



ROMANIA

REIMBURSABLE ADVISORY SERVICES AGREEMENT ON TECHNICAL SUPPORT TO ROMANIA IN ANALYZING AND ADDRESSING THE CHALLENGES IN MEETING THE UWWTD REQUIREMENTS (P167925)

Output No. 4

“TOWARDS A NEW UWWTD IMPLEMENTATION ACCELERATION PLAN”

Report with a proposed updated implementation plan of UWWTD, including prioritization of measures and new timeline for compliance of the agglomerations above 2,000 p.e.

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MINISTERUL MEDIULUI,
APELOR ȘI PĂDURILOR



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Abbreviations

ANAR	National Administration "Romanian Waters"
ANCPI	National Agency for Cadaster and Land Registration
ANRSC	National Regulatory Authority on Communal Services of Public Utilities
BOT	Build-Operate-Transfer
CAPEX	Capital Expenditure
CBA	Cost Benefit Analysis
CS	Collecting System
DSCR	Debt Service Coverage Ratio
EBRD	European Bank for Reconstruction and Development
EC	European Commission
EU	European Union
FS	Feasibility Studies
GIS	Geographic Information Systems
GoR	Government of Romania
IAP	Implementation Acceleration Plan
IAS	Individual Appropriate Systems
IBRD	International Bank for Reconstruction and Development
IDA	Intercommunity Development Association
IFI	International Financial Institution
LIOP	Large Infrastructure Operational Programme
MEF	Ministry of European Funds
MEWF	Ministry of Environment, Waters and Forests
MoWF	Ministry of Waters and Forests
MPF	Ministry of Public Finance
MPWDA	Ministry of Public Works Development and Administration
MFD	Maximizing Finance for Development
NPV	Net Present Value
NRW	Non-Revenue Water
OECD	Organisation for Economic Co-operation and Development
OPE	Operational Programme Environment
OPEX	Operational Expenditure
PNDL	National Program for Local Development
PNDR	National Program for Rural Development
PPP	Public-Private Partnership

RAS	Reimbursable Advisory Services
RCA	Root Cause Analysis
ROC	Regional Operating Company
SIC	Strategic Implementation Committee
SFP	Strategic Financing Plan
TG	Technical Group
UWWTD	Urban Waste Water Treatment Directive
UWWTP	Urban Wastewater Treatment Plant
WB	World Bank
WBA	Water Basin Authority
WSS	Water Supply and Sanitation
WSSO	Water Supply and Sanitation Operators
WWTP	Wastewater Treatment Plant

Executive Summary

1. This report analyzes **why the existing Implementation Plan (IP) of the Urban Waste Water Treatment Directive (UWWTD) did not allow Romania to comply with its obligation, and proposes a new approach to accelerate implementation.** Several key issues have been identified during the stocktaking phase, such as (i) institutional and capacity challenges; (ii) lack of an unified national approach, as well as proper baseline assessment of agglomerations, their boundaries and load; (iii) difficulties in establishing adequate policy and planning process for UWWTD compliance; (iv) partial success in engaging local authorities and completing the water supply and sanitation (WSS) utility aggregation process; (v) very slow WSS infrastructure investment process; (vi) lack of compliance incentives; (vii) external economic and financial challenges, (viii) inadequate financing plan for the required compliance investments; and (ix) absence of mechanism to monitor and evaluate the Implementation Plan progress.
2. Having in mind all these challenges it is not surprising that the **compliance situation in Romania is quite unsettling** as demonstrated in the draft 10th UWWTD Implementation Report: one third of the wastewater load still needs to be collected (around 4.4 million p.e.); half of the collected wastewater load still need secondary treatment in line with the requirements of the Directive (around 6 million p.e.); and two thirds of the collected wastewater load from agglomerations generating >10,000 p.e. still require more stringent treatment (around 7.5 million p.e.).
3. From 2004 till 2019 the country did manage to invest approximately EUR 6.6 billion (i.e. nearly 70 percent of the initially estimated investments) and significantly improve WSS services. However, although the remaining distance to compliance (target)¹ is lower than the figures at the end of 2016 mentioned above, it clearly signals a critical need for reevaluation of the ongoing compliance efforts. At the same time, since 2004 Romania faced significant demographic changes, leading to negative population growth in many of the smaller cities and agglomerations. Hence, **this report is proposing a new approach in developing UWWTD Implementation Acceleration Plan (IAP).**
4. The new approach addresses the initial Plan's bottlenecks and changed reality by proposing a national compliance approach and proper baseline assessment; developing a plan to bridge compliance gaps, establishing a financing plan for the required compliance investments; and proposing a mechanism to monitor and evaluate progress. Other identified WSS sector issues such as: institutional and capacity challenges, improvement of the infrastructure investment process, engaging local authorities and completing aggregation, are also analyzed and recommendations are proposed for further communication, discussion and agreement with the Romanian sector stakeholders during the preparation of the WSS Strategy outline. The IAP proposes a realistic compliance plan comprising the following pillars: **I. Optimization of compliance investments; II. Prioritization of investments; III. Establishment of a financing plan and sustaining WSS**

¹ A new indicator that was introduced in the 9th UWWTD Implementation Report; in the 10th report it is called distance to target. The "distance to target" represents the effort still necessary to reach compliance with the Directive for each requirement: distance to target (collection) shows how much wastewater is not yet collected and therefore also not appropriately treated; distance to target (secondary treatment) shows how much of the collected wastewater is not yet adequately treated; and distance to target (more stringent treatment) shows how much of the collected wastewater is not yet treated adequately.

investments; IV. Other measures to accelerate investments and improve sector performance; and V. Monitoring, evaluation and adjustment of the plan.

5. The report documents **the expected results of the proposed approach**: the number of agglomerations decreases by 46 percent (from 1,870 in 2016 to 1,041) and their pollution load by 29 percent (from 20,236,565 p.e. in 2016 to 14,342,256 p.e.) as a result of negative population growth, slow down of economic activities and changed methodological approach. This would address the initial lack of a unified national approach and proper baseline assessment since a lot of the initially reported agglomerations turned out to be communes comprised of a few settlements with just a few hundreds of people and not matching the “sufficiently concentrated” area criteria of the Directive. As a result, the **investment needs assessment** demonstrated a requirement for **RON 29.4 billion (€6.2 billion)**, of which 25 percent are for the UWWTD driven water investments and 75 percent for the extension or new collection systems and new WWTPs. Sustaining compliance in Romania turns out to be even more challenging with investment needs for the next 20 years of **RON 77.8 billion (€16.4 billion)**, of which 61 percent are for maintaining and improving existing water infrastructure and 39 percent for maintaining sewerage systems and facilities.
6. Financing of compliance investments remains a key challenge. The report reviews and assesses three scenarios: 1) business as usual; 2) maximum results; and 3) acceleration. If the sector challenges remain to a large extent unresolved (scenario 1 “Business as Usual”), the results from the financial modelling (at county level and the national model) reveal that Romania will not be able to comply with the UWWTD in the next 20 years. With the implementation of significant tariff increase and investment financing policy (Scenario 2 “maximum”), Romania can comply in the next 20 years, however, this will have significant impact on customers (through required tariff increases) as well as on the national budget (in addition to EU funds co-financing). **Scenario 3 “Acceleration” represents a middle way as it combines significant investment increases with an optimization of investment needs. This scenario is the one that appears most appropriate and realistic to accelerate Romania’s compliance in a sustainable and affordable manner**: following legislative changes, if Individual Appropriate Systems (IAS) are improved in small agglomerations between 2,000 and 5,000 p.e., where no collecting systems and WWTP exist (alternatively to building CS and WWTPs, which will require around RON 13 billion), the investment needs will be reduced, with the total remaining compliance costs amounting to **RON 16.2 billion (€3.4 billion)**; **under this scenario Romania can achieve UWWTD compliance in 2035.**
7. To achieve the **Scenario 3** results, Romanian authorities will have to take timely decisions on:
 - Engaging and improving the **accountability and alignment of incentives for local authorities’ in UWWTD compliance process**;
 - Further **extension of ROCs WSS services area** (all agglomerations above 2,000 p.e. should be served by sustainable ROCs);
 - **Resolving the connection issue**: with almost one million people in Romania, which have access to collecting systems but decided not to connect, the situation is threatening the investment efforts and jeopardizing both the compliance and the sustainability of WSS services;

- **Improving sector governance and establishing a mechanism to coordinate efforts and resources for compliance:** A mechanism should be established by the key institutional stakeholders like MEF, MPWDA and MEWF to coordinate and complement efforts and resources towards achieving compliance; all funding sources for the sector need to follow the same guiding principles and should be channeled towards compliance and sustainability;
 - Setting up a **Strategic Implementation Committee** to perform regular monitoring and evaluation and to propose remedial actions during the implementation of the IAP; and
 - **Adoption of the national methodologies** for the delineation of agglomeration boundaries and the calculation of pollution load, and of the **legislative changes** to allow additional IAS and establish a proper IAS process.
8. This report acknowledges that compliance efforts, and the implementation of any updated plan, will remain a work in progress for the foreseeable future, and will require a close monitoring, evaluation and adjustment mechanism. Therefore, the new approach is **proposing a monitoring and evaluation framework** including the creation of a special Committee as mentioned above. Such a monitoring and evaluation framework is essential for the transparency and credibility of the proposed Implementation Acceleration Plan. This will ensure that progress is measured accurately, and information is received and reported internally and externally in a timely manner, so that any deviation from the Plan or issues during its implementation are identified early on and duly addressed by the responsible stakeholders. Since the Implementation Acceleration Plan is a living and effective document, regular reporting, assessment and adjustments are proposed.
9. Finally, the sector needs a **full-scale national WSS Strategy** to be developed urgently, to unlock the current sector deadlocks and establish a better environment for UWWTD compliance. This strategy shall identify a set of measures necessary to address the current policy issues, especially closing the financial gap and ensuring that both compliance and inclusion are achieved over the next decades in a sustainable manner.

Chapter 1. Introduction

1.1 Background

10. During the negotiation process leading to the European Union (EU) Accession Treaty, Romania committed to harmonization with the EU “Environmental acquis”, which includes the complex body of EU water legislation. Compliance with this set of directives and the associated implementation and transition deadlines became mandatory once Romania became a full EU member on January 1, 2007.
11. In the early 1990s Romania had a significant investment backlog in the water supply and sanitation (WSS) sector, including a large portion of urban areas not connected to piped WSS systems, and most of the rural settlements without any WSS network infrastructure. Thus, Romania, in comparison to other EU Member States, started from a very low level of WSS services coverage towards EU water legislation implementation. At the end of 2003, only 11.5 million inhabitants out of the total population of 21.7 million in Romania had access to wastewater collection and treatment services. The breakdown of population benefiting from public sewerage services was 10.3 million inhabitants in urban areas and only 1.2 million inhabitants in rural areas. Only 644 localities (265 urban and 379 rural) out of around 3,000 localities have had public collecting systems (representing 21.5 percent); yet, only 77 percent of their total discharged wastewater was treated, while at the same time in 47 urban localities, with more than 150,000 inhabitants, the wastewater was discharged without any treatment².
12. Romania’s UWWTD Implementation Plan was adopted in October 2004 and became effective in 2007, targeting wastewater collection and treatment in agglomerations representing a percentage of the load generated at the end of 2010 (61% collection, including all agglomerations of more than 10 000 p.e.; 51% treatment) and 2013 (69% collection, 61% treatment), concerning all agglomerations above 10,000 people equivalent (p.e.) at the end of 2015, and at the end of 2018 for all agglomerations between 2,000 and 10,000 p.e. The IP identified a total number of 2,609 agglomerations above 2,000 p.e. – including 263 above 10,000 p.e. and 2,346 between 2,000 and 10,000 p.e.
13. The entire territory of Romania was classified as a Sensitive Area under Article 5 (2, 3, 8) of the Directive, thereby requiring more stringent treatment of nitrogen and phosphorus in all wastewater treatment plants for agglomerations with more than 10,000 p.e.
14. Like in most of the European countries, the time and costs needed to comply with the UWWTD acquis was underestimated. Following the results of the 9th report on the implementation status and the programs for implementation of the UWWTD related to the 2014 reference year, the European Commission (EC) initiated an infringement procedure against Romania for not meeting the agreed deadlines of 2013. A list of agglomerations representing the load that had to be collected and treated was established under this procedure. In line with the discussions between Romania and the EC the national authorities decided to prepare an updated inventory of agglomerations based on new methodologies for delineation of agglomeration boundaries and determination of their pollution load and update the IP by proposing measures to

² As per the information from the UWWTD Implementation plan, October 2004

accelerate compliance, a new timeline and financing plan to address the requirements of UWWTD. The WB is providing technical support to the Government of Romania to deliver on the above-mentioned commitments.

15. Despite the significant WSS investments for the last 15 years and sector reform implementation, compliance with the UWWTD remains extremely challenging. Implementation of this Directive has always been closely linked to the need of reforms in the WSS sector, which encountered various challenges including resistance by local authorities against joining regional public utilities, resistance of households to connect to newly installed sewerage networks, slow utilization of EU grant funds, and the absence of a strategy for expanding WSS services to rural areas. With the 2013 deadlines missed and infringement case initiated for several agglomerations representing the percentage of the load that had to be collected and treated, and the potential risk that a second infringement case would be triggered this year for missing the 2015 deadline it is extremely important to reconsider the UWWTD compliance approach.

1.2 Current Technical Assistance

16. A Reimbursable Advisory Services Agreement (RAS) signed between the Ministry of Waters and Forests (MoWF³) and the World Bank (WB) on January 28, 2019 for the provision of “Technical support to Romania in analyzing and addressing the challenges in meeting the UWWTD requirements”. It includes the following components:

COMPONENT A: SUPPORT FOR THE UPDATE OF THE UWWTD IMPLEMENTATION PLAN

The Bank will assist the MoWF in the preparation of an updated implementation plan for the UWWTD, including the following technical assistance activities to support MoWF in:

- (i) Carrying out a stocktaking assessment of the current implementation plan based on the available most up-to-date data, and identifying bottlenecks and options to accelerate implementation;
- (ii) Assessing options for optimization of compliance costs⁴;
- (iii) Establishing a new baseline;
- (iv) Developing a Strategic Financing Plan for the remaining compliance investments;
- (v) Developing a new timetable for the implementation of Directive 91/271/EEC;
- (vi) Strengthening capacity of the personnel of MoWF and “Romanian Waters” National Administration (ANAR) in data collection, information validation and reporting.

COMPONENT B: ASSISTANCE FOR THE UPDATE OF THE NATIONAL MECHANISM FOR MONITORING, EVALUATION AND REPORTING ON UWWTD IMPLEMENTATION

The technical assistance will include support to the MoWF in:

- (i) Evaluating the existing national UWWTD reporting systems and their compatibility with the SIIF requirements;
- (ii) Developing a proposal to improve the process of data collection, processing and validation of information regarding UWWTD compliance reporting;

³ Restructured and renamed in 2019 as the Ministry of Environment, Waters and Forests

⁴ This covers: a) development of a methodology for delineation of agglomeration boundaries; b) organization and participation in meetings in all the counties on the new methodology; c) update of the list of agglomerations above 2,000 p.e., including details and maps; d) conducting analytical field work to validate the maps in boundary cases; e) improvement of the process of Individual Appropriate Systems (IAS) implementation in Romania.

- (iii) Developing technical specifications to update the existing systems (or systems under development) in order to be SIIF compatible;
- (iv) Increasing the capacity of the personnel of MoWF and ANAR to work with the updated national UWWTD data collection and reporting system and SIIF.

COMPONENT C: RECOMMENDATIONS TOWARDS DEVELOPMENT OF A NATIONAL STRATEGY FOR THE WATER SUPPLY AND SANITATION SECTOR

Based on the technical assistance delivered under Components A and B above, the Bank will assist the MoWF in initiating the development of a National Strategy for the Water Supply and Sanitation (WSS) Sector (Strategy) by supporting the MoWF in:

- (i) Preparing a recommended vision statement and an executive outline of the proposed Strategy, focusing on specific areas and issues that need to be addressed in line with the applicable EU environmental directives pertaining to the WSS sector, and improve sector performance and sustainability;
- (ii) Taking stock and analyzing all available information from national authorities and other International Financial Institutions (IFIs) that provide support to the WSS sector;
- (iii) Proposing a mechanism to coordinate efforts and inputs during the preparation of the Strategy to engage all key stakeholders and IFIs involved in the sector.

1.3 Purpose and Scope

17. This *“Report with a proposed updated implementation plan of UWWTD, including prioritization of measures and new timeline for compliance of the agglomerations above 2,000 p.e.”* represents the Output No 4 as specified in the above-mentioned RAS Agreement.
18. Its purpose is to enable the Romanian Government to identify and implement measures to accelerate and reach full compliance with the UWWTD. At present, the country lacks and needs to develop Implementation Acceleration Plan outlining all the necessary steps, timeframe and resources to bring all agglomerations with more than 2,000 p.e. in compliance while implementing measures to optimize cost of achieving the UWWTD requirements.
19. The Report describes the results obtained by implementing the existing UWWTD Implementation Plan and highlights the main barriers encountered for achieving the original plan; the proposed national methodologies for delineation of agglomeration boundaries and calculation of pollution load and establishment of new baseline assessment; the updated strategic financing plan for funding of remaining compliance investments and maintenance of existing WSS infrastructure; outlines an updated implementation acceleration plan and proposes a monitoring and controlling mechanism to track its implementation.

1.4 Use of this report

20. The Romanian authorities could use this report to prepare a National Implementation Acceleration Plan for the UWWTD. Building on the proposed 1) new inventory of agglomerations; 2) prioritization of investments; 3) investment needs and delivery scenarios; 4) financing plan for the proposed measures; 5) measures to improve overall WSS sector performance; and 6) new timeline for compliance the Romanian Government

could better address compliance challenges. Such a plan should be adopted by the Government and communicated to the EC.

21. The current document could also be used by the Romanian authorities during the discussions with the EC on WSS investments to be financed under 2021-2027 EU financial programming period. Requirements for national contributions as well as opportunities for leveraging grant and budget resources is assessed and options proposed for informed decisions by the respective Romanian institutions.

1.5 Validation and Communication of the new Implementation Acceleration Plan

22. Although there were several discussions with key WSS sector Romanian stakeholders during the preparation of the plan, having in mind its nature, identified responsibilities, required resources and commitments the Bank team recognized a need for further communication. The Romanian national authorities should, at a minimum, present, discuss, validate and agree on the responsibilities allocated in the plan with local and county authorities as well as operators. The communication with all relevant stakeholders is key to build consensus and ensure buy-in from all WSS actors. Following the Bank team's advice, the MEWF established a Technical Group (TG) for the development of a WSS Strategy outline, which can be used for further communication of the Plan, along with broadening participation and organizing regional and national workshops, which can be supported under the project.
23. As with every implementation plan this one is also a living document, which requires monitoring, regular reviews and evaluation, adjustments and fine-tuning in order to achieve its planned results. **Chapter 7** describes the proposal of the team; however, this proposal should be further agreed, communicated and acted upon. Compliance with the UWWTD, as in other EU Member States (MS), is not only a national level commitment; thus, a broader communication campaign should be envisaged to align the efforts of all authorities, operators and users.
24. Finally, this report was prepared during the outbreak of the challenging situation posed by the COVID-19 pandemic. This not only disrupted the planned communication process on the proposed Plan, but also led to some uncertainties around its proposed implementation. However, since a comprehensive assessment of the COVID-19 pandemic impacts on the UWWTD compliance efforts is not feasible at this stage due to the ongoing uncertainties, and having in mind the long-term horizon of the proposed plan, we believe that the calculations and projections are quite sound. Once the pandemic situation is over, or during the first scheduled implementation review, the Plan can be adjusted to address the new realities.

1.6 Report Overview

25. This Report has the following structure:

Chapter 1 of the report provides a background information on Romania's WSS sector and compliance baseline situation, describes the current Technical Assistance, the purpose, scope and use of this report, along with proposals on communication of the developed Implementation Acceleration Plan and finally provides a report overview.

Chapter 2 outlines the existing UWWTD Implementation plan, its initial compliance assessment and approach, the negotiated transition periods and commitments, along with the reasons for which the current IP did not deliver expected results and presents the compliance situation as per the draft 10th UWWTD Implementation Report. It also describes the new approach in developing the Implementation Acceleration Plan, suggestions on bridging the initial gaps and proposes a new five step approach to structure the Plan.

Chapter 3 presents the first pillar, which is the optimization of compliance investments. The initial assessment of UWWTD compliance costs is described along with the opportunities for optimization of compliance investments, the updated list of agglomerations and the calculation of pollution load based on the new methodologies.

Chapter 4 describes the second pillar – the prioritization of investments. A proposal on how to prioritize investments as well as compliance needs assessment is described in detail.

Chapter 5 of the report covers pillar three – establishing a financing plan and sustaining WSS investments through the development of a Strategic Financing Plan. The financing plan preparation is presented along with analyzes on three scenarios to deliver investments along with their respective results.

Chapter 6 presents pillar four – other measures to accelerate investments and improve WSS sector performance. It focuses on remaining challenges to the sector and what could be the way forward.

Chapter 7 describes pillar five, which is the proposed monitoring, evaluation and adjustment of the Implementation Acceleration Plan. It covers proposals: to improve the current national monitoring and reporting processes and tools; to implement regular monitoring and reporting on the IAP; to allocate institutional responsibilities as well as to suggest options for adjustments during the implementation process of the plan.

Chapter 8 of the report covers the conclusions: why developing an Accelerated Implementation Plan is important; how the Plan is addressing the current implementation issues; what is proposed; what are the main results from the recommended scenarios; what are the required decisions to ensure optimal results' delivery and going beyond compliance.

Annex 1 includes Output 1 *“Concept paper on support provided to update the UWWTD implementation plan including approach, workplan and roadmap of the associated activities”* – final report.

Annex 2 presents Output 2 *“Report on options for optimization of compliance costs and implementation status of UWWTD, including methodology for defining agglomeration with more than 2,000 p.e.”* – final report.

Annex 3 refers to Output 3 *“Report with updated list of agglomerations above 2,000 p.e., details and maps based on the methodology for optimizing cost of compliance with UWWTD”* – draft report.

Annex 4: presents the approach for the calculation of investment needs – compliance and sustainability CAPEX.

Annex 5 provides summarized information on the agglomerations' number and load at county level.

Annex 6 presents the distribution of agglomerations and p.e. according to sewer and WWTP connection rates.

Annex 7 contains the list of agglomerations following the implementation of the new methodologies and their new compliance deadlines (as per the three scenarios).

Annex 8 includes the developed county and national financial models for the three scenarios.

Chapter 2. A new approach to address existing UWWTD Implementation Plan issues

2.1 Initial compliance assessment and approach

26. Since the adoption of the Implementation Plan for the UWWTD in 2004 (effective in 2007), the number of agglomerations changed often, following a general downward trend, due to 1) the reorganization of agglomerations following the preparation and revision of County WSS Master Plans; 2) changes in the lay-out of sewerage networks and location of wastewater treatment plants (WWTP) during preparation of Feasibility Studies (FS) and engineering design; and 3) population drop deriving from significant outmigration. Hence, the number of agglomerations decreased from 2,609 in 2004 (estimated in the absence of a methodology for defining agglomerations) to 1,870 in 2016 when their number stabilized.
27. The change in the number of agglomerations triggered also a substantial drop in the total load estimated by the initial Implementation Plan, not only because of the reduction in the resident population but also because of the diminishing of economic activities discharging wastewater. Thus, the total load generated by all emitters was estimated, in 2004, at 26,767,398 p.e. and dropped (by 25%) to 20,142,050 p.e. in 2016 (according to EC Report on the 10th reporting cycle⁵). The change in the number of agglomerations and load, over time, is presented in **Table 1** below.

Table 1: Changes in structure and load of agglomerations

Agglomerations	2004		2016		Change	
	Number	Load (p.e.)	Number	Load (p.e.)	Number	Load (p.e.)
>10,000 p.e.	263	16,575,167	207	13,696,594	78.7%	82.6%
2000-10,000 p.e.	2,346	10,192,131	1,663	6,445,456	70.9%	63.2%
Total	2,609	26,767,398	1,870	20,142,050	71.7%	75.2%

28. The IP was developed considering all requirements included in UWWTD, except the targets that remained subject to negotiation between the Government and EC before the Environment Chapter of the Accession Treaty was closed. Thus, the Plan includes detailed actions to secure country's preparedness for Directive implementation and conformation, assigning clear responsibilities to various ministries and agencies and deadlines for compliance. However, the number of Government bodies involved initially changed and increased over time, during implementation, with a series of detrimental effects on the coherence of Plan implementation. The evolving institutional arrangement with separate responsibilities assigned to (i) the Ministry of Environment, Water and Forests as a reporting body; (ii) the Ministry of European Funds as a financing body; (iii) the ROCs as contracting authorities; and (iv) the Ministry of Public Works, Development and Administration as a technically responsible body did not seem to be well coordinated and delivering the desired results.
29. Romania started reporting on the status of UWWTD implementation since 2007 and the country data have been reflected in EC Report on the 6th reporting cycle (2011) where the

⁵ The EC Report on the 10th reporting cycle is under final analysis by the EC and member-states and is expected to become public in May 2020.

significant gap between Romania and the other member-states, not only the EU-15 but EU-10 as well, was obvious and gave the full sense of the need for huge investment to catch-up. The lowest rate of population connected to sewerage infrastructure (50% compared with 85% EU average), secondary treatment (29% compared with 77% EU average) and more advanced treatment of wastewater (5% compared with 61% EU average) gave Romania a difficult head-start for reaching compliance with UWWTD with respect to the time and costs for compliance.

2.2 Transition periods and commitments

30. During the negotiation of the Environment Chapter, Romania declared its entire territory as sensitive to nitrogen and phosphorus pollution because monitoring records of surface and sub-surface water bodies showed that a large territory of Romania was affected by pollution with nitrogen and phosphorus, and it was agreed that it would be difficult to delineate non-sensitive zones from sensitive zones to such pollution. This decision, although environmentally reasonable, imposed additional compliance costs due to the need to apply more advanced and costly wastewater treatment technologies. While assessing options to optimize compliance costs the Bank team analyzed the initial designation and effect on remaining compliance investments. Details are provided in **Chapter 3**.
31. At the time of negotiation of the Environment Chapter, it was obvious that Romania could not meet the compliance deadlines stipulated by UWWTD and a transition period was needed (i.e. to extend the respective deadlines for several years). Although Romania proposed longer extension time for each condition, the transition period accepted by EC included the following:
 - To comply with the UWWTD provisions regarding the collection of urban wastewaters (Art. 3), Romania will:
 - a. Secure collection of all wastewater generated in all agglomerations larger than 10,000 p.e., by December 31, 2013; and
 - b. Secure collection of all wastewater generated in all agglomerations larger than 2,000 p.e., by December 31, 2018.
 - To comply with the UWWTD provisions regarding the treatment and discharging of urban wastewater (Art. 4 and Art. 5), Romania will:
 - c. Secure full stringent treatment of all wastewater collected from agglomerations larger than 10,000 p.e., by December 31, 2015; and
 - d. Secure secondary treatment of all wastewater collected from agglomerations larger than 2,000 p.e. by December 31, 2018.

2.3 Why the current Implementation plan did not deliver expected results?

32. Although the agreed transitional periods seem quite ambitious, the current level of their achievement could have been closer to the expected results. Several factors – political, economic, financial, technical, institutional and organizational hampered the implementation of the Investment Plan from planning to completion of works, infrastructure operation and WSS service delivery, as outlined below:
33. **Institutional and coordination challenges:** Many governmental institutions have been (and still are) involved in UWWTD implementation process, with different roles and

parallel activities, which as mentioned above, create a complex environment not entirely conducive to streamline decision making. During the period 2007-2013, it included the regulatory agency for communal services (ANRSC), the implementation authority (MEWF), the financing bodies (MPF and MEF), the technical governing entity (MPWDA), and the agency reporting to EC (MEWF). From 2014 onwards, the implementing agency role was taken over by one of the financing bodies (MEF), while the reporting agency became, for a while, MWF. Under this complex setup, harmonization of efforts proved to be very difficult, particularly with regard to the reporting references (e.g. statistical population vs. population equivalent in defining load). Moreover, the access to operators' information was not easy, as they have obligations for direct reporting to local not national level.

34. **Difficulties in establishing adequate policy and planning process:** The UWWTD implementation in Romania was based on the *"Guidance on how to define the agglomerations"* issued by MEWF in 2008, four years after the Implementation Plan was developed and one year after the EU financing for it became available (2007). Instead of providing a country-tailored methodology, with clear principles for Directive application, the Guidance just replicated the flexible approach of the Directive (open for country customization), allowing for a wide range of interpretations. This led to significant freedom in defining agglomerations and a myriad of technical solutions developed by the consultants during the preparation of regional (county) WSS Master Plans, which resulted in a large number of agglomerations with significant territorial coverage and exaggerated loads. The inadequate dimensions and loads of agglomerations led to oversized infrastructure and overestimated costs, and ultimately to suboptimal use of funds. Since the sector was required to find solutions to many challenges, the absence of a comprehensive vision and strategy to implement it deepened the fragmentation of investments. In addition, Romania had to bridge critical sector gaps simultaneously, such as achieving compliance with EU water and wastewater directives, while trying to ensure inclusion by providing universal access to piped water (reducing differences between urban and rural settlements). The lack of strategic document outlining policies, targets, measures, financing and monitoring and control have led to a hardly sustainable patchwork.
35. **Lack of national approach and proper baseline assessment:** As mentioned above there was no national methodology for defining "sufficiently concentrated" areas and delineation of agglomeration boundaries in Romania. Besides, the County WSS Master Plans have been developed following the regionalization policy which covered only a (changing) fraction of the national territory, thus failing to provide a full picture of the efforts needed for compliance and requiring periodic update to reflect the regionalization progress. In addition, local political interference in the priority setting process severely affected the adherence to the above-mentioned Guidelines. The Bank team did not manage to discover a properly prepared baseline assessment for UWWTD implementation at national level. The national authorities were completely dependent on information submitted by operators and counties and simply aggregated the data (which, as mentioned, followed different approaches). As a result, from 2004 to 2019, approximately EUR 6.6 billion was invested for achieving UWWTD compliance, which represents nearly 70 percent of the initially estimated investments, leading to around 20 percent increase in wastewater collection and around 30 percent for treatment. However,

the distance to compliance continues to be high – around 30 percent of the load is still to be collected and 40 percent is still to be adequately treated.

- 36. Incomplete process of utility aggregation and capacity increase:** The Government of Romania (GoR) initiated a major structural reform in the WSS sector with two main objectives (i) promoting integrated water resources management and application of solidarity principle between urban and rural settlements in each region; and (ii) achieving economies of scale in water services through consolidation of WSS operators within a geographical area into Regional Operating Company (ROC), thus overcoming the high fragmentation of services. As part of the reform, the local authorities have been economically incentivized (access the EU-grants for investment) to join the Intercommunity Development Associations (IDA) at county level. However, a significant number of local authorities are still not part of IDAs and continue to use suboptimal WSS services from their local utilities. Currently, about two-thirds of local authorities are part of IDAs but only about 60 percent of them have delegated their WSS services to ROCs. There are 1,015 operators, including 43 regional and two private operators in Romania⁶. The 972 small, local operators primarily serve localities between 2,000 and 8,000 people. The number of these small operators decreased slightly over the past 10 years but continues to be one of the main problems to achieve UWWTD compliance in agglomerations below 10,000 p.e. – these small companies, sometime units within municipal authorities, are unsustainable with significant difficulties to access financing and invest, attract WSS professionals, and overall perform basic operation and maintenance of existing infrastructure. In addition, most of the ROCs resisted expanding services in small settlements due to the lack of contractual obligations, incentives and, sometimes, due to the fact that this would lower their performance indicators and/or ratios monitored by financing organizations.
- 37. Investment process difficulties:** There were significant number of challenges to the investment process in the WSS sector. Despite Phare and ISPA pre-accession financing the bulk of WSS project preparation started only after 2007. It took several years for most of the County WSS Master Plans and FS to be completed, which led to significant delays in investments in the sector compared to the initial projections. In addition, the procurement procedures applied have been entirely based on the national legislation which was a significant challenge to enable streamlined contracting, designs preparation and implementation of construction works. The Romanian procurement legislation in the early years of accession was pretty rigid and poorly aligned to international practices, lacking provisions for implementation of flexible contracts for design and works or did not fully integrate sound procedures for contract management. Multiple amendments to the legislation have been enacted to remove the often deadlocks that occurred during procurement under the EU-financed programs. Serious problems have been created by the permissive procedures for complaints submission without solid reasons, just as a reaction for not getting a contract. Such unfunded complaints blocked many large contracts, delayed implementation and also discouraged the international contractors to participate in tenders, limiting the access to good international practices and technologies in Romania.

⁶ ANRSC, Annual Report 2017

38. **Lack of adequate Financing plan:** The existing implementation plan includes a costing table with 15-year (2004-2018) annual financial allocations amounting to 9.5 billion EUR, calculated to be sufficient for compliance achievement. The costs were planned to be covered by EU funds (40%), state and local budgets (30%), credits and public-private partnerships, the Environmental Fund and the beneficiaries through tariffs (30%). The distribution among different funding sources was also envisaged. Although the team did not manage to discover how the calculations and allocations were made it is obvious that the costing table is not based on preparation of financial models at county or ROC level and assumes that all counties will achieve compliance simultaneously by 2018. The latter was not achieved because the disparities between the counties/ROCs were not initially considered, i.e. different starting point towards compliance, different financial absorption potentials and technical capacity. In addition, we have not seen evidence that the identified resources were actually allocated and disbursed. Despite witnessing that the compliance costs become much higher than initially envisaged, the actual budget spending much lower, and the tariffs not covering the gap there was no remedial action (for further details see **Chapter 5**). This, combined with the fact that there was no specific institution in charge of the implementation of the plan, resulted in a lack of adequate financing, monitoring and evaluation.
39. **Lack of compliance incentives:** The Plan does not contain any incentives for local authorities to participate actively and become accountable for UWWTD compliance. This created a significant misalignment between national and local authorities' efforts. Similarly, the unwillingness or inability of people to connect to new collecting systems was not envisaged and this problem is currently not only affecting UWWTD compliance, but also the financial health of WSS utilities as they end up operating newly built networks with a lower connection density than planned.
40. **External economic and financial challenges and affordability constraints:** The world's economic and financial crisis of 2008-2010 affected badly the execution of the UWWTD Implementation Plan not only through a drastic drop of the financial resources but also by a sharp increase of prices of construction materials, fuel and equipment. Many construction firms reduced their activities (some even closed down) and lost significant number of skilled staff, who decided to move abroad in search of safer jobs. Although the availability of EU grant funds was not affected, the co-financing funds became scarce and tapping the EU resources difficult. In addition, credits become more difficult to obtain and expensive, which forced many beneficiaries to refrain from borrowing for their counterpart contribution, which delayed or reduced grant financed projects and increased pressure on tariffs – already at the limits of affordability for some – as WSS investments had to be partly financed with own resources.
41. **Lack of monitoring and evaluation and corrective mechanism:** The existing implementation plan does not include a mechanism for monitoring and evaluation the progress towards achieving compliance, including annual target values and responsibilities allocation at national, county and local level. So far, the “monitoring” was replaced by the reporting every 2 years to the EU on the Implementation status as required by Article 17 of the WWTD. However, no critical evaluation of the achieved and non-achieved results has been carried out, along with corrective actions, changes, adjustments etc.

2.4 Compliance situation as per the draft 10th UWWTD Implementation Report

42. The compliance situation is assessed by the EC, based on the information reported by member states (MS) and validated through a thorough review process, every two years. The most recent review was completed in 2019 and the Report for the 10th reporting cycle (currently in final draft) is about to be issued by the EC. It is based on the data reported in 2018 as of December 31, 2016, with a time gap of three years. Indeed, updated information, as of December 31, 2018, has been collected by ANAR and will be reported to the EC during this year, as per the UWWTD procedure. In this section, the compliance status is presented with reference to the formal EC evidence included in the above-mentioned draft report, which discusses the status of compliance with respect to the deadlines set for December 31, 2015 (including the December 31, 2013 deadline).

43. In summary, the situation of the 1,870 agglomerations of more than 2,000 p.e. each, shows that:

- 13 agglomerations, generating 1,046,986 p.e. of wastewater, complied with the requirements of the Directive;
- 842 agglomerations, generating 15,784,897 p.e. of wastewater, did not comply with the requirements of the Directive; and
- 1,015 agglomerations, generating 3,310,167 p.e. of wastewater, were still not required to comply with the requirements of the Directive due to pending deadlines (their situation will be assessed based on the 2018 data to be reported).

To sum up, at the end of 2016, 2 percent of agglomerations complied with the requirements of the Directive, representing 6 percent of the wastewater load generated by the country, which is a slight increase compared with 2014. The overall compliance situation is shown in **Table 2**.

Table 2: Compliance status as of December 31, 2016

Compliance Indicator	Agglomerations			Wastewater Load		
	Total (no)	Compliant (no)	%	Total (p.e.)	Compliant (p.e.)	%
Article 3 (collection)	855	24	3	16,831,883	2,551,319	15
Article 4 (secondary treatment)	730	13	2	12,145,433	1,032,472	9
Article 5 (more stringent treatment)	205	9	4	11,462,572	997,660	9

44. However, many investment projects are underway or have been partially completed, addressing in part the compliance obligations in the respective agglomerations. Thus, although the agglomerations cannot be rated as compliant, the outstanding measures to be undertaken will only address a part of their obligations, defined as “distance to compliance”. In this respect, the situation in 2016 stands as follows:

- 26% of the wastewater load still need to be collected (about 4,377,876 p.e.);
- 50% of the collected wastewater load still require secondary treatment in line with the requirements of the Directive (about 6,038,171 p.e.); and

- 65% of the collected wastewater load from agglomerations generating >10,000 p.e. must still undergo more stringent treatment (about 7,536,554 p.e.).

Moreover, about 1.4 percent of wastewater load was reported addressed through individual or other appropriate systems (IAS), representing approximately 281,660 p.e. It needs to be mentioned that the compliance and distance to compliance rates referred above are calculated against the targets with deadlines that expired before the reporting time, i.e. deadlines set for 2013 and 2015 (“Secure collection of all wastewater generated in all agglomerations larger than 10,000 p.e.” and “Secure full stringent treatment of all wastewater collected from agglomerations larger than 10,000 p.e.”, respectively).

45. An infringement case was opened for Romania regarding several agglomerations representing the percentage of the load that had to be collected and treated by 2013 (including collection of all wastewater collected in all agglomerations larger than 10,000 p.e.) and a new infringement case is likely to be opened by the EC against Romania for not fulfilling the commitment to secure full stringent treatment of all wastewater collected from agglomerations larger than 10,000 p.e., once the findings of the EC Report on the 10-th reporting cycle would be approved by the EU.

2.5 A new approach to bridge the gaps of current Implementation Plan

46. The new Implementation Acceleration Plan addresses some of the initial Plan’s bottlenecks by proposing a national compliance approach and proper baseline assessment; developing a plan to bridge compliance gaps, establishing financing plan for the required compliance investments; and proposing mechanism to monitor and evaluate progress. However, other WSS sector issues like institutional and capacity challenges; improvement of infrastructure investment process; engaging local authorities and completing aggregation although analyzed in the report can only be addressed during the preparation of the WSS Strategy outline since they require further communication, discussion and agreement with Romanian sector stakeholders along with informed decision making. Further details on these challenges are provided in **Chapter 6**. In addition, some of the issues like the “rigid” procurement process have been largely addressed during the past years (with complaints handling and court appeal process still requiring further optimization).

Table 3: Addressing the WSS sector issues

Identified WSS sector issues	Addressed by the IAP	To be addressed by the WSS Strategy outline
Institutional and coordination challenges		X
Difficulties in establishing adequate policy and planning process	X	
Lack of national approach and proper baseline assessment	X	
Incomplete process of utility aggregation and capacity increase		X

Investment process difficulties		X
Lack of adequate Financing plan	X	
Lack of compliance incentives		X
External economic and financial challenges and affordability constraints		X
Lack of monitoring and evaluation and corrective mechanism	X	

47. Taking stock of the challenges that the current Implementation Plan is faced with and of the draft findings of the 10th UWWTD Implementation report, the Bank team proposes a new five pillars approach for the development a realistic and optimized Plan:

- I. **Optimization of compliance investments;**
- II. **Prioritization of investments;**
- III. **Establishment of a financing plan and sustaining WSS investments;**
- IV. **Other measures to accelerate investments and improve sector performance;**
- V. **Monitoring, evaluation and adjustment of the plan.**

Chapter 3. Pillar I. Optimization of compliance investments

3.1 Initial assessment of UWWTD compliance costs

48. The UWWTD compliance costs have been estimated in the initial Implementation Plan for both the needs for administrative preparedness (prior to EU accession) and technical compliance (investment in infrastructure). The administrative costs have been calculated at €1.12 million for 2005-2007 and included expenses for licensing, hiring new staff in ANAR and developing the monitoring system (for data collection by ANAR and transmission to the ministry). Training of the MEWF and ANAR staff on annual basis was also considered.
49. The capital expenditures (CAPEX) for infrastructure development have been estimated to €9.5 billion, of which €5.7 billion for WWTP and €3.8 billion for sewerage networks for the period 2004-2018. The calculation was based on a costing model, which included expenses for construction of new WWTP, modernization of existing urban and food industry WWTP, construction of new sewerage network as well modernization/extension of the existing networks in all settlements above 2,000 p.e. The costing model assumed some average costs for various infrastructure and settlement size, as shown in **Table 4** below. An amount of €3.8 billion was also estimated as O&M expenses during the transition period.

Table 4: Unit costs for CAPEX estimation

Settlement size	CAPEX by Infrastructure type (€/p.e.)			
	WWTP more stringent treat.	WWTP second. Treatment	WWTP primary treatment	Sewerage networks
>10,000 p.e.	250			160
5,000-10,000 p.e.		120		160
< 5,000 p.e.			180	75

Source: UWWTD Implementation plan, 2004

50. The financing plan, developed to secure the required investment funds, considered that funding would be received from multiple sources: state budget, international financing institutions (IFIs) – as reimbursable and non-reimbursable funds; public-private partnership (PPP); and beneficiary contribution in variable share, as follows:
- European funds (grants) – €3.8 billion (40%)
 - State budget (Central and Local) – €2.85 billion (30%)
 - Loans (EBRD, EIB, IBRD) + PPP – €1.9 billion (20%)
 - Environment Fund – €0.28 billion (3 %)
 - Beneficiaries – 0.67 billion (7%)

The breakdown of annual expenditures until 2018 shows a gradual increase of amounts from €140 million in 2004 to a peak of €920 million in 2015 (slight decrease to €720 million in 2018).

51. The team did not manage to discover the methodology for those calculations, but they have underestimated compliance costs obviously. From 2004 till 2019 the country invested approximately EUR 6.6 billion (i.e. nearly 70 percent of the initially estimated investments), which although being a significant achievement, resulted in increased collection of only 20 percent and treatment with around 30 percent⁷. With such a remaining distance to compliance – about 30 percent of the load still needs to be collected and 40 percent to be adequately treated, there is a need for reevaluating the compliance approach.

3.2 Assessment of opportunities for optimization of compliance investments

52. In order to propose optimization to compliance investments, the Bank team performed an assessment of (i) the designation of sensitive areas, (ii) the delineation of agglomeration boundaries, (iii) the calculation of pollution load and (iv) the implementation of IAS. For each of these four areas, the potential opportunities for an optimization of compliance investments are detailed below.

53. **Sensitive areas:** The whole territory of Romania was classified as Sensitive Area under Article 5 (2, 3, 8) of the UWWTD. As a result, all wastewater treatment plants for agglomerations above 10,000 p.e. need to comply with more stringent treatment for nitrogen and phosphorus. Following discussions with Romanian and European authorities, the team would like to clarify and stress that if the country wants to change the defined sensitive areas, a detailed analysis should be conducted to demonstrate that the river bodies in question have sufficient self-purification capacity that would allow discharge from UWWTPs having less stringent wastewater quality requirements for N and P, from those specified in Table 1, Annex 1 of UWWTD. This would also require an agreement with all countries and stakeholders and specifically the Danube Commission. Having in mind that most of the investments in agglomerations above 10,000 p.e. have been already completed or are about to be completed, the Bank team believes that there is a limited possibility for optimization of compliance costs through the redefinition of sensitive areas in Romania and application of less stringent wastewater treatment.

54. **Delineation of agglomeration boundaries:** In 2008, the Ministry of Environment and Sustainable Development of Romania published a document *“Guidance on how to define agglomerations under the Urban wastewater treatment Directive 91/271”*. This document was consistent with the EU guidelines and helped for establishment of agglomerations in the country. However, it did not contain any quantitative criteria for determining “sufficiently concentrated” areas and with the delegation of preparation of county WSS Master Plans to local authorities they were empowered to define and approve agglomeration boundaries. The lack of properly defined quantitative criteria at national level have led to broadly defined agglomerations and resulted in significant investment costs to achieve compliance with the UWWTD and potential for payment of huge infringement penalties for not meeting the requirements of the Directive.

55. To optimize and streamline compliance investments, the Bank team developed a new methodology for delineation of agglomeration boundaries. Following the UWWTD requirements, the new approach focused on defining “sufficiently concentrated” area as well as “excessive costs” for collecting system development in Romania. Though not

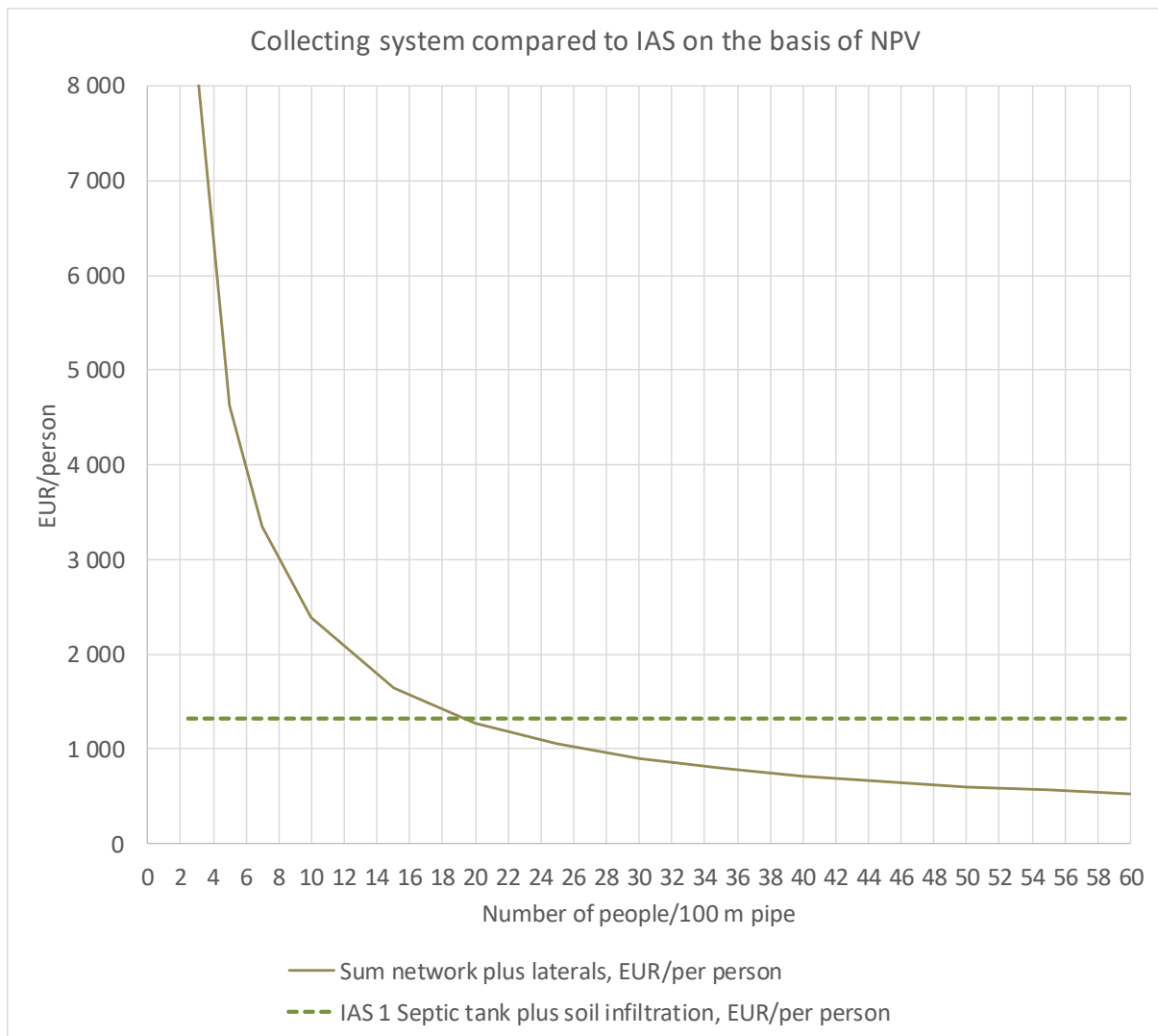
⁷ Data from the draft 10th UWWTD Implementation Report.

explicitly stated in the Directive, there is apparent correlation between the phrases “sufficiently concentrated” and “the costs for the construction and operation of the collecting system per person” since the more concentrated the population and economic activities are, the cheaper the price per person to collect wastewater will be. This understanding is the core of the proposed new methodology for the delineation of agglomeration boundaries in Romania⁸. Considering that the urban planning in Romania is predominantly linear, i.e. many of the settlements are situated along one or two long streets/roads, it is suggested that the cut-off criterion for delineation of areas with “sufficiently concentrated” population and/or economic activities (i.e. agglomeration boundaries) is distance-related.

56. The methodology proposed a criterion “people/houses connected per 100 meters of pipe”. Its cut-off value (see **Figure 1**) was determined as a result of the comparison of construction and operation costs (based on NPV calculation) for two engineering approaches – centralized (collecting system) and decentralized (IAS). The proposed approach assumes that areas with residential blocks will be included in the agglomeration boundaries since there is high concentration of population. Therefore, the cut-off criterion will be applied only for individual houses. In line with the analysis presented in Output 2 (see **Annex 2**) the proposed cut-off criteria for Romania is 19 people connected per 100m. or 7 houses/100m. of pipe. A criterion of 250 m. is used as an approximation to decide on whether two close settlements should belong to one agglomeration. This criterion was adopted from good practices used in other EU Member States.

⁸ For more details see Output 2 “Report on options for optimization of compliance costs and implementation status of UWWTD, including methodology for defining agglomeration with more than 2,000 p.e.”, The World Bank, final version, January 2020

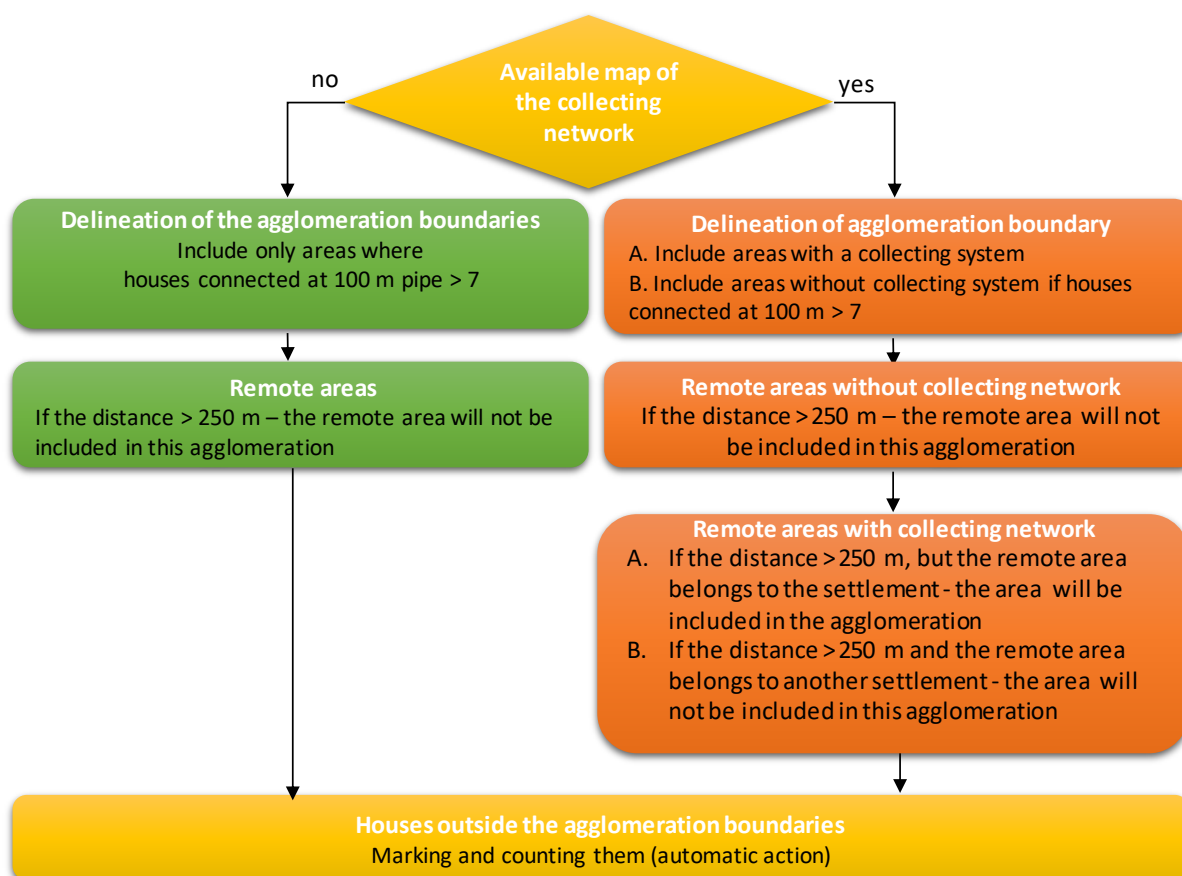
Figure 1: Collecting system in Romania compared to IAS on the basis of NPV



Source: Output 2, the WB

57. The agglomeration boundaries have been delineated for the entire territory of Romania following an algorithm, developed and presented by the Bank team as part of the methodology for delineation of agglomeration boundaries; for details see **Annex 2** (Output 2).

Figure 2: Algorithm for the delineation of agglomeration boundaries in Romania



Source: Output 2, the WB

58. **Calculation of pollution load:** The UWWTD establishes certain rules for urban wastewater collection and treatment in agglomerations above 2,000 p.e. with the size of the agglomeration corresponding to the total (organic) pollution load (1 p.e. = 60 gBOD₅/d) generated by resident and non-resident population, industries covered by Article 11 of the UWWTD and other industries that do, or shall, discharge into the collecting system, and all remaining wastewater generated in an agglomeration (if there is evidence for other emitters that do not fall in the above-mentioned groups).
59. Following the requirements for reporting compliance with Art.15 of the UWWTD, the generated agglomeration load would be expressed as⁹:

$$aggGenerated = L_{aggC1} + L_{aggC2} + L_{aggWithoutTreatment}$$

- agg Generated the generated load within the agglomeration in p.e.;
- L_{aggC1} the generated load of agglomeration collected through CS, in p.e.;
- L_{aggC2} the generated load of agglomeration addressed through IAS, in p.e.;
- L_{agg WithoutTreatment} the generated load of agglomeration not collected through CS and not addressed through IAS, in p.e.

60. Extensive data base had been collected from different sources (e.g. the NSI, ROCs/LOCs, EBRD Reports, ANAR data base) in order to determine the agglomerations load in 2018.

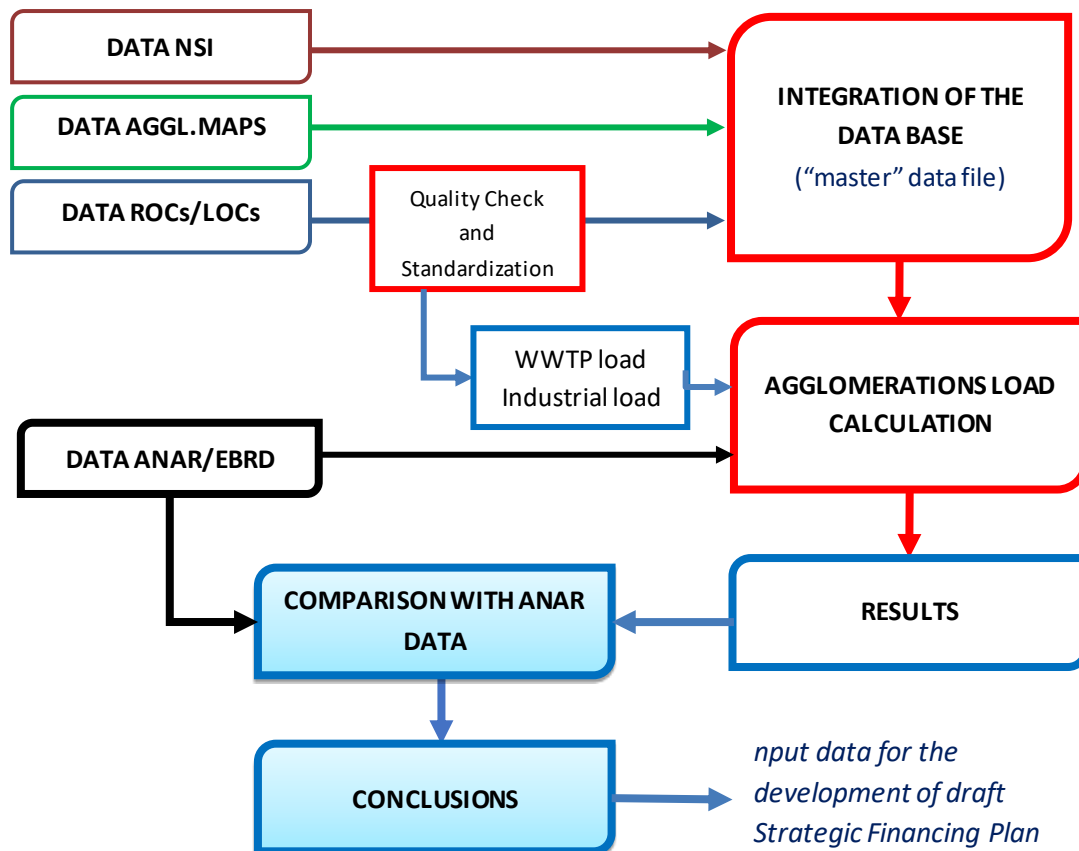
⁹ The definitions and the short names of the parameters are identical with the definition and short name of the same parameter (if such) in the dataset for reporting compliance with Art. 15 of the UWWTD.
<http://dd.eionet.europa.eu/datasets/latest/UWWTDart15/tables/Agglomerations/>

The team collected data from the NSI concerning the usual resident population in 2011 and 2018, as well as data about tourist activities. Special Questionnaire was prepared for ROCs/LOCs for collecting data on the number of clients connected to sewer network, significant industrial users discharging into the CS, as well as monitoring data at the inlet of existing UWWTPs. We have also found out that although there are individual decentralized solutions, there is no register about their type (technical solution), performance, operation and maintenance, to ensure “the same level of environmental protection” as required by the UWWTD. Therefore, separation between generated load addressed by IAS (LaggC1) and generated load not collected by CS and not addressed through IAS (LaggC2) can not be made currently in Romania.

Detailed information on the generated agglomeration load calculations (i) is presented in **Annex 2** and **Annex 3** (Output 3).

61. The process of calculation of pollution load for the newly delineated agglomerations was complex and included 3 steps: preparatory work; agglomerations load calculation and comparison of the results, see **Figure 3**.

Figure 3: Data integration and processing

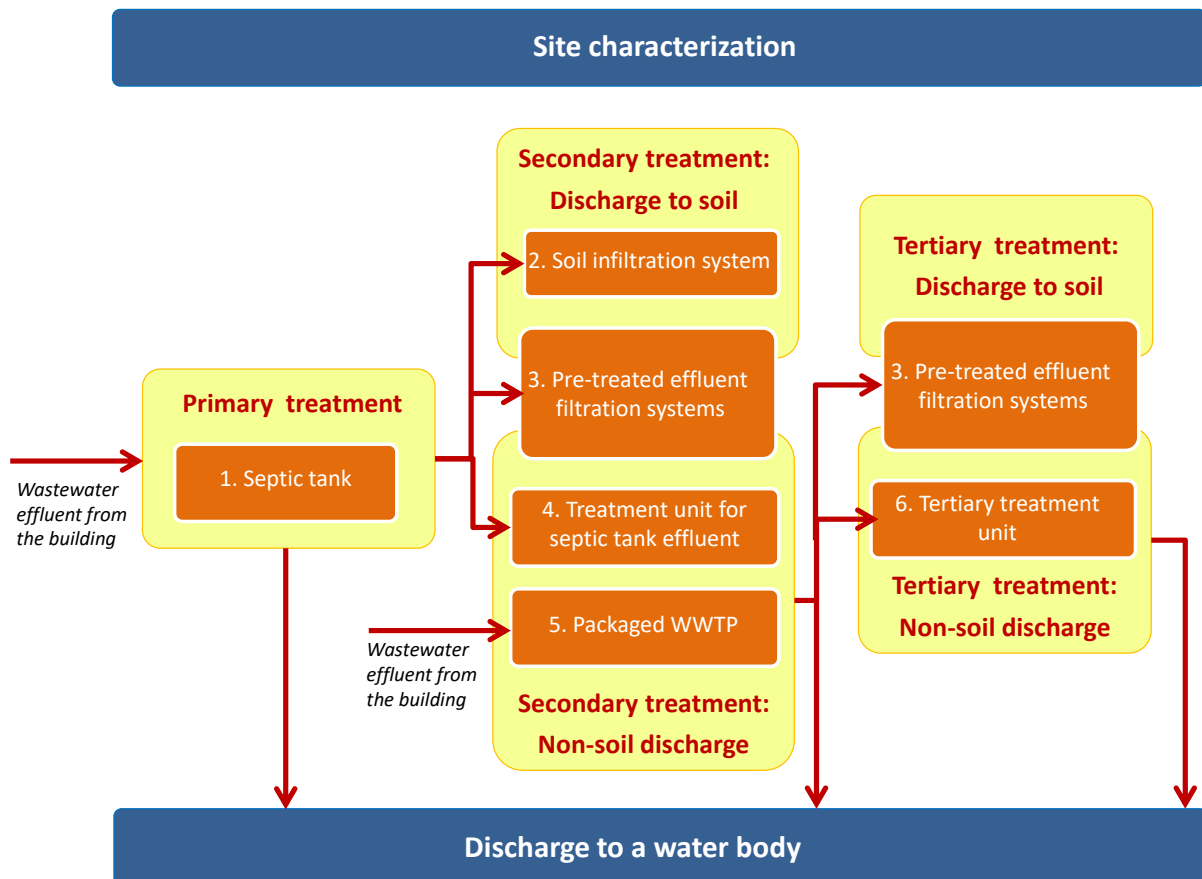


Source: Output 2, the WB

62. **Implementation of IAS:** Article 3(1) of the UWWTD stipulates the application of Individual systems or other appropriate systems (IAS) as an alternative to centralized collecting systems where “the establishment of a collecting system is not justified either because it would produce no environmental benefit or because it would involve excessive cost”. However, IAS should achieve the same “level of environmental protection” as a collecting system. The Romanian WSS legislation does not provide a systematic regulation of the

IAS. Several laws, bylaws, design norms and standards include requirements for design and construction of IAS, while the requirements for operation and maintenance are succinct. At present, only one IAS is allowed in the country – a watertight tank, which is very expensive to operate and should only be used for seasonal houses. The Bank team recommended that additional IAS are allowed in the country, however, a proper process of registration, design, construction, operation and maintenance (O&M), monitoring and control is needed to ensure environmental protection. Based on the standardized IAS units, the discharge possibilities (soil or surface water body) and the requirements of the UWWTD the following summary scheme of treatment units and their combinations was proposed:

Figure 4: Summary of standardized IAS units¹⁰, their combination, treatment levels and discharge possibilities



Source: Output 2, the WB

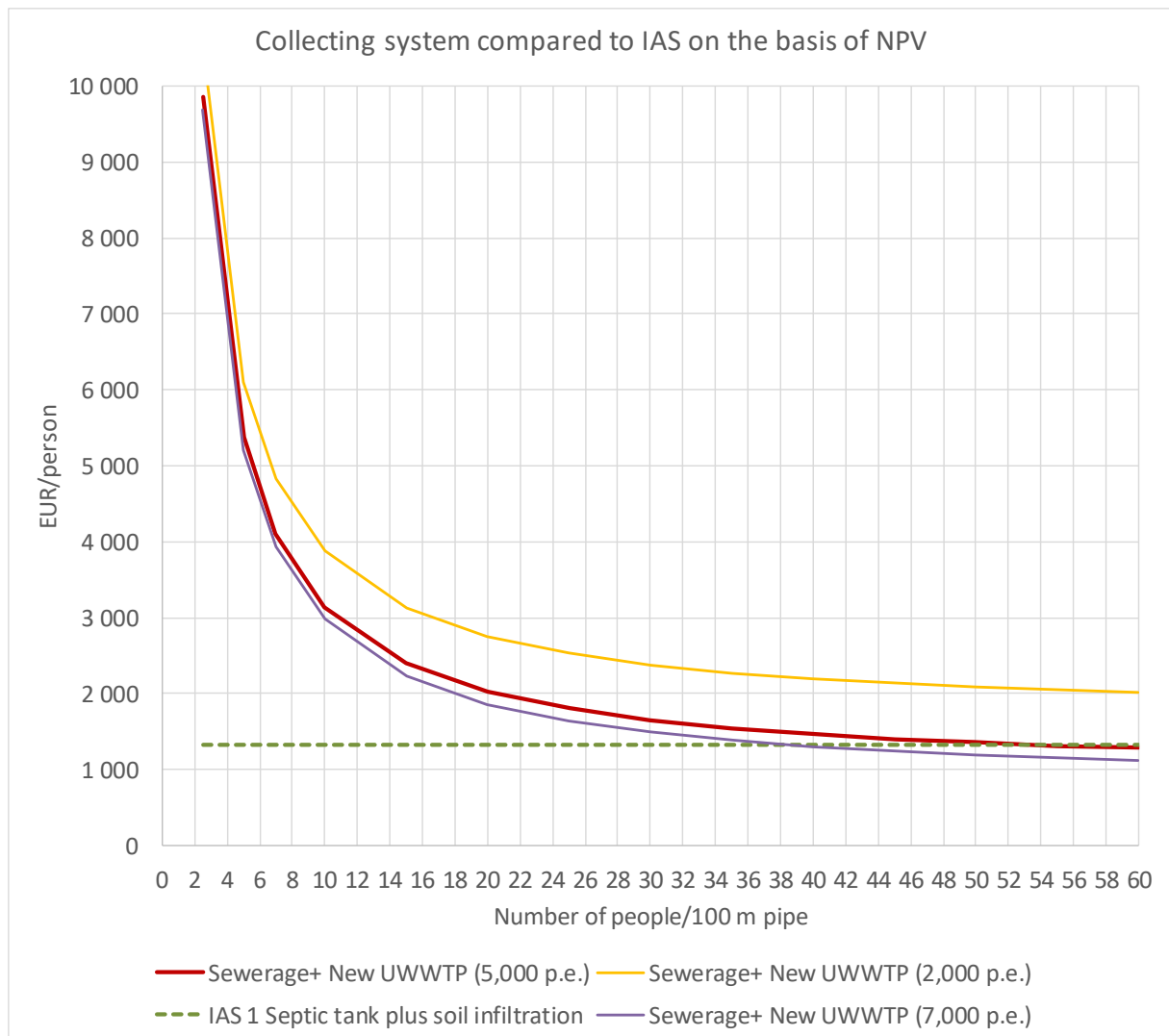
63. A financial criterion was applied to outline the applicability of IAS inside agglomeration boundaries in Romania. At present, agglomeration without collecting systems in Romania are almost exclusively below 10,000 p.e. Agglomerations around 2,000 p.e.; 5,000 p.e. and 7,000 p.e. have been analyzed to assess compliance costs for building a collecting system and a UWWTP (as explained below in some of the cases there is also a need for building piped water supply). In such small agglomerations the load (in p.e.) is almost equal to the population number i.e. there are no big industrial pollutants, which is in line with the

¹⁰ Watertight septic tank is not included since this system is well known in Romania being the only legally allowed individual partial solution (partial because the wastewater is just collected and should be transported for treatment to an UWWTP).

findings from the field visits. If there are some industrial activities, the number of people will be smaller, i.e. there will be higher costs per person for the construction and operation of the collecting system and the UWWTP. Thus, such scenarios will not change the conclusions.

64. CAPEX for the collecting system and UWWTP were calculated based on information on estimated project costs from FS financed under LIOP. Data from 96 projects for collecting system and 45 projects for UWWTPs were used as explained in **Annex 2** (Output 2). OPEX for the collecting system and UWWTP were determined based on the international experience assuming: OPEX costs for the collecting system: 1 percent of its CAPEX; OPEX costs for the UWWTP: 3.2 percent of its CAPEX. CAPEX and OPEX of the IAS were calculated based on the market prices in Romania¹¹. The most common IAS in Europe (septic tank plus soil infiltration system, which is currently not allowed in Romania) was used in the calculations. The results are visualized in the figure below.

Figure 5: Collecting system (network and UWWTP) compared to IAS on the basis of NPV



Source: Output 3, the WB

¹¹ More information is available in Annex 2 (Output 2)

65. This figure shows that when both collecting system and UWWTP need to be constructed:

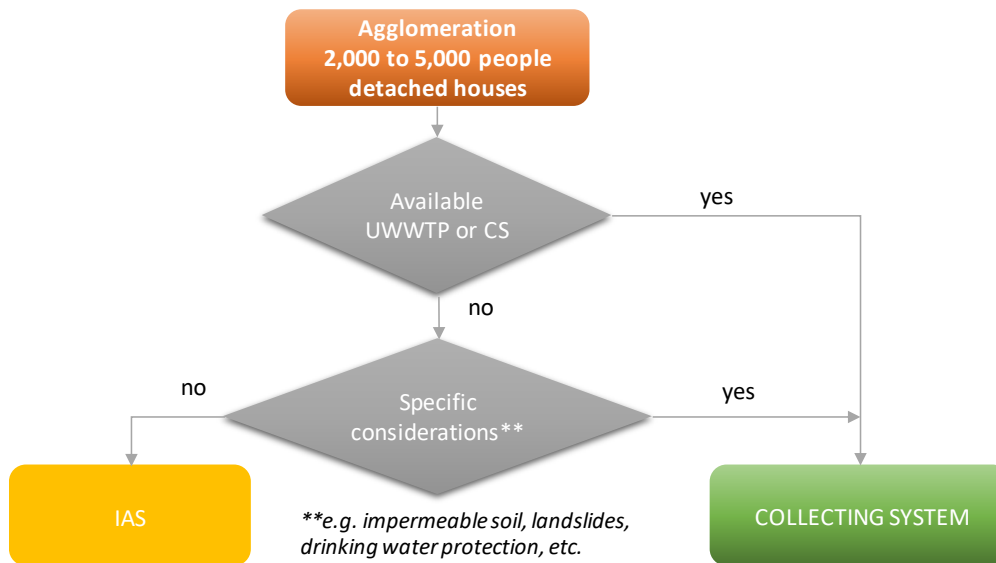
- In agglomerations around 2,000 people: IAS is always cheaper than building a CS and a UWWTP;
- In agglomerations between 2,000 and 5,000 people: building a CS and a UWWTP will be a cheaper option only when there are more than 53 people connected to 100 m. of pipe. If detached houses are assumed, 53 people/100 m. (or 20 houses¹²/100 m pipe) means approximately plots with width smaller than 10 m (face on the road), which is quite rare in Romania. Therefore, for settlements between 2,000 and 5,000 people with detached houses IAS will be a cheaper option.
- Agglomerations above 5,000 people: building a CS and a UWWTP will most likely be a cheaper option. The curve for agglomeration of 7,000 p.e. shows that IAS is cheaper if population density is below 38 people (14 houses per 100 m pipe).

66. There are limitations in the implementation of IAS like impermeable soil and no possibility for discharge of treated wastewater; landslides zones, where discharging into the soil increases the risk of landslides; high ground water table, which restrict construction of infiltration pipes, etc. However, those are exceptions, which need to be confirmed at FS stage. The Bank team advised that within agglomeration boundaries IAS should be used on exceptional basis in agglomerations above 5,000 p.e. and as a solution for those below 5,000 p.e.¹³ where there is no collecting system and UWWTP. Of course, at a later stage when investment funds are available, sewerage networks and treatment plants can be constructed in agglomerations below 5,000 p.e. as long as sustainability of infrastructure is ensured as well as affordability of WSS services. More details as well as proposals for the establishment of process and related responsibilities for (i) planning/identification of IAS zones; (ii) registration and inspection of existing and new IAS; (iii) designing and building of IAS; (iv) O&M of IAS; and (v) IAS monitoring and control can be found in **Annex 2** (Output 2).

¹² Using 2.67 people/house, NSI, census 2011

¹³ rational for the proposed cut-off value can be found in Annex 2.

Figure 6: Decision tree for construction of CS in agglomerations between 2,000 and 5,000 people



Source: WB elaboration for this report

3.3 Updated list of agglomerations and updated calculation of pollution load based on the new methodologies

67. The implementation of the above-described methodologies for the delineation of agglomeration boundaries and calculation of the pollution load resulted in a new inventory of agglomerations in Romania. Some agglomerations were merged, some excluded (due to low density, pollution load below 2,000 p.e. or a combination) and new agglomerations were formed (see **Table 5** below for summarized results at county level, with further details provided in **Annex 5**).

68. The total number of agglomerations, defined by implementing the proposed national methodology, are 1,041 of which 90 percent have already been considered in the last reporting (ANAR list) and 10 percent are newly formed agglomerations (see **Figure 7**).

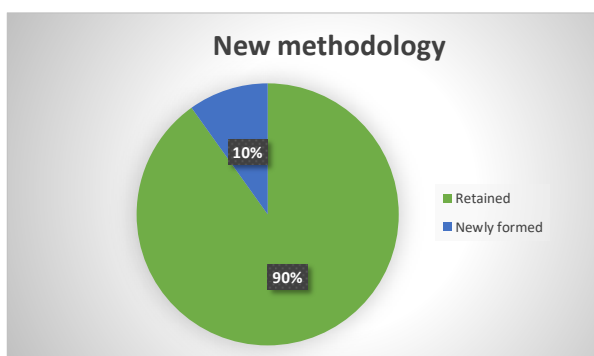


Figure 7: Distribution of the agglomeration number

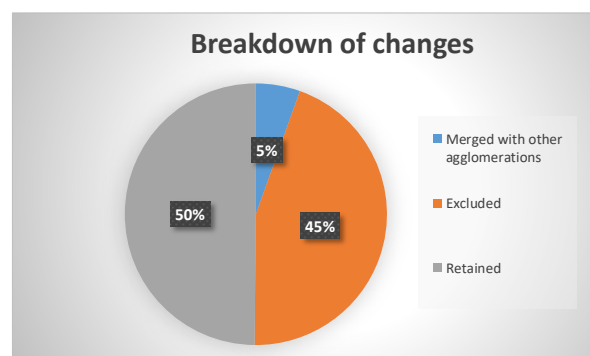


Figure 8: Changes to existing ANAR lists

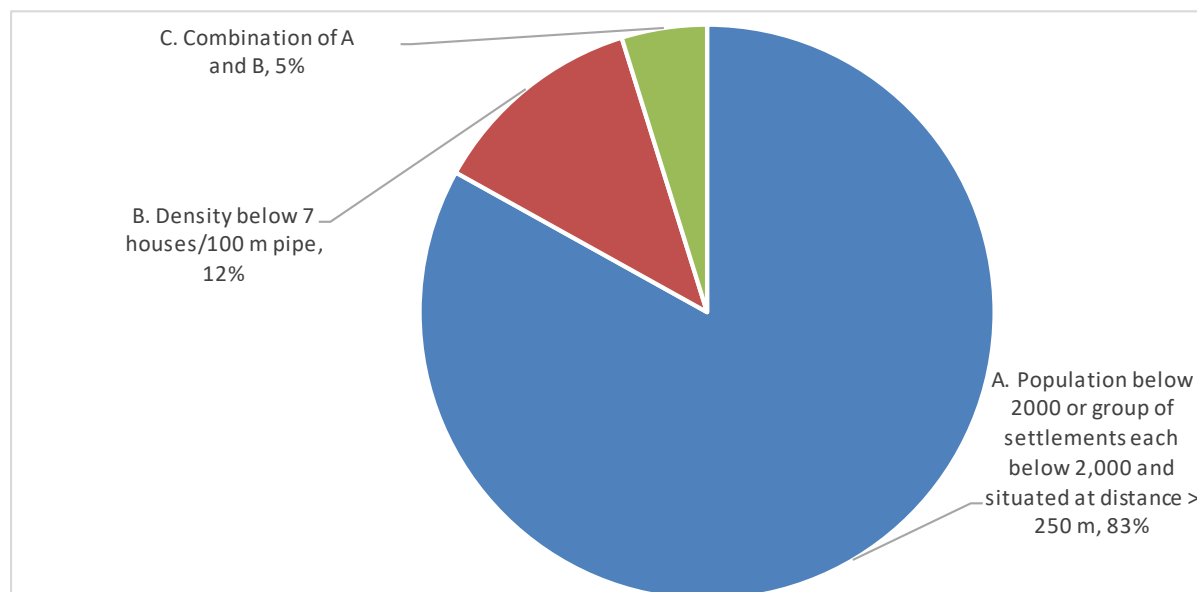
69. In the new list, 55 percent of the agglomerations were retained in the new list either as single (50 percent) or merged agglomerations (5 percent) and 45 percent of the agglomerations were excluded (see **Figure 8**). Five percent (100 agglomerations) were merged with other agglomerations, however, the same number of new agglomerations was added.
70. In addition, a significant number of agglomerations – **833**, no longer need to be reported following the UWWTD requirements (along with the merged agglomerations), when compared to ANAR 2017 agglomeration list. There are four main reasons explaining this decrease: 1) population in an agglomeration is below 2,000 or the reported agglomeration consists of a number of settlements, each below 2,000 people and situated at distance longer than 250 m.; 2) density of the reported agglomeration is below 7 houses/100 m pipe; 3) combination of 1 and 2; and 4) the entire agglomeration or some settlements of it are merged/included in another agglomeration.
71. The analysis shows that the most common reason for exclusion of the reported agglomerations (83 percent) is “Population in an agglomeration is below 2,000 or the reported agglomeration consists of a number of settlements, each below 2,000 people and situated at distance longer than 250 m” (see **Figure 9**).

Table 5: Summarized information on agglomerations' number and load at county level

County	CODE	AGGLOMERATIONS PROJECT						CODE	AGGLOMERATIONS ANAR					
		over 10000 p.e.		2000-10000 p.e.		TOTAL			over 10000 p.e.		2000-10000 p.e.		TOTAL	
		number	load, p.e.	number	load, p.e.	number	load, p.e.		number	load, p.e.	number	load, p.e.	number	load, p.e.
ALBA	AB	5	135,148	15	57,825	20	192,973	AB	6	178,767	39	148,568	45	327,335
ARGES	AG	5	352,526	10	43,546	15	396,072	AG	6	469,574	55	169,576	61	639,150
ARAD	AR	3	205,144	32	121,702	35	326,846	AR	5	212,506	44	183,030	49	395,536
BACAU	BC	6	294,807	21	73,820	27	368,627	BC	8	362,029	71	330,132	79	692,161
BIHOR	BH	4	295,579	25	99,351	29	394,930	BH	6	316,935	41	152,022	47	468,957
BISTRITA NASAUD	BN	3	108,713	16	66,967	19	175,680	BN	4	198,186	19	65,625	23	263,811
BOTOSANI	BT	2	151,136	11	42,150	13	193,286	BT	4	197,045	29	109,330	33	306,375
BRAILA	BR	2	183,718	15	49,292	17	233,010	BR	1	243,227	24	86,568	25	329,795
BRASOV	BV	5	363,914	21	99,078	26	462,992	BV	7	553,993	34	158,790	41	712,783
BUCHAREST	B	1	1,841,807	0	0	1	1,841,807	B	1	2,159,995	0	0	1	2,159,995
BUZAU	BZ	2	182,730	26	83,712	28	266,442	BZ	3	201,394	43	169,103	46	370,497
CALARASI	CL	2	95,147	29	118,832	31	213,979	CL	2	98,183	41	175,288	43	273,471
CARAS SEVERIN	CS	4	131,977	9	45,894	13	177,871	CS	3	136,611	11	50,258	14	186,869
CLUJ	CJ	5	445,496	8	36,159	13	481,655	CJ	5	556,736	25	88,627	30	645,363
CONSTANTA	CT	10	692,693	23	104,755	33	797,448	CT	13	929,602	23	107,746	36	1,037,348
COVASNA	CV	3	124,024	13	47,012	16	171,036	CV	3	104,954	27	115,348	30	220,302
DAMBOVITA	DB	7	170,799	39	138,645	46	309,444	DB	5	154,462	76	379,349	81	533,811
DOLJ	DJ	6	330,251	36	136,271	42	466,522	DJ	6	406,477	60	225,175	66	631,652
GORJ	GJ	3	130,964	12	53,356	15	184,320	GJ	3	132,026	28	100,128	31	232,154
GALATI	GL	5	288,070	26	89,234	31	377,304	GL	4	408,506	30	150,015	34	558,521
GIURGIU	GR	1	71,752	31	110,818	32	182,570	GR	2	87,370	44	185,622	46	272,992
HARGHITA	HR	6	142,769	22	88,510	28	231,279	HR	7	170,269	35	137,333	42	307,602
HUNEDOARA	HD	8	263,373	6	36,743	14	300,116	HD	7	306,974	22	84,436	29	391,410
IALOMITA	IL	5	127,853	23	76,381	28	204,234	IL	4	123,692	26	91,195	30	214,887
IASI	IS	4	665,345	24	81,500	28	746,845	IS	5	1,063,534	56	208,395	61	1,271,929
ILFOV	IF	3	39,558	22	95,085	25	134,643	IF	10	247,444	32	184,876	42	432,320
MEHEDINTI	MH	1	98,186	9	36,737	10	134,923	MH	1	105,870	12	46,444	13	152,314
MARAMURES	MM	4	248,747	24	91,444	28	340,191	MM	5	293,391	41	182,091	46	475,482
MURES	MS	6	366,278	18	55,585	24	421,863	MS	6	289,673	32	130,125	38	419,798
NEAMT	NT	3	210,303	17	70,410	20	280,713	NT	4	203,745	57	251,630	61	455,375
OLT	OT	4	147,553	36	117,350	40	264,903	OT	5	139,017	73	227,367	78	366,384
PRAHOVA	PH	11	349,701	41	165,446	52	515,147	PH	12	418,347	82	347,155	94	765,502
SALAJ	SJ	1	58,818	7	35,194	8	94,012	SJ	3	88,951	10	39,823	13	128,774
SATU MARE	SM	3	156,743	23	81,659	26	238,402	SM	3	157,187	40	159,070	43	316,257
SIBIU	SB	3	246,711	23	89,900	26	336,611	SB	5	289,695	36	133,021	41	422,716
SUCEAVA	SV	7	239,487	34	134,434	41	373,921	SV	8	250,585	74	313,191	82	563,776
TELEORMAN	TR	4	113,322	23	76,075	27	189,397	TR	5	166,263	65	215,820	70	382,083
TIMIS	TM	4	486,307	36	126,509	40	612,816	TM	4	515,580	56	185,201	60	700,781
TULCEA	TL	1	81,060	16	60,292	17	141,352	TL	3	120,173	28	97,359	31	217,532
VALCEA	VL	2	148,196	16	60,816	18	209,012	VL	4	188,923	63	214,268	67	403,191
VASLUI	VS	3	128,083	11	35,139	14	163,222	VS	4	223,287	27	80,433	31	303,720
VRANCEA	VN	2	96,408	23	97,432	25	193,840	VN	5	153,445	32	132,410	37	285,855
TOTALS		169	11,011,196	872	3,331,060	1,041	14,342,256		207	13,624,623	1,663	6,611,943	1 870	20,236,565
% difference		-18.4%	-19.2%	-47.6%	-49.6%	-44.3%	-29.1%							

The main reasons for agglomerations no longer appearing in the new inventory list is presented in **Figure 9** below.

Figure 9: Breakdown of reasons for exclusion of agglomerations



72. The main results from the implementation of the methodologies are summarized in the **Table 6** below.

Table 6: Summarized results

	ANAR, 2016	New Methodology	Evolution (%)
Total number of agglomerations above 2,000 p.e.	1,870	1,041	-44.3
Total pollution load of agglomerations above 2,000 p.e.	20,236,565	14,342,256	-29.1
Total number of agglomerations above 10,000 p.e.	207	169	-18.4
Total pollution load of agglomerations above 10,000 p.e.	13,624,623	11,011,196	-19.2
Total number of agglomerations between 10,000 and 2,000 p.e.	1,663	872	-47.6
Total pollution load of agglomerations between 10,000 and 2,000 p.e.	6,611,943	3,331,060	-49.6

The most significant reduction both in number of agglomerations and generated loads is observed for the agglomerations between 2,000 and 10,000 p.e. (see **Table 5**).

3.4 Compliance situation following the application of the new methodologies

73. The agglomerations, defined according to the new methodologies, were compared with the 10th UWWTD Implementation reporting cycle, referring to the compliance status in 2016.

The comparison presents data regarding Art. 3 of the UWWTD only, due to issues with data on UWWTP quality performance according to Art. 4 and Art. 5, which cannot be reconciled yet and will be discussed at a later stage. The table below presents key comparison figures.

Table 7: Comparison between compliance situation in 2016 and results of the suggested methodologies

Agglomerations	Total for all agglomerations		Art.3 compliant agglomerations **		% of total	
	Number	Load (p.e.)	Number	Load (p.e.)	Agg. Number	Load (p.e.)
ANAR, 2016*	1,870	20,142,050	24	2,551,319	1.3%	12.7%
New methodologies **	1,041	14,342,256	14	349,415	1.3%	2.4 %

* the 10th UWWTD Implementation reporting cycle focuses on 855 agglomerations (out of 1870), which should had been compliant with the UWWTD for reference year 2016. The reported figures in ANAR, 2016 encompass only the above-mentioned 855 agglomerations.

** An agglomeration is considered compliant when less than 2% (and less than 2,000 p.e.) of the wastewater load does not comply with Article 3. Due to the poor IAS data (as explained in the report) the presented figures are only for agglomerations with CS coverage equal or more than 98% (further explanations are provided below how the situation can be improved). 349,415 p.e. is the load connected to CS, the corresponding total generated load is 352,837 p.e. For more details concerning the agglomerations in compliance, see Annex 6.

The lower value of generated load in compliance, following the application of the new methodologies, is due to several reasons: i) decreased connection rate of some big agglomerations due to inclusion of smaller satellites, without collection systems within their boundaries; ii) lack of clarity on how the connection rates were calculated in last reporting or some non-justified overestimates of the load in the 2016 reporting cycle etc. As pointed out in **Annex 2** (Output 2), there is no process of registering IAS in Romania. Nevertheless, based on the information collected from operators and ANAR data, the use of individual decentralized wastewater management solutions (i.e. IAS) is a common practice in areas where there is no collecting system¹⁴. If these IASs are included in the reporting practice, the compliance rate will increase.

74. The table below provides a comparison of the load connected to CS and indication about improvements that can be made using the new methodologies.

¹⁴ The data collected by the team from operators was quite scarce due to the lack of properly established IAS process and only one legally allowed IAS – watertight tank in Romania, which did not allow for correct assessment of the load addressed by IAS. In addition, during discussions with ROCs the team did not manage to verify the IAS data as reported by ANAR at the end of 2016.

Table 8: Overview of the agglomerations with existing collecting systems as per ANAR, 2016 and the new methodologies

Agglomeration size p.e.	ANAR, 2016				New methodologies			
	Agg.	Load generated	Load connected CS		Agg.	Load generated	Load connected to CS	
	nr	p.e.	p.e.	%	nr	p.e.	p.e.	%
existing CS								
≥100,000	27	8,631,853	7,906,839	91.6	23	6,779,996	6,115,388	90.2
10,000-100,000	175	4,930,222	3,655,914	74.2	144	4,208,094	3,231,543	76.8
2,000-10,000	689	3,168,148	1,107,697	35.0	388	1,773,968	872,189	49.2
Subtotal	891	16,730,222	12,670,451		555	12,762,058	10,219,120	
% of total	47.6	82.7	62.6		53.3	89.0	71.3	
Total	1 870		20,236,565		1,041		14,342,256	

The data demonstrate that the collection rate of agglomerations above 10,000 p.e. is quite high as the percentage of the collected load in both approaches; the percentage of collected load in agglomerations between 2,000 and 10,000 p.e. is higher in the new methodologies due to more precise delineation of boundaries.

More detailed analyses of the agglomerations, defined by the new methodologies, lead to the following conclusions:

- **21 agglomerations** with total generated load of 1,817,804 p.e. have connection rate to collecting system between **95 and 98 percent** of which:
 - 6 agglomerations are above or equal to 100,000 p.e.
 - 9 agglomerations are between 10,000 and 100,000 p.e. and
 - the rest 6 agglomerations are between 2,000 and 10,000 p.e..

These agglomerations have significant potential to reach compliance very soon;

- **79 agglomerations** with total load of 6,149,226 p.e. have connection rate to collecting system between **85 and 95 percent** of which:
 - 13 agglomerations are above or equal to 100,000 p.e.,
 - 35 agglomerations are between 10,000 and 100,000 p.e.
 - and the rest 31 agglomerations are between 2,000 and 10000 p.e.

More details concerning the agglomerations with current high connection rate to collecting system can be found in **Annex 6**.

- around **one million people in Romania** has access to collection systems but decided not to connect;
- **an improved reporting of the IAS, prioritized investments and improved connection for the agglomerations with over 85% current connection rate to CS will increase the number of agglomerations in compliance up to 114 and the total compliant load will be 8,319,867 p.e. (58 % of total).**¹⁵

More detailed information at county level is presented in **Annex 6**.

75. To further shed some light on the connection issue, the team would like to clarify that while reviewing maps of existing collecting systems, an important difference was noticed

¹⁵ 114 is the number of agglomerations that currently have connection rate over 85% to CS (i.e. 14+21+79) and 8,319,867 is the sum of the generated load from these agglomerations (i.e. 352,837+1,817,804+6,149,226)

between potential wastewater collection through existing infrastructure and the actual wastewater collection (based on legal contracts), as reported by operators to the Bank. Some examples are presented in **Table 9** below:

Table 9: Population connected vs. population with access to collecting systems as percent of the total population in the agglomerations (for a sample of counties)

County	People with contract to operator	People with access to CS
BIHOR	66%	81%
BISTRITA NASAUD	55%	75%
CARASSEVERIN	31%	44%
DAMBOVITA	36%	44%
HARGHITA	64%	81%
VALCEA	63%	79%

This is mainly due to the fact that although collecting systems and WWTPs were built, some households decided not to connect (the UWWTD requires legal connection and treatment of generated load). Since this is becoming a very serious issue in Romania and affecting the country's compliance efforts, more details are presented under **section 6.2**.

76. As for the current report this issue is addressed in the following way:

- The analyses regarding UWWTD compliance, presented above, are based on the number of people and industrial load (both presented in p.e.) legally connected to collecting system i.e. households having contracts with an operator and paying for wastewater collecting and treatment services;
- The estimation of necessary investments for construction of collecting systems was based on the existing sewer networks in the agglomerations (as shown on maps provided) not the connection rate to avoid overestimation of the required investment;
- Some funding is envisaged for supporting and enforcing the legislative requirement for people to connect if network is available as well as they are given one full year to connect to available sewerage system.

77. **Distance to target.** The distance to target load is defined as the load of an agglomeration that shall be, but is currently not addressed through collecting system or IAS, as per the requirements of Art. 3 of the UWWTD. The agglomeration boundaries, defined by the new methodologies, include sufficiently concentrated area where the generated load shall be at least 98 percent connected to collecting system and the rest of the load is below 2,000 p.e. The results are presented in the table below. For comparison purposes distance to target was calculated also for ANAR 2016 data.

Table 10: Distance to target for agglomerations in 2016 ANAR data base and new methodologies

Agglomeration size	ANAR, 2016			New methodologies		
	Target	Distance to target		Target	Distance to target	
	p.e.	p.e.	%	p.e.	p.e.	%
≥100,000 p.e.	8 631 853	666 871	7.7	6,779,996	618,608	9.1
100,000>...≥10,000-	4 992 770	1 239 400	24.8	4,231,200	918,065	21.7
10,000>...≥2,000	6 611 943	5 373 094	81.3	3,331,060	2,392,935	71.8
TOTAL	20 236 565	7 279 365	36.0	14,342,256	3,929,608	27.4

Figure 10: Distance to target for agglomerations (ANAR, 2016 and new methodologies)



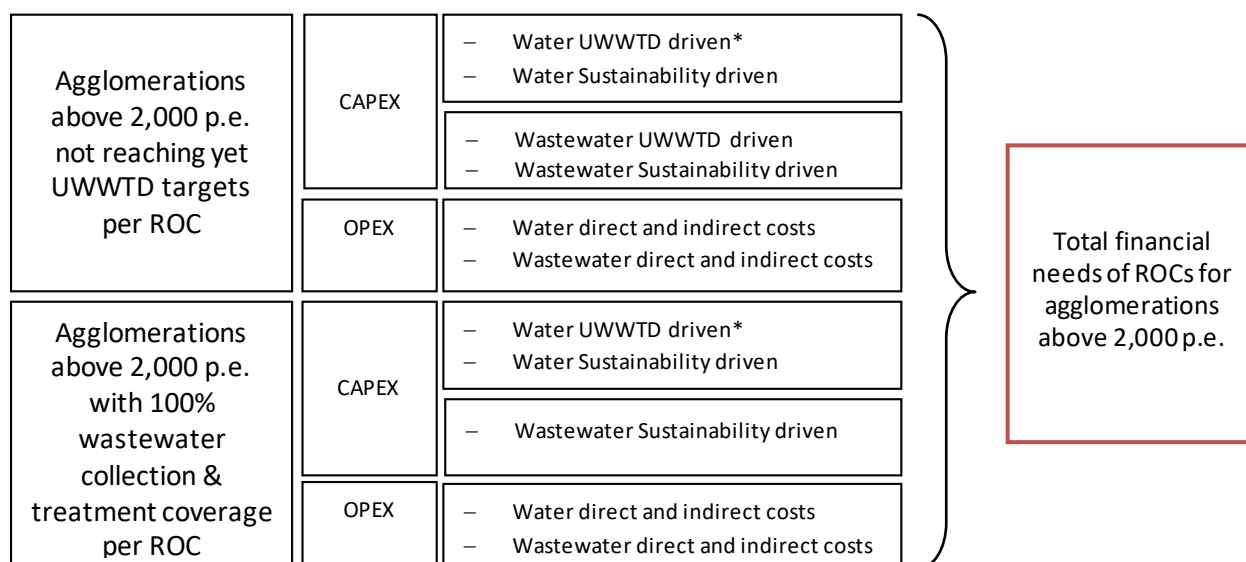
78. The analyses show that although the number of the compliant agglomerations and the respective compliant load is still unsatisfactory low, there are 100 agglomerations, defined by the new methodologies with connection rate to collecting system between 85% and 98% that are very close to compliance according to Art. 3 and which represent around 55 percent of the total generated load in Romania. In addition, a significant decrease of distance to target will be achieved in comparison with 2016 situation. This decrease will result in lower investment needs and faster compliance, which will be demonstrated in the next chapters of the report.

Chapter 4. Pillar II: Prioritization of investments

4.1 Investment needs calculation

79. After completing the **First step – Optimization of compliance investments** there is a need for prioritization of the remaining WSS investments. This is addressing the identified planning difficulties, the lack of unified national approach and baseline assessment of the initial Implementation Plan. Identifying and dealing with major polluters will also alleviate the pressure on environment. This section presents, for each ROC, (i) the total financial needs assessed through financing modeling; and (ii) the criteria used to prioritize investments and a summary of all agglomerations above 2,000 p.e. that do not currently meet UWWTD requirements (or targets, both used interchangeably in the report).
80. The Bank team developed financial models for each ROC and a national one to summarize the results following the strategic financial planning methodology for water supply and sanitation jointly developed by the OECD/EAP Task Force and the Government of Denmark¹⁶. This methodology designed to help countries improve their financial planning for the WSS sector was used by the OECD, the World Bank and the European Union in several countries. In order to assess the total financial needs for the WSS sector, including specific UWWTD compliance needs, and prepare a Strategic Financing Plan for Romania, the following approach was used:

Figure 11: Investment need approach¹⁷



* Water UWWTD driven investments refer to water supply infrastructure investments, which are assessed based on the assumption that extension of piped water supply should be completed in parallel to wastewater collection systems extensions. Further details are provided in **Annexes 4 and 8**.

81. **Aggregation of costs assumption at county level.** Financial needs have been aggregated at county level with the assumption that all agglomerations above 2,000 p.e. in one county will be served by the “county” ROC. However, since the real situation is quite mixed (for example, the agglomeration of Predeal in Brasov county is served by Constanta

¹⁶<http://www.oecd.org/environment/outreach/improvingfeasibleandextendingfinancingstrategymethodologybeyonwatersupplyandsanitationtoissuesofwaterresourcesmanagement.html>

¹⁷ The team wants to clarify that these are UWWTD compliance investments only and do not include any investment needs to improve overall water supply access in rural areas.

ROC) the team “moved” agglomerations from their geographical county to the county of the operator (in the example Predeal was moved from Brasov county to Constanta county for financial modelling purposes). In addition, in counties where two ROCs exist simultaneously, the bigger ROC is considered the “extended ROC” of the county, while the other ROC is assessed separately considering only its current service area, e.g. Cluj county with ROC Cluj-Salaj and ROC Turda-Campia Turzii; Hunedoara County with ROC Hunedoara and ROC Valea Jiului and Sibiu county with ROC Sibiu and ROC Medias. More details are presented in **Annexes 7 and 8**.

82. **Wastewater.** Two CAPEX components are considered to assess investments needs: 1) compliance investments – UWWTD driven investments targeted towards wastewater collection and treatment coverage and 2) sustainability driven investments, which correspond to rehabilitation investments needed to ensure sustainability of the wastewater infrastructure. The table below details the elements assessed to determine sustainability driven and UWWTD driven investment needs.

Sustainability driven CAPEX	<ul style="list-style-type: none"> – Rehabilitation costs of large collectors, sewer network and pumping stations; – Rehabilitation costs of existing WWTPs
UWWTD driven CAPEX	<ul style="list-style-type: none"> – Construction of new sewers; – Construction of new WWTPs; – Other Investments, including soft measures to ensure the connection of the population to the WW network in agglomerations above 2,000 p.e.

UWWTD driven investments are calculated on the basis of the total population and/or load (p.e.) that should be connected to sewerage systems and WWTPs. Further details are provided in **Annexes 4 and 8**. The following unit costs were used:

Unit cost calculations	Value
Unit cost wastewater collection pipe inside settlement	190 €/mL
Unit cost wastewater collection pipe outside settlement	120 €/mL
Unit cost house connection to wastewater collection system	350 €/pc
Unit cost per p.e. UWWTP (€/p.e.)	$131596 * N_{p.e.}^{-0,695}$

Sustainability driven investments are calculated on the basis of physical infrastructure data, rehabilitation unit cost¹⁸ for each type of asset and lifespan. When physical data is not available, sustainability driven CAPEX is calculated on the basis of estimated network length, population density and rehabilitation unit costs. Further details are provided in **Annexes 4 and 8**. For agglomerations with 100 percent wastewater collection and treatment coverage, only sustainability driven investments are assessed.

Type of asset	Unit	Average	Lifespan
Sewage pumping stations	€/nr.	105.000	15
Sewerage collectors	€/mL	240	50
WWTP	€/nr.	3.100.000	40
Sewerage network + Connections	€/mL	320	50

83. **Water.** Although this is a proposal for UWWTD Implementation Acceleration Plan, water investments have been estimated to ensure 100 percent access to centralized water supply in wastewater agglomerations. It is not logical to ensure sanitation services if the population does not have access to piped water – since these will be financed along with the wastewater investments. We refer to them later in the text as “UWWTD driven” water investments. Water investment needs have also been considered to reflect financial

¹⁸ Rehabilitation unit costs are calculated as average unit costs in LIOP for each type of asset.

sustainability needs for each ROC in the long term, thus avoiding an under-estimation of CAPEX and OPEX needs per ROC, and an over-estimation of ROC funding capacities. The table below details the elements assessed to determine sustainability driven and UWWTD driven investment needs for all agglomerations above 2,000 p.e.:

Sustainability driven CAPEX	– Rehabilitation costs for abstraction sources, water treatment, transmission pipes, pumping stations, reservoirs, distribution pipes
“UWWTD driven” water CAPEX	– Construction costs for infrastructure

The following unit costs were used:

Unit cost calculations	Value
Unit cost water pipe inside settlement	110 €/mL
Unit cost water pipe outside settlement	130 €/mL
Unit cost house connection to water distribution system	180 €/pc

Sustainability driven investments are calculated on the basis of physical infrastructure data, rehabilitation unit cost¹⁹ for each type of asset and lifespan. When physical data is not available, sustainability driven CAPEX is calculated on the basis of estimated network length, population density and rehabilitation unit costs. Further details are provided in **Annexes 4 and 8**.

Type of asset	Unit	Average	Lifespan
Water Sources	€/nr.	95.000	50
Trunk Mains	€/mL	370	40
DWTP	€/nr.	750.000	50
Storage facilities (water tanks)	€/nr.	210.000	50
Pumping stations	€/nr.	160.000	15
Distribution network + Connections	€/mL	160	40

84. **Ongoing investment projects.** Finally, all ongoing investments or WSS projects approved for financing and currently implemented have been considered and included in the overall calculation. Indeed, the updated financing and Implementation Acceleration Plan does not intend to block or postpone the ongoing investment process in the Romanian WSS sector.

85. **Detailed total financial needs per extended ROC²⁰.** Based on the financial modeling calculations, the total financial needs per ROC were assessed (details on investments calculation provided in the section below). **Table 11** provides a summary of these needs according to water and wastewater UWWTD driven (WSS service extension) and sustainability (capital maintenance).

¹⁹ Ibid.

²⁰ As mentioned already for financial modelling purposes the investment needs and financing are calculated separately for each “extended ROC” service area, where in most cases the “extended ROC” service area overlaps with the corresponding county area, assuming that there is one extended ROC per county. However, there are exceptions, hence more ROCs than counties. Further details are provided in **Annexes 7 and 8**.

Table 11: Total financial needs per ROCⁱⁿ*million RON*

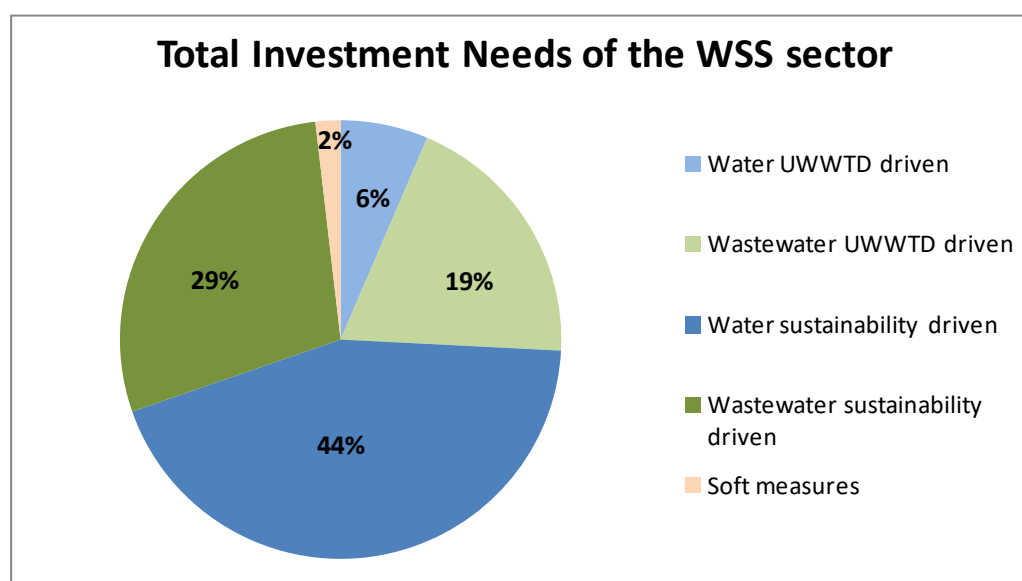
ROC	Water CAPEX		Wastewater CAPEX		Soft Measures	TOTAL Water CAPEX	TOTAL Wastewater CAPEX
	UWWTD driven ²¹	Sustainability	UWWTD	Sustainability			
Alba	37	1 269	168	770	45	1 306	939
Arad	119	1 340	573	940	45	1 459	1 513
Arges	97	1 004	462	816	45	1 101	1 279
Bacau	240	1 124	504	548	45	1 364	1 052
Bihor	76	1 646	330	1 023	45	1 722	1 354
Bistrita	62	1 104	159	738	45	1 166	897
Botosani	232	886	378	470	45	1 118	848
Braila	24	1 212	267	516	45	1 235	783
Brasov	119	1 054	389	702	45	1 174	1 091
Bucuresti	297	1 813	563	2 509	45	2 110	3 072
Buzau	67	988	548	360	45	1 055	908
Calarasi	120	670	701	307	45	790	1 008
Caras Severin	201	652	489	330	45	853	819
Cluj Salaj	124	2 490	202	1 589	45	2 615	1 791
Cluj Turda	6	245	33	181	45	251	214
Constanta	73	2 291	691	1 477	45	2 364	2 168
Covasna	93	508	239	564	45	601	802
Dambovita	234	1 070	971	524	45	1 305	1 495
Dolj	660	1 519	1 024	935	45	2 179	1 958
Galati	108	1 086	704	668	45	1 195	1 371
Giurgiu	261	256	709	341	45	516	1 050
Gorj	64	943	431	386	45	1 007	817
Harghita	63	824	228	671	45	887	899
Hunedoara	52	794	112	702	45	846	813
Ialomita	330	399	454	245	45	728	699
Iasi	218	2 842	599	1 757	45	3 060	2 356
Ifov	126	649	444	652	45	775	1 096
Maramures	290	1 382	736	808	45	1 672	1 544
Medias	3	204	32	275	45	208	307
Mehedinti	33	475	159	290	45	508	449
Mures	90	1 217	345	905	45	1 306	1 250
Neamt	318	1 365	453	677	45	1 683	1 130
Olt	386	623	920	369	45	1 009	1 289
Prahova	190	2 603	1 331	1 042	45	2 792	2 373

²¹ Water UWWTD driven investments refer to water supply infrastructure investments, which are assessed based on the assumption that extension of piped water supply needs be done in parallel to wastewater collection systems extensions. Further details are provided in Annexes 4 and 8.

ROC	Water CAPEX		Wastewater CAPEX		Soft Measures	TOTAL Water CAPEX	TOTAL Wastewater CAPEX
	UWWTD driven ²¹	Sustainability	UWWTD	Sustainability			
Satu Mare	76	793	255	601	45	870	856
Sibiu	105	1 099	245	799	45	1 204	1 045
Suceava	357	1 561	733	1 003	45	1 918	1 736
Teleorman	365	818	768	298	45	1 183	1 065
Timis	75	1 416	548	1 041	45	1 491	1 590
Tulcea	48	319	285	244	45	368	529
Valcea	134	1 124	300	780	45	1 258	1 080
Valea Jiului	16	307	31	172	45	323	203
Vaslui	113	765	372	429	45	878	801
Vrancea	263	786	561	275	45	1 049	836
TOTAL	6 966	47 535	20 448	30 730	1 983	54 502	51 178

The overall investment needs of the WSS sector in Romania amount to more than RON 107 billion (€22.7 billion), with 50.6 percent for water and 47.5 percent for wastewater. Remaining UWWTD driven investments represent just one quarter of the overall CAPEX needs (RON 27.4 billion, €5.8 billion) which corresponds to 60 percent of the initial UWWTD compliance costs estimated in the 2004 Implementation Plan (RON 46 billion, €9.7 billion), and 86 percent of the CAPEX spent from 2004 to 2019 for UWWTD compliance (RON 32 billion, €6.7 billion). However, sustainability driven CAPEX represents the largest share of investment needs both for water supply (87 percent) and for wastewater (60 percent). Nevertheless, there is a diversity of situation across counties with ROCs like Cluj Turda facing investment needs of RON 510 million (€108 million) while other like Iasi need to invest ten times more (RON 5 461 million, €1 151 million).

Figure 12: Investment needs in the sector



CAPEX needs (mill. RON)	Water	Wastewater	Soft measures	TOTAL
UWWTD driven	6 966	20 448	1 983	29 397
Sustainability driven	47 535	30 730		78 266
TOTAL	54 502	51 210	1 983	107 663

4.2 Prioritization of investments

86. **Prioritization criteria for investment programs.** In order to fulfill these financial needs in the most cost-efficient way and achieve maximum compliance results, investments have been prioritized as follow:

- First priority, UWWTD driven investments in agglomerations above 10,000 p.e.;
- Second priority, UWWTD driven investments in agglomerations between 5,000 and 10,000 p.e.;
- Third priority, UWWTD driven investments in agglomerations between 2,000 and 5,000 p.e. with a prioritization among these agglomerations depending on their population density, availability of partial collecting systems, and WWTP;
- Forth priority, sustainability investments to ensure that existing WSS infrastructure is properly maintained to provide quality WSS service (compliance should not only be achieved but also maintained).

In addition to the proposed prioritization process further weights could be given to agglomerations listed under infringement, ecological status of affected river bodies, overall environmental impact etc.

As already pointed out, a better prioritization of sector investments is needed to maximize the impact of available resources for UWWTD compliance and WFD objective fulfillment. Despite the approximately €6.6 billion invested in the sector over the past 15 years, the improvement of wastewater collection and treatment coverage has not progressed as expected. One cause is the poor prioritization of investments because resources have not been directed to the most impactful infrastructure. Therefore, investments were prioritized based on agglomeration size, but also with the goal of reaching WFD environmental objectives in the most cost-efficient way. **Table 12** below details the application of prioritization criteria to the 44 extended ROCs.

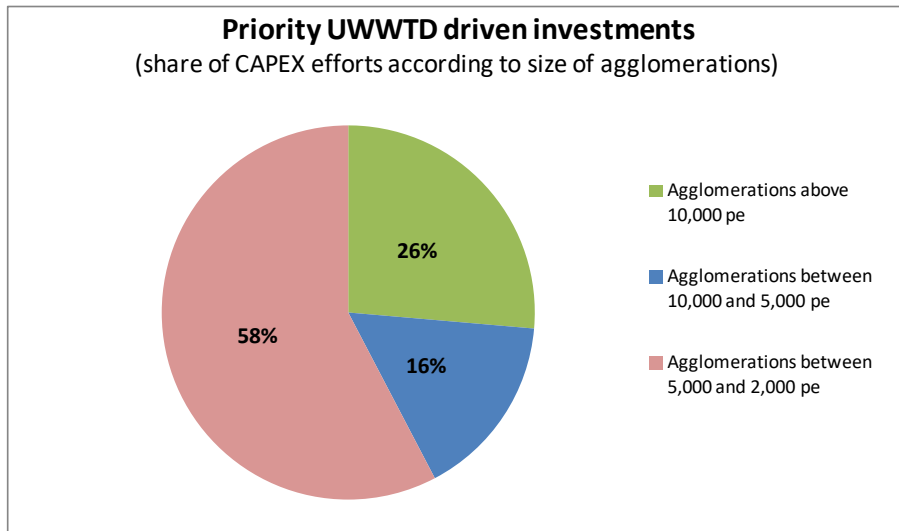
Table 12: Prioritization of investments per ROC

ROC	in million RON			Agg. above 10,000 pe			Agg. between 10,000 and 5,000			Agg. between 5,000 and 2,000 pe		
	Total agg.	Agg. w/priority investment	UWWTD driven CAPEX	Total agg.	Agg. w/priority investment	UWWTD driven CAPEX	Total agg.	Agg. w/priority investment	UWWTD driven CAPEX	Total agg.	Agg. w/priority investment	UWWTD driven CAPEX
Alba	5	5	30 510	3	3	59 129	12	12	115 895			
Arad	3	3	70 118	8	8	170 651	24	24	451 014			
Arges	5	5	271 503	3	3	94 934	7	7	192 536			
Bacau	5	5	208 857	3	3	67 351	18	17	467 573			
Bihor	4	3	37 641	5	5	86 540	20	17	281 825			
Bistrita	3	3	77 446	4	4	48 408	12	12	95 574			
Botosani	2	2	140 213	3	3	75 486	8	8	394 592			
Braila	2	2	42 617	2	0	-	13	12	247 624			
Brasov	4	3	201 117	5	4	127 281	15	13	180 111			
Bucuresti	1	1	860 534		0	-		0	-			
Buzau	2	2	66 139	2	2	19 477	24	24	529 459			
Calarasi	3	3	86 192	6	6	214 711	21	21	520 993			
Caras Severin	4	4	532 083	4	4	105 393	5	5	53 030			
Cluj Salaj	4	4	162 931	5	5	20 553	9	9	142 910			

<i>in million RON</i>	Agg. above 10,000 pe			Agg. between 10,000 and 5,000			Agg. between 5,000 and 2,000 pe		
ROC	Total agg.	Agg. w/priority investment	UWWTD driven CAPEX	Total agg.	Agg. w/priority investment	UWWTD driven CAPEX	Total agg.	Agg. w/priority investment	UWWTD driven CAPEX
Cluj Turda	2	2	38 699		0	-	1	1	655
Constanta	13	11	240 496	9	8	147 839	20	19	375 053
Covasna	3	3	40 242	2	2	29 861	11	11	261 480
Dambovita	7	7	204 083	7	7	244 611	32	32	756 679
Dolj	6	5	337 310	6	6	208 004	30	30	1 138 634
Galati	5	5	195 648	3	3	142 071	23	23	474 329
Giurgiu	1	1	48 445	4	3	177 308	27	26	744 303
Gorj	3	3	201 062	4	4	153 560	8	7	140 190
Harghita	6	6	39 913	4	4	13 364	17	17	237 909
Hunedoara	4	4	141 360	3	3	5 441	3	3	16 573
Ialomita	2	2	42 387	2	2	69 919	19	19	671 394
Iasi	4	4	225 793	3	3	94 131	23	23	497 010
Ilfov	3	3	108 809	7	7	191 299	15	15	270 287
Maramures	4	4	326 041	4	4	158 221	20	20	541 735
Medias	1	1	2 620	1	0	-	3	2	32 602
Mehedinti	1	1	15 927	2	2	23 587	7	7	152 198
Mures	6	6	153 744	3	2	26 588	16	16	253 881
Neamt	3	3	152 396	6	6	329 705	9	9	289 158
Olt	4	4	109 269	3	3	158 845	33	33	1 038 574
Prahova	11	11	503 815	10	10	310 712	30	30	706 337
Satu Mare	3	3	40 879	2	1	8 494	21	15	215 871
Sibiu	3	3	80 313	5	5	91 509	14	12	178 874
Suceava	7	7	244 673	8	8	209 961	26	26	634 725
Teleorman	4	4	213 767	3	3	173 383	20	20	745 599
Timis	4	4	54 144	5	5	52 694	31	31	516 213
Tulcea	1	0	-	2	2	40 969	14	13	292 286
Valcea	2	2	234 756	2	2	21 701	14	14	177 584
Valea Jiului	4	4	46 606		0	-		0	-
Vaslui	3	3	117 750	1	1	16 975	10	10	350 558
Vrancea	2	2	88 669	6	6	156 445	17	17	579 344
TOTAL	169	163	7 037 518	170	163	4 347 110	702	683	15 963 175

First priority investments should be implemented in 163 agglomerations throughout the country and represent a CAPEX effort of RON 7 billion (€1.5 billion). This First priority CAPEX effort corresponds to 26 percent of the total UWWTD driven investment needs. Second priority investments should be implemented in 163 agglomerations and amount to RON 4.3 billion (€0.9 billion) which represent 16 percent of the overall UWWTD investment needs. Third priority investments represent the most demanding CAPEX effort (58%) with RON 15.9 billion (€3.4 billion) to be invested in 683 agglomerations.

Figure 13: Priorities CAPEX share



4.3 Operating Costs calculation

87. **Operating costs calculation.** The level and evolution of OPEX have also been considered over the investment planning period. Firstly, the level of OPEX was calculated so that operation and maintenance costs would ensure the sustainability of the existing and future WSS systems. This was done on the basis of historical and FS projected investment costs. Secondly, the impact of CAPEX on OPEX was accounted for assuming that UWWTD driven investments would increase OPEX as they imply extension of existing water and wastewater infrastructure, while sustainability investments would result in OPEX decrease as they improve WSS systems efficiency. Historical financial and operational data for 2016-2018 submitted by ROCs to the H2O Benchmark managed by the Romanian Water Association were used as a basis for calculating and projecting operational expenditure. **Table 13** below details the assumptions made for direct and indirect costs evolution over the planning period.

Table 13: assumptions made for direct and indirect costs evolution over the planning period

Type of OPEX	Water	Wastewater collection	Wastewater treatment
Direct OPEX			
<i>Electricity</i>	Electricity consumption is assumed to decrease proportionally to investments realized in water/wastewater pumps, reaching 10% overall decrease a year after all planned investments are realized. Electricity price used is 2018 reference value.		
<i>Chemicals</i>	Chemical price is kept constant using 2018 value as a reference. Chemical costs vary according to water and wastewater volumes treated.		
<i>Water abstraction fee</i>	Water abstraction fee is calculated using 2018 fee (kept constant). It varies according to the volume of water abstracted.		
<i>Wastewater discharge costs</i>		Wastewater discharge fee is calculated using 2018 unit cost (kept constant). It varies according to the volume of wastewater collected and treated.	
<i>Sludge disposal costs</i>			Sludge disposal costs is calculated using 2018 unit cost.
<i>Maintenance</i>	Maintenance costs comprise existing maintenance costs (kept constant) and additional maintenance costs representing 1% of all new investments realized in the previous year		
Indirect OPEX			
<i>Personnel</i>	Personnel costs are calculated using 2018 constant values and assuming that salaries will increase, while personnel will decrease. ²²		
<i>Other expenses</i>	All OPEX not explicitly mentioned above are part of other expenses. They are kept constant using 2018 value as a reference.		

The evolution of the population connected to water and wastewater systems has been assessed over the planning period for each ROC. The associated evolution in terms of volumes of water abstracted and sold, and of wastewater collected and treated has been calculated and reflected in direct costs evolution. Non-revenue water (physical and commercial losses) is targeted to become lower than 30 percent at the end the investment planning period.

²² Due to lack of sufficient data, salaries are assumed to increase by 2.6% annually on average for the period 2019-2038. Thus, the assumption made means that the personnel will decrease by 2.6% on average on annual basis due to improved efficiency of the existing staff and reduction of staff due to extension of the WSSO at regional level. At the same time, personnel will increase due to new assets (for instance WWTPs), but this increase will not offset the staff reduction due WSSOs regional consolidation. As a whole, salaries' increase is compensating personnel decrease.

Chapter 5. Pillar III: Establishment of a financing plan and sustaining WSS investments

5.1 Financing plan preparation

88. As the report outlines, the lack of an adequate Financing plan and dedicated resources is considered as one of the main shortfalls of the existing Implementation Plan, which led to its failure to deliver the expected results. Hence, this section presents a proposal for a financial plan to cover the total remaining investment needs and ensure sustainability of the WSS sector in Romania. The plan is based on the Maximizing Finance for Development (MFD) approach widely promoted and applied by the World Bank when designing funding schemes for financing and sustaining WSS investments.
89. **Funding and financing sources.** Before explaining the proposed MFD approach we need to clarify that there are three major, traditional sources of funding for the WSS sector, following the “3 Ts” framework as developed by the OECD (2009):
- *Tariffs*, user fees, and household investment (such as connection fees) include all payments, charges, or direct investments made by water users themselves in exchange for a service they receive. Water service providers are generally in charge of collecting tariffs to cover their costs of service provision;
 - *Taxes* and levies, collected by central or local governments and that can be passed to the sector through grants, subsidized loans, subsidies, etc.;
 - *Transfers* from external sources refer to funds from international donors, including grants (e.g. EU OPE funds) and the grant component of loans (reduced interest rate or extended maturity) from development banks. They are used mainly to support capital costs. They are not always predictable and therefore most often used to support capital, rather than operating, expenses. **Table 14** below summarizes the pros and cons of these sources.

Table 14: 3 Ts pros, cons and uses

Sources	Pros	Cons	Uses
Tariffs	<ul style="list-style-type: none"> - Directly related to the services – usually, investments in infrastructure result in higher tariffs - Reflect the service (quantity- and quality-wise) - Good accountability 	<ul style="list-style-type: none"> - They have limitations due to the affordability - Increasing the tariffs is unpopular with the public 	<ul style="list-style-type: none"> - Investment - Repairs - Generation of profit for the utility owners
Taxes and levies	<ul style="list-style-type: none"> - May be used for social support to certain users - May be grant sources of financing 	<ul style="list-style-type: none"> - Sporadic, unsustainable over time - Limit other government spending and investments 	<ul style="list-style-type: none"> - Targeted subsidies for investments in certain regions and projects - “rescuing” of operators
Transfers	<ul style="list-style-type: none"> - May be grant sources of financing 	<ul style="list-style-type: none"> - Limited in amount and scope 	<ul style="list-style-type: none"> - Targeted subsidies for investments in certain regions and projects - Advisory support, etc.

Source: WB based on OECD development

The WSS service providers worldwide are funded by a mix of the 3 Ts, which are the only sources of funds available for the WSS sector. The 3 Ts are funding sources and differ conceptually from financing sources such as loans and equity, which serve to close the time gap due to the bulk nature and long useful life of WSS infrastructure, that have to be repaid later (mainly through tariffs). Regardless of whether funding or financing is used, reductions in one revenue stream require increases in another to meet the shortfall. In short, financing sources are different from funding sources because they do not represent additional money for the WSS sector but rather an opportunity to have timely access to resources, which will be recovered later from one of the 3 Ts funding sources.

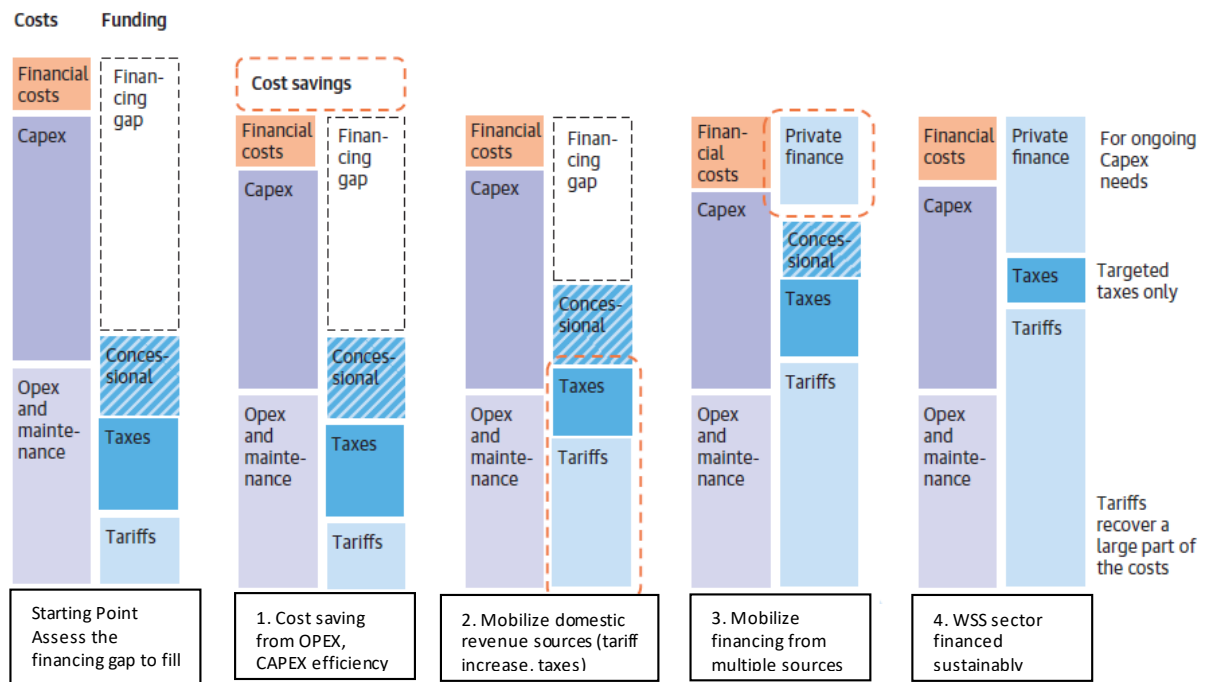
In the WSS sector, it is well accepted amongst practitioners that tariffs should be the largest and most stable source of sector revenues, in order to ensure both financial sustainability in the long term and that the utilities can focus their attention on serving their customers (instead of lobbying politicians for subsidies). However, when they are insufficient, the gap needs to be filled by taxes or transfers from external sources.

Nevertheless, in most countries around the world as in Romania, the existing magnitude and specific mix of the 3 Ts are becoming insufficient and/or unsustainable to address ongoing and future WSS investment needs. The underlying reasons differ from country to country, but include:

- New requirements of Sustainable Development Goals (especially Goal 6: Clean water and sanitation);
- Considerable needs for modernization and rehabilitation of existing assets;
- Socially sensitive pricing;
- Currently insufficient financing (maintenance etc.) of the water cycle elements, leading to faster depreciation of assets and replacement needs;
- Inefficient management of the water cycle and losses.

90. As a result, a new approach was needed to bridge the WSS sectors financing gap worldwide. To do so, the WB has developed an approach called MFD. This approach proposes potential pathways to fill the WSS sector financing gap through efficiency gains, tariff increases, mobilization of domestic taxes, commercial loans and best use of transfers. As described in the figure below, the first step of the MFD seeks opportunities to increase the operating cash-flow of WSS utilities through improved efficiency. The second step aims at optimizing the 3 Ts mix by maximizing revenues from users (tariffs increases and new tariff components) while ensuring affordability for the vulnerable consumers and/or users, to reduce the overall financing gap. The third step looks at fostering access to commercial debt to help bridge the financial gap for the WSS sector and the fourth step outline that there is no further need for grants/concessional financing and the WSS sector is funded in a sustainable manner.

Figure 14: Maximizing Finance for Development approach: potential pathways to fill the WSS financing gap



Source: The World Bank, 2016

As explained above although private (commercial) financing is presented next to funding sources this is to demonstrate that it can provide the required timely access to resources to bridge the financing gap. However, private financing is not an additional source, since it needs be recovered (repaid) later from one of the 3 Ts funding sources.

91. **Financial options to sustain WSS investments.** In the context of Romania, the WB team used the MFD approach to propose an overall financing plan to reach UWWTD targets and sustain WSS investment. In all scenarios, the above-mentioned potential pathways have been considered to finance the WSS sector total CAPEX needs:

- Efficiency gains have been integrated into the financial modeling through the implementation of sustainability investments leading to operational efficiency gains;
- **Tariff** increases have been planned to consider the affordability threshold of 2.5 percent on average as well as the affordability limit for the 1st and 3rd decile;

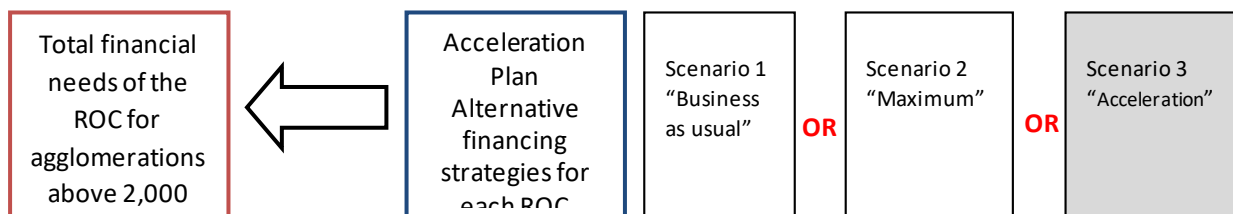
- **Taxes** (national budget support) have been mobilized either in the form of subsidies or national co-financing for EU funds;
- Commercial loans have been integrated into the financing mix of all scenarios;
- The best use of available **transfers** in the specific Romanian context has been planned to consider the prioritization of investments based on cost-benefit analysis (CBA), and the absorption capacity of the WSS sector. An assessment of the WSS sector’s capacity to absorb investments as well as the construction sector’s ability to deliver them in the recent years is indicating that a peak annual investment in the sector was achieved in 2015 when around €1 billion (from all funding sources) was disbursed. Nevertheless, the year 2015 appears as an outlier currently but could serve as a target on what the sector could achieve.

5.2 Financing scenarios

92. Following the MFD approach the team created and assessed several financing scenarios in order to propose an overall financing plan for achieving compliance with the UWWTD. Three alternative scenarios were developed, which try to provide funding for the total UWWTD investment needs – Scenario 1: Business and usual; Scenario 2: Maximum results; and Scenario 3: Acceleration.

The team built these scenarios to demonstrate: Scenario 1 – what can be financed/achieved if the current situation in the sector continues. It uses historical investments; existing tariffs etc. and just adds the implementation of the new methodologies for delineation of agglomeration boundaries and prioritization of the remaining investments (for comparative purposes with the other scenarios). Scenario 2 presents what needs to be done so that compliance investments are implemented. The team is bearing in mind the limitations of the WSS sector to absorb financing and hence compliance is achieved only when all the required investments can be financed and completed (compliance timeline is not pre-defined). Scenario 3 builds on Scenario 2, however, as mentioned above building collecting systems and WWTP in agglomerations between 2,000 p.e. and 5,000 p.e. where no sewerage system exist is leading to excessive costs and hence implementation of IAS is explored, which leads to significant reduction of investment needs. Further details and assumptions are described in **Table 15**.

Figure 15: Financing of investment needs



The key assumptions for each scenario are presented in **Table 15** below.

Table 15: Key assumptions for each scenario

		Scenario 1 "BAU"	Scenario 2 "MAX"	Scenario 3 "ACL"
ASSUMPTIONS	Tariffs	<ul style="list-style-type: none"> – Tariff increase of 5% per year until no more EU funding is available, then constant increase in line with the annual increase of average household income, leaving 10% headroom for Drinking Water Directive compliance funding. – Loans only applied to ROCs with appropriate credit history, with a total outstanding loan amount not exceeding the total annual revenue. IFI loans were prioritized, leveraging commercial funding. 	<ul style="list-style-type: none"> – Tariff increase sharper than in Scenario 1, leaving 10% headroom for Drinking Water Directive compliance funding. A constant increase in line with the annual increase of average household income is applied afterwards. – Loans applied where possible, with the total outstanding loan amount representing less than three times the revenue from sales for the corresponding year. DSCR of 1.3x is envisaged. IFI and/or commercial loans are also maximized. 	
	Transfers	<ul style="list-style-type: none"> – EU grants already contracted and committed are allocated to the corresponding counties with absorption until end of 2023. – For the programming period 2021-2027, total EU funds are assumed to be equal to those available during the programming period 2014-2020. – These new EU grants are allocated among counties according to the list of feasibility studies under preparation with pro-rata decrease to match the total available EU funds. – Absorption of EU funds for 2021-2027 will start shortly after the beginning of the period and end in 2029. No EU grants are assumed for the WSS sector after 2029. 	<ul style="list-style-type: none"> – EU grants already contracted and committed are allocated to the corresponding counties with absorption until end of 2023. – For the programming period 2021-2027, total EU funds are assumed to be equal to those available during the programming period 2014-2020. – These new EU grants are allocated among counties based on prioritization criteria and investment needs. – Absorption of EU funds for 2021-2027 will start shortly after the beginning of the period and end in 2029. 	
	Taxes	National co-financing of EU grant funds	<ul style="list-style-type: none"> – National co-financing of EU grant funds – Government grants are used to fill remaining investment financing gaps at ROC level (if needed) 	
	Coverage	100% coverage for water supply and for wastewater collection and treatment in agglomerations above 2,000 p.e.		<ul style="list-style-type: none"> – 100% coverage for water supply and for wastewater collection and treatment in agglomerations above 100,000 p.e.²³ – 98% coverage for wastewater collection and treatment in agglomerations between 5,000 p.e. and 100,000 p.e.²⁴ – IAS for agglomerations between 2,000 p.e. and 5,000 p.e. without wastewater collecting systems.

93. **Funding and financial sources:** In the initial Implementation Plan dated 2004, the financing mix was relying on EU funds for 40 percent, and equally on taxes and tariffs for 30 percent each. In the three proposed scenarios, the financing mix relies primarily on tariffs. In Scenario 1, tariffs represent more than half of the funding mix (with a total increase of two thirds over the planning period) while transfers account for more than one quarter. In Scenario 2, tariffs still represent the major funding source with 57 percent (and total tariff increase of 80% over the period), followed by transfers and commercial loans. In scenario 3, tariffs stand for 54 percent of the funding mix (with an increase of 73% of the tariffs over the period) and commercial loans for 15 percent.

²³ So that 98% do not result in more than 2,000 p.e.

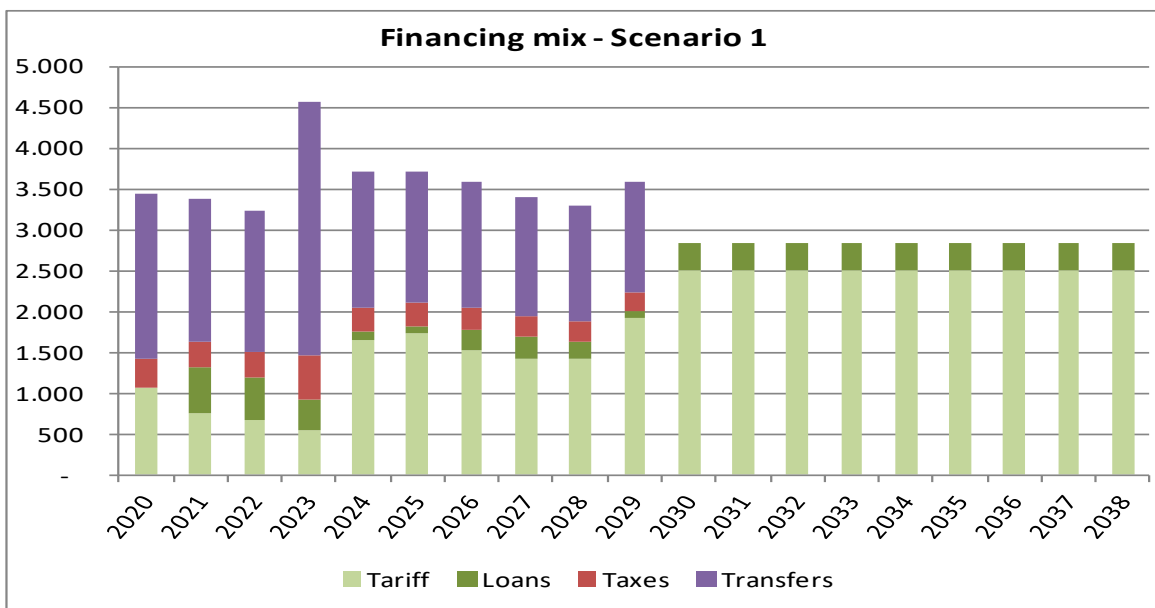
²⁴ Compliance with Art. 3 – the rate of connection to collection systems in agglomerations larger than 2,000 p.e. must be of at least 98% and the remaining 2% should cover less than 2,000 p.e.

Table 16: Breakdown of funding and financing mix

Financing Mix	Scenario 1 <i>Business as usual</i>	Scenario 2 <i>Maximum</i>	Scenario 3 <i>Acceleration</i>	2004 Implementation Plan
Efficiency gains (as share of direct water OPEX)	3.8%	3.8%	5.4%	
Tariffs	57%	57%	54%	30%
<i>Tariff increase planned</i>	<i>67%</i>	<i>80%</i>	<i>73%</i>	
Taxes (fiscal resources)	5%	7%	4%	30%
Transfers (EU funds)	29%	23%	23%	40%
Commercial loans (to be repaid by tariffs)	9%	12%	15%	

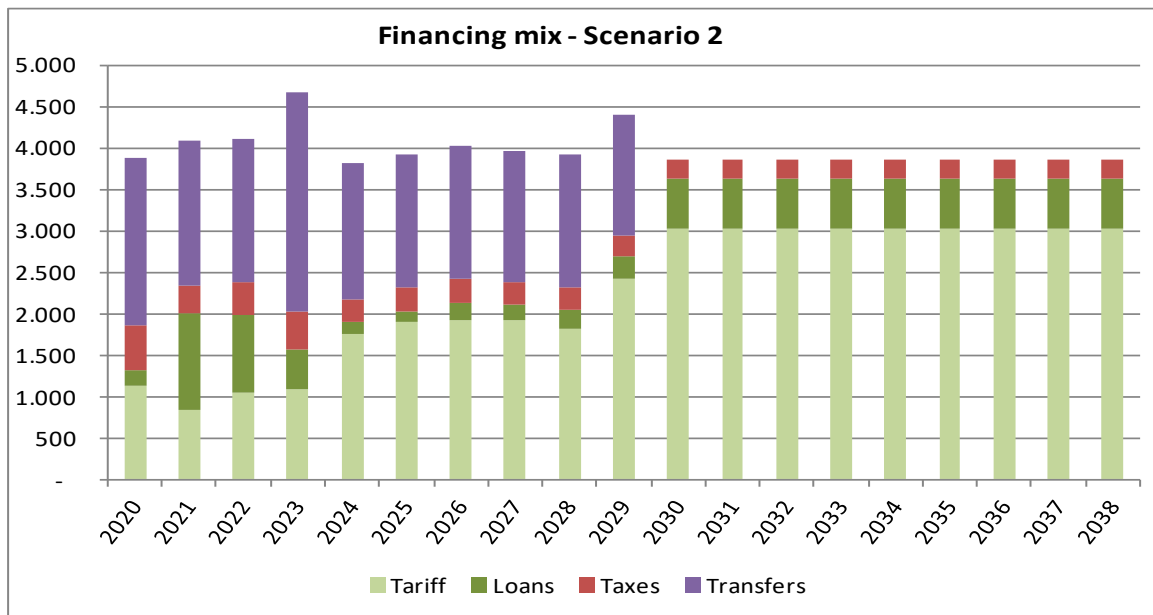
For each scenario, the financing mix throughout the planning period is presented in the graphs below.

Figure 16: Scenario 1 investment needs financing sources



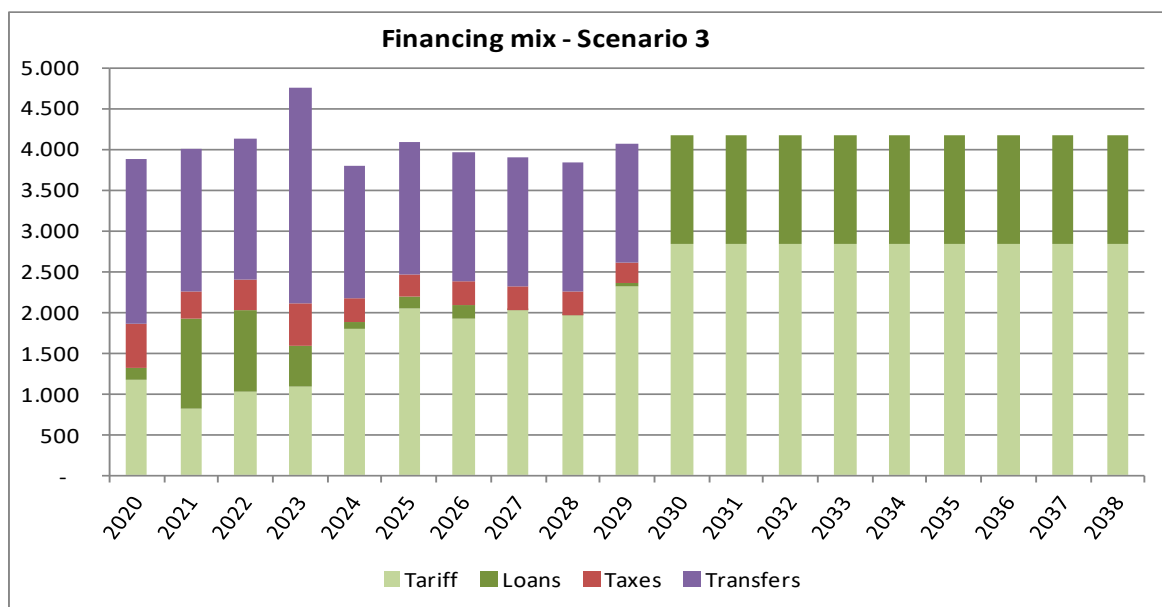
For Scenario 1 (Business as usual), transfers represent from 37 to 68 percent of the WSS investment funding source until 2029. From 2030 onwards, when EU funds availability is unpredictable, tariffs and loans become the only funding sources for the sector thus potentially triggering affordability issues for the 1st decile of the population.

Figure 17: Scenario 2 investment needs financing sources



For Scenario 2 (Maximum results), transfers represent from 31 to 51 percent of the WSS investment funding source until 2029. From 2030 onwards, when EU funds availability is unpredictable, tariffs and loans become the major funding sources for the sector thus triggering affordability issues for the 1st decile of the population. In such circumstances, grants from the Government of Romania are primarily directed toward ROCs where affordability issues will be most severe.

Figure 18: Scenario 3 investment needs financing sources



For Scenario 3 (Acceleration), transfers represent between 36 and 56 percent of the WSS investment funding source until 2029. From 2030 onwards, when EU funds availability is unpredictable, tariffs (directly or through commercial loans) become the only funding sources for the sector thus triggering affordability issues for the 1st decile of the population; still, in all counties tariffs (judged against the average WSS bills of around 15 m³/household) are kept at affordability level of 4 percent of the average household income.

94. Nevertheless, for all three scenarios, a financing gap remains at the end of the planning period (43% for Scenario 1, 30% for Scenario 2, and 18% for Scenario 3) as some ROCs are not able to reach UWWTD targets and/or some ROCs have to postpone sustainability investments. If WSS systems operation and rehabilitation are not sustainably financed, there is a high-risk in-service quality, which is extremely difficult to assess in terms of continuation of compliance levels.

Figure 19: Scenario 1 remaining financing gap

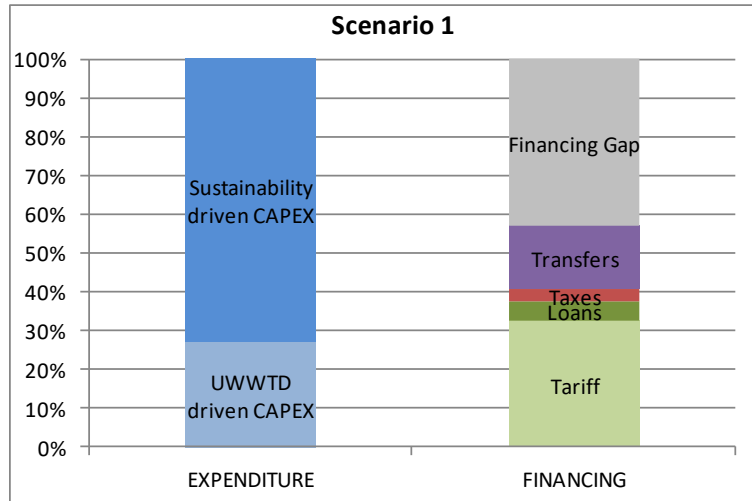


Figure 20: Scenario 2 remaining financing gap

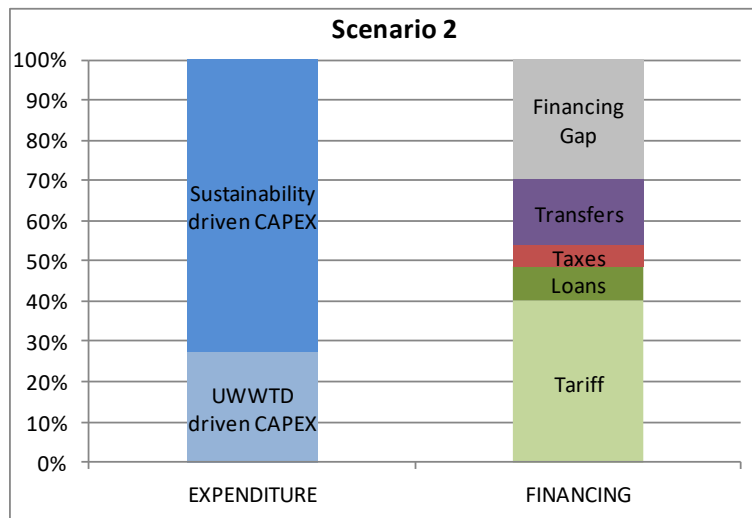
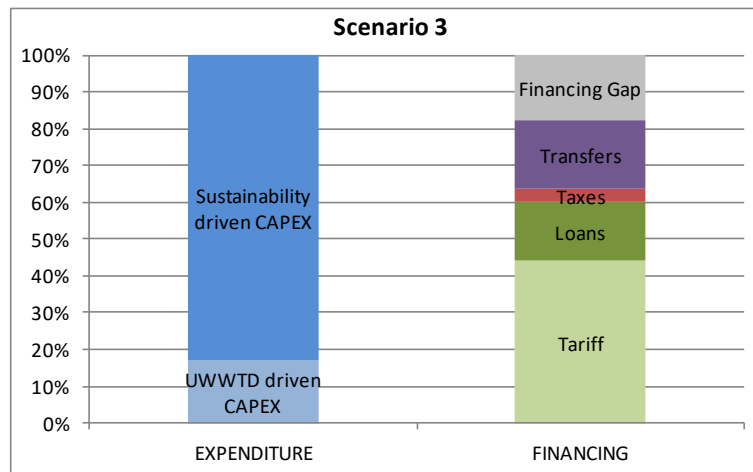


Figure 21: Scenario 3 remaining financing gap



95. Nevertheless, Scenario 3 appears as the scenario with the smallest financing gap, which means that only a small portion of sustainability investments should be postponed, hence limiting the risk that compliance (once achieved) is not sustained in the next 20 years. As a result, **Scenario 3 provides the most optimal and sustaining compliance results during the next two decades.** Scenario 3 would provide sufficient resources to fund all UWWTD CAPEX and 79 percent of sustainability driven CAPEX needs, thus **allowing to reach UWWTD targets by 2035 while not jeopardizing the viability WSS sector over the long-term.** However, it should be noted that the proposed option and financial plan (i.e. Scenario 3) to achieve compliance and sustain WSS investments cannot be considered as a ready-made solution. It needs to be further consulted, agreed on and embedded in the legal framework regulating the WSS in Romania through an interactive consultation process involving all key stakeholders in the sector. The team believes that this is the only path to ensure financially sustainable WSS sector in Romania.

5.3 Presentation of scenario results

96. The following paragraphs provide, for each scenario, the WSS infrastructure investments to be financed along with their funding sources, compliance timelines and a summary of the agglomerations that remain noncompliant for each ROC. In the **Business as usual** scenario the only differences to the ongoing investment process in the sector are that the proposed optimization measures are applied (pillar I but not IAS) as well as the investments prioritization (pillar II). This enables comparison of results from the three scenarios since all of them start from the same base of investment needs calculation. However, **Scenario Maximum** adds tariff increases, which are higher than historical average figures, which allow for financing of much larger share of compliance and sustainability investments. **Scenario Acceleration** builds on Scenario 2 but apply IAS in agglomerations below 5,000 p.e. where no collecting systems and UWWTP exists and thus reducing required investments. This decreases primarily the compliance costs (not sustainability ones) as well as the compliance timeframe for Romania. However, by the time all the required investments (CSs and WWTPs) are completed, the country should have implemented the proposed IAS options and process (otherwise the load addressed by IAS could not be properly captured and reported as ensuring the “same level of environment protection”).

Table 17: Cost differences between Scenarios

(million RON)	UWWTD CAPEX	Sustainability CAPEX	Soft measures
Scenarios 1 & 2	29 397	78 266	1 983
Scenario 3	16 238 ²⁵	78 266	1 983

It should be clear that the team is not pre-determining a specific compliance period. All scenarios assess through financial modeling at ROC level and at national level what results can be achieved in the next 20 years if the underlying assumptions are implemented as proposed.

97. **Results of Scenario 1.** Table 18 below details the main results of the implementation of Scenario 1 “Business as usual”.

Table 18: Scenario 1 compliance results

SCENARIO 1							
ROC	Compliance year	Tariffs	Loans	Transfers (EU Funds)	Taxes (national co-funding)	Financing gap	Agg not meeting target
Alba	2039	712	151	391	69	42%	0
Arad	2039	781	160	348	61	55%	0
Arges	2039	1 205	175	382	67	25%	0
Bacau	2039	735	186	801	141	24%	0
Bihor	2039	1 189	147	-	-	57%	0
Bistrita	2039	377	209	547	97	42%	0
Botosani	Beyond	247	41	20	4	85%	7

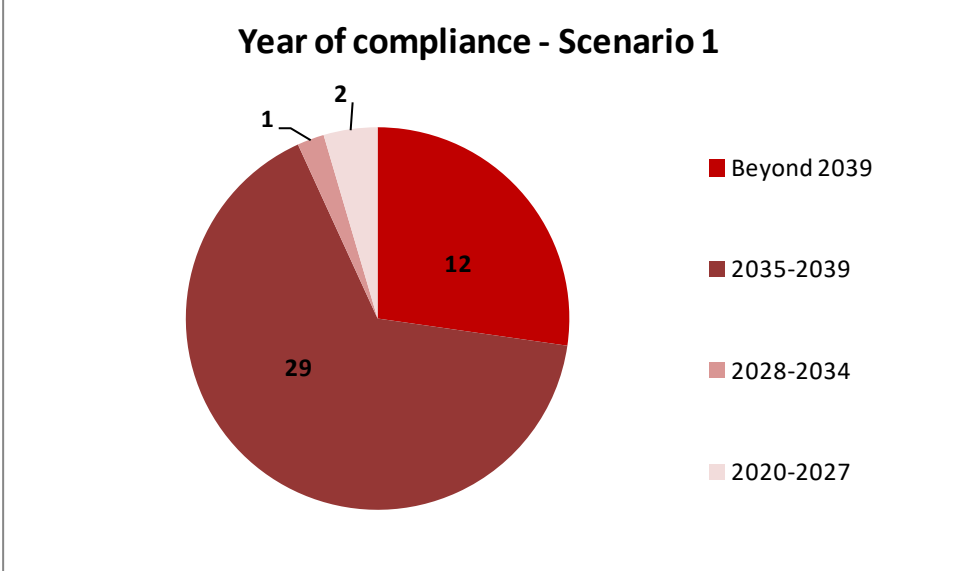
Funding sources: mil RON

²⁵ Due to replacement of CS and WWTP investments with IAS in agglomerations between 2,000 p.e. and 5,000 p.e., that do not have existing CS; see par. 99 for further information of IAS rehabilitation and reconstruction costs.

SCENARIO 1							
ROC	Compliance year	Tariffs	Loans	Transfers (EU Funds)	Taxes (national co-funding)	Financing gap	Agg not meeting target
Braila	2039	503	81	300	53	55%	0
Brasov	2036	1 634	139	420	74	2%	0
Bucuresti	2024	4 326	644	219	39	0%	0
Buzau	Beyond	655	117	304	54	44%	6
Calarasi	Beyond	222	76	548	97	49%	10
Caras Severin	Beyond	149	-	262	46	73%	11
Cluj Salaj	2039	1 875	416	852	150	26%	0
Cluj Turda	2030	375	-	115	20	0%	0
Constanta	2039	1 439	124	879	155	43%	0
Covasna	2039	359	34	130	23	62%	0
Dambovita	Beyond	611	130	524	93	52%	6
Dolj	Beyond	1 778	19	731	129	36%	3
Galati	2039	991	138	453	80	36%	0
Giurgiu	Beyond	166	52	305	54	64%	17
Gorj	2039	165	54	508	90	56%	0
Harghita	2039	446	76	427	75	44%	0
Hunedoara	2036	230	77	670	118	36%	0
Ialomita	Beyond	69	29	-	-	93%	20
Iasi	2039	1 882	222	665	117	47%	0
Ilfov	2039	675	115	342	60	38%	0
Maramures	2039	883	174	532	94	48%	0
Medias	2039	87	57	95	17	54%	0
Mehedinti	2039	168	26	321	57	43%	0
Mures	2039	1 403	159	46	8	38%	0
Neamt	2039	718	85	-	-	72%	0
Olt	Beyond	348	144	561	99	51%	17
Prahova	2039	1 359	202	779	137	52%	0
Satu Mare	2039	500	55	288	51	50%	0
Sibiu	2039	1 060	229	511	90	18%	0
Suceava	Beyond	644	124	521	92	63%	4
Teleorman	Beyond	183	90	403	71	67%	14
Timis	2039	2 162	286	487	86	3%	0
Tulcea	2039	337	19	283	50	27%	0
Valcea	2038	502	75	598	106	46%	0
Valea Jiului	2024	175	41	133	23	35%	0
Vaslui	2039	379	48	624	110	33%	0
Vrancea	Beyond	451	100	267	47	55%	7
TOTAL	Beyond	35 156	5 526	17 591	3 104	43%	122

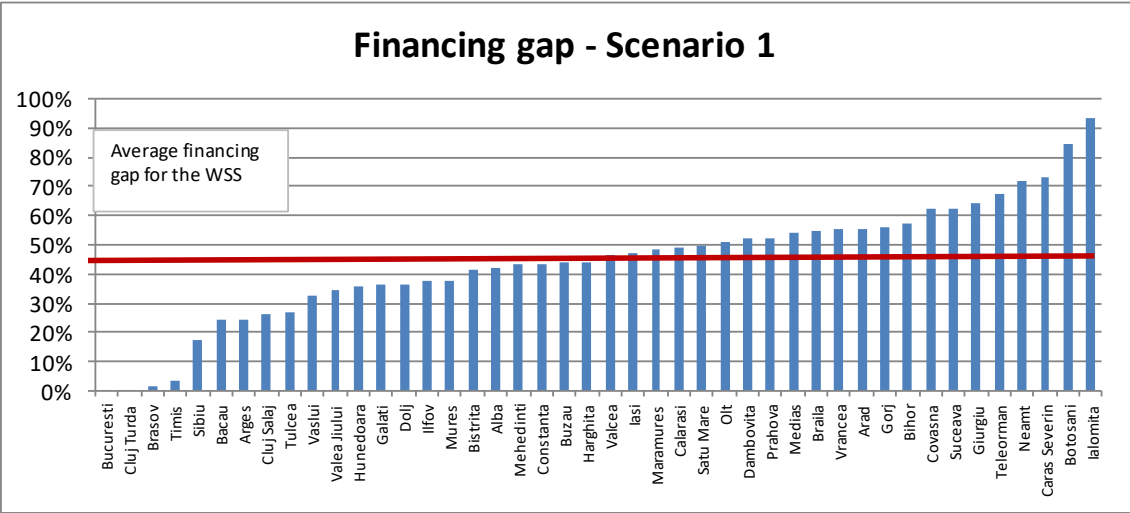
In the business as usual scenario, 32 ROCs (73%) manage to achieve UWWTD targets in all their agglomerations by the end of 2039. However, among them, only 2 ROCs (Bucuresti and Cluj Turda) manage to cover all their CAPEX needs (financing gap at 0%). This means the other 30 ROCs face a financing gap as they are only able to achieve UWWTD targets within the planning period by postponing sustainability investment. Moreover, 12 ROCs (27%) are not able to reach full wastewater collection and treatment coverage before 2039, representing **122 agglomerations**. As a result, **Romania cannot achieve UWWTD compliance in the next 20 years** if just a limited number of measures are implemented and most of the remaining sector issues are not addressed (remain as they are).

Figure 22: Scenario 1 breakdown of compliance year for 44 ROCs



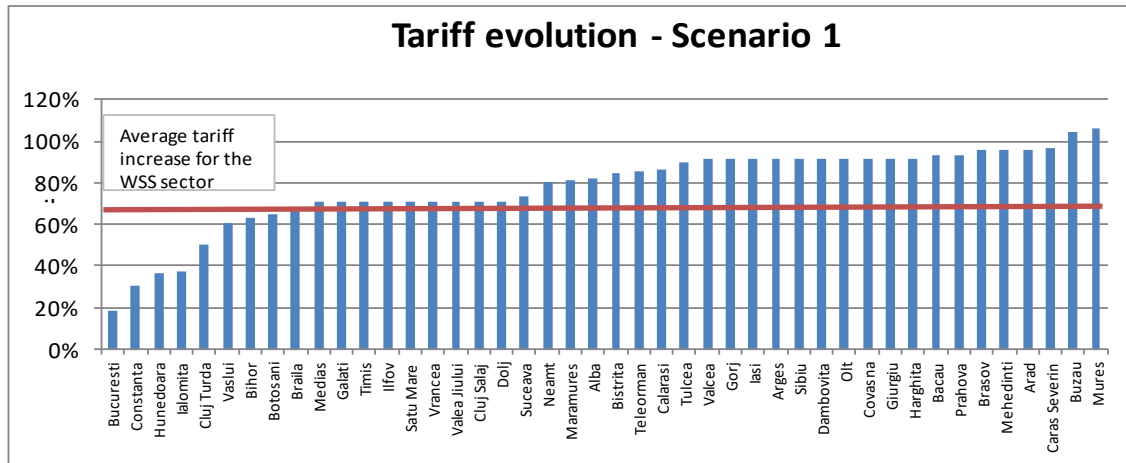
As mentioned above, in this scenario, a large financing gap remains for 42 ROCs, which are unable to finance UWWTD and/or sustainability driven investments. This financing gap represents 42 percent of the total WSS financial needs.

Figure 23: Scenario 1 breakdown of financing gap



The BAU scenario includes important tariff increases along the planning period which represent a total of 67 percent increase in the sector over the next 20 years. Those increases range from 19 percent in Bucuresti to 106 percent in Mures.

Figure 24: Scenario 1 breakdown of tariff increases



The average tariff for water and wastewater in Romania would increase from 7.27 RON/m³ in 2019 to 12.14 RON/m³ in 2038. This scenario triggers some affordability issues for the 1st decile of the population with the average tariff being tangent to the 1st decile affordability threshold from 2021 onwards with a maximum difference of 3.7 percent in 2029. The summary of Scenario 1 results is presented in **Table 19** below.

Table 19: Scenario 1 financial results

Funding sources, mil RON

Period	Total investment needs	Total investment financed	Investment cost of debt	EU grant		Government grant	Loans	WSSC own funds	Investment gap (postponement)	Change in Water Tariff during the period
				Grant from EU funds	National contribution					
2020	6.006	3.437	-	2.019	356	-	-	1.061	2.569	2%
2021	6.006	3.379	6	1.760	311	-	556	753	2.626	4%
2022	6.007	3.223	16	1.727	305	-	523	668	2.783	4%
2023	6.047	4.566	25	3.105	548	-	359	554	1.482	4%
2024	5.024	3.700	30	1.647	291	-	116	1.646	1.324	3%
2025	4.997	3.703	30	1.599	282	-	93	1.728	1.294	3%
2026	4.989	3.576	31	1.524	269	-	261	1.523	1.413	3%
2027	4.991	3.398	34	1.450	256	-	273	1.419	1.593	3%
2028	4.989	3.297	35	1.416	250	-	218	1.413	1.692	3%
2029	5.934	3.586	35	1.343	237	-	91	1.914	2.348	3%
2020-2029	54.989	35.866	172	17.591	3.104	-	2.490	12.681	19.123	36%
2030-2038	52.674	25.511	542	-	-	-	3.036	22.475	27.163	23%
Total	107.663	61.377	714	17.591	3.104	-	5.526	35.156	46.286	67%

98. **Results of Scenario 2.** The table below details the main results of the implementation of Scenario 2 "Maximum". This scenario adds additional tariff increases (+13%) and widespread use of commercial financing (+169%), which is enhanced by the revenue increase as well as additional funding from taxes (+77%).

Table 20: Scenario 2 compliance results

Funding sources, mil RON

SCENARIO 2							
ROC	Compliance year	Tariffs	Loans	Transfers (EU Funds)	Taxes (national co-funding)	Financing gap	Agg not meeting target
Alba	2039	784	349	391	87	25%	0
Arad	2039	739	455	348	65	46%	0
Arges	2039	1.211	335	382	47	23%	0
Bacau	2039	1.024	353	801	58	32%	0
Bihor	2039	1.949	433	-	27	18%	0
Bistrita	2039	406	284	547	22	60%	0
Botosani	2039	422	112	20	35	62%	0
Braila	2039	505	104	300	53	53%	0
Brasov	2036	1.738	164	420	61	0%	0
Bucuresti	2024	4.304	666	219	39	0%	0
Buzau	2039	908	330	304	77	13%	0
Calarasi	2039	137	174	548	364	42%	0
Caras Severin	2033	291	145	262	203	27%	0
Cluj Salaj	2039	3.319	-	852	170	0%	0
Cluj Turda	2030	375	-	115	20	0%	0
Constanta	2039	1.038	362	879	216	38%	0
Covasna	2039	358	88	130	16	62%	0

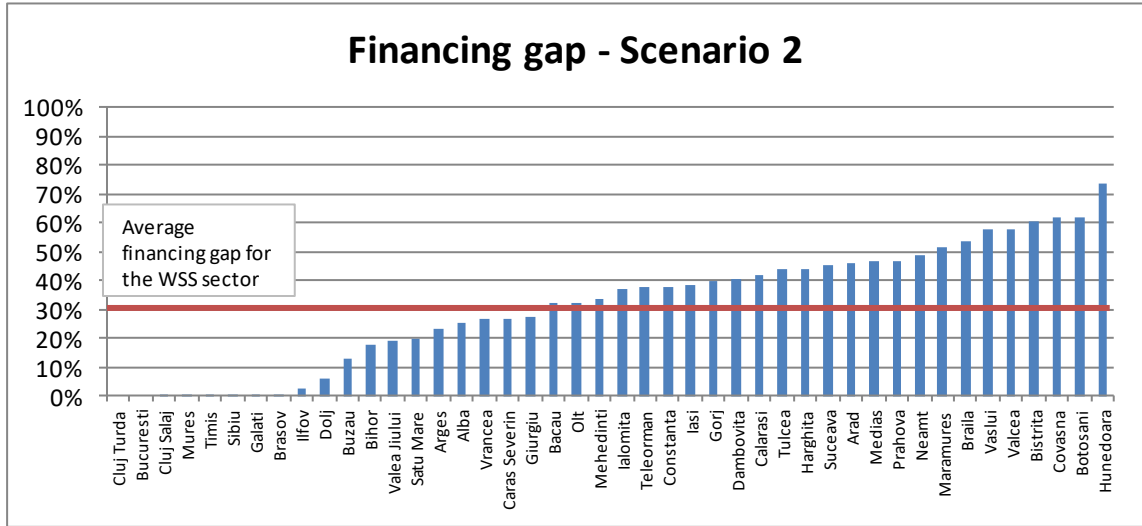
SCENARIO 2							
ROC	Compliance year	Tariffs	Loans	Transfers (EU Funds)	Taxes (national co-funding)	Financing gap	Agg not meeting target
Dambovită	2039	995	98	524	97	41%	0
Dolj	2039	1.653	697	731	235	6%	0
Galati	2039	1.403	290	453	137	0%	0
Giurgiu	2039	255	197	305	334	28%	0
Gorj	2039	434	241	508	94	40%	0
Harghita	2039	720	225	427	11	44%	0
Hunedoara	2036	268	101	670	22	73%	0
Ialomița	2039	61	46	-	620	37%	0
Iasi	2039	2.766	248	665	52	39%	0
Ilfov	2039	906	158	342	121	2%	0
Maramures	2039	876	171	532	114	51%	0
Medias	2039	131	55	95	17	47%	0
Mehedinti	2039	358	132	321	26	34%	0
Mures	2038	2.162	221	46	33	0%	0
Neamt	2039	618	212	-	96	49%	0
Olt	2039	385	269	561	507	32%	0
Prahova	2039	1.580	307	779	133	47%	0
Satu Mare	2039	745	256	288	63	20%	0
Sibiu	2039	1.815	253	511	34	0%	0
Suceava	2039	688	116	521	183	45%	0
Teleorman	2039	108	162	403	680	38%	0
Timis	2039	2.345	-	487	117	0%	0
Tulcea	2039	370	38	283	18	44%	0
Valcea	2038	674	129	598	29	58%	0
Valea Jiului	2024	232	75	133	23	19%	0
Vaslui	2039	442	84	624	29	58%	0
Vrancea	2039	557	204	267	98	27%	0
TOTAL	2039	43.053	9.339	17 591	5.481	30%	0

99. In **Scenario 2**, where all funding sources are optimized in the most efficient way, the **UWWTD targets are reached by 2039 for all ROCs and all agglomerations**. This however requires that the Government of Romania finances 7 percent of the UWWTD investments through grants for lagging behind counties (in addition to the national co-financing related to EU grants). Nevertheless, in this scenario, only 8 ROCs would be able to fully cover their CAPEX needs (financing gap at 0%) while the other **36 ROCs would have to postpone sustainability investments** to reach UWWTD targets by 2039 thus potentially jeopardizing the viability and quality of service provision. In addition, this scenario relies more heavily on commercial loans which represent about 12 percent of the financing sources of ROCs over the planning period. This requires specific policy changes and reforms to be launched as soon as possible to improve credit worthiness of some of the ROCs. The financial position of operators and owners ought to be characterized by

transparency, accountability, and autonomy. It is only after these qualities become prevalent that the national or international financial market could be expected to invest in wastewater utilities.

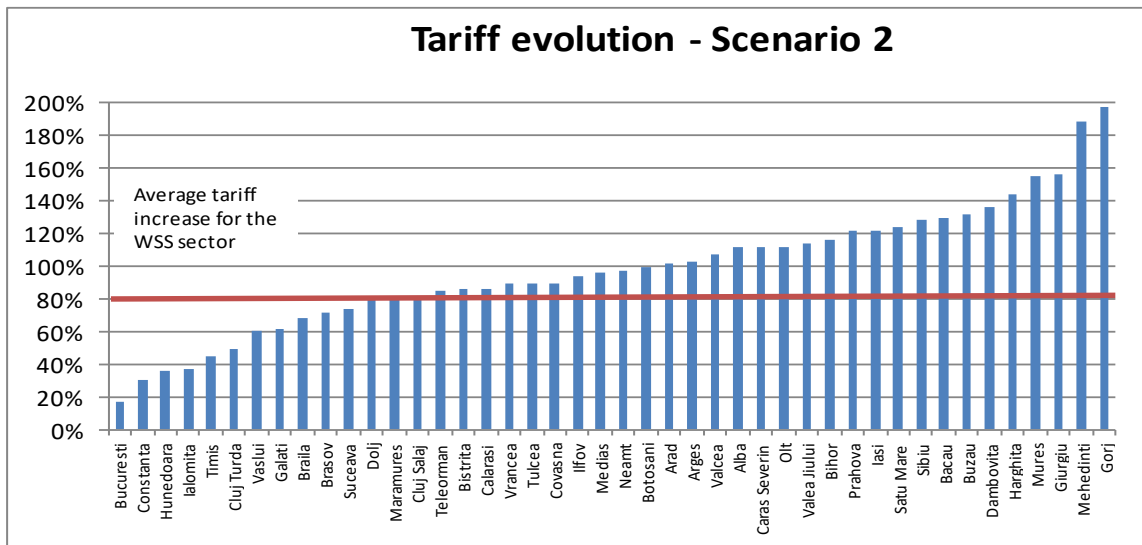
100. In this scenario, a financing gap remains for 36 ROCs, which are unable to finance both UWWTD and sustainability investments. This gap represents 30 percent of the total financial CAPEX needs, for the entire WSS sector.

Figure 25: Scenario 2 breakdown of financing gap



The Maximum scenario includes significant tariff increases along the planning period from 7.27 RON/m³ in 2019 to 13.07 RON/m³ in 2038 which represent a total of 80 percent increase in the sector. Those increases range from 17 percent in Bucuresti to 198 percent in Gorj.

Figure 26: Scenario 2 breakdown of tariff increases



These heavy tariff increases would trigger affordability concerns in many counties. From 2021 onwards, the average tariff would remain above the affordability threshold for the 1st decile, reaching a peak in period 2024-2026 with the average tariff being more than 17 percent above the threshold. The social and equity consequences hereof would have to be addressed through supporting mechanisms. Over the planning period, the average tariff would tangent the affordability threshold for the 3rd decile, but would remain well

below the social affordability limit. The summary of Scenario 2 results is presented in **Table 21** below.

Table 21: Scenario 2 financial results

Funding sources, mil RON

Period	Total investment needs	Total investment financed	Investment cost of debt	EU grant		Government grant	Loans	WSSC own funds	Investment gap (postponement)	Change in Water Tariff during the period
				Grant from EU funds	National contribution					
2020	6.006	3.876	2	2.019	356	187	174	1.139	2.130	2%
2021	6.006	4.088	15	1.760	311	16	1.156	846	1.918	8%
2022	6.007	4.104	36	1.727	305	89	944	1.039	1.902	13%
2023	6.047	4.665	51	2.632	465	11	478	1.079	1.383	6%
2024	5.024	3.806	57	1.629	287	-	141	1.749	1.218	3%
2025	4.997	3.923	56	1.608	284	-	123	1.908	1.074	3%
2026	4.989	4.015	56	1.597	282	-	226	1.910	974	2%
2027	4.991	3.957	54	1.579	279	-	171	1.928	1.035	2%
2028	4.989	3.912	52	1.591	281	-	225	1.814	1.077	2%
2029	5.934	4.396	52	1.448	255	3	265	2.425	1.538	2%
2020-2029	<i>54.989</i>	<i>40.742</i>	327	<i>17.591</i>	<i>3.104</i>	307	3.903	<i>15.837</i>	<i>14.247</i>	51%
2030-2038	<i>52.674</i>	<i>34.722</i>	<i>975</i>	-	-	<i>2.070</i>	<i>5.436</i>	<i>27.216</i>	<i>17.952</i>	19%
Total	107.663	75.464	1.302	17.591	3.104	2.377	9.339	43.053	32.199	80%

101. The table below details the main results of the implementation of **Scenario 3 “Acceleration”**. Scenario 3 presents an alternative option to overcome the identified financial difficulties. Implementation of IAS in agglomerations between 2,000 to 5,000 p.e. where currently no wastewater collection system exists will enable to lower the UWWTD investment costs by 44 percent, thus decreasing both CAPEX and OPEX, which is then reflected in the required tariff increases (improving affordability). This scenario also relies on commercial loans, which represent 19 percent of the financing sources of ROCs over the planning period. This requires that consolidation (further aggregation of ROCs, see **Chapter 6** for details) is completed as soon as possible to improve credit worthiness of some of the ROCs. The financial position of operators ought to be characterized by transparency, accountability, and autonomy. It is only after these qualities become prevalent that the national or international financial market could be expected to invest much more in Romanian WSS utilities. In addition, this scenario requires changes to the existing legislation and technical standards to allow more options for IAS as well as creation of a proper process of their registration, design, construction, O&M, monitoring and control to ensure environmental protection and reporting.

Table 22: Scenario 3 compliance results

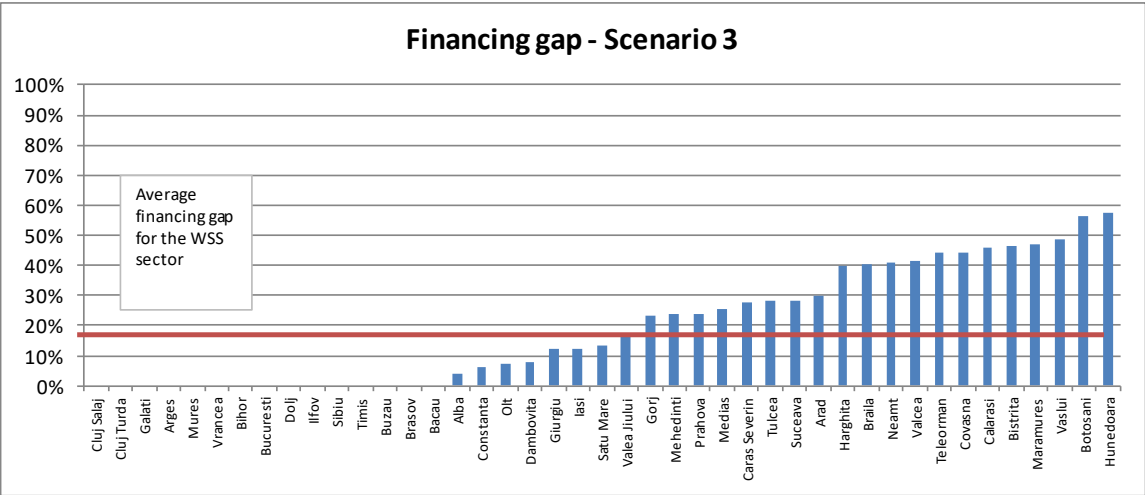
Funding sources, mil RON

SCENARIO 3							
ROC	Compliance Year	Tariffs	Loans	Transfers	Taxes (incl national co-funding)	Financing gap	Agg not meeting target
Alba	2035	1 090	510	492	87	4%	0
Arad	2033	894	514	371	65	30%	0
Arges	2034	1 359	638	266	47	0%	0
Bacau	2032	1 156	610	233	57	0%	0
Bihor	2034	2 050	677	154	27	0%	0
Bistrita	2033	595	372	123	22	47%	0
Botosani	2033	379	115	199	35	56%	0

SCENARIO 3							
ROC	Compliance Year	Tariffs	Loans	Transfers	Taxes (incl national co-funding)	Financing gap	Agg not meeting target
Braila	2032	449	302	300	53	40%	0
Brasov	2031	1 602	163	347	61	0%	0
Bucuresti	2024	3 928	1042	219	39	0%	0
Buzau	2035	873	184	438	77	0%	0
Calarasi	2031	115	154	391	79	46%	0
Caras Severin	2032	323	83	615	198	28%	0
Cluj Salaj	2034	3 231	0	962	170	0%	0
Cluj Turda	2024	303	70	115	20	0%	0
Constanta	2034	1 171	1414	1 222	216	6%	0
Covasna	2033	368	235	92	16	44%	0
Dambovita	2031	837	511	499	93	8%	0
Dolj	2032	1 564	0	1 334	235	0%	0
Galati	2034	1 199	123	780	138	0%	0
Giurgiu	2032	190	154	381	88	12%	0
Gorj	2031	499	415	351	93	23%	0
Harghita	2035	665	247	64	11	40%	0
Hunedoara	2031	289	341	63	30	57%	0
Ialomita	2033	36	40,5	201	50	61%	0
Iasi	2034	2 774	1413	293	52	12%	0
Ilfov	2032	835	60	685	121	0%	0
Maramures	2032	682	287	426	104	47%	0
Medias	2031	146	146	95	17	25%	0
Mehedinti	2034	437	65	146	26	24%	0
Mures	2032	2 098	106	186	33	0%	0
Neamt	2030	548	341	543	96	41%	0
Olt	2032	465	309	424	75	7%	0
Prahova	2033	1 696	975	753	133	24%	0
Satu Mare	2035	665	268	359	63	13%	0
Sibiu	2032	1 677	252	192	34	0%	0
Suceava	2035	575	602	1 013	179	28%	0
Teleorman	2031	99	144	478	151	44%	0
Timis	2032	1 936	0	663	117	0%	0
Tulcea	2035	322	156	101	18	28%	0
Valcea	2035	580	551	167	71	42%	0
Valea Jiului	2024	226	76	133	23	17%	0
Vaslui	2033	327	193	167	30	49%	0
Vrancea	2031	502	197	555	98	0%	0
TOTAL	2035	41 755	15 056	17 591	3 447	18%	0

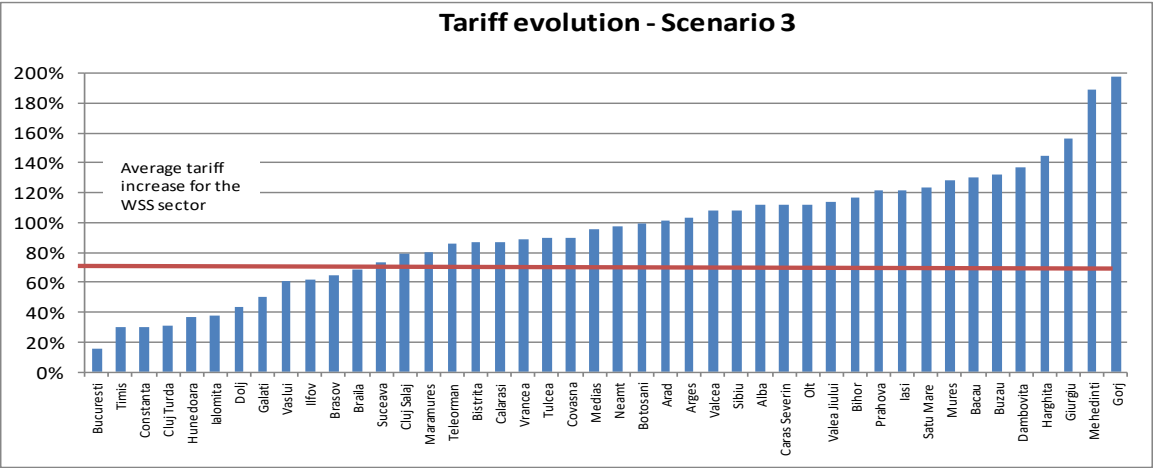
In Scenario 3, the UWWTD targets are reached by 2035 for all ROCs with 622 agglomerations achieving 100 percent coverage for wastewater collection and treatment, and 415 agglomerations below 5,000 p.e. relying on IAS. It is expected that 15 ROCs would be able to fully cover their CAPEX needs (financing gap at 0%) while the other 29 ROCs would have to postpone some sustainability investments. However, the overall financing gap which represents 18 percent of the total CAPEX needs is significantly lower than in Scenarios 1 (43%) and 2 (30%) and as mentioned above should not jeopardize compliance sustainability.

Figure 27: Scenario 3 breakdown of financing gap



The Acceleration scenario includes slightly lower tariff increases along the next 20 years (compared to Scenario 2) from 7.27 RON/m³ in 2019 to 12.59 RON/m³ in 2038, which represent a total of 73 percent average increase at national level.

Figure 28: Scenario 3 breakdown of tariff increases



These tariff increases would trigger affordability concerns in some counties but only for the 1st decile of vulnerable households, reaching a peak in 2024 with the average tariff being more than 17 percent above the threshold. The social and equity consequences hereof would have to be addressed through targeted support mechanism. Over the planning period, the average tariff would tangent the affordability threshold for the 3rd

decile, but would remain well below the social affordability limit. The summary of Scenario 3 results is presented in **Table 23** below.

Table 23: Scenario 3 financial results

Period	Total investment needs	Total investment financed	Investment cost of debt	Funding sources, mil RON							Change in Water Tariff during the period
				EU grant		Government grant	Loans	WSSC own funds	Investment gap (postponement)		
				Grant from EU funds	National contribution						
2020	5.955	3.880	2	2.019	356	179	156	1.170	2.076	2%	
2021	5.955	4.011	14	1.760	311	23	1.094	823	1.945	8%	
2022	5.958	4.135	35	1.727	305	80	992	1.031	1.823	13%	
2023	6.023	4.742	50	2.632	465	61	496	1.088	1.281	6%	
2024	5.002	3.799	55	1.629	287	-	94	1.789	1.203	3%	
2025	4.988	4.077	54	1.608	284	-	134	2.051	912	2%	
2026	4.978	3.967	52	1.597	282	-	170	1.918	1.010	2%	
2027	4.979	3.887	48	1.579	279	-	6	2.023	1.092	2%	
2028	4.981	3.844	41	1.591	281	-	5	1.966	1.137	2%	
2029	5.242	4.057	35	1.448	255	-	35	2.319	1.185	2%	
2020-2029	<i>54.061</i>	<i>40.399</i>	311	<i>17.591</i>	<i>3.104</i>	343	3.182	<i>16.179</i>	<i>13.662</i>	50%	
2030-2038	<i>40.443</i>	<i>37.450</i>	<i>844</i>	-	-	-	<i>11.874</i>	<i>25.576</i>	<i>2.992</i>	16%	
Total	94.504	77.849	1.155	17.591	3.104	343	15.056	41.755	16.654	73%	

This Scenario demonstrates significant investment need savings RON 13.2 billion (€2.7 billion), compared to Scenarios 1 and 2. As mentioned already this is resulting from not building collection system and WWTP in agglomerations between 2,000 to 5,000 p.e. where currently no wastewater CS exists. Despite the fact that during field visits the existence of IAS was confirmed (the team could not verify how many of these are actually the only allowed IAS in Romania – watertight tank) as part of the process to make sure that they are delivering “same level of environmental protection” in these small agglomerations, the team made some assumptions and calculation for IAS investment needs, which are presented in **Table 24** below.

Table 24: Investment needs for IAS

Adjusted population, #	1.177.106
Household size, #	2,63
Households, #	447.569
Existing IAS requiring rehab. 40%	3,227
Existing IAS requiring replacement 40%	10,012
Packaged individual WWTP, 10%	22,255
Watertight tanks, 10%	9,490
Investment per 1 household, RON	8.470
Investment need, mil RON	3.791

RON 3.8 billion (€0.8 billion), will be need for rehabilitation and replacement of existing IAS in agglomerations between 2,000 to 5,000 p.e. where currently no wastewater collecting system exists. The team is still under discussion with the MEWF and ANAR on the acceptability of this proposal and hence no agreement has been reached on who will cover these costs. Even if they are covered by the Government of Romania (in line with the practice in other MS to cover appropriate systems, which collect and treat wastewater from more than one household) or split to some extent with the owners there is still going to be a minimum saving of RON 9 billion (€1.9 billion) in UWWTD compliance investment needs.

102. A summary of the most important results and implications of the explored scenarios are presented in **Table 25**.

Table 25: Results and implications of explored scenarios

Indicator	Scenario 1	Scenario 2	Scenario 3
Compliance Investment needs (in billion RON)	29.73	29.73	16.24
Sustainability investment needs (in billion RON)	77.8	77.8	77.8
Agglomerations failing compliance	122	0	0
Tariffs	Limited affordability concerns	Significant affordability concerns	Some affordability concerns
Compliance year	Not in the next 20 years	2039	2035
Government contribution (in addition to EU funds co-financing), in billion RON		2.38	0.34

In our view Scenario 3 will not only reduce the required timing for compliance and put a bit less pressure on tariff increases but also minimize the impact on scarce fiscal resources, leaving some space to address other core WSS sector priorities such as better access to piped water supply in rural areas.

Chapter 6. **Pillar IV: Other measures to accelerate investments and improve sector performance**

103. Beyond the specific technical recommendations in this report – proposing a national compliance approach and proper baseline assessment (based on optimized compliance costs); developing a plan to prioritize investment and bridge compliance gaps, establishing financing plan for the required WSS investments; and proposing a mechanism to monitor and evaluate AIP progress (see **Chapter 7**), there are additional bottlenecks, both at WSS sector level and beyond, that constitute serious obstacles for achieving UWWTD compliance and need to be addressed (see **Chapter 2**). The various actions listed in the previous chapters will be difficult to implement unless a more supportive and conducive environment for compliance and sustainability in the sector is put in place.

6.1 Improving leadership and coordination in the WSS sector

104. **Improving institutional coordination and having sector leadership is a must.** As mentioned during the analysis of the existing IP, institutional and coordination challenges remained over the past decade despite some reform efforts. Many national institutions continue to be involved in the UWWTD implementation process, with different roles and sometimes parallel activities, which create a complex environment and decision-making process. MEWF, MEF, MPWDA and MPF as well as ANAR and ANRSC have their specific mandates and coordination is challenging despite recent attempts. The Inter-Ministerial Committee on Water was created at the end of 2018 to improve coordination of compliance efforts and streamline sectoral technical assistances, as well as to support the preparation of answers and required actions on the initiated infringement process under the UWWTD. However, the WB team witnessed that while this Committee helps facilitate knowledge exchange and coordination in the water sector, this has not yet proved to be a decision-making body. Part of the problem is the lack of assumed leadership (“an institutional champion”) in the Romanian WSS sector. The financing institutions, the beneficiaries, and the reporting institutions are often working in silos and the regulatory body does not have the capacity to ensure the missing links. Even though there are some capacity issues, mostly at local level, the main issue is the lack of proper coordination, sector leadership and holistic decision making. The Bank team will discuss this further with the established TG for the preparation of the WSS Strategy outline. From the current assessment of the situation, it seems that the MPWDA is better equipped to lead the sector, however, so far, no clear willingness nor a plan for working towards this solution was observed. As a first step, a small group comprising MEWF, MEF, MPWDA could be established to guide the sector efforts, which can naturally grow into the proposed Strategic Implementation Committee to monitor and evaluate the proposed Plan’s implementation (see **Chapter 7**).

6.2 Aligning and supporting the role of local authorities in WSS service delivery and UWWTD compliance

105. **Making local authorities accountable for UWWTD compliance through incentives (financing/sanctions and fines) would help reduce misalignment between national and local authorities’ efforts.** In line with the identified institutional and coordination challenges as well as difficulties in establishing adequate policy, the role of local authorities to support UWWTD compliance remains problematic. It is fair to say that WSS

services are local services, and they are better handled at local level, but in the context of the current institutional arrangements in Romania, this is clearly not delivering the required results. Beyond the resistance of many mayors to embark on the regionalization process, there are sometimes other aspects whereby local authorities and mayors are not making a positive contribution to UWWTD compliance and sector performance or are even acting as obstacles to further progress.

106. Under the current institutional set-up, mayors and local councils play a crucial role in UWWTD compliance on their respective communal territory. They are the ones who make the decision to delegate or not their WSS services to a ROC. Those who embark on the regionalization have a voting power within the IDA. Those who choose to retain the operation of their WSS services are the ones who should allocate funding for investments in order to expand services, collect and treat wastewater and reach compliance, something which rarely happens. They play a key role in facilitating (or not) the challenging civil works required for installing collecting systems under their streets, with all the traffic disruptions and discontent these can create. Finally, their closeness to the local population should make them valuable allies to promote connections to sewerage systems and flush toilets. The reality, however, demonstrates that most of the local authorities are not interested and do not cooperate actively and support national and operators' efforts towards UWWTD compliance. IDAs did not transfer compliance obligations to ROCs; their oversight of ROCs' WSS services and investments is suboptimal; and many of them lack capacity or are becoming too political. For those who have kept their own municipal WSS services, they regularly fail to allocate funding for WSS investments, and their average tariffs often fail to cover even OPEX. Furthermore, many ROCs complain of administrative difficulties to obtain local permits for essential civil works from local authorities, and sometimes excessive requirements for road reinstatements or new taxes for construction work.
107. There seems to be no incentives to local authorities for UWWTD compliance under the current set-up, regardless of whether they have delegated or not their WSS services to a ROC. In either case, they are not subject to any penalties or sanctions if their administrative territory does not comply with the Directive. They have no incentives to allow for tariff increases and facilitate investment financing to expand services, while they have a lot to lose by generating political discontent in doing so. This raises the question whether local authorities are the appropriate decision-making level for the future development of the sector, or whether the decision-making process needs be revised/improved. It is time to reconsider what the role of local authorities in UWWTD compliance should be, and in WSS service delivery in general.
108. The entire spectrum of options could be explored in addressing this issue: from technical support and capacity building for local authorities; making IDA participation compulsory, as well as ROC servicing, to recognizing the potential role of small municipal providers as long as there is clear accountability for compliance for local authorities, including fines for non-compliance. Links to the overall national budget support to small municipalities and/or a robust set of sanctions mirroring the potential infringement penalties at national level should be considered. We've seen this being applied in a couple of other Member States to incentivize local authorities and force them to act. More groundbreaking reforms could also be explored, such as transferring the responsibility for WSS services from the local to the central level, as is the case in some other EU countries. Such analysis would reflect the fact that the Romanian WSS sector is currently faced with

a major issue: local authorities are responsible for WSS services, but it is the central government, which is responsible for UWWTD compliance. Albeit a major change on the paradigm for the sector, such a move could solve many issues and bring significant benefits, for instance facilitating the coordination of investments and allowing for the implementation of a national tariff policy more in line with the solidarity principle (with cross-subsidies between rich and poor regions, and to the poor).

6.3 Overcoming the utilities aggregation deadlock

109. **Resuming the aggregation process to facilitate progress on UWWTD compliance through a better access to financing and capacity.** The blockage of WSS utilities aggregation process and further need for their capacity increase was indicated as one of the issues that prevented the initial Implementation Plan delivery. Indeed, the regionalization process continues to be incomplete, as close to 1.6 million people are still served by small local municipal utilities. Although they provide suboptimal services and have no access to EU grant funding for investments, there has been growing resistance from small rural municipalities to join IDAs and delegate their WSS services to a ROC. Only about two-thirds of local authorities had joined an IDA by 2015, with an even lower proportion having actually delegated their WSS services to a ROC. Furthermore, several local governments have decided to leave IDAs in recent years. This demonstrates that the process requires some further incentives and support. The underlying motives for many local authorities to resist the regionalization process are multifold. These include lack of attention from some ROC management for rural customers, unwillingness of the local politicians to relinquish control, excessive expectations regarding services improvement, insufficient funding available for investment at ROCs level, and concerns about increasing tariffs. In order to achieve further aggregation, the concerns of rural municipalities and local rural populations need to be addressed. This will mean analyzing the underlying political economy and incentives of the various actors, and carrying out a full-fledged public consultation process. Valuable lessons can be learned from other European (e.g. Portugal, Italy, Greece, France, Netherlands, Slovakia, Hungary) and OECD countries that have embarked in the past on utility aggregation processes.
110. Investment for UWWTD compliance has been largely concentrated in larger cities and towns. As a result, many small agglomerations (those between 2,000 and 10,000 p.e., and below) have had virtually no access to investment for UWWTD compliance over the last decade (except for some limited funding from PNDL and PNDR). Small local operators (Communes and SRL) have had limited access to investment financing in the past, and currently can only access limited PNDR funds with an allocation which is well below the needs. The push to establish creditworthy public utilities has also resulted in reducing the incentives for ROCs to take over more rural WSS services, because doing so often reduces their operational performance and financial viability (especially in the overall context of demographic decline and rural outmigration). One of the key rationales for the regionalization reform was to facilitate expanding access in rural areas – lowering the costs through scale economies, addressing local capacity shortages and promoting cross-subsidies at county/regional level – but, although this achieved some early successes, the current model is now having the opposite effects. ROCs do not try to expand in low density rural areas with huge investment needs; considering the many associated risks, ROCs are showing less and less appetite for further aggregation: the regionalization process is stalled.

111. A still ongoing technical assistance carried out by EBRD²⁶ has been looking at potential options to help the aggregation process and further consolidate the sector. The report²⁷, which is still at draft stage, underlines that there is no “one size fits all solution” for completing the regionalization process. It suggests several ideas including merging of existing ROCs, expanding the most efficient ROCs beyond counties’ limits, increasing the incentives for local authorities to delegate to ROCs (or even make it mandatory), and improving the governance of IDAs including voting rights to facilitate decision making. As mentioned above the regionalization process must be completed and all agglomerations above 2,000 p.e. should be served by a ROC if compliance is to be achieved within the indicated resources and timeframe (see scenario explanations for further details).

6.4 Dealing with resistance from customers to connect

112. **Addressing resistance to connect and affordability issues are key to reduce access gap and increase both water and wastewater connection rate.** Connection issues were not specifically identified as a major compliance obstacle for the initial plan, but they can be considered as part of the overall investment process challenges. If people do not connect to newly built infrastructure, sustainability of WSS assets and operators will be seriously jeopardized, not to mention potential return of grant money since the financed infrastructure do not deliver envisaged benefits. Resistance to connect houses to collecting systems seems to be increasing and is becoming a major challenge for UWWTD compliance. Rural and small-town population is refusing to connect to both piped water and sewerage networks. Affordability constraints have been the most common reason for opposing connection, because of both the one-off cost of connection and the cost of paying recurring bills, especially in context of ever increasing WSS bills nationwide (WSS tariffs have increased 5 to 10-fold since 2000). This situation is not just affecting UWWTD compliance, but also the financial health of WSS utilities as they end up operating newly built networks with a lower connection density than planned. Such a resistance is largely due to unmatched expectations between what the UWWTD requires and what some Romanian households want. A study carried out by the WB under the Danube Water Program showed that 89 percent of Romanian households who have flush toilets but not a sewerage network connection do not want any change (much more than in any other Danube country). Those who indicated using pit latrines, signaled a desire for change, but indicated that they really want an access to flush toilets, not a connection to collecting system and the associated costs.

113. The issue of affordability for the poor of connecting to WSS networks – both for the one-off connection cost and future recurring bills, could be addressed through targeted subsidies. Contrary to many other EU countries, there is currently a working financial support or subsidy scheme in Romania to help poor households defray the cost of connection to WSS networks, and/or help them pay their WSS bills. Considering that Romania has the largest income disparities amongst EU countries, the mechanism for introduction of social WSS tariffs for the poor, enabled by the WSS legislation since 2015, should be developed with priority, especially as WSS tariffs are expected to continue increasing due to compliance investments. The affordability threshold used by ANRSC for setting tariff levels for each ROC is based on average disposable income – a misguided criteria that fails to protect the poorest households. Many other EU countries (Spain, Italy,

²⁶ Under the EU Technical Assistance Operational Program 2014-2020.

²⁷ Report on Strategic Options for the Romanian Water Sector Consolidation and Development 2020-2035.

Portugal, France, Belgium, Greece, Malta and England) have valuable experiences with putting in place social water tariffs for the poor, which they did largely in reaction to growing affordability gap due to rising tariffs for UWWTD implementation. In the special context of Romania (rural poverty, social habits, vulnerable groups), such subsidies may have to be combined with parallel programs (communication and financial help) to promote the installation of flush toilets in households' premises. In parallel, there is also a need for stricter enforcement of connection obligations by WSS operators. The obligation to connect to centralized systems was reinforced in 2015 through changes to the WSS Law, but this delivered little results in practice, as utilities are encountering continuous implementation difficulties, including doing inspections and imposing fines to households who refuse to connect. Norms of application should be developed at central level to provide guidance to WSS operators for this challenging and sensitive task. This is paramount if the Government of Romania wants for all the ongoing WSS investments to provide the required results.

6.5 Rethinking the WSS financial framework

114. **Innovative financing options will have to be explored to bridge the financing gap in small agglomerations, and enhanced institutional and technical capacity will be needed to ensure a high absorption rate of EU funds.** Innovative financing options should be explored to bridge the identified financing gap and enhance institutional and technical capacity to ensure a high absorption rate of EU funds. Since 1996, national investment programs have been the backbone of WSS reforms, with EU grant funding being by far the main financing source and about half going to wastewater collection and treatment. A total of 4.1 billion Euro were provided from SOP in the programming period 2007–2013, and LIOP allocated 4.1 billion Euros for 2014–20 for ROCs (2.4 billion Euros for wastewater collection and treatment). In addition, public financing from the central budget under the National Program for Local Development (PNDL) allocated 8.61 billion RON (about 1.9 billion Euros) to WSS investments for 2015–2019, to which must be added the National Program for Rural Development (PNDR, under the Ministry of Agriculture) which allocated about 0.34 billion Euros for 2014–2020 to finance WSS investments in agglomerations below 10,000 inhabitants.
115. Absorption of EU funds for WSS investments has been slow. While a key bottleneck for investments under SOP 2007–13 was the lack of institutional capacity in the newly created ROCs, other issues have continued to affect the implementation of LIOP 2014-20. The local construction industry became a serious bottleneck, due to limited capacity and competition of other sectors, while foreign contractors did not demonstrate significant interest in delivering WSS investments in Romania. Also, investments financed under national programs (PNDL) follow different rules and were not properly coordinated within the Master Plans with LIOP investments. National procurement law and procedures proved cumbersome and time consuming.
116. Financing of WSS investments in rural areas not served by ROC has been largely insufficient – and will have to be increased significantly. These areas represent a large portion of the Romanian population, and are also where UWWTD compliance and closing the piped water access gap have been proving the most difficult. The 2017 WB household survey on WSS in rural areas showed that half of the communes surveyed had made zero capital investments in WSS services in the past year, and more than $\frac{3}{4}$ named the lack of investment funds as their main issue. The PNDL program provides significant investment

funds for local authorities, but needs revisiting. Only a small portion of small local WSS operators appear to be benefiting from it, and there appear to be significant regional discrepancies for funding allocation. Amongst innovative options to close the financial gap, especially in poor rural areas, the introduction of a new national wastewater compliance charge could also be explored. These are in place in France and Spain, and have proved of crucial importance in helping these two countries carry out massive investments to comply with the UWWTD. In Romania, such charge could be of a small amount per customer but, being levied over all WSS bills in the country, could generate significant additional funding to the sector. The proceeds could be allocated to a special fund to finance UWWTD compliance and closing the piped water access gap in poor rural areas – which currently have the biggest needs and the less funding available. This would help spread the compliance cost at national level, building on the solidarity principle. For instance, even a modest charge of 0.2 RON per m³ (about 0.04 Euros per m³) could generate an additional 120 million RON per year²⁸ for the WSS sector i.e. more than 250 million Euros over 2021-30.

117. Another option to explore for accelerating investments in wastewater treatment plans would be the recourse to Build-Operate-Transfer (BOT) schemes in partnership with the private sector. In Europe, BOT schemes for WWTP have been used in several countries, including France and Spain but also Scotland where the public utility Scottish Water has developed most of its WWTPs under BOT schemes, including for large cities such as Glasgow and Edinburgh, an arrangement that has worked very well over the last two decades. The turnkey approach provided by BOTs have multiple benefits that could be very valuable considering the current challenges faced by Romania for UWWTD compliance. First, it would allow accessing private financing for some wastewater treatment investments. Second, the private concessionaire takes all construction risks and has therefore strong incentives to ensure that the new plant is commissioned in time and avoid construction delays, and there are no opportunities for claiming cost overrun. Third, during the operational phase, the risk of non-compliance for not meeting effluent quality standards is passed to the private sector. In Romania, this could be used for smaller WWTPs that have still not been built, and which could be grouped conveniently together through regional contracts.

6.6 Developing a full-scale national WSS strategy

118. **In view of the analysis outlined before, a full-scale national WSS strategy needs to be developed urgently, to unlock the current deadlocks and establish a better environment for UWWTD compliance.** This strategy shall identify the set of measures necessary to address the current policy issues, especially closing the financial gap and ensuring that both compliance and inclusion are achieved over the next decades in a sustainable manner. At the minimum, the current WSS services delivery model ought to be revisited to improve inclusion and establish a more supportive environment for UWWTD compliance, while at the same time safeguarding the valuable achievements in commercialization of public utilities.
119. The national WSS strategy shall also look for opportunities for the development of greener solutions in the Romanian WSS sector. It should explicitly explore how to promote a more circular economy in WSS services, such as developing a local industry for sludge management of individual sanitation systems, reed bed filters for small

²⁸ Based on total billed volume nationwide for ROCs of 600 million m³ per year (2015)

communities, biogas generation and treated wastewater reuse in agriculture. This may allow Romania to access more EU funds under the new EU Green Deal. This would also allow looking at WSS services and UWWTD compliance in a broader manner, addressing broader aspects such as integrated water resources management (improving investment planning at river basin level, to promote water security), urban flood protection, as well as transversal issues such as national procurement, urban planning and the widespread institutional weaknesses.

120. It will be essential that this national WSS strategy be developed through extensive consultation of all actors and stakeholders. In essence, it is important to view this strategy as not just a report, but a process whereby actors and stakeholders shall be able to discuss openly the various challenges and blockages of the WSS sector, and identify solutions that can be supported by a wide consensus. In this context, an “institutional champion” will need to be identified, since the WSS sector is currently affected by fragmentation between various ministries, as well as between central government vs. local authorities.
121. The upcoming report “WSS Strategy Outline” under this RAS (Output 7) will propose detailed framework for the development of such a national WSS Strategy, with a more comprehensive analysis of challenges and blockages, along with proposals on how Romania can address them and develop a full scale national WSS Strategy covering priority actions for short term, medium term and long term. Special attention will be paid to lessons learned from global and European experience – for example Portugal, with its WSS sector reforms to comply with the UWWTD, as the country had many similarities to the current challenges in Romania 20 years ago (fragmented operators, low access, high dependence on EU grants for investment, not fully fledged regulator), which were successfully addressed through an extensive planning with successive national WSS strategies and their implementation.

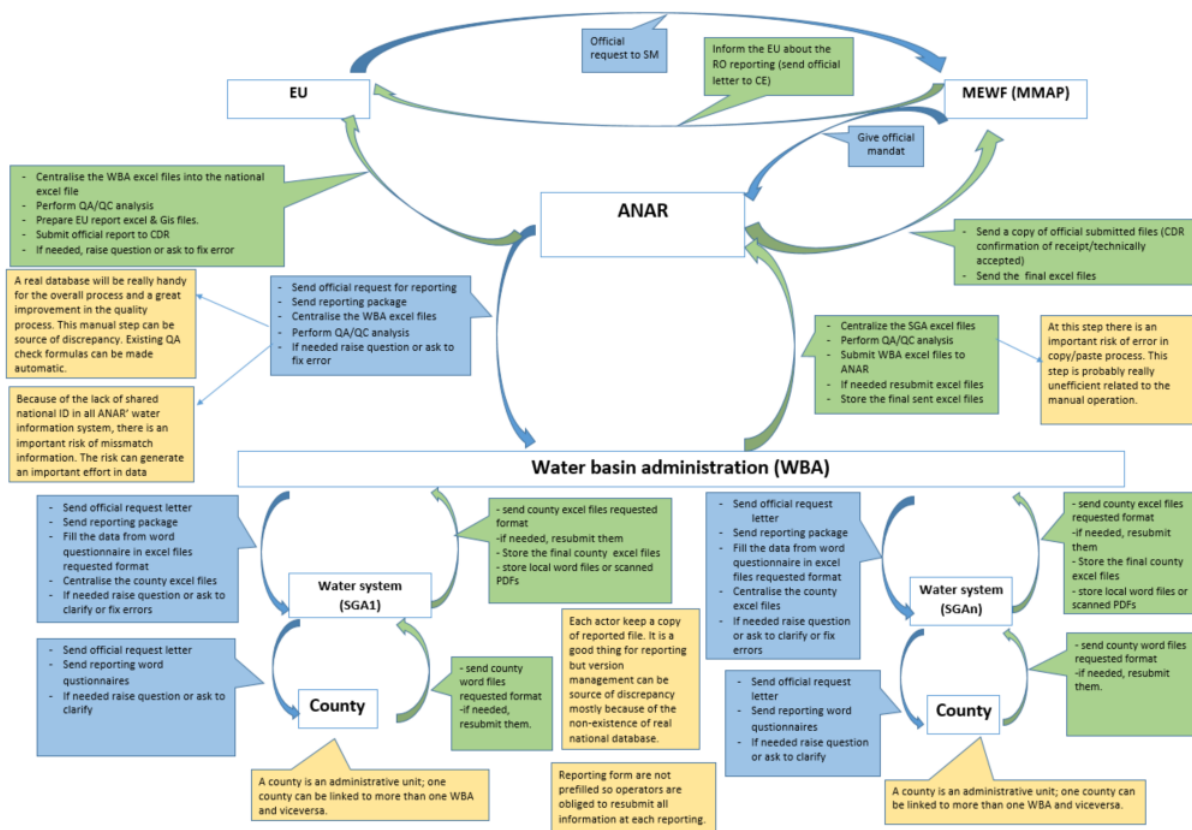
Chapter 7. **Step 5: Monitoring, evaluation and adjustment of the plan**

7.1 Improving the current national monitoring and reporting processes and tools

122. As mentioned under **section 1.2**, the Bank is supporting the MEWF to assess the existing national UWWTD reporting systems and their compatibility with the SIIF requirements. As a result, the team will propose improvements to data collection, verification and reporting process as well as the development of an IT system to automatize, enhance quality and minimize current manual work, which is prone to mistakes (under Outputs 5 and 6 of the current RAS). While this technical assistance is still ongoing, some preliminary findings are shared below to inform the proposed monitoring and evaluation mechanism for the Implementation Acceleration Plan.
123. The existing data flows are organized by ANAR using weak solutions²⁹: MS Excel/Word/Paper formats/scanned pdfs. On the one hand this has the advantage of being adaptable to any data provider and keeping track (copy) at all levels of the data collection chain. On the other hand, it has significant disadvantages, which go from lots of double entries, manual operations for data checking, risk of errors in the chain, and repetition of these when corrections are not shared with the producer/data originator (and reappear in the next report), difficulty to reuse data or use of different versions in different data flows or by different services of ANAR. Developing and maintaining a good quality information system is crucial not only in terms of UWWTD reporting but also to monitor ongoing efforts and their effect on compliance.
124. In term of process, the responsible institutions interact via exchange of official paper letters and/or MS Word and Excel files or in some cases scanned pdfs, with copies kept at all levels. No shared information exists, even with restricted/controlled access or internally at ANAR/WBA/SGA. Actors are not uniquely identified, and more generally shared reference lists and permanent information are recollected with each exercise, while no secured database system exists. As it can be seen from the scheme below, the process involves a significant number of steps, mostly based on manual handling, paper documents and regular collection of same information. This requires the repetition of many checks of the same information all along the data collection chain. The resources used are simple personal computer software managed by thematic staff, and some GIS checks involving GIS specialized staff using ArcGIS software. The collection involves staff at all levels of the data collection chain from county to SGA/WBA and ANAR central level.

²⁹ From an IT perspective, these formats only allow for a rudimentary input control, a low level of traceability and do not have referential integrity constraints system.

Figure 29: National and EU "technical" reporting scheme



Legend:

- blue box: descending request sent to ANAR, WBA, SGA, county
- green box: ascending answer

Source: ANAR, 2020

125. The above scheme is centered solely on the UWWTD reporting; it does not focus on the data unrelated to the UWWTD reporting, which is also gathered through data collection and necessary for ANAR for other purposes (national reporting requirements, decision making, inspections, etc.). The ongoing efforts to improve the reporting process and develop a modern IT system (which are not yet completed) and the challenges identified by the Bank team during data collection for the preparation of Outputs 2, 3 and current report, have led to the recommendation of having a separate monitoring and evaluation mechanism for Implementation Acceleration Plan. A proactive monitoring approach is proposed below, which is different from the UWWTD reporting cycle .

7.2 Regular monitoring and reporting on the Implementation Acceleration Plan

126. The goal of monitoring and evaluation (M&E) framework is to evaluate the progress of the Plan implementation and allow for regular information updates for decision making and taking proactive actions. The proposed key performance indicators (KPIs) are structured around the identified implementation steps described in **section 2.5**. As it became clear that the existing reporting process is not supported by a specialized IT tool the team will propose simple, easy to track indicators, that should not overburden information generating institutions and help the implementation committee to report on the progress of the plan.

127. M&E should be a continuous activity during the period of implementation of the Plan. M&E arrangements have the purpose of timely identification of problems, potential successes and the readjustment of the Plan and its measures. Process evaluation will provide regular information to decision makers whilst the evaluation for results will provide information to decision makers, potential funding bodies and local stakeholders regarding the successes and necessary changes.
128. Monitoring plays a key role in assessing and reporting progress on the Implementation Acceleration Plan. It ensures that the IAP is carried according to planification, both strategic and operational and that it is delivering the expected outputs, results and outcomes. To do so, it should be designed to provide stakeholders at all levels, with transparent, credible and regular information regarding progress and delays, thus allowing to identify early on any issue or deviation from the Plan. Monitoring process of the Implementation Acceleration Plan should be *regular, specific, results oriented* and follow a *formalized* monitoring procedure.
- **Regular:** institutions involved in the IAP should provide a regular reporting detailing achievement regarding objectives they were assigned.
 - **Specific:** institutions involved in the IAP should use the same set and source of data to monitor and report improvements and progress made regarding the objectives they were assigned.
 - **Results oriented:** progress achieved for each objective shall be clearly detailed, compared, and assessed against targets forecasted in the IAP for short, medium and long terms.
 - **Formalized:** institutions involved in the IAP must follow a clear monitoring mechanism.
129. Building upon the principles mentioned above, the following indicators are proposed in order to monitor the progress and delivery of the Implementation Acceleration Plan.

MONITORING AND EVALUATION FRAMEWORK (BASED ON SCENARIO 3 RESULTS)

Name of the indicator	Further explanations	Reporting frequency	Data source	Responsible institution	Baseline	Target value	Milestone 2023	Milestone 2026	Milestone 2029	Milestone 2032	Milestone 2035	Milestone 2037	End target 2039
Step 1: Optimization of compliance investments													
Adoption of the methodologies	Following-up on the recommendations of the Bank team	One off	MEWF	Inter-Ministerial Committee on Water	0	1							
Implementation of methodologies	For project preparation and financing	One off	MA	MEF	0	1							
	For UWWTD reporting	One off	ANAR	MEWF	0	1							
Legal changes with regards to IAS	To allow for different types of IAS and establishing a proper process	Semi-annual	MEWF	Inter-Ministerial Committee on Water	0	1							
Compliant agglomerations		Annual	ROCs	MEWF	14	1041	154	283	342	549	1041	1041	1041
Step 2: Prioritization of investments													
Financing only for agglomerations above 5,000 p.e.		One off	ROCs	MEF, MPWDA	0	1							
Total compliance investments (RON)	Recorded since the adoption of AIP	Annual	ROCs	MEF, MPWDA	0	14.3 bill.	7.0 bill.	9.3 bill.	11.8 bill.	13.9 bill.	14.3 bill.	14.3 bill.	14.3 bill.
Total adjusted sustainability investments (RON)	Recorded since the adoption of AIP	Annual	ROCs	MEF, MPWDA	0	78.3 bill.	9.5 bill.	18.8 bill.	27.9 bill.	35.4 bill.	44.3 bill.	53.9 bill.	62.1 bill.
Soft Measures (RON)	Recorded since the adoption of AIP	Annual	ROCs	MEF, MPWDA	0	2.0 bill.	0.2 bill.	0.5 bill.	0.7 bill.	0.9 bill.	1.1 bill.	1.3 bill.	2.0 bill.
Step 3: Establishment of financing plan and sustaining investments													
EU funds utilization (RON)	Recorded since the adoption of AIP	Annual	MA	MEF	0	17.6 bill.	8.1 bill.	13.0 bill.	17.6 bill.	17.6 bill.	17.6 bill.	17.6 bill.	17.6 bill.

Allocation of national resources (RON)	Recorded since the adoption of AIP	Annual	MEF, MPWDA, MEWF	MF	0	3.5 bill.	1.8 bill.	2.6 bill.	3.5 bill.	3.5 bill.	3.5 bill.	3.5 bill.	3.5 bill.
ROC own investments (RON)	Recorded since the adoption of AIP	Annual	ROCs	IDAs	0	56.8 bill.	6.9 bill.	13.0 bill.	19.4 bill.	29.1 bill.	38.6 bill.	48.4 bill.	56.8 bill.
Step 4: Other measure to accelerate investments and improve sector performance													
Incentives for local authorities	To achieve UWWTD compliance	One off	ROCs	MEF, MPWDA, MEWF	0	1							
Extension of ROCs service area	To cover all agglomerations above 2,000 p.e.	Annual	ROCs	IDAs	75%	100%	80%	90%	100%				
Resolving the connection issue	To increase connection rate and access to services	One off	ROCs	MEF, MPWDA, MEWF	0	1							
Improving sector governance and mechanism to coordinate efforts and resources		One off	MEF	MEF, MPWDA, MEWF	0	1							

130. As mentioned, regular monitoring and reporting on the IAP are essential for its transparency and credibility. This will ensure that progress is measured accurately, and information is received and reported internally and externally in a timely manner, so that any deviation from the plan or issues during its implementation are identified early on and duly addressed by the responsible stakeholders. Since the Implementation Acceleration Plan is a living and effective document, annual or more frequent reporting as indicated above should be done for the implementation committee, which will prepare reports.

7.3 Designation of responsibilities for monitoring and reporting

131. Romanian authorities bear the responsibility to monitor and report to European Commission (EC) on compliance with EU water directives. Ministry of Environment, Waters and Forests and ANAR are responsible for performing evaluation and monitoring activities for policies which fall under this responsibility. ANAR is the key actor in the organization of reporting actions related to wastewater management being also in charge of the UWWTD report for Romania and organizing related data-collection chains and acting as final data recipient. Besides ANAR, a series of actors hold key responsibilities with different compliance components of the Directive, therefore an extended set of actors will be responsible with implementation and provision of data for the acceleration plan.

132. **Governance** of the Acceleration plan is therefore proposed to be organized on two streams: strategic and operational.

i) **Strategic Implementation Committee**

- a) **Justification:** Communication and collaboration between key stakeholders involved in the process is very important for the success of the plan. The Strategic Implementation Committee (SIC) will be responsible for assessing measures implementation progress and evaluating outcomes and compliance. The Strategic Committee will be coordinated by MEWF and will include representatives from key actors with roles in the implementation of AIP, actors that will be nominated by their institutions to be part of the structure. Given the complexity of data needed for the M&E process, the Committee should help with exchange of relevant information between all actors involved and with the production of data needed for progress monitoring. The committee needs also to be responsible to review the analysis of results evaluation and annual reports, and should make decisions for remedies and improvements if the process is delayed or affected in some way.
- b) **Composition:** The Committee will include high-performing mid to senior level representatives from those organizations that are essential to the sector, namely – MEWF, MPWDA (ANRSC), MEF, MF, ANAR, Associations of Municipalities/Cities/Communes, Operators and Public Service Business Associations, ARA. The MEWF should preside the committee in its capacity of institution responsible for reporting on UWWTD implementation results. The State Secretary of the ministry responsible for the WSS sector is the usual proposal to be in charge of the SIC and the plan, but it should be given sufficient authority to persuade all actors to implement what was agreed or remedied later on.
- c) **Attributions:** The committee will organize biannual meetings, to discuss Progress and Review the Annual Progress Report. The secretariat and logistical

arrangements of the Committee will be assured by MEWF/ANAR. The committee will:

- Monitor the implementation of identified measures and track the associated indicators;
- Review the progress on the AIP and organize detailed evaluation every 4 years;
- Following the evaluation through the targets set in the plan, if necessary, propose adjustments/corrective actions to the identified measures, responsibilities, indicators etc.
- Offer performance data to ANAR for the preparation of the annual progress report.

ii) Operational Monitoring Structure (ANAR)

- a) **Justification:** for hands-on monitoring and evaluation of the acceleration plan, a specialized team will collect data, aggregate and prepare reports and evaluate progress. A project manager, with additional allocated resources will be responsible in ANAR of collecting regularly information regarding implementation of the AIP and reporting.
- b) **Composition:** According to the current organizational chart, the Department for Management of Water Resources and Development and the Investment Department from ANAR, both subordinated to the Deputy Director General, could be responsible for the Acceleration Plan monitoring and evaluation operations. Other departments in ANAR, such as the Investment Promotion and Promotion of EU Programs and Projects units, should help, depending on the data collection needs. The task force is accountable to the Director General, with delegated managing attributions to the Deputy Director General.
- c) **Attributions:** The structure will be permanent and at least one staff member, specialized in Monitoring and Reporting will be a full time responsible for the task. The M&E structure will:
- Collect information from data providers and discuss challenges with responsible institutions;
 - Summarize progress per each priority;
 - Fill in the indicator matrix;
 - Communicate and collaborate with external institutions;
 - Prepare the Annual Progress Report;
 - Provide technical support to the Strategic Committee meetings.

Data Collection Process. Indicators will be collected by using two categories of sources: i) collection of secondary data from the national and international official statistical institutions such as Romanian National Institute of Statistics or/and EUROSTAT and ii) collection of primary data from ANAR reporting and information system in place at the moment for UWWTD compliance and from institutions responsible with implementation measures. Data collected from these sources, both external and internal statistical sources will provide the factual basis for the preparation of the Annual Progress Report. If the adoption of another standard format to centralize the process and collect from all institutions is decided, this should be discussed and agreed within the by all partners and based on inputs from the National Institute of Statistics. The questionnaire should include key technical and financial indicators measuring annual or biannual progress of the plan measures. ANAR/MEWF will prepare the Annual Report which will be discussed and

approved by the Strategic Committee. Indicators will be collected from various sources, according to the **Table 24** below.

Table 26: Indicators and type of data

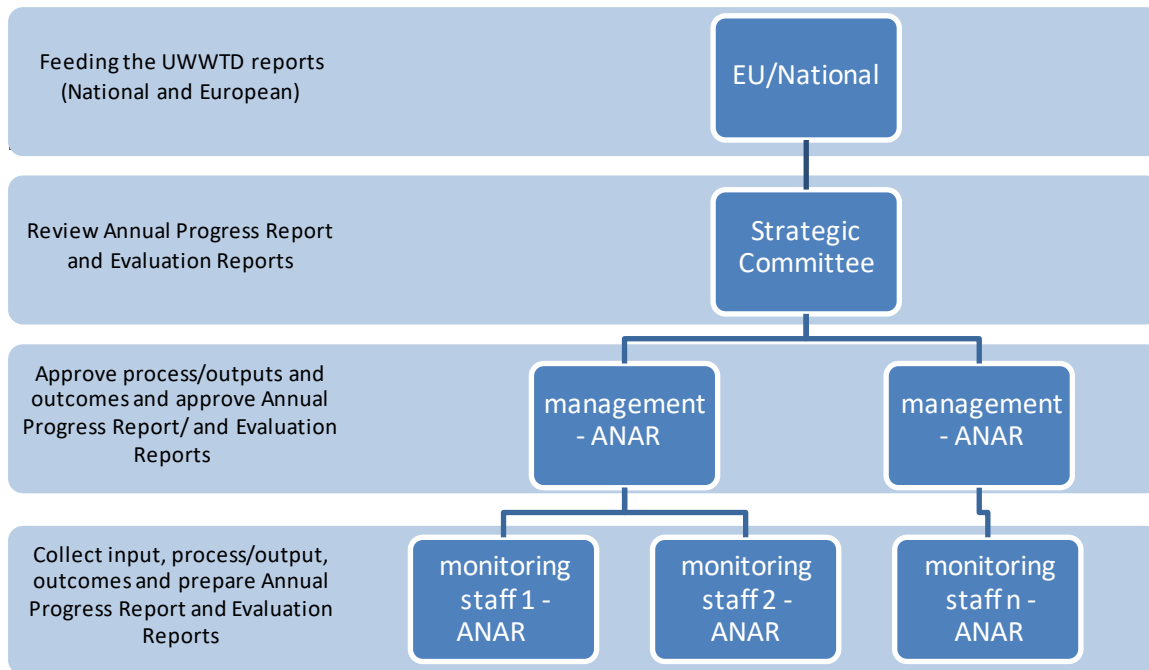
Source	Description	Quantitative	Qualitative
Standard Forms distributed by ANAR each semester for UWWTD reporting purpose or additional sheet	Data collected from authorities directly responsible with Implementation Acceleration Plan	x	x
Administrative Data	National Institute of Statistics, other sources of the Ministry of Environment, Waters and Forests, Government, Local Public Administration	x	
Expert judgement	Collecting opinions from experts with water related expertise		x
Legislation	Checking if relevant legislation has been adopted and changes the framework for Plan		
Surveys	Surveys with Operators/Municipalities/Population	x	x
Focus groups	With other institutions and key stakeholders such as regional and local operators		

Depending on the availability of data, a decision to organize ad-hoc data collection could be taken. Expert surveys and water operators' surveys are very good data sources to complement the data collection process based on ANAR monitoring system and indicators from the National Institute of Statistics and other national and international official info providers. However, these will be instruments for the purpose of evaluating the plan.

The data will be reviewed by the Strategic Implementation Committee, the accountable body for the information collected. Based on the progress reports prepared by MEWF as the responsible institution, the committee will use the outcome indicators to analyze the results and expenditures that have helped the Implementation Acceleration Plan to reach the targets of the annual/multiannual forecasts. The financial reporting of the Acceleration Plan will be utilizing the informational support provided by different annual planned and executed budgets. Ideally, for the sake of data coherence and consistency, budget execution data will be collected by each institution from the Ministry of Public Finance, State Treasury's financial information system, and reported to MEWF/ANAR through the standard reporting formats. This operation could also be organized based on an annual information exchange process between MEWF and MPF. Complementary, outputs and outcomes, as well as context indicators, will be collected from the National Institute of Statistics, which is in charge of the population census and the Romanian answer to the Eurostat/OECD Joint Questionnaire on water statistics which includes a specific section on wastewater. NSI could be the provider of other relevant data for the wastewater topics.

The logic of monitoring and reporting process is described below. According to this process, monitoring and evaluation operations are managed by ANAR and will be based on the data collection and reporting for the national information system on wastewater, which includes monitoring information, implementation program for Art. 17, yearly national report on the Directive and EC reporting on UWWTD every two years.

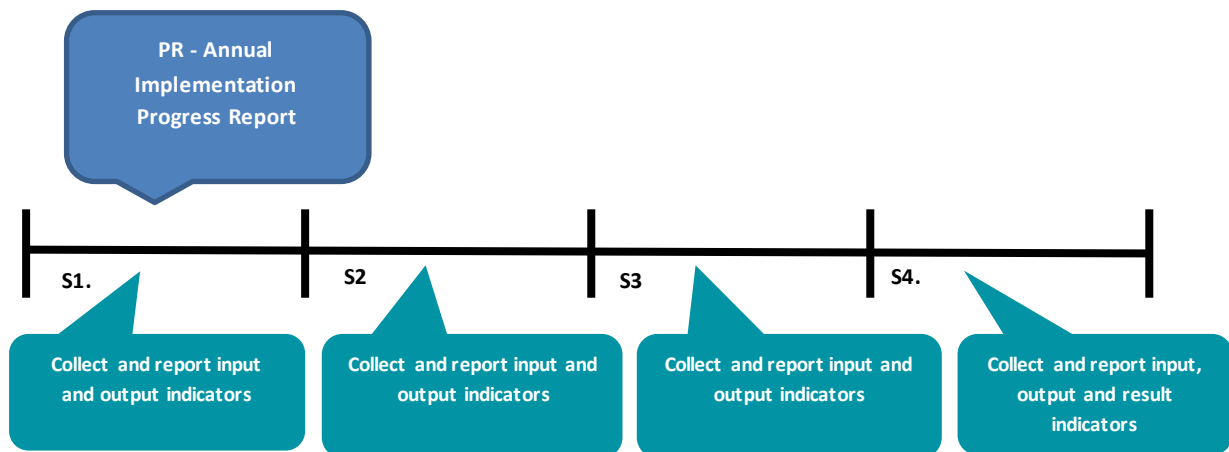
Figure 30: Reporting process



133. Frequency of monitoring should be intrinsically linked with the availability of data. For inputs (budget related indicators) and outputs (spending or physical progress), annual data is available. For the outcomes (extension of ROC service area for example) data will not be available annually. Therefore, monitoring the progress of objectives and measures by MEWF/ANAR should be performed continuously for output and input indicators, while outcome indicators should be measured yearly or for a longer period (2-4 years), depending on the feasibility of having frequent data for different outcomes.

134. National and EU reports should be improved as a consequence of the regular monitoring. The **monitoring and evaluation** of the Plan will be performed in parallel with the official national reporting commitments and data streams will be partly similar, for the outcome indicators. Data from the plan monitoring will be feeding data for the annual preparation of the National Directive Report and for the biannual EU UWWTD report. Technical and financial data will be collected in order to prepare the reports. ANAR is already collecting the financial contributions for discharge of wastewater into the aquatic environment from all dischargers, statistical data from NIS, emission data from environment agency and data on the water operators from the regulatory authority for public utilities services (ANRSC). Monitoring efforts will be also consolidated in the annual progress report, a technical aggregation of results and indicators, per each objective and key measure according to the acceleration plan.

Figure 31: Annual progress report process



135. **The Annual Progress Report** is an overall summary of ongoing activities and will present the status of the indicators and how the targets are met. Collection of data from various institutions will be organized, based also on the support of the Strategic Implementation Committee. Monitoring experts will be allocated to monitor outputs and results from key objectives/measures in the plan and they will prepare quarterly factual reports. An annual report will be prepared in the first semester of the year and will be consulted in a Strategic Implementation Committee meeting. The report should focus on the problems identified and resolved, the critical issues that require attention and the activities planned for the next reporting period. The data collection form for the monitoring of acceleration plan progress, as well as the annual progress report templates, will be prepared and disseminated by ANAR, in order to ensure the systematic collection of necessary information. The progress report will be prepared in a draft format, discussed and approved by the Committee; thus, every key stakeholder is accountable for the implementation process success.

136. **Evaluation.** The evaluation component of the AIP has a twofold purpose: to capture performance against objectives and to offer the Ministry and Romanian stakeholders sufficient information regarding the need to change, modify or improve the planning processes. During the implementation cycle, or as needed, the plan will be subject to periodic reviews. The evaluation of the plan aims to measure the overall success of the implementation for a mid-term period. It will focus on the progress of the implementation and analyze the causes of setbacks, possible remedies and improvements.

137. **Process Review** will be performed every 3 years with the goal to check whether the process is implemented according to what was planned, it is timely, it captures possible delays and also limitations in data collection and key stakeholders' involvement. It will answer the questions like:

- Is the data collected reliable?
- Have all indicators been collected?
- Is the calendar respected?
- Have all institutions contributed to the progress?
- Are there responsible for all planned activities?

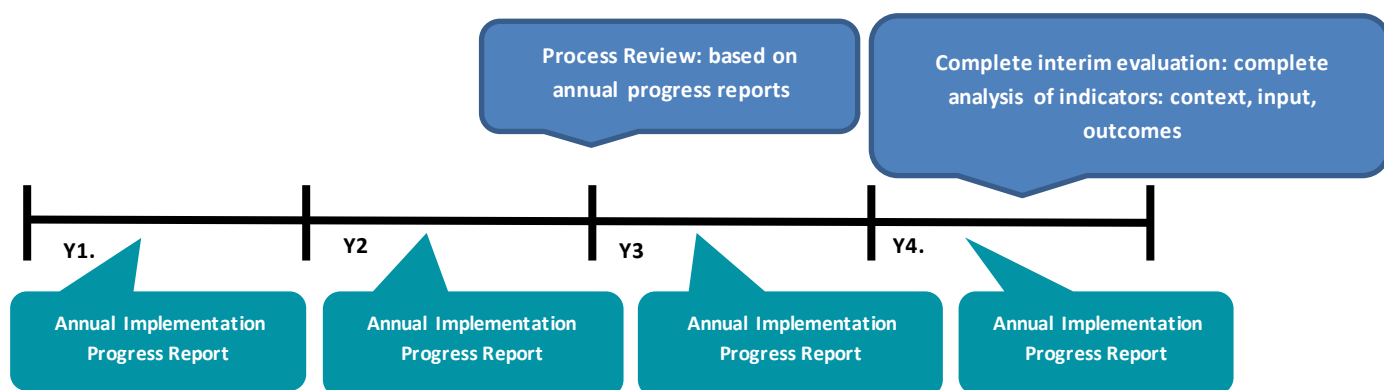
The Process Review Report will inform on the plan monitoring and reporting vulnerabilities, based on a log frame analysis and a critical analysis of the key AIP related management processes and functions.

138. **Interim Evaluation** will be performed every 4 years. Evaluation will respond to questions such as: i) is the plan generating the expected results? ii) are the interventions still relevant in a continuously changing environment? iii) is spending efficient? iv) is the intervention sustainable?

For the evaluation process, data from the annual progress reports as well as recommendations from the Process Review Report will be utilized. The evaluation will be guided by 4 evaluation criteria:

- Relevance
- Effectiveness
- Efficiency
- Sustainability

Figure 32: Interim evaluation process

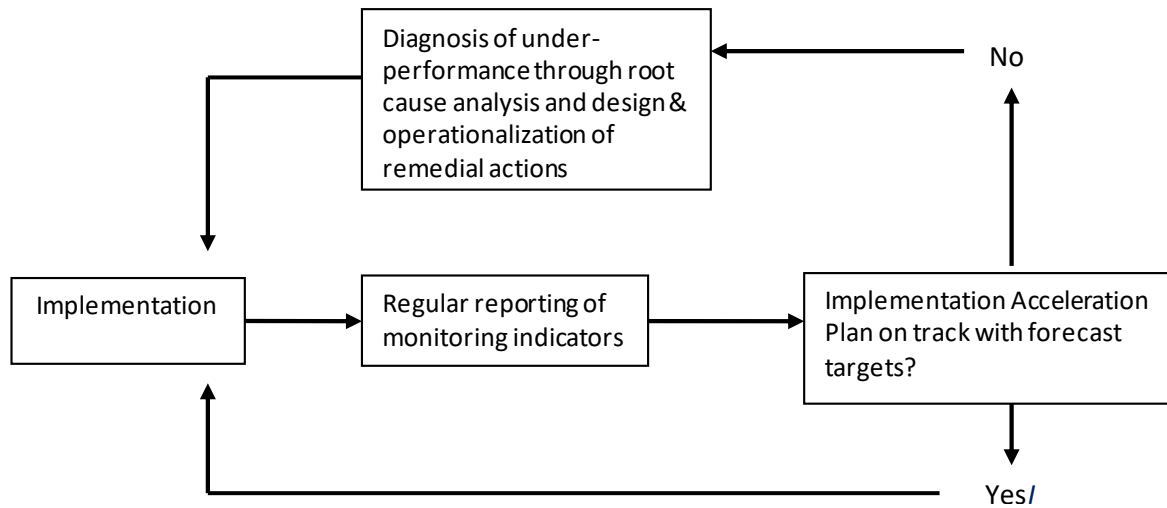


139. The evaluation design as well as the Evaluation Reports will be discussed and approved by the Strategic Committee. Resources should be allocated to ANAR to perform or outsource the evaluation. Following the observations and findings of the evaluation, the plan may be reviewed and adjusted as necessary.

7.4 Opportunities for adjustments during the implementation process

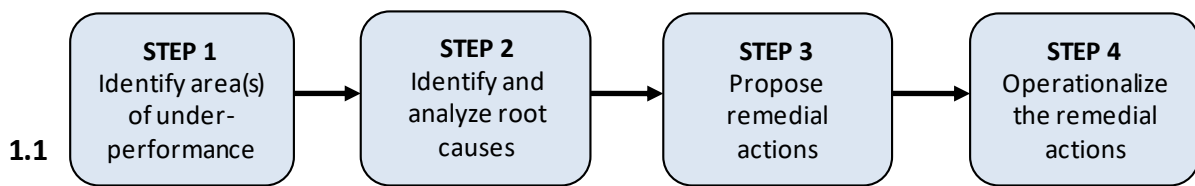
140. Every Action/Implementation plan, like this one, is a living document, which requires monitoring, regular reviews, adjustments and fine-tuning in order to achieve its planned results. As mentioned above the team is proposing that every three years, a more in-depth review of the Implementation Acceleration Plan is conducted to allow for adjustments or remedial actions if necessary. The AIP could be used for the required reporting of every two years to EC under Article 17, so this review could be adjusted to coincide before the reporting exercise. The process of this in-depth review is described below.

Figure 33: In-debt review process



141. This in-depth review (to be prepared by the Implementation committee) should highlight the progress made to achieve the identified milestones and identify remaining gaps. The document should assess how effective the Acceleration Implementation Plan has been to achieve milestones and will identify areas of under-performance (step 1). A diagnosis to investigate the root causes of this under-performance should then be conducted (step 2). Remedial actions should be proposed (step 3), and adjusted responsibilities and required resources to operationalize remedial actions should be formulated (step 4).

Figure 34: IAP revision steps



1.2

Step 1 – Areas of under-performance

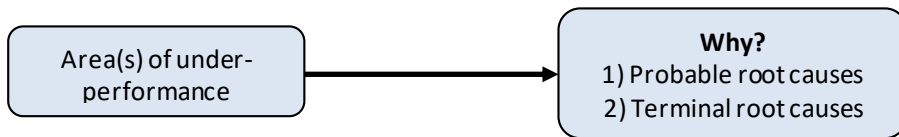
142. Areas of under-performance of the AIP should be appraised against the progress as captured by the indicators. Additional information can also be used (for example from the developed IT system for UWWTD reporting) to provide the most up to date picture of the status of play.

Step 2 – Root cause analysis

143. A root cause analysis (RCA) is a systematic process for identifying root causes of problems or events and for responding to them. An RCA is based on the idea that effective management requires more than merely putting out fires for problems that develop – it requires finding ways to prevent them.

144. An RCA should be conducted to highlight underlying causes that lead to underperformance and prevent the Implementation Acceleration Plan from achieving its objectives. For each problem, logic trees help determine the probable root causes, identified by asking why; and the likely terminal root causes given available information.

Figure 35: Root cause analysis



145. The table below gives examples of probable root causes and terminal root causes for potential under-performance areas of the AIP.

Table 27: Probable root causes

Areas of underperformance	Probable root causes	Terminal root causes
Allocation of national resources	Budgetary constraints	MPWDA continues with its PNDL and no changes to align its objectives with the AIP are done
Extension of ROCs service area	ROCs have limited incentives to serve small agglomerations	IDAs did not transfer responsibilities to ROCs to serve agglomerations above 2,000 p.e. as well as achieving compliance

The results of the RCA will help formulate relevant remedial actions.

Step 3 – Remedial actions

146. Based on the area of under-performance and the associated RCA outcomes, a list of remedial actions should be defined. Remedial actions are not intended to modify the objectives of the AIP, but rather to propose actions needed to ensure that milestones/targets are achieved.

147. The design phase of these remedial actions should involve all relevant stakeholders, at national and local levels, as this phase is crucial to build consensus regarding the content and target of the action. This is a key step to promote and ensure buy-in by stakeholders in charge of delivering the remedial action outcomes.

Step 4 – Operationalizing remedial actions

148. The in-depth review will include an operationalization of remedial actions through the description of the following variables for each remedial action:

Table 28: Remedial actions operationalization

Variable	Description
Time frame	Detail the starting date and the end date
Technical area	Wastewater collection, wastewater treatment, IAS
Geographic area	Agglomeration, County
Operational steps	Step by step description of operational actions to ensure remedial action effective implementation
Implementation cost	Total cost of remedial action
Type of cost	One-off cost only; recurrent cost only; or both
Stakeholders responsible for the design, funding, or implementation of the action	Identify the stakeholders, whether national and/or local, who will design, fund and/or implement the remedial action
Funding sources	Tariffs (including Loans), Taxes, Transfers
Expected impact	Likelihood that the remedial action closes the Implementation gap. This expected impact can be assessed quantitatively or qualitatively.
Risk of failure	Qualitatively assessed as high, medium, or low. It corresponds to the risk that the remedial action fails to deliver its expected outcomes in the expected time frame.

Chapter 8. Conclusions

8.1 Why developing a new Implementation Acceleration Plan?

149. Romania's UWWTD Implementation Plan was adopted in October 2004 and became effective in 2007, targeting improvement in wastewater collection and treatment and full compliance with the requirements of the Directive by the end of 2018. Despite the significant WSS investments for the last 15 years (EUR 6.6 billion) and the sector reform implementation, compliance with the UWWTD continues to be extremely challenging. With the 2013 deadlines missed and an infringement case initiated for several agglomerations representing the percentage of the load that had to be collected and treated, as well as the potential risk that a second infringement case would be triggered for missing the 2015 deadline, it is extremely important to reconsider the UWWTD compliance approach. Currently, there is no strategic plan on what needs to be done to accelerate compliance and how much money are needed for Romania to achieve the Directive's requirements. Article 17 reporting seems like putting together information from ROCs (which have different approaches in understanding and assessing compliance needs) to compile a national file for the sake of reporting. Too many key institutional stakeholders like MEF, MPWDA and MEWF are having their own ideas and resources, while the lack of a common plan and efficient cooperation is delivering suboptimal results.

150. Having in mind all these challenges it is not surprising that the compliance situation in Romania is quite unsettling as demonstrated in the draft 10th UWWTD Implementation Report (reporting on compliance situation at the end of 2016):

- 26% of the wastewater load still needs to be collected (about 4,377,876 p.e.);
- 50% of the collected wastewater load still needs secondary treatment in line with the requirements of the Directive (about 6,038,171 p.e.); and
- 65% of the collected wastewater load from agglomerations generating >10,000 p.e. still need more stringent treatment (about 7,536,554 p.e.).

Reflecting on all these challenges, the MEWF, which is the institution responsible for compliance, decided to request technical assistance from the World Bank to review and update the Implementation Plan. While supporting the ministry in its efforts, the Bank team felt that there is a need for a different approach in the Plan preparation, which is proposed and explained below.

8.2 How can a new Plan be more successful?

151. During the stocktaking process it became obvious that compliance commitments have been missed by a significant margin. The challenges are not that a few investments did not materialize and hence a few agglomerations remained non-compliant. The figures quoted above are quite striking after more than a decade of significant investments in the Romanian WSS sector. However, the team discovered that a number of sector issues remained unresolved through the years: i) institutional and coordination challenges; ii) establishing an adequate policy and planning process; iii) lack of a national approach and proper baseline assessment; iv) incentivizing local authorities to participate in compliance process; v) utility aggregation and capacity building; vi) WSS investment process difficulties; and vii) lack of an adequate Financing plan, which led to the initial Plan delivery failure.

152. The Implementation Acceleration Plan cannot resolve all these issues, nevertheless, the proposed new approach addresses a significant number of bottlenecks by proposing a national compliance approach and proper baseline assessment; developing a plan to bridge compliance gaps; establishing financing plan for the required compliance investments; and proposing mechanism to monitor and evaluate progress. Other identified WSS sector issues like institutional and capacity challenges; improvement of infrastructure investment process; engaging local authorities and completing aggregation are also analyzed with recommendations proposed for further communication, discussion and agreement with Romanian sector stakeholders during the preparation of the WSS Strategy outline.

8.3 What is the new plan proposing?

153. This report is proposing a new approach in developing an updated UWWTD Implementation Plan. The document outlines an ambitious, yet a realistic, compliance acceleration plan, which is built around the following pillars: I. Optimization of compliance investments; II. Prioritization of investments; III. Establishment of a financing plan and sustaining WSS investments; IV. Other measure to accelerate investments and improve sector performance; and V. Monitoring, evaluation and adjustment of the plan.

154. While evaluating options for optimization of compliance costs, the ones that provide the best results are the development of methodologies for proper delineation of agglomeration boundaries, the calculation of pollution load in line with UWWTD requirements, and improvement of IAS in small agglomerations between 2,000 and 5,000 p.e., where no collecting systems and WWTP exist. The main results from the implementation of the methodologies can be summarized as follows: the total number of agglomerations, defined according to the new methodology for boundaries delineation is **1,041** compared to **1,870** according to the latest report of ANAR; the total estimated load generated by the new agglomerations is **14,342,256** p.e. compared to **20,236,565** p.e. based on the latest ANAR data. This is significantly reducing distance to compliance (targets) and hence investment needs for achieving UWWTD requirements. The new results from the SFP, based on prioritization of investments (see **section 4.1**) and financial modeling, are as follows:

- Compliance needs are **RON 29.7 billion (€6.2 billion)**, of which 25 percent are for UWWTD driven water investments and 75 percent for extension or new collection systems and new WWTP (with only a few cases of tertiary treatment upgrades);
- Sustaining compliance in Romania turns out to be even more challenging with investment needs for the next 20 years of **RON 77.8 billion (€16.4 billion)**, of which 61 percent are for maintaining and improving existing water infrastructure (for example NRW reduction) and 39 percent for maintaining sewerage systems and facilities;
- In addition, around **RON 2 billion (€0.42 billion)** will be needed for the next two decades for soft measures in the sector to encourage and help people to connect for example.

As mentioned above, the lack of an adequate Financing plan was considered as one of the main issues of the existing Implementation Plan, hence, the report is proposing a financial plan to cover the total identified investment needs and ensure the sustainability of the WSS sector in Romania. The plan is based on the MFD approach and combines various sources of funding and financing. Three alternative scenarios have been developed to test

and demonstrate their ability to deliver the desired UWWTD results over the next 20 years.

8.4 What scenario should the Government pursue?

155. This document demonstrates that if the optimization of compliance investments, the prioritization and funding of WSS infrastructure, the changes to the sector legislation, along with fulfillment of the additional measures to accelerate investments and improve sector performance are not implemented, compliance will not be achieved in the next 20 years. If partial measures are implemented (steps 1 and 2) as demonstrated in *Scenario 1: Business as usual*, UWWTD requirements will not be achieved in the next 20 years by 12 ROCs (covering 122 agglomerations). Scenario 2, where all funding sources are optimized in the most efficient way, presents much better results with all counties achieving compliance by 2039. However, this will require significant tariff increases as well as government compliance CAPEX support of around RON 2 billion (€0.42 billion). Yet again, in this Scenario (like in Scenario 1) less but still quite worrying amounts of sustainability investments of RON 31 billion (€6.5 billion) are deferred to the future, which will create significant WSS infrastructure performance and compliance risks. **Scenario 3 is what the Bank team recommends.** If the indicated water and wastewater investments in agglomerations above 5,000 p.e. are completed and existing IAS are improved in small agglomerations between 2,000 and 5,000 p.e., where no collecting systems and WWTP currently exist, Romania would achieve UWWTD compliance by **2035**. To sum up, if this scenario is implemented (along with the necessary decisions mentioned below), the required investments for compliance (**RON 16.2 billion/€3.4 billion**) and sustainability (**RON 77.8 billion/€16.4 billion, including soft measures**) are going to be **RON 94.5 billion (€19.9 billion)**, and compliance can be achieved in **2035**.

8.5 Required decisions to ensure a successful outcome

156. For the Scenario 3 results to materialize there is a need for a few difficult decisions to be discussed, agreed and made:

- Engaging and improving the **accountability and alignment of incentives for local authorities' in UWWTD compliance process**;
- Further **extension of ROCs WSS services area** (all agglomerations above 2,000 p.e. should be served by sustainable ROCs);
- **Resolving the connection issue**: with almost one million people in Romania, which have access to collecting systems but decided not to connect, the situation is threatening the investment efforts and jeopardizing both the compliance and the sustainability of WSS services;
- **Improving sector governance and establishing a mechanism to coordinate efforts and resources for compliance**: A mechanism should be established by the key institutional stakeholders like MEF, MPWDA and MEWF to coordinate and complement efforts and resources towards achieving compliance; all funding sources for the sector need to follow the same guiding principles and should be channeled towards compliance and sustainability;
- Setting up a **Strategic Implementation Committee** to perform regular monitoring and evaluation and to propose remedial actions during the implementation of the AIP; and

- **Adoption of the national methodologies** for the delineation of agglomeration boundaries and the calculation of pollution load, and of the **legislative changes** to allow additional IAS and establish a proper IAS process.

8.6 Going beyond compliance

157. Although this is a report focused on proposing an updated UWWTD Implementation Plan it contains recommendations going beyond compliance. Why? There are issues in the Romanian WSS sector that are not strictly compliance related (for example, the expansion of piped water supply in small rural areas, provision of targeted subsidies to ensure affordability of services etc.). Such issues are to be addressed during the preparation of a full-scale national WSS Strategy, which should also look at opportunities for the development of greener solutions in the Romanian WSS sector. The ongoing preparation of a Strategic vision and outline will explore how to promote a more circular economy in WSS services, such as developing a local industry for sludge management of individual sanitation systems, reed bed filters for small communities, biogas generation and treated wastewater reuse in agriculture. This may allow Romania to access more EU funds under the new EU Green Deal.
158. Within a WSS Strategy, the WSS services and UWWTD compliance should be looked at in a broader manner, addressing multiple water aspects such as integrated water resources management (improving investment planning at river basin level, to promote water security), urban flood protection, as well as transversal issues such as national procurement, urban planning and the widespread institutional weaknesses to ensure sector sustainability beyond compliance and current heavy reliance on EU grant financing.

Annex 1: Output No 1

Attached to the current report as a pdf file.

Annex 2: Output No 2

Attached to the current report as a pdf file.

Annex 3: Output No 3

Attached to the current report as a pdf file.

Annex 4: Approach for calculation of investment needs – compliance and sustainability CAPEX

1. ASSUMPTIONS

1.1 Estimation of the length of the network using “houses at 100 m. pipe”

This assumption is valid only for settlement with family houses; if there are predominantly blocks of flats the assumptions below will not apply. However, since it is mostly agglomerations below 10,000 p.e. that need construction of new collecting systems and they are formed mostly of individual houses, the approach is providing reliable results.

Romanian settlements are mostly homogeneous regarding population density as shown in the two pictures below.



Figure 36: A homogeneous settlement with HIGH density



Figure 37: A homogeneous settlement with LOW density

Let transform virtually the settlement to be situated along one street, as demonstrated using a real case in the figure below.



Figure 38: Example for a linear village

Then, using a parameter “number of houses per 100 m pipe”, the length of the network inside the settlement could be easily calculated as shown in the figure below for the two examples – low

population density of 8 houses in 100 m pipe and high population density of 14 houses in 100 m pipe.

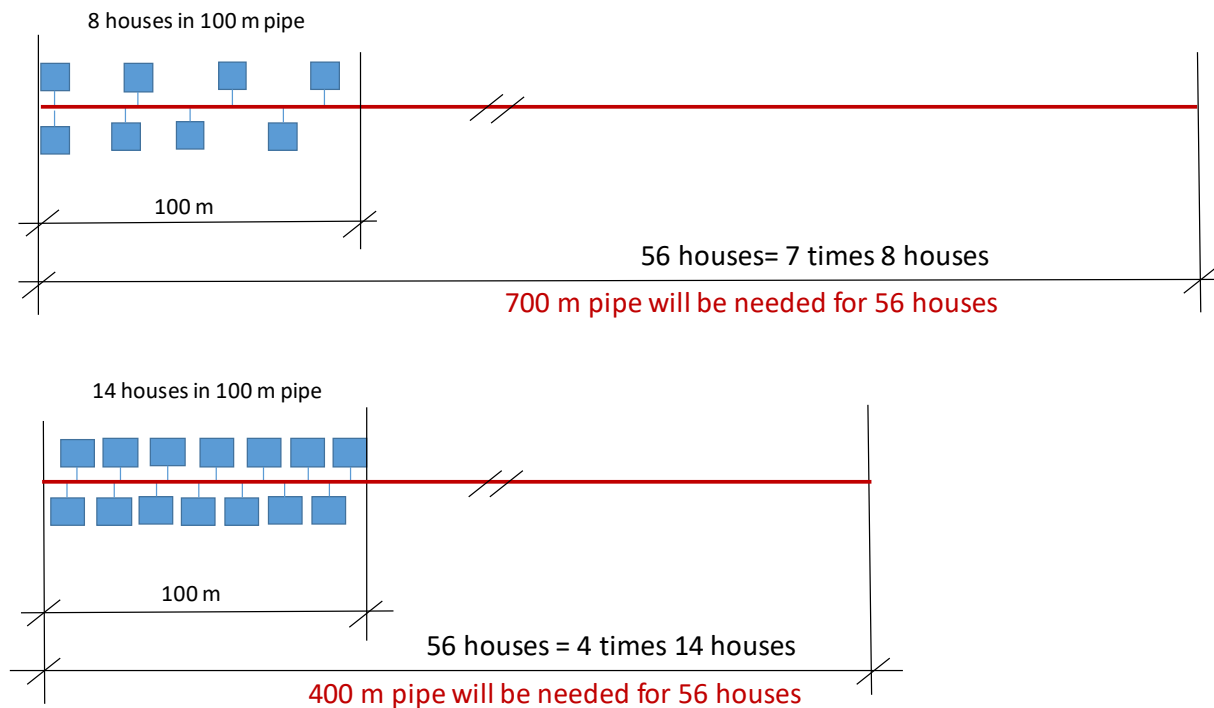


Figure 39: Visualization for calculation of the length of the network

To sum up, in the approach we define the number of the houses per 100 m pipe for a given settlement using maps (like the one, shown in the pictures above). Knowing the population in the settlement at the end of 2018 and the average number of people per household (2018) is enabling the calculation of the number of houses in the settlement. Then, the length of the pipe is the total number of houses divided by the number of the houses per 100 m pipe.

1.2 Water main lengths outside settlements

At a project stage like this one – update of UWWTD Implementation Plan, when engineering design are not available for the entire country, the length of water mains and collectors outside settlement should be estimated somehow. The approach, which was adopted is the following:

- ROC provided data about the length of the mains (length of the water pipes outside settlements) for all settlements served. The number of the settlements is also known. Dividing the total length to the number of the settlement gives an average value of the water mains per settlement, i.e. “water mains lengths outside settlements”.
- It is then assumed that this length will be similar for the rest of the settlement in county, which currently do not have any water systems.

1.3 Wastewater collectors outside settlements

For the settlements, which have not been connected to a UWWTP, a connection pipe to the plant should be included in the calculations. The length of this pipe cannot be known without a proper FS. Based on the review of the UWWTPs, which has already been built and their distance from the settlements, it was estimated that an average length of 3 km. will be a reasonable assumption.

1.4 Estimation of population with access to existing networks

It should be noted, that WSS operators provided data allowing the calculation of population, which is connected and pay for WSS services. Even if there is available network, some people are not connected (as mentioned in the main text). Thus, if only connected and paying households are considered, this will lead to wrong results for the existing length of the network. To mitigate this mistake, the estimation of the population with existing network was done in the following way:

- Based on the maps of the existing collecting system, visually the percentage of the settlement (population), covered with CS was assessed;
- Population with existing CS was then calculated (the percent as determined above multiplied by the total population);
- The bigger of the two values was adopted – calculated as explained above or provided by the water operator for people, who pay;
- Since the team did not have maps of the existing water supply systems, the estimation was done on the basis on the maps of the CSs. Based on the assumption that number of people with available piped water supply will be at least equal to the number of people with available CS, the value for people paying for wastewater collection was also corrected when the paying people were smaller than the estimated people with availability to connect to CS.

1.5 Disaggregation of population served or not by ROCs and lengths of WSS networks

For some of the financial calculations, it was important to have data disaggregated for 3 separate groups at a county level, respectively:

- ROC area (all settlements, which are served by a ROC);
- AGGL area – all agglomerations, which are in the county, but are not served by a ROCs; and finally
- Neither ROC, nor AGGL settlements – these are settlements below 2,000 p.e.

Data for the area served by ROCs was received from the operators. Data for the rest of the agglomerations was collected from other data bases (like EBRD projects, or ANAR data base, etc.). For the rest of the settlement, which are not served by ROC and are below 2,000, i.e. do not form an agglomeration, the following assumption was done: at country level for these settlements a connection rate to water supply of 8 percent and a connection rate to collecting systems of 4 percent of the total population in Romania was assumed³⁰.

³⁰ Report on Strategic Options for the Romanian water sector consolidation and development 2020-2035, EBRD, January 2020

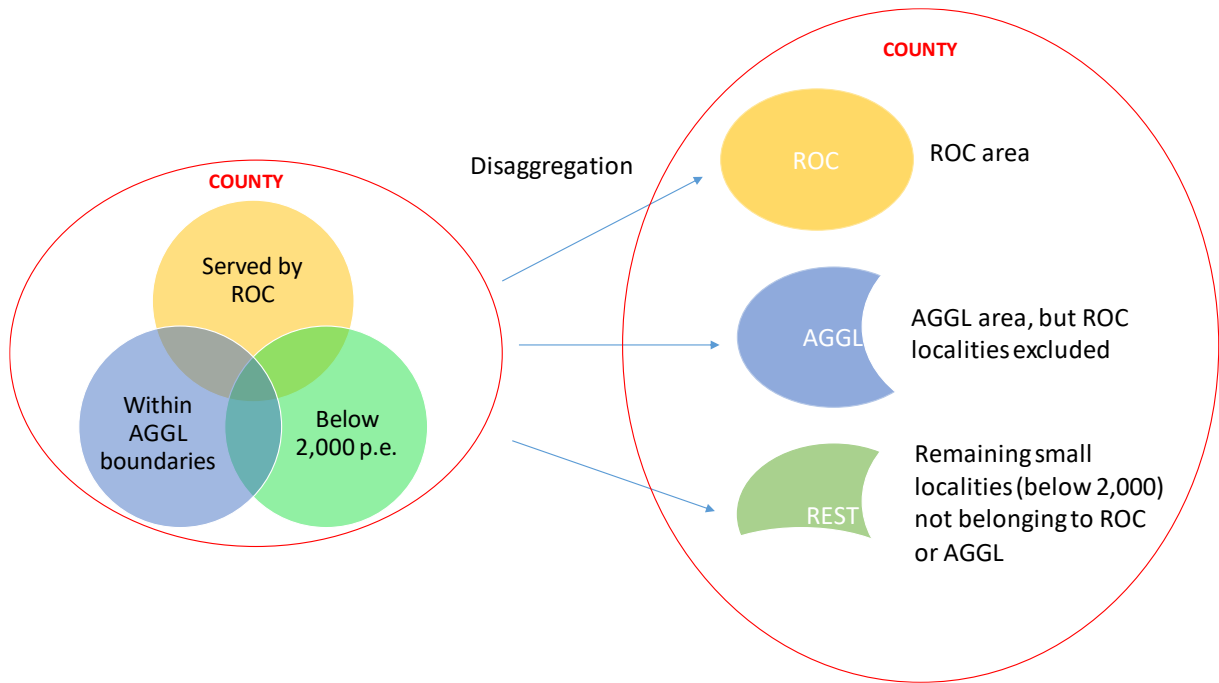


Figure 40: Visualization of the disaggregation of the county by three groups

The following assumptions were made to calculate the population, connected to water supply and CS for this group:

- 0 percent connection rate for counties where the population cover by "neither ROC nor AGGL" is less than 20 percent of the population of this county;
- 10 percent for the water supply and 5 percent for the CS respectively for counties where the population covered by "neither ROC nor AGGL" is more than 20 percent of the population of this county.

These assumptions reflect the above cited 8 percent and 4 percent at country level.

2. CALCULATIONS

2.1 Input data

To do the calculations of the CAPEX, a certain data is needed at settlement, agglomeration and ROC level (see the table below).

Table 29: Input data, needed to calculate the CAPEX

Data needed	Data source	Used symbol in the methodology
Population in agglomeration 2018	NSI	P
UWWTP availability	WO*	-
Number of p.e.	WO	$N_{p.e.}$
Population with existing WSS - NETWORK	WO, maps	P_{WSS}
Population with existing CS - NETWORK	WO, maps	P_{CS}
Houses at 100 m pipe	maps	H
People per household	NSI	P_{pvh}
Number of settlements without WSS in an agglomeration	WO	$Settl_{NO\ WSS}$
Number of settlements without UWWTP in an agglomeration	WO	$Settl_{NO\ UWWTP}$
Unit length WSS outside settlement (length per a settlement)	calculated**	UL_{WSS}
Unit length CS outside settlement (length per a settlement)	assumed**	UL_{CS}

Notes: *WO– water operator

**See “Assumptions” below for more details

2.2 Assisting calculations

The table bellows shows the equations used to determine the length of the linear infrastructure to be constructed – water supply and CS networks.

Table 30: Equations for determination of the assisting parameters

Assisting calculation – per agglomeration	Equation
People at 100 m pipe	$P_{100} = H * pphh$
Existing length WSS, km	$L_{WSS} = \frac{P_{WSS}}{10 * P_{100}}$
Existing length CS, km	$L_{CS} = \frac{P_{CS}}{10 * P_{100}}$
Length WSS to be built inside agglomeration, km	$L_{WSS,NEW} = \frac{(P - P_{WSS})}{10 * P_{100}}$
Length CS to be built inside agglomeration, km	$L_{CS,NEW} = \frac{(P - P_{CS})}{10 * P_{100}}$
Households to be connected WSS	$HH_{WSS} = \frac{P - P_{WSS}}{pphh}$
Households to be connected CS	$HH_{CS} = \frac{P - P_{CS}}{pphh}$
Length WSS to be built-OUTSIDE, km	$L_{WSS,OUTSIDE} = UL_{WSS} * Settl_{NO\ WSS}$
Length CS to be built-OUTSIDE, km	$L_{CS,OUTSIDE} = UL_{CS} * Settl_{NO\ UWWTP}$

2.3 Unit costs

Table 26 provides summary information of the unit costs, which were used in the calculations.

Table 31: Unit costs used in the calculation of CAPEX

Unit cost calculations	Value	Unit
Unit cost WSS inside settlement per m pipe	110	EUR/m
Unit cost WSS outside settlement per m pipe	130	EUR/m
Unit cost CS inside settlement per m pipe	190	EUR/m
Unit cost CS outside settlement per m pipe	120	EUR/m
Unit cost house connection CS	350	EUR/pc
Unit cost house connection WSS	180	EUR/pc
Unit cost per p.e. UWWTP	$Unit\ cost_{UWWTP} = 131596 * N_{p.e.}^{-0,695}$	EUR/p.e.

JUSTIFICATION of the unit costs shown in the table above:

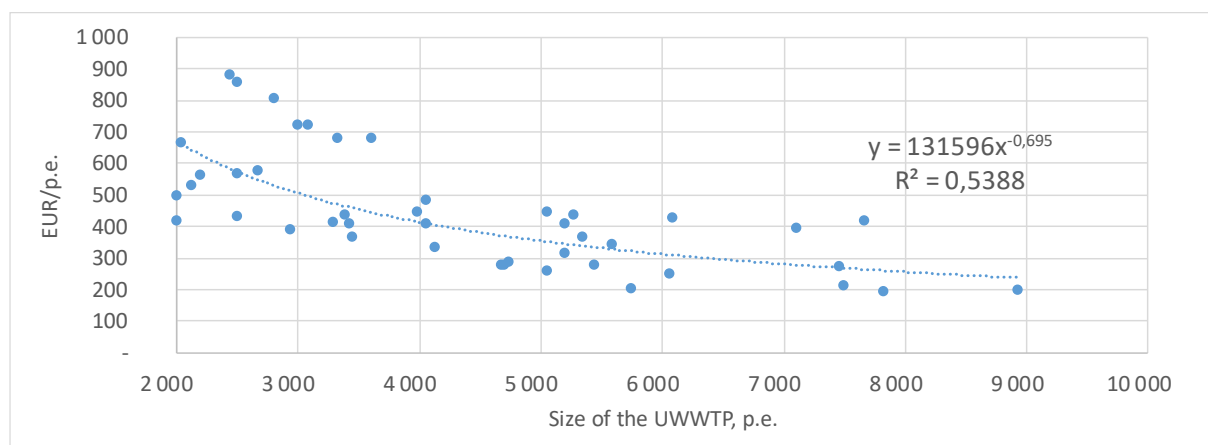
CAPEX for the collecting systems: information on estimated project costs from FS financed under LIOP has been analyzed. In total 96 projects are included in this analysis. The data include the following information:

- People to be connected to the system;
- Length of the new pipelines (main and secondary);
- Costs for construction (pipes, collectors, pumping stations), EUR;
Based on these data, the average value for the costs for construction of m pipe was calculated to be 188 EUR/m. The value **190 EUR/m** was adopted in the further calculations.

CAPEX for UWWTPs: information on estimated project costs from FS financed under LIOP has been analyzed. In total 45 projects, where there is a new construction of UWWTPs below 10,000 p.e. are included in this analysis. We've used the following information during the analysis:

- Size of the UWWTP (p.e.).
- Costs for construction, EUR.
The figure below visualizes the determined relationship between the size of the UWWTP and the unit cost EUR/p.e.

Figure 41: CAPEX determination for the UWWTP (EUR/p.e.) in relation to the size of the UWWTP (p.e.)



Source: the WB, 2019

The equation derived in this analysis, was used in the calculations of the necessary CAPEX for construction of UWWTP. The other unit costs in the table above were adopted from LIOP projects or are based on engineering estimation.

2.4 Investment cost (CAPEX) calculations

Finally, the investment costs for construction of WSS and CS were calculated summing up the costs for pipes inside the settlement, outside the settlement as well as household connections (see the table below). The investment costs for construction of an UWWTP were calculated multiplying the number of the p.e. by the unit cost (see **Table 27** below).

Table 32: Equations used for determination of CAPEX

Cost calculations	Equation
CAPEX _{WSS} , EUR	$CAPEX_{WSS} = 110\,000 * L_{WSS,NEW} + 130\,000 * L_{WSS,OUTSIDE} + 180 * HH_{WSS}$
CAPEX _{CS} , EUR	$CAPEX_{CS} = 190\,000 * L_{CS,NEW} + 120\,000 * L_{WSS,OUTSIDE} + 350 * HH_{CS}$
CAPEX _{UWWTP} , EUR	$CAPEX_{UWWTP} = N_{p.e.} * Unit\ cost_{UWWTP}$

3. DATA ISSUES

Despite all efforts the estimation of the necessary CAPEX has been done using incomplete data, with insufficient details or in some cases illogical data (which was eliminated). The team has done the best possible approximation, yet, it should be noted that the calculated values contain some level of uncertainties.

The following main difficulties have been encountered:

- We received a significant number but not a full set of maps for existing collecting systems (we have from almost all ROCs but close to none from LOCs). The lack of maps for the entire country as well as the lack of database with adequate estimation of the length of existing water supply and collecting systems, has led to imperfect estimation of the available, respectively new pipes to be constructed;
- Different data bases provide different figures for the connection rates to water supply and CS;
- Lack of reliable information whether there is an UWWTP or not. In some databases it is indicated that there is no UWWTP, but such is well visible on google maps and vice versa;
- In some cases, the connection rate to water supply and CS for the same settlement is equal, but the lengths of the two systems inside the settlement differ significantly, which, apparently is highly doubtful.

Annex 5: Recapitulation of the number of agglomerations

No	County	ANAR List	Dropouts from ANAR list		Implementation of the new methodology		
			Total	Merged with other agglomerations	Excluded	Retained	Newly formed
1	ALBA	45	0	31	14	6	20
2	ARGES	61	1	47	13	2	15
3	ARAD	49	0	17	32	3	35
4	BACAU	79	1	53	25	2	27
5	BIHOR	47	2	17	28	1	29
6	BISTRITA NASAUD	23	0	11	12	7	19
7	BOTOSANI	33	0	20	13	0	13
8	BRAILA	25	1	7	17	0	17
9	BRASOV	41	2	16	23	3	26
10	BUCHAREST	1	0	0	1	0	1
11	BUZAU	46	0	21	25	3	28
12	CALARASI	43	0	14	29	2	31
13	CARAS SEVERIN	14	0	2	12	1	13
14	CLUJ	30	2	17	11	2	13
15	CONSTANTA	36	2	2	32	1	33
16	COVASNA	30	1	13	16	0	16
17	DAMBOVITSA	81	10	35	36	10	46
18	DOLJ	66	3	21	42	0	42
19	GORJ	31	3	13	15	0	15
20	GALATI	34	0	9	25	6	31
21	GIURGIU	46	2	18	26	6	32
22	HARGHITA	42	1	16	25	3	28
23	HUNEDOARA	29	1	18	10	4	14
24	IALOMITA	30	1	4	25	3	28
25	IASI	61	0	36	25	3	28
26	ILFOV	42	22	1	19	6	25
27	MEHEDINTI	13	0	4	9	1	10
28	MARAMURES	46	0	24	22	6	28
29	MURES	38	0	16	22	2	24
30	NEAMT	61	7	36	18	2	20
31	OLT	78	5	34	39	1	40
32	PRAHOVA	94	6	38	50	2	52
33	SALAJ	13	0	5	8	0	8
34	SATU MARE	43	1	18	24	2	26
35	SIBIU	41	2	15	24	2	26
36	SUCEAVA	82	1	43	38	3	41
37	TELEORMAN	70	8	37	25	2	27
38	TIMIS	60	2	19	39	1	40
39	TULCEA	31	0	14	17	0	17
40	VALCEA	67	11	39	17	1	18
41	VASLUI	31	0	18	13	1	14
42	VRANCEA	37	2	14	21	4	25
Total		1 870	100	833	937	104	1 041

Annex 6: Distribution of agglomerations and p.e. according to sewer connection rate

County	CODE	Total		≥98 % connection CS		95-98 % connection CS		85-95 % connection CS		no sewer	
		aggl.nr	p.e.	aggl.nr	total p.e. generated	aggl.nr	total p.e. generated	aggl.nr	total p.e. generated	aggl.nr	total p.e. generated
1	2	3	4	5	6	7	8	9	10	11	12
ALBA	AB	20	192,973	2	23,030	0	0	4	93,256	2	6,440
ARGES	AG	15	396,072	0	0	0	0	3	291,185	7	28,410
ARAD	AR	35	326,846	0	0	1	184,157	0	0	16	40,825
BACAU	BC	27	368,627	1	2,526	0	0	4	224,944	11	36,492
BIHOR	BH	29	394,930	0	0	1	10,947	1	247,953	10	33,242
BISTRITA NASAUD	BN	19	175,680	0	0	0	0	1	86,486	2	4,464
BOTOSANI	BT	13	193,286	0	0	0	0	1	123,119	7	20,032
BRAILA	BR	17	233,010	0	0	0	0	2	183,718	8	22,661
BRASOV	BV	26	462,992	2	13,129	2	18,185	4	327,898	8	32,938
BUCHAREST	B	1	1,841,807	0	0	0	0	1	1,841,807	0	0
BUZAU	BZ	28	266,442	0	0	1	143,246	1	5,067	17	47,957
CALARASI	CL	31	213,979	0	0	0	0	1	27,869	24	99,288
CARAS SEVERIN	CS	13	177,871	0	0	0	0	1	2,745	4	14,872
CLUJ	CJ	13	481,655	0	0	0	0	4	356,145	2	4,460
CONSTANTA	CT	33	797,448	0	0	2	95,195	5	552,342	10	28,770
COVASNA	CV	16	171,036	2	109,341	0	0	0	0	6	17,076
DAMBOVITSA	DB	46	309,444	0	0	0	0	1	80,846	32	103,522
DOLJ	DJ	42	466,522	0	0	0	0	2	21,907	26	94,266
GORJ	GJ	15	184,320	0	0	1	4,167	1	12,995	5	15,008
GALATI	GL	31	377,304	0	0	1	189,419	1	39,033	18	71,928
GIURGIU	GR	32	182,570	0	0	0	0	0	0	24	81,583
HARGHITA	HR	28	231,279	0	0	0	0	7	136,830	7	25,084
HUNEDOARA	HD	14	300,116	2	78,640	4	38,506	3	89,125	0	0

County	CODE	Total		≥98 % connection CS		95-98 % connection CS		85-95 % connection CS		no sewer	
		aggl.nr	p.e.	aggl.nr	total p.e. generated	aggl.nr	total p.e. generated	aggl.nr	total p.e. generated	aggl.nr	total p.e. generated
1	2	3	4	5	6	7	8	9	10	11	12
IALOMITA	IL	28	204,234	0	0	1	49,538	0	0	20	56,628
IASI	IS	28	746,845	0	0	1	582,439	1	40,753	10	27,140
ILFOV	IF	25	134,643	0	0	0	0	2	9,541	13	55,674
MEHEDINTI	MH	10	134,923	1	6,454	0	0	1	98,186	3	8,428
MARAMURES	MM	28	340,191	0	0	0	0	1	157,559	16	55,775
MURES	MS	24	421,863	0	0	0	0	1	265,972	8	21,568
NEAMT	NT	20	280,713	0	0	0	0	2	64,247	12	42,053
OLT	OT	40	264,903	0	0	0	0	2	81,669	29	82,794
PRAHOVA	PH	52	515,147	0	0	1	18,608	2	24,255	21	63,404
SALAJ	SJ	8	94,012	1	58,818	0	0	2	14,912	1	2,863
SATU MARE	SM	26	238,402	0	0	1	118,044	2	27,905	14	41,934
SIBIU	SB	26	336,611	1	51,538	1	6,821	6	206,755	9	26,958
SUCEAVA	SV	41	373,921	0	0	0	0	4	148,073	15	53,328
TELEORMAN	TR	27	189,397	0	0	0	0	0	0	21	62,969
TIMIS	TM	40	612,816	2	9,361	1	45,833	4	437,778	18	57,152
TULCEA	TL	17	141,352	0	0	0	0	1	3,356	4	10,656
VALCEA	VL	18	209,012	0	0	0	0	0	0	2	5,412
VASLUI	VS	14	163,222	0	0	0	0	1	51,316	8	22,768
VRANCEA	VN	25	193,840	0	0	0	0	1	84,378	16	53,376
TOTAL		1,041	14,342,256	14	352,837	19	1,505,105	81	6,461,925	486	1,580,198

Note: The load presented in the columns reflects the total load of the agglomerations

Agglomerations with connection rate $\geq 98\%$

Nr	County	Code	Agglomeration name	P.E Generated	Connection rate $\geq 98\%$
1	Alba	AB	Abrud	3180	99.7
2	Alba	AB	Cugir	19 850	98.1
3	Bacau	BC	Slanic Moldova	2 526	100.0
4	BRASOV	BV	Poiana Brasov	5 153	99.8
5	BRASOV	BV	Victoria	7 976	100.0
6	COVASNA	CV	Covasna	18 346	98.1
7	COVASNA	CV	Sfantu Gheorghe	90 995	99.6
8	HUNEDOARA	HD	Deva (Archia, Deva, Santuhalm)	68 728	99.6
9	HUNEDOARA	HD	Simeria (Simeria, Tampa)	9 912	98.0
10	MEHEDINTI	MH	Strehaia	6 454	100.0
11	SALAJ	SJ	Zalau (Zalau, Criseni)	58 818	98.0
12	SIBIU	SB	Medias	51 538	98.9
13	TIMIS	TM	Buzias	5 759	100.0
14	TIMIS	TM	Faget	3 602	99.9

Agglomerations with connection rate $95 \leq \dots < 98$

Nr	County	Code	Agglomeration name	P.E Generated	Connection rate $95 \leq \dots < 98$
1	Arad	AR	Arad	184 157	97.0
2	Bihor	BH	Beius	10 947	96.0
3	BRASOV	BV	Harman	3 799	95.2
4	BRASOV	BV	Rasnov	14 386	95.5
5	Buzau	BZ	Buzau	143 246	96.1
6	CLUJ	CJ	Cluj-Napoca (Apahida, Baci, Cluj-Napoca, Dezmir, Floresti, Sannicoara)	304 528	95.0
7	Constanta	CT	Costinesti (Costinesti, Schitu)	14 259	95.9
8	Constanta	CT	Mangalia (Jupiter, Mangalia, Neptun, Olimp, Saturn, Venus)	80 936	97.5
9	GORJ	GJ	Ticleni	4 167	96.7
10	GALATI	GL	Galati	189 419	95.2
11	HUNEDOARA	HD	Brad	10 673	95.8
12	HUNEDOARA	HD	Hateg (Hateg, Santamaria-Orlea)	8 664	97.1
13	HUNEDOARA	HD	Orastie	17 051	96.4
14	HUNEDOARA	HD	Geoagiu-Bai	2 118	97.0
15	IALOMITA	IL	Slobozia (Bora, Slobozia)	49 538	95.3
16	IASI	IS	Iasi (Iasi, Balciu, Horpaz, Holboca, Dancu, Lunca Cetatuii, Miroslava, Valea Lupului, Valea Adanca, Tomesti)	582 439	95.7
17	PRAHOVA	PH	Plopeni	8 171	95.0
18	PRAHOVA	PH	Sinaia	18 608	97.4
19	SATU MARE	SM	Satu Mare (Ambud, Petin, Martinesti, Paulesti, Satu Mare, Apateu)	118 044	97.1
20	SIBIU	SB	Gura Raului (Gura Raului, Orlat)	6 821	97.2
21	TIMIS	TM	Lugoj	45 833	96.5

Agglomerations with connection rate 85≤...<95

Nr	County	Code	Agglomeration name	P.E Generated	Connection rate 85≤...<95
1	ALBA	AB	Alba Iulia (Micesti, Alba Iulia, Barabant)	61 073	85.7
2	ALBA	AB	Campeni	4 676	88.2
3	ALBA	AB	Petresti	3 847	90.1
4	ALBA	AB	Sebes	23 660	90.2
5	ARGES	AG	Curtea De Arges (Albestii Pamanteni, Albestii Ungureni, Mustatesti, Curtea De Arges, Zigoneni)	34 047	89.7
6	ARGES	AG	Mioveni (Contesti, Colibasi, Racovita, Mioveni)	35 570	91.9
7	ARGES	AG	Pitesti (Argeselu, Borlesti, Prislopu Mic, Glambocu, Schiau, Uiasca, Mica, Bascov, Valea Ursului, Prislopu Mare, Smeura, Albota, Bradu, Dobrogostea, Dealu Viilor, Varzaru, Gura Vaii, Geamana, Budeasa Mica, Maracineni, Braileni, Micesti, Pitesti, Hintesti, Izvorani, Viisoara, Stefanestii Noi, Ciocanesti, Stefanesti, Valea Mare Podgoria, Zavoi)	221 568	87.3
8	BACAU	BC	Bacau (Bacau, Barati, Letea Veche, Lileci, Magura, Margineni, Trebes)	176 289	91.0
9	BACAU	BC	Onesti	43 074	92.2
10	BACAU	BC	Racaciuni	2 578	89.1
11	BACAU	BC	Valea Seaca	3 003	88.9
12	BIHOR	BH	Oradea (Alparea, Baile Felix, Cihei, Cordau, Fughiu, Haieu, Oradea, Osorhei, Rontau, Sanmartin)	247 953	86.5
13	BISTRITA NASAUD	BN	Bistrita (Bistrita, Ghinda, Sigmir, Unirea, Viisoara)	86 486	89.0
14	BOTOSANI	BT	Botosani (Rachiti, Catamaresti-Deal, Cismea, Botosani, Curtesti)	123 119	92.0
15	BRAILA	BR	Braila (Baldovinsti, Braila, Cazasu, Lacu Sarat, Varsatura)	154 365	93.3
16	BRAILA	BR	Ianca (Ianca, Perisoru, Plopu)	29 353	88.2
17	BRASOV	BV	Brasov (Brasov, Sanpetru, Sacele)	262 407	91.1
18	BRASOV	BV	Codlea	25 423	93.3
19	BRASOV	BV	Fagaras	35 748	92.6
20	BRASOV	BV	Ghimnav	4 320	87.6
21	BUCHAREST	B	Bucurest	1 841 807	88.4
22	BUZAU	BZ	Pogoanele	5 067	87.6
23	CALARASI	CL	Oitenita	27 869	89.0
24	CARAS SEVERIN	CS	Mopdova Nouă	2 745	87.3
25	CLUJ	CJ	Aghiresu-Fabrici	3 511	87.1
26	CLUJ	CJ	Campia Turzii (Campia Turzii, Luna)	29 179	86.3
27	CLUJ	CJ	Gherla (Baita, Gherla, Mintiu Gherlii, Hasdate)	18 927	89.2
28	CONSTANTA	CT	Cernavoda	19 542	87.2
29	CONSTANTA	CT	Constanta (Mamaia, Mamaia-Sat, Navodari, Palazu Mare)	420 633	93.9

30	CONSTANTA	CT	Eforie (Eforie-Nord, Eforie-Sud, Tuzla)	58 903	90.3
31	CONSTANTA	CT	Medgidia	44 128	94.7
32	CONSTANTA	CT	Murfatlar	9 136	90.6
33	DAMBOVITA	DB	Targoviste (Targoviste, Matraca, Ulmi)	80 846	90.3
34	DOLJ	DJ	Bailesti	19 003	92.2
35	DOLJ	DJ	Carcea	2 904	88.4
36	GORJ	GJ	Rovinari (Rosia Jiu, Rovinari)	12 995	90.5
37	GALATI	GL	Tecuci	39 033	87.1
38	HARGHITA	HR	Balan	6 380	89.5
39	HARGHITA	HR	Cristuru Secuiesc (Cristuru Secuiesc, Filias)	9 480	88.5
40	HARGHITA	HR	Gheorgheni	17 436	89.6
41	HARGHITA	HR	Miercurea Ciuc (Jigodin-Bai, Miercurea Ciuc, Pauleni-Ciuc, Soimeni)	44 746	93.0
42	HARGHITA	HR	Odorheiu Secuiesc (Bradesti, Odorheiu Secuiesc, Satu Mare)	43 326	85.4
43	HARGHITA	HR	Toplita (Toplita, Vale, Magherus)	11 844	92.3
44	HARGHITA	HR	Baile Tusnad	3 618	90.8
45	HUNEDOARA	HD	Calan (Calan, Streisangeorgiu)	8 482	94.1
46	HUNEDOARA	HD	Petrosani-Petrila (Petrosani, Petrila, Cimpa)	53 659	85.4
47	HUNEDOARA	HD	Vulcan (Vulcan, Iscroni, Dealu Babii, Aninoasa, Jiu-Paroseni)	26 984	86.2
48	IASI	IS	Pascani (Pascani, Lunca)	40 753	90.9
49	ILFOV	IF	Glina	7 098	91.4
50	ILFOV	IF	Saftica (Saftica, Dumbraveni)	2 443	90.6
51	MEHEDINTI	MH	Drobeta-Tumu Severin (Drobeta-Turnu Severin, Dudasu, Schela Cladovei)	98 186	93.2
52	MARAMURES	MM	Baia Mare (Baia Sprie, Mocira, Sasar, Baia Mare, Tautii De Sus)	157 559	90.2
53	MURES	MS	Targu Mures (Corunca, Cristesti, Curteni, Nazna, Remetea, Sancaiu de Mures, Sangeorgiu de Mures, Santana de Mures, Targu Mures, Valureni)	265 972	93.5
54	NEAMT	NT	Bicaz (Bicaz, Capsa, Dodeni)	5 546	86.9
55	NEAMT	NT	Roman (Roman, Cordun)	58 701	88.6
56	OLT	OT	Scornicesti (Piscani, Rusciori, Scornicesti)	4 234	92.9
57	OLT	OT	Slatina (Cireasov, Slatina)	77 435	87.4
58	PRAHOVA	PH	Mizil (Fefeiei, Mizil)	16 084	94.9
59	SALAJ	SJ	Cehu Silvaniei	5 906	85.6
60	SALAJ	SJ	Simleu Silvaniei	9 006	92.5
61	SATU MARE	SM	Carei	23 550	85.3
62	SATU MARE	SM	Odoreu	4 355	86.6
63	SIBIU	SB	Agnita	7 769	92.6
64	SIBIU	SB	Avrig	8 416	91.1
65	SIBIU	SB	Saliste (Gales, Saliste)	2 901	92.1
66	SIBIU	SB	Sibiu (Sibiu, Selimbar)	179 725	94.8
67	SIBIU	SB	Talmaciu	5 776	90.1
68	SIBIU	SB	Racovita	2 168	89.6
69	SUCEAVA	SV	Dolhasca	2 924	85.3
70	SUCEAVA	SV	Falticeni (Falticeni, Soldanesti)	25 667	89.2
71	SUCEAVA	SV	Plopeni (Plopeni, Mereni, Salcea)	5 809	88.4

72	SUCEAVA	SV	Suceava (Sfantu Ilie, Scheia, Suceava)	113 673	89.1
73	TIMIS	TM	Ciacova	2 762	85.6
74	TIMIS	TM	Deta	5 469	92.6
75	TIMIS	TM	Sannicolau Mare	12 031	92.7
76	TIMIS	TM	Timisoara (Timisoara, Mosnita Veche, Chisoda, Giroc, Utvin, Dumbravita, Mosnita Noua, Ghiroda, Giarmata-Vii)	417 516	87.7
77	TULCEA	TL	Sulina	3 356	86.4
78	VASLUI	VS	Vaslui (Moara Grecilor, Vaslui, Viisoara)	51 316	92.2
79	VRANCEA	VN	Focsani (Campineanca, Ceardac, Focsani, Golesti, Mandresti-Moldova, Mandresti-Munteni, Pietroasa, Valcele)	84 378	90.4

Annex 7: List of agglomerations following the implementation of the new methodologies and their compliance deadlines (including with and without application of IAS for agglomeration between 2,000 and 5,000 p.e.)

Alba County

No.	Agglomeration name	County	Agglomeration code	Population #	Population p.e.	Meeting the target for UWWTD			County based extended ROC area ³¹
						BAU	MAX	ACC	
1	ALBA IULIA	Alba	AB2	57.304	61.073	2022	2022	2022	ROC Alba
2	SEBES	Alba	AB6	19.717	23.660	2023	2023	2023	ROC Alba
3	CUGIR	Alba	AB4	17.751	19.850	2023	2023	Prior 2020	ROC Alba
4	AIUD	Alba	ABbig1	18.165	18.727	2024	2024	2024	ROC Alba
5	BLAJ	Alba	AB3	11.491	11.838	2024	2024	2024	ROC Alba
6	OCNA MURES	Alba	AB5	7.533	8.248	2026	2026	2026	ROC Alba
7	TEIUS	Alba	AB35	5.616	6.178	2029	2029	2029	ROC Alba
8	IZVOARELE	Alba	ABN001	5.111	5.294	2030	2030	2030	ROC Alba
9	CAMPENI	Alba	AB9	4.453	4.676	2030	2030	2030	ROC Alba
10	PETRESTI	Alba	ABN002	3.664	3.847	2030	2030	2030	ROC Alba
11	UIOARA DE SUS	Alba	ABN003	2.681	2.815	2031	2031	2030	ROC Alba
12	DATA ROMANA	Alba	AB14	2.550	2.678	2031	2031	2031	ROC Alba
13	OARDA	Alba	ABN004	2.170	2.279	2031	2031	2031	ROC Alba
14	VINEREA	Alba	ABN006	1.905	2.000	2031	2031	2031	ROC Alba
15	BUCERDEA GRANOASA	Alba	AB7	3.696	3.782	2033	2033	2032	ROC Alba
16	ZLATNA	Alba	AB39	3.324	3.490	2034	2034	2033	ROC Alba
17	VINTU DE JOS	Alba	AB38	2.779	2.918	2035	2035	2033	ROC Alba
18	ABRUD	Alba	ABsmall1	3.029	3.180	2037	2037	2035	ROC Alba
19	SARD	Alba	ABN005	1.968	2.087	2038	2038	IAS ³²	ROC Alba
20	UNIREA	Alba	AB36	4.353	4.353	2039	2039	2035	ROC Alba

³¹ In the financial models, the investment needs and financing are calculated separately for each “extended ROC” service area, where in most cases the “extended ROC” service area overlap with the corresponding county area, assuming that there is one extended ROC per county. However, some exceptions where agglomerations belonging to one county are served by a ROC of other geographic area, e.g. agglomeration Predeal in Brasov county, which is served by ROC Constanta. Those agglomerations naturally are accounted to the “extended ROC” that serve them, therefore they are “moved” in view of financial modelling from the county to which they geographically belong to the county of the “extended ROC” serving them (i.e. Predeal is moved from Brasov county to Constanta). In counties where more than one ROC is operating, the biggest ROC will be considered the “extended ROC” of the county, while the other ROC will be assessed separately considering only its current service area, e.g. Cluj county with ROC Cluj-Salaj and ROC Turda-Campia Turzii, Hunedoara County with ROC Hunedoara and ROC Valea Jiului and Sibiu county with ROC Sibiu and ROC Medias. Another example is Voluntari city, which is included in Bucharest financial model as it is part of Bucharest agglomeration area based on the new methodology, even if currently is operated by ROC Voluntari. Also, Ploiesti city which is currently operated by Apa Nova Ploiesti is considered under ROC Prahova due to lack of available historical OPEX data.

³²As required by the UWWTD, when IASs are applied inside agglomeration boundaries, they should ensure the “same level of environmental protection” as the collecting systems. Scenario ACC assumes that in small agglomerations between 2,000 and 5,000 p.e., where no collecting systems and WWTP are available, the existing IASs will be upgraded to ensure such environmental protection. This will result in achieving compliance at lower cost and earlier (in 2035 instead in 2039) compared to scenario MAX.

Arad County

No.	Agglomeration name	County	Agglomeration code	Population, #	Population, p.e.	Meeting the target for UWWTD			County based extended ROC area
						BAU	MAX	ACC	
21	ARAD	Arad	AR13	153.464	184.157	2022	2022	2022	ROC Arad
22	PECICA	Arad	AR15	10.743	10.789	2024	2024	2024	ROC Arad
23	SANTANA	Arad	AR16	9.780	10.198	2024	2024	2024	ROC Arad
24	INEU	Arad	AR57	7.917	8.540	2025	2025	2025	ROC Arad
25	NADLAC	Arad	AR61	6.814	7.495	2026	2026	2026	ROC Arad
26	SIRIA	Arad	AR75	6.748	7.086	2027	2027	2027	ROC Arad
27	CURTICI	Arad	AR47	6.933	7.017	2028	2028	2028	ROC Arad
28	LIPOVA	Arad	AR14	6.793	6.887	2028	2028	2028	ROC Arad
29	VLADIMIRESCU	Arad	AR17	6.062	6.668	2029	2029	2029	ROC Arad
30	CHISINEU-CRIS	Arad	AR46	5.914	6.505	2029	2029	2029	ROC Arad
31	PANCOTA	Arad	AR62	5.242	5.505	2030	2030	2030	ROC Arad
32	SEBIS	Arad	AR67	4.716	4.952	2030	2030	2031	ROC Arad
33	NADAB	Arad	AR003	1.701	3.701	2030	2030	2031	ROC Arad
34	ZADARENI	Arad	AR82	2.317	2.433	2030	2030	2031	ROC Arad
35	FANTANELE	Arad	AR51	2.097	2.202	2031	2031	2031	ROC Arad
36	MANDRULOC	Arad	AR002	2.089	2.194	2031	2031	2031	ROC Arad
37	MACEA	Arad	AR60	3.688	3.872	2031	2031	2032	ROC Arad
38	GHIOROC	Arad	AR54	3.416	3.587	2031	2031	2033	ROC Arad
39	SOCODOR	Arad	AR76	2.127	2.233	2032	2032	2033	ROC Arad
40	BUTENI	Arad	AR44	2.099	2.099	2032	2032	2033	ROC Arad
41	ZIMANDU NOU	Arad	AR83	2.831	2.831	2032	2032	IAS	ROC Arad
42	FELNAC	Arad	AR52	2.588	2.588	2033	2033	IAS	ROC Arad
43	BOCSIG	Arad	AR43	2.122	2.122	2033	2033	IAS	ROC Arad
44	SICULA	Arad	AR73	2.048	2.048	2034	2034	IAS	ROC Arad
45	HORIA	Arad	AR001	2.027	2.027	2034	2034	IAS	ROC Arad
46	VINGA	Arad	AR70	3.835	3.835	2035	2035	IAS	ROC Arad
47	SIMAND	Arad	AR74	3.609	3.609	2035	2035	IAS	ROC Arad
48	SEMLAC	Arad	AR71	3.458	3.458	2036	2036	IAS	ROC Arad
49	SEITIN	Arad	AR69	2.733	2.733	2037	2037	IAS	ROC Arad
50	LIVADA	Arad	AR59	2.668	2.668	2037	2037	IAS	ROC Arad
51	COVASINT	Arad	AR49	2.363	2.363	2038	2038	IAS	ROC Arad
52	SEPREUS	Arad	AR72	2.204	2.204	2038	2038	IAS	ROC Arad
53	ZABRANI	Arad	AR81	2.108	2.108	2039	2039	IAS	ROC Arad
54	BELIU	Arad	AR42	2.088	2.088	2039	2039	IAS	ROC Arad
55	SECUSIGIU	Arad	AR68	2.044	2.044	2039	2039	IAS	ROC Arad

Arges County

No.	Agglomeration name	County	Agglomeration code	Population, #	Population, p.e.	Meeting the target for UWWTD			County based extended ROC area
						BAU	MAX	ACC	
56	PITESTI	Arges	AG11	190.064	221.568	2022	2022	2022	ROC Arges
57	CAMPULUNG	Arges	AG7	38.378	44.595	2023	2023	2023	ROC Arges
58	MIOVENI	Arges	AG10	30.309	35.570	2023	2023	2023	ROC Arges
59	CURTEA DE ARGES	Arges	AG9	29.018	34.047	2024	2024	2024	ROC Arges
60	TOPOLOVENI	Arges	AG12	15.744	16.746	2024	2024	2024	ROC Arges
61	COSTESTI	Arges		9.143	9.955	2025	2025	2025	ROC Arges
62	RUCAR	Arges	AG123	5.200	5.200	2027	2027	2027	ROC Arges
63	TITESTI	Arges	AGN005	5.195	5.195	2030	2030	2030	ROC Arges
64	COSESTI	Arges	AG98	4.307	4.307	2031	2031	2031	ROC Arges
65	DOMNESTI	Arges	AG101	2.919	3.065	2032	2032	2032	ROC Arges
66	IZVORU	Arges	AG107	2.843	2.843	2033	2033	2033	ROC Arges
67	BARLA	Arges	AG87	2.020	2.116	2034	2034	2034	ROC Arges
68	SLOBOZIA	Arges	AG126	3.983	3.983	2036	2036	IAS	ROC Arges
69	PIETROSANI	Arges	AG118	3.792	3.792	2038	2038	IAS	ROC Arges
70	LEORDENI	Arges	AGN003	3.090	3.090	2039	2039	IAS	ROC Arges

Bacau County

No.	Agglomeration name	County	Agglomeration code	Population, #	Population, p.e.	Meeting the target for UWWTD			County based extended ROC area
						BAU	MAX	ACC	
71	BACAU	Bacau	BC18	148.698	176.289	2022	2022	2022	ROC Bacau
72	BUHUSI	Bacau	BC19	12.857	22.704	2022	2022	2022	ROC Bacau
73	MOINESTI	Bacau	BC23	20.175	22.135	2023	2023	2023	ROC Bacau
74	COMANESTI	Bacau	BC20	16.539	19.847	2024	2024	2024	ROC Bacau
75	TARGU OCNA	Bacau	BC25	9.063	10.758	2024	2024	2024	ROC Bacau
76	OITUZ	Bacau	BC177	5.010	5.511	2025	2025	2025	ROC Bacau
77	DARMANESTI	Bacau	BC21	8.151	8.966	2025	2025	Prior 2020	ROC Bacau
78	DOFTEANA	Bacau	BC22	6.025	6.025	2030	2030	2030	ROC Bacau
79	NICOLAE BALCESCU	Bacau	BC176	3.349	3.516	2030	2030	2030	ROC Bacau
80	RACACIUNI	Bacau	BC187	2.455	2.578	2030	2030	2030	ROC Bacau
81	FARAOANI	Bacau	BCN002	3.498	3.673	2030	2030	2031	ROC Bacau
82	VALEA SEACA	Bacau	BC207	2.860	3.003	2030	2030	2031	ROC Bacau
83	GIOSENI	Bacau	BCN003	2.824	2.965	2031	2031	2032	ROC Bacau
84	SL. MOLDOVA	Bacau	BC196	1.160	2.526	Prior 2020	Prior 2020	Prior 2020	ROC Bacau
85	PODU TURCULUI	Bacau	BC185	2.336	2.453	2031	2031	2032	ROC Bacau
86	SAUCESTI	Bacau	BC193	2.035	2.137	2031	2031	2032	ROC Bacau
87	GARLENI de SUS	Bacau	BC162	3.586	3.586	2032	2032	IAS	ROC Bacau
88	LUIZI-CALUGARA	Bacau	BCN004	3.205	3.205	2033	2033	IAS	ROC Bacau

89	MANASTIREA CASIN	Bacau	BC174	2.779	2.779	2034	2034	IAS	ROC Bacau
90	SATU NOU	Bacau	BCN006	2.238	2.238	2034	2034	IAS	ROC Bacau
91	CLEJA	Bacau	BC152	3.898	3.898	2035	2035	IAS	ROC Bacau
92	BALCANI	Bacau	BC142	3.554	3.554	2036	2036	IAS	ROC Bacau
93	APA ASAU	Bacau	BC140	3.302	3.302	2037	2037	IAS	ROC Bacau
94	BLAGESTI	Bacau	BCN001	3.167	3.167	2038	2038	IAS	ROC Bacau
95	PODURI	Bacau	BC186	2.396	2.396	2039	2039	IAS	ROC Bacau
96	CASIN	Bacau	BC151	2.342	2.342	2039	2039	IAS	ROC Bacau
97	ONESTI	Bacau	BC24	35.895	43.074	2023	2023	2023	ROC Constanta

Bihor County

No.	Agglomeration name	County	Agglomeration code	Population, #	Population, p.e.	Meeting the target for UWWTD			County based extended ROC area
						BAU	MAX	ACC	
98	ORADEA	Bihor	BH29	204.354	247.953	Prior 2020	Prior 2020	Prior 2020	ROC Bihor
99	SALONTA	Bihor	BH30	17.166	20.599	2023	2023	2023	ROC Bihor
100	MARGHITA	Bihor	BH28	13.400	16.080	2024	2024	2024	ROC Bihor
101	BEIUS	Bihor	BH27	9.952	10.947	2024	2024	2024	ROC Bihor
102	VALEA LUI MIHAI	Bihor	BH31	9.438	9.438	2025	2025	2025	ROC Bihor
103	ALESD	Bihor	BH26	8.081	8.840	2026	2026	2026	ROC Bihor
104	STEI	Bihor	BH241	7.679	8.315	2027	2027	2027	ROC Bihor
105	SACUENI	Bihor	BH235	6.615	7.277	2028	2028	2028	ROC Bihor
106	DIOSIG	Bihor	BH219	5.988	6.587	2030	2030	2030	ROC Bihor
107	TILEAGD	Bihor	BH245	4.677	4.911	2031	2031	2031	ROC Bihor
108	TINCA	Bihor	BH246	4.446	4.668	Prior 2020	Prior 2020	Prior 2020	ROC Bihor
109	SANTANDREI	Bihor	BH239	4.549	4.749	2031	2031	2031	ROC Bihor
110	GIRISU DE CRIS	Bihor	BH222	3.273	3.273	Prior 2020	Prior 2020	Prior 2020	ROC Bihor
111	BORS	Bihor	BH213	2.984	3.133	2031	2031	2032	ROC Bihor
112	POPESTI	Bihor	BH231	2.972	3.121	2031	2031	2032	ROC Bihor
113	VADU CRISULUI	Bihor	BH249	2.729	2.865	2031	2031	2032	ROC Bihor
114	VASCAU	Bihor	BH250	2.331	2.404	2032	2032	2033	ROC Bihor
115	NOJORID	Bihor		1.984	2.083	2032	2032	2033	ROC Bihor
116	INEU	Bihor	BH223	2.511	2.637	Prior 2020	Prior 2020	Prior 2020	ROC Bihor
117	SUPLACU DE BARCAU	Bihor	BH243	2.232	2.344	2032	2032	2034	ROC Bihor
118	SALACEA	Bihor	BH236	2.159	2.159	2033	2033	2034	ROC Bihor
119	BIHARIA	Bihor	BH212	3.373	3.373	2034	2034	IAS	ROC Bihor
120	SALARD	Bihor	BH237	2.933	2.933	2035	2035	IAS	ROC Bihor
121	BRUSTURI	Bihor		2.669	2.669	2036	2036	IAS	ROC Bihor
122	TULCA	Bihor	BH248	2.224	2.224	2036	2036	IAS	ROC Bihor
123	VOIVOZI	Bihor	BHN01	2.072	2.175	2037	2037	2034	ROC Bihor
124	CURTUISENI	Bihor	BH218	2.730	2.730	2038	2038	IAS	ROC Bihor
125	TAUTEU	Bihor	BH244	2.301	2.301	2039	2039	IAS	ROC Bihor
126	SIMIAN	Bihor	BH240	2.142	2.142	2039	2039	IAS	ROC Bihor

Bistrita-Nasaud County

No.	Agglomeration name	County	Agglomeration code	Population, #	Population, p.e.	Meeting the target for UWWTD			County based extended ROC area
						BAU	MAX	ACC	
127	BISTRITA	Bistrita Nasaud	BN33	72.723	86.486	2024	2022	2022	ROC Bistrita
128	BECLEAN	Bistrita Nasaud	BN32	9.138	11.787	2024	2023	2023	ROC Bistrita
129	PRUNDU BARGAULUI	Bistrita Nasaud	BN003	9.993	10.440	2024	2024	2024	ROC Bistrita
130	SANGEORZ-BAI	Bistrita Nasaud	BN35	8.145	9.848	2025	2025	2025	ROC Bistrita
131	NASAUD	Bistrita Nasaud	BN34	8.952	9.807	2026	2026	2026	ROC Bistrita
132	Lunca Ilvei	Bistrita Nasaud	BN261	2.937	6.620	2028	2028	2028	ROC Bistrita
133	RODNA	Bistrita Nasaud	BN006	4.910	5.156	2030	2030	2030	ROC Bistrita
134	MAIERU	Bistrita Nasaud	BN002	4.544	4.771	2030	2030	IAS	ROC Bistrita
135	FELDRU	Bistrita Nasaud	BN256	4.386	4.605	2030	2030	2030	ROC Bistrita
136	RETEAG	Bistrita Nasaud	BN005	3.765	3.881	2032	2032	2031	ROC Bistrita
137	LECHINTA	Bistrita Nasaud	BN259	3.303	3.441	2032	2032	Prior 2020	ROC Bistrita
138	SANT	Bistrita Nasaud	BN265	2.501	2.626	2033	2033	2032	ROC Bistrita
139	TEACA	Bistrita Nasaud	BN268	1.675	2.162	2034	2034	2032	ROC Bistrita
140	LIVEZILE	Bistrita Nasaud	BN001	1.934	2.031	2034	2034	IAS	ROC Bistrita
141	TELCIU	Bistrita Nasaud	BN269	2.862	3.005	2034	2034	Prior 2020	ROC Bistrita
142	REBRISOARA	Bistrita Nasaud	BN004	2.425	2.546	2035	2035	2033	ROC Bistrita
143	ILVA MICA	Bistrita Nasaud	BN258	1.909	2.004	2035	2035	2033	ROC Bistrita
144	SALVA	Bistrita Nasaud	BN007	2.368	2.368	2038	2038	2033	ROC Bistrita
145	REBRA	Bistrita Nasaud	BN264	2.096	2.096	2039	2039	IAS	ROC Bistrita

Botosani County

No.	Agglomeration name	County	Agglomeration code	Population, #	Population, p.e.	Meeting the target for UWWTD			County based extended ROC area
						BAU	MAX	ACC	
146	BOTOSANI	Botosani	BT37	103.130	123.119	2025	2022	2023	ROC Botosani
147	DOROHOI	Botosani	BT38	23.719	28.017	2033	2024	2024	ROC Botosani
148	FLAMANZI	Botosani	BT39	7.532	7.909	2035	2026	2026	ROC Botosani
149	DARABANI	Botosani	BT277	5.780	6.358	2037	2028	2028	ROC Botosani
150	SAVENI	Botosani	BT289	4.929	5.155	2038	2030	2030	ROC Botosani
151	STEFANESTI	Botosani	BT290	2.765	2.765	2039	2031	2033	ROC Botosani
152	BUCECEA	Botosani	BT271	2.568	2.696	NO	2032	IAS	ROC Botosani
153	TUDORA	Botosani	BT40	4.047	4.047	NO	2033	IAS	ROC Botosani
154	CORNI	Botosani	BT274	3.445	3.445	NO	2035	IAS	ROC Botosani
155	VORNICENI	Botosani	BT298	2.912	2.912	NO	2036	IAS	ROC Botosani
156	TODIRENI	Botosani	BT293	2.402	2.402	NO	2038	IAS	ROC Botosani
157	DERSCA	Botosani	BT278	2.354	2.354	NO	2039	IAS	ROC Botosani

158	HAVARNA	Botosani	BT280	2.107	2.107	NO	2039	IAS	ROC Botosani
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Braila County

No.	Agglomeration name	County	Agglomeration code	Population, #	Population, p.e.	Meeting the target for UWWTD			County based extended ROC area
						BAU	MAX	ACC	
159	BRAILA	Braila	BR36	167.677	154.365	2023	2023	2023	ROC Braila
160	IANCA	Braila	BR306	7.628	29.353	2024	2024	2024	ROC Braila
161	INSURATEI	Braila	BR307	5.070	6.096	Prior 2020	Prior 2020	Prior 2020	ROC Braila
162	TUFESTI	Braila	BR316	4.861	5.455	Prior 2020	Prior 2020	Prior 2020	ROC Braila
163	FAUREI	Braila	BR303	3.180	3.339	2030	2030	2030	ROC Braila
164	GROPENI	Braila	BR305	2.916	3.062	2030	2030	2031	ROC Braila
165	VIZIRU	Braila	BR321	3.310	3.814	Prior 2020	Prior 2020	Prior 2020	ROC Braila
166	MOVILA MIRESEI	Braila	BR311	2.614	2.745	2031	2031	2032	ROC Braila
167	VADENI	Braila	BR318	2.134	2.120	2031	2031	2032	ROC Braila
168	JIRLAU	Braila	BR308	2.818	2.818	2032	2032	IAS	ROC Braila
169	SUTESTI	Braila	BR313	3.803	3.803	2033	2033	IAS	ROC Braila
170	CHISCANI	Braila	BR301	3.294	3.528	2034	2034	IAS	ROC Braila
171	TICHILESTI	Braila	BR314	3.332	3.332	2035	2035	IAS	ROC Braila
172	ULMU	Braila	BR317	2.589	2.589	2036	2036	IAS	ROC Braila
173	BARAGANUL	Braila	BR299	2.388	2.388	2037	2037	IAS	ROC Braila
174	ZAVOAI	Braila	BR322	2.150	2.150	2038	2038	IAS	ROC Braila
175	LANURILE	Braila	BR309	2.053	2.053	2039	2039	IAS	ROC Braila

Brasov County

No.	Agglomeration name	County	Agglomeration code	Population, #	Population, p.e.	Meeting the target for UWWTD			County based extended ROC area
						BAU	MAX	ACC	
176	BRASOV	Brasov	BV41	280.830	262.407	2023	2023	2023	ROC Brasov
177	ZARNESTI	Brasov	BV47	21.625	25.950	2024	2024	2024	ROC Brasov
178	CODLEA	Brasov	BV42	21.186	25.423	Prior 2020	Prior 2020	Prior 2020	ROC Brasov
179	RASNOV	Brasov	BV46	14.359	14.386	2024	2024	2024	ROC Brasov
180	PREJMER	Brasov	BV45	8.335	9.021	2025	2025	2025	ROC Brasov
181	VICTORIA	Brasov	BV353	7.251	7.976	Prior 2020	Prior 2020	Prior 2020	ROC Brasov
182	BRAN	Brasov	BV325	5.707	6.549	2028	2028	2028	ROC Brasov
183	POIANA BRASOV	Brasov	BVN3	379	5.153	2028	2028	Prior 2020	ROC Brasov
184	TARLUNGENI	Brasov	BV348	8.215	8.215	2030	2030	2030	ROC Brasov
185	RUPEA	Brasov	BV343	4.736	4.973	2030	2030	2030	ROC Brasov
186	FELDIOARA	Brasov	BV330	4.515	4.741	2030	2030	Prior 2020	ROC Brasov
187	GHIMBAV	Brasov		4.612	4.320	Prior 2020	Prior 2020	Prior 2020	ROC Brasov
188	CRISTIAN	Brasov	BVN1	4.528	4.269	2030	2030	2030	ROC Brasov
189	HARMAN	Brasov	BV333	4.078	3.799	2030	2030	2030	ROC Brasov
190	VULCAN	Brasov	BV356	3.679	3.679	2030	2030	2030	ROC Brasov

191	HALCHIU	Brasov	BV332	3.107	3.262	2030	2030	2030	ROC Brasov
192	HOGHIZ	Brasov	BV334	2.223	2.334	Prior 2020	Prior 2020	Prior 2020	ROC Brasov
193	BOD	Brasov	BV324	3.345	3.420	2031	2031	2031	ROC Brasov
194	CRIZBAV	Brasov	BVN2	2.604	2.604	2031	2031	2031	ROC Brasov
195	BUDILA	Brasov	BV326	4.319	4.319	2033	2033	IAS	ROC Brasov
196	TELIU	Brasov	BV349	4.119	4.119	2034	2034	IAS	ROC Brasov
197	DUMBRAVITA	Brasov	BV329	3.771	3.771	2035	2035	IAS	ROC Brasov
198	APATA	Brasov	BV323	3.237	3.237	2036	2036	IAS	ROC Brasov
199	RACOS	Brasov	BV342	2.994	2.994	2036	2036	IAS	ROC Brasov
200	PREDEAL	Brasov	BV44	3.616	6.323	2028	2028	2028	ROC Constanta
201	FAGARAS	Brasov	BV43	29.790	35.748	2024	2024	2024	ROC Sibiu

Bucuresti

No.	Agglomeration name	County	Agglomeration code	Population, #	Population, p.e.	Meeting the target for UWWTD			County based extended ROC area
						BAU	MAX	ACC	
202	Bucuresti	Bucuresti		2.143.098	1.841.807	2024	2024	2024	ROC Bucuresti

Buzau County

No.	Agglomeration name	County	Agglomeration code	Population, #	Population, p.e.	Meeting the target for UWWTD			County based extended ROC area
						BAU	MAX	ACC	
203	BUZAU	Buzau	BZ48	106.718	143.246	2022	2022	2022	ROC Buzau
204	RAMNICU SARAT	Buzau	BZ50	38.242	39.484	2024	2024	2024	ROC Buzau
205	MARACINENI	Buzau	BZ376	9.008	9.388	2029	2029	2029	ROC Buzau
206	POGOANELE	Buzau	BZ384	4.826	5.067	2030	2030	2030	ROC Buzau
207	CISLAU	Buzau	BZ365	3.212	3.310	2030	2030	2030	ROC Buzau
208	SMEENI	Buzau	BZ392	2.926	3.072	2030	2030	2031	ROC Buzau
209	NEHOIU	Buzau	BZ49	4.431	4.652	2030	2030	2032	ROC Buzau
210	PATARLAGELE	Buzau	BZ381	2.025	2.117	2031	2031	2033	ROC Buzau
211	SAPOCA	Buzau	BZ391	2.134	2.178	2031	2031	2033	ROC Buzau
212	BERCA	Buzau	BZ359	2.945	3.092	2030	2030	2032	ROC Buzau
213	SCURTEȘTI	Buzau	BZN003	3.728	3.728	2031	2031	IAS	ROC Buzau
214	PADINA	Buzau	BZ379	3.679	3.679	2032	2032	IAS	ROC Buzau
215	VADU PASII	Buzau	BZ396	3.473	3.473	2033	2033	IAS	ROC Buzau
216	RAMNICELU	Buzau	BZ388	3.199	3.199	2033	2033	IAS	ROC Buzau
217	RUSETU	Buzau	BZ389	3.179	3.179	2033	2033	IAS	ROC Buzau
218	STALPU	Buzau	BZ393	2.886	2.886	2035	2034	IAS	ROC Buzau
219	TABARASTI	Buzau	BZ394	2.767	2.767	2036	2034	IAS	ROC Buzau
220	CANDESTI	Buzau	BZ363	2.721	2.721	2037	2035	IAS	ROC Buzau
221	GHERASENI	Buzau	BZ368	2.697	2.697	2038	2035	IAS	ROC Buzau
222	COSTESTI	Buzau	BZ367	2.452	2.452	2038	2036	IAS	ROC Buzau
223	POSTA CALNAU	Buzau	BZ386	2.289	2.289	2039	2036	IAS	ROC Buzau
224	COCHIRLEANCA	Buzau	BZ366	2.250	2.250	2039	2037	IAS	ROC Buzau
225	BOLDU	Buzau	BZ360	2.167	2.167	NO	2037	IAS	ROC Buzau

226	FUNDENI	Buzau	BZN001	3.280	3.280	NO	2038	IAS	ROC Buzau
227	GLODEANU SARAT	Buzau	BZ369	3.082	3.082	NO	2038	IAS	ROC Buzau
228	GREBANU	Buzau	BZN004	2.076	2.076	NO	2039	IAS	ROC Buzau
229	UNGURIU	Buzau	BZ395	2.778	2.879	NO	2039	2035	ROC Buzau
230	BASCENII	Buzau	BZ357	2.032	2.032	NO	2039	IAS	ROC Buzau

Calarasi County

No.	Agglomeration name	County	Agglomeration code	Population, #	Population, p.e.	Meeting the target for UWWTD			County based extended ROC area
						BAU	MAX	ACC	
231	CALARASI	Calarasi	CL56	60.814	67.278	2024	2023	2023	ROC Calarasi
232	OLTENITA	Calarasi	CL57	23.224	27.869	2024	2023	2023	ROC Calarasi
233	FUNDULEA	Calarasi	CL415	5.466	6.013	2025	2025	2025	ROC Calarasi
234	MODELU	Calarasi	CL426	9.137	9.137	2026	2026	2026	ROC Calarasi
235	CHIRNOGI	Calarasi	CL403	6.773	6.773	2027	2027	2027	ROC Calarasi
236	DRAGALINA	Calarasi	CL411	5.686	5.686	2028	2028	2028	ROC Calarasi
237	ROSETI	Calarasi	CL431	5.653	5.653	2029	2029	2029	ROC Calarasi
238	CURCANI	Calarasi	CL406	5.202	5.202	2031	2030	2030	ROC Calarasi
239	BUDESTI	Calarasi	CL402	4.470	4.694	2030	2030	2031	ROC Calarasi
240	LEHLIU-GARA	Calarasi	CL421	3.372	3.541	2030	2030	2031	ROC Calarasi
241	STEFAN CEL MARE	Calarasi	CL435	2.899	3.044	2031	2031	2031	ROC Calarasi
242	RAZVANI	Calarasi	CLN001	2.145	2.252	2031	2031	2031	ROC Calarasi
243	FUNDENI	Calarasi	CL414	4.760	4.760	2032	2032	IAS	ROC Calarasi
244	ULMENI	Calarasi	CL437	4.494	4.494	2032	2032	IAS	ROC Calarasi
245	PERISORU	Calarasi	CL428	3.816	3.816	2033	2033	IAS	ROC Calarasi
246	GRADISTEA	Calarasi	CL417	3.717	3.717	2035	2033	IAS	ROC Calarasi
247	FRUMUSANI	Calarasi	CL413	3.652	3.652	2037	2034	IAS	ROC Calarasi
248	GALBINASI	Calarasi	CL416	3.369	3.369	2038	2034	IAS	ROC Calarasi
249	MANASTIREA	Calarasi	CL424	3.282	3.282	2039	2035	IAS	ROC Calarasi
250	RADOVANU	Calarasi	CL430	3.237	3.237	NO	2035	IAS	ROC Calarasi
251	NANA	Calarasi	CL427	2.382	2.382	NO	2035	IAS	ROC Calarasi
252	SOLDANU	Calarasi	CL433	2.196	2.196	NO	2036	IAS	ROC Calarasi
253	UNIREA	Calarasi	CL438	2.006	2.006	NO	2036	IAS	ROC Calarasi
254	CIOCANESTI	Calarasi	CL405	4.305	4.305	NO	2037	IAS	ROC Calarasi
255	CUZA VODA	Calarasi	CL407	3.400	3.400	NO	2037	IAS	ROC Calarasi
256	VASILATI	Calarasi	CL439	3.267	3.267	NO	2038	IAS	ROC Calarasi
257	DOR MARUNT	Calarasi	CL409	3.260	3.260	NO	2038	IAS	ROC Calarasi
258	CHISELET	Calarasi	CL404	3.092	3.092	NO	2039	IAS	ROC Calarasi
259	STANCEA	Calarasi	CLN002	2.530	2.530	NO	2039	IAS	ROC Calarasi
260	BORCEA	Calarasi	CL401	7.383	7.383	2030	2030	2030	ROC Constanta
261	JEGALIA	Calarasi	CL419	2.689	2.689	2030	2030	2031	ROC Constanta

Caras-Severin County

No.	Agglomeration name	County	Agglomeration code	Population, #	Population, p.e.	Meeting the target for UWWTD			County based extended ROC area
						BAU	MAX	ACC	
262	RESITA	Caras-Severin	CS60	64.766	77.468	2038	2024	2024	ROC Caras-Severin
263	CARANSEBES	Caras-Severin	CS59	21.449	25.739	2039	2024	2024	ROC Caras-Severin
264	BOCSA	Caras-Severin	CS58	14.284	17.141	NO	2024	2024	ROC Caras-Severin
265	OTELU ROSU	Caras-Severin	CS449	10.768	11.629	NO	2024	2024	ROC Caras-Severin
266	BAILE HERCULANE	Caras-Severin	CS442	4.460	9.894	NO	2025	2025	ROC Caras-Severin
267	ORAVITA	Caras-Severin	CS448	8.284	9.112	NO	2027	2027	ROC Caras-Severin
268	MOLDOVA VECHE	Caras-Severin	CSN001	7.677	7.677	NO	2029	2029	ROC Caras-Severin
269	ANINA	Caras-Severin	CS441	6.637	7.156	NO	2030	2030	ROC Caras-Severin
270	BOZOVICI	Caras-Severin	CS444	2.014	2.115	NO	2031	2031	ROC Caras-Severin
271	MOLDOVA NOUA	Caras-Severin	CS447	2.614	2.745	NO	2032	2032	ROC Caras-Severin
272	TEREGOVA	Caras-Severin	CS450	2.638	2.638	NO	2032	2032	ROC Caras-Severin
273	MEHADIA	Caras-Severin	CS446	2.047	2.427	NO	2033	IAS	ROC Caras-Severin
274	CARASOVA	Caras-Severin	CS445	2.130	2.130	NO	2033	2032	ROC Caras-Severin

Cluj County

No.	Agglomeration name	County	Agglomeration code	Population, #	Population, p.e.	Meeting the target for UWWTD			County based extended ROC area
						BAU	MAX	ACC	
275	CLUJ NAPOCA	Cluj	CJ52	359.259	304.528	2022	2022	2022	ROC Cluj-Salaj
276	DEJ	Cluj	CJ53	35.764	29.668	2024	2024	2024	ROC Cluj-Salaj
277	GHERLA	Cluj	CJ54	22.247	18.927	2024	2024	2024	ROC Cluj-Salaj
278	HUEDIN	Cluj	CJ467	8.556	9.412	2025	2025	Prior 2020	ROC Cluj-Salaj
279	GILAU	Cluj	CJN001	9.118	8.336	2027	2027	2027	ROC Cluj-Salaj
280	BONTIDA	Cluj	CJ456	3.115	3.271	2032	2032	Prior 2020	ROC Cluj-Salaj
281	IARA	Cluj	CJ468	2.187	2.280	2033	2033	2033	ROC Cluj-Salaj
282	AGHIRESU-FABRICI	Cluj	CJ452	3.344	3.511	2034	2034	2034	ROC Cluj-Salaj
283	COJOCNA	Cluj	CJ462	2.299	2.299	2038	2038	IAS	ROC Cluj-Salaj
284	TRITENII DE JOS	Cluj	CJ474	2.161	2.161	2039	2039	IAS	ROC Cluj-Salaj
285	TURDA	Cluj	CJ55	52.708	63.194	2023	2023	2023	ROC Turda
286	CAMPIA TURZII	Cluj	CJ51	24.629	29.179	2024	2024	2024	ROC Turda
287	VIISOARA	Cluj	CJN002	4.656	4.889	2030	2030	Prior 2020	ROC Turda

Constanta County

No.	Agglomeration name	County	Agglomeration code	Population, #	Population, p.e.	Meeting the target for UWWTD			County based extended ROC area
						BAU	MAX	ACC	
288	CONSTANTA	Constanta	CT62	307.145	420.633	2022	2022	2022	ROC Constanta
289	MANGALIA	Constanta	CT67	35.181	80.936	2022	2022	2022	ROC Constanta
290	EFORIE	Constanta	CT64	15.930	58.903	2023	2023	2023	ROC Constanta
291	MEDGIDIA	Constanta	CT68	36.773	44.128	2023	2023	Prior 2020	ROC Constanta
292	CERNAVODA	Constanta	CT61	16.285	19.542	Prior 2020	Prior 2020	Prior 2020	ROC Constanta
293	CUMPANA	Constanta	CT63	12.465	14.571	2024	2024	2024	ROC Constanta
294	COSTINESTI	Constanta	CT485	2.716	14.259	2024	2024	2024	ROC Constanta
295	TECHIRGHIOL	Constanta	CT496	6.869	13.733	2024	2024	Prior 2020	ROC Constanta
296	OVIDIU	Constanta	CT72	11.386	13.663	Prior 2020	Prior 2020	Prior 2020	ROC Constanta
297	VALUL LUI TRAIAN	Constanta	CT499	12.275	12.325	2024	2024	2024	ROC Constanta
298	HARSOVA	Constanta	CT65	8.903	9.793	Prior 2020	Prior 2020	Prior 2020	ROC Constanta
299	MURFATLAR	Constanta	CT70	8.813	9.136	2025	2025	2025	ROC Constanta
300	LUMINA	Constanta	CT487	7.889	8.678	2026	2026	2026	ROC Constanta
301	MIHAIL KOGALNICEANU	Constanta	CT69	8.381	8.358	2027	2027	2027	ROC Constanta
302	COBADIN	Constanta	CT482	6.572	7.229	2028	2028	2028	ROC Constanta
303	AGIGEA	Constanta	CT478	4.759	5.908	2028	2028	2028	ROC Constanta
304	POARTA ALBA	Constanta	CT73	4.683	4.738	Prior 2020	Prior 2020	Prior 2020	ROC Constanta
305	2 MAI	Constanta	CT66	2.816	3.707	2030	2030	2031	ROC Constanta
306	CORBU	Constanta	CT484	4.601	4.831	2030	2030	2031	ROC Constanta
307	NEGRU VODA	Constanta	CT488	3.839	4.031	2031	2031	2032	ROC Constanta
308	LIMANU	Constanta		2.880	3.478	2031	2031	2033	ROC Constanta
309	COGEALAC	Constanta	CT483	2.931	3.078	2032	2032	2033	ROC Constanta
310	TOPRAISAR	Constanta	CT497	3.154	3.154	2032	2032	IAS	ROC Constanta
311	CUZA VODA	Constanta	CT486	3.632	3.632	2034	2034	IAS	ROC Constanta
312	NICOLAE BALCESCU	Constanta	CT489	3.070	3.070	2035	2035	IAS	ROC Constanta
313	BANEASA	Constanta	CT479	2.876	3.020	2035	2035	2034	ROC Constanta
314	CASTELU	Constanta	CT480	2.903	2.903	2036	2036	IAS	ROC Constanta
315	CIOBANU	Constanta	CT481	2.865	2.865	2036	2036	IAS	ROC Constanta
316	SATU NOU	Constanta	CT495	2.858	2.858	2037	2037	IAS	ROC Constanta
317	23 AUGUST	Constanta	CT477	2.798	2.798	2038	2038	IAS	ROC Constanta
318	PECINEAGA	Constanta	CT491	2.722	2.722	2038	2038	IAS	ROC Constanta
319	OSTROV	Constanta	CT490	2.595	2.595	2039	2039	IAS	ROC Constanta
320	RASOVA	Constanta	CT492	2.173	2.173	2039	2039	IAS	ROC Constanta

Covasna County

No.	Agglomeration name	County	Agglomeration code	Population, #	Population, p.e.	Meeting the target for UWWTD			County based extended ROC area
						BAU	MAX	ACC	
321	SFANTU GHEORGHE	Covasna	CV75	51.116	90.995	2021	2021	Prior 2020	ROC Covasna
322	COVASNA	Covasna	CV74	8.780	18.346	2021	2021	2021	ROC Covasna
323	TARGU SECUIESC	Covasna	CV76	15.289	14.683	2024	2024	2024	ROC Covasna
324	INTORSURA BUZAUULUI	Covasna	CV515	9.209	9.923	2028	2028	2028	ROC Covasna
325	BARAOLT	Covasna	CV501	4.897	5.142	2030	2030	2030	ROC Covasna
326	OZUN	Covasna	CV518	2.403	2.523	2030	2030	2030	ROC Covasna
327	BRETCU	Covasna	CV507	2.228	2.339	2030	2030	2030	ROC Covasna
328	GHELNITA	Covasna	CV511	4.042	4.042	2031	2031	2031	ROC Covasna
329	TURIA	Covasna	CV522	3.370	3.539	2032	2032	2032	ROC Covasna
330	ZAGON	Covasna	CV526	3.095	3.250	2033	2033	2033	ROC Covasna
331	CERNAT	Covasna	CV509	3.067	3.220	2033	2033	2033	ROC Covasna
332	OJDULA	Covasna	CV517	2.931	2.931	2035	2035	IAS	ROC Covasna
333	BELIN	Covasna	CV500	2.799	2.799	2036	2036	IAS	ROC Covasna
334	ZABALA	Covasna	CV525	2.606	2.606	2037	2037	IAS	ROC Covasna
335	SANZIENI	Covasna	CV520	2.591	2.591	2039	2039	IAS	ROC Covasna
336	ARACI	Covasna	CV523	2.107	2.107	2039	2039	IAS	ROC Covasna

Dambovită County

No.	Agglomeration name	County	Agglomeration code	Population, #	Population, p.e.	Meeting the target for UWWTD			County based extended ROC area
						BAU	MAX	ACC	
337	TARGOVISTE	Dambovită	DB80	74.767	80.846	2021	2021	2021	ROC Dambovită
338	MORENI	Dambovită	DB78	16.812	20.174	2021	2021	Prior 2020	ROC Dambovită
339	PUCIOASA	Dambovită	DB79	11.629	14.751	2022	2021	Prior 2020	ROC Dambovită
340	GAESTI	Dambovită	DB77	11.996	14.395	2022	2021	Prior 2020	ROC Dambovită
341	RAZVAD	Dambovită	DB584	13.326	13.726	2024	2022	2022	ROC Dambovită
342	SOTANGA	Dambovită	DB588	11.748	11.992	2025	2023	2023	ROC Dambovită
343	TITU	Dambovită	DB81	14.256	14.915	2025	2024	2024	ROC Dambovită
344	COJASCA	Dambovită	DB540	7.273	7.384	2025	2025	2025	ROC Dambovită
345	I.L. CARAGIALE	Dambovită	DB561	6.487	6.811	2026	2026	2026	ROC Dambovită
346	FIENI	Dambovită	DB553	6.113	6.669	2026	2026	Prior 2020	ROC Dambovită
347	COMISANI	Dambovită	DB541	5.092	5.292	2026	2026	2026	ROC Dambovită
348	BALENI	Dambovită	DB528	7.897	7.897	2028	2028	2028	ROC Dambovită
349	RACARI	Dambovită	DB581	7.799	7.799	2029	2029	2029	ROC Dambovită
350	DECINDENI	Dambovită	DBN002	5.314	5.314	2030	2030	2030	ROC Dambovită
351	DOICESTI	Dambovită	DB550	4.225	4.436	2030	2030	2031	ROC Dambovită
352	NICULESTI	Dambovită	DB571	2.295	2.410	2030	2030	2031	ROC Dambovită
353	LUDESTI	Dambovită	DB563	2.020	2.121	2030	2030	2031	ROC Dambovită

354	PIETROSITA-MOROENI	Dambovita	DB576	4.473	4.473	2031	2031	IAS	ROC Dambovita
355	ROMANESTI	Dambovita	DBN009	3.995	3.995	2031	2031	IAS	ROC Dambovita
356	LUNGULETU	Dambovita	DB564	3.964	3.964	2032	2032	IAS	ROC Dambovita
357	BREZOAIELE	Dambovita	DB533	3.847	3.847	2032	2032	IAS	ROC Dambovita
358	DARMANESTI	Dambovita	DB548	3.481	3.481	2033	2033	IAS	ROC Dambovita
359	BUCSANI	Dambovita	DB535	3.456	3.456	2033	2033	IAS	ROC Dambovita
360	PICIOR DE MUNTE	Dambovita	DBN007	3.274	3.274	2033	2033	IAS	ROC Dambovita
361	IONESTI	Dambovita	DBN005	3.236	3.236	2034	2034	IAS	ROC Dambovita
362	OCNITA	Dambovita	DB573	3.163	3.163	2034	2034	IAS	ROC Dambovita
363	POIANA	Dambovita	DB577	3.139	3.139	2034	2034	IAS	ROC Dambovita
364	GURA SUTII	Dambovita	DB558	3.092	3.092	2035	2035	IAS	ROC Dambovita
365	VACARESTI	Dambovita	DB593	2.952	2.952	2036	2035	IAS	ROC Dambovita
366	GLODENI	Dambovita	DB555	2.858	2.858	2037	2035	IAS	ROC Dambovita
367	FANTANELE	Dambovita	DBN003	2.668	2.668	2037	2036	IAS	ROC Dambovita
368	POTLOGI	Dambovita	DB578	2.649	2.649	2037	2036	IAS	ROC Dambovita
369	VLADENI	Dambovita	DB599	2.646	2.646	2038	2036	IAS	ROC Dambovita
370	PERSINARI	Dambovita	DBN006	2.572	2.572	2038	2036	IAS	ROC Dambovita
371	BEZDEAD	Dambovita	DB530	2.474	2.474	2038	2037	IAS	ROC Dambovita
372	TATARANI	Dambovita	DB590	2.407	2.407	2039	2037	IAS	ROC Dambovita
373	LUCIENI	Dambovita	DB562	2.340	2.340	2039	2037	IAS	ROC Dambovita
374	TEIS	Dambovita	DBN010	2.325	2.325	2039	2037	IAS	ROC Dambovita
375	NUCET	Dambovita	DB572	2.244	2.244	2039	2038	IAS	ROC Dambovita
376	MANESTI	Dambovita	DB566	2.143	2.143	2039	2038	IAS	ROC Dambovita
377	CIOCANESTI	Dambovita	DB538	2.124	2.124	NO	2038	IAS	ROC Dambovita
378	GHEBOAIA	Dambovita	DBN004	2.025	2.025	NO	2038	IAS	ROC Dambovita
379	DARZA	Dambovita	DBN001	2.011	2.011	NO	2039	IAS	ROC Dambovita
380	VISINA	Dambovita	DB597	2.549	2.549	NO	2039	IAS	ROC Dambovita
381	PIETRARI	Dambovita	DBN008	2.405	2.405	NO	2039	IAS	ROC Dambovita
382	SLOBOZIA MOARA	Dambovita	DB587	2.000	2.000	NO	2039	IAS	ROC Dambovita

Dolj County

No.	Agglomeration name	County	Agglomeration code	Population, #	Population, p.e.	Meeting the target for UWWTD			County based extended ROC area
						BAU	MAX	ACC	
383	CRAIOVA	Dolj	DJ84	256.620	257.101	2024	2024	2024	ROC Dolj
384	BAILESTI	Dolj	DJ82	15.836	19.003	2024	2024	2024	ROC Dolj
385	DABULENI	Dolj	DJ85	14.977	17.419	2024	2024	2024	ROC Dolj
386	FILIASI	Dolj	DJ86	11.339	13.607	Prior 2020	Prior 2020	Prior 2020	ROC Dolj
387	CALAFAT	Dolj	DJ83	12.600	12.614	2024	2024	2024	ROC Dolj
388	POIANA MARE	Dolj	DJ87	9.654	10.507	2024	2024	2024	ROC Dolj
389	PODARI	Dolj	DJ651	7.371	7.559	2025	2025	2025	ROC Dolj
390	SEGARCEA	Dolj	DJ656	6.633	7.296	2025	2025	2026	ROC Dolj
391	BARCA	Dolj	DJ607	6.110	6.415	2026	2026	2026	ROC Dolj
392	SADOVA	Dolj	DJ654	6.044	6.044	2027	2027	2027	ROC Dolj

393	VALEA STANCIULUI	Dolj	DJ662	5.303	5.303	2028	2028	2029	ROC Dolj
394	MOTATEI	Dolj	DJ644	5.035	5.035	2030	2030	2030	ROC Dolj
395	ISALNITA	Dolj	DJ636	3.403	3.573	2030	2030	2030	ROC Dolj
396	CARCEA	Dolj	DJ614	2.766	2.904	2030	2030	2030	ROC Dolj
397	BISTRET	Dolj	DJ609	2.314	2.430	2030	2030	2030	ROC Dolj
398	CARAULA	Dolj	DJ613	2.213	2.324	2030	2030	2030	ROC Dolj
399	BREASTA	Dolj	DJ611	2.133	2.231	2030	2030	2031	ROC Dolj
400	CIUPERCENII VECHI	Dolj	DJ621	2.028	2.028	2030	2030	2031	ROC Dolj
401	PLENITA	Dolj	DJ650	3.545	3.722	2030	2030	2032	ROC Dolj
402	BECHET	Dolj	DJ608	3.382	3.551	2030	2030	2032	ROC Dolj
403	CETATE	Dolj	DJ619	4.468	4.468	2031	2031	IAS	ROC Dolj
404	GHIDICI	Dolj	DJ649	4.319	4.319	2031	2031	IAS	ROC Dolj
405	DESA	Dolj	DJ625	4.289	4.289	2032	2032	IAS	ROC Dolj
406	MARSANI	Dolj	DJ641	4.238	4.238	2032	2032	IAS	ROC Dolj
407	CERAT	Dolj	DJ618	3.834	3.834	2033	2033	IAS	ROC Dolj
408	PIELESTI	Dolj	DJ648	3.757	3.757	2033	2033	IAS	ROC Dolj
409	CIUPERCENII NOI	Dolj	DJ620	3.752	3.752	2033	2033	IAS	ROC Dolj
410	OSTROVENI	Dolj	DJ647	3.327	3.327	2034	2034	IAS	ROC Dolj
411	LEU	Dolj	DJ637	3.241	3.241	2034	2034	IAS	ROC Dolj
412	MAGLAVIT	Dolj	DJ639	3.234	3.234	2035	2035	IAS	ROC Dolj
413	LIPOVU	Dolj	DJ638	2.918	2.918	2035	2035	IAS	ROC Dolj
414	COSOVENI	Dolj	DJ622	2.917	2.917	2036	2035	IAS	ROC Dolj
415	URZICUTA	Dolj	DJ661	2.376	2.376	2036	2036	IAS	ROC Dolj
416	GIURGITA	Dolj	DJ634	2.138	2.138	2037	2036	IAS	ROC Dolj
417	NEGOI	Dolj	DJ646	2.090	2.090	2037	2036	IAS	ROC Dolj
418	GOIESTI	Dolj	DJ635	4.924	4.924	2038	2037	IAS	ROC Dolj
419	AMARASTII DE JOS	Dolj	DJ605	3.865	3.865	2039	2037	IAS	ROC Dolj
420	GALICEA MARE	Dolj	DJ630	3.857	3.857	2039	2038	IAS	ROC Dolj
421	DANETI	Dolj	DJ624	3.828	3.828	2039	2038	IAS	ROC Dolj
422	UNIREA	Dolj	DJ660	3.517	3.517	NO	2039	IAS	ROC Dolj
423	CELARU	Dolj	DJ617	2.723	2.723	NO	2039	IAS	ROC Dolj
424	GANGIOVA	Dolj	DJ631	2.244	2.244	NO	2039	IAS	ROC Dolj

Galati County

No.	Agglomeration name	County	Agglomeration code	Population, #	Population, p.e.	Meeting the target for UWWTD			County based extended ROC area
						BAU	MAX	ACC	
425	GALATI	Galati	GL91	234.874	189.419	2022	2022	2022	ROC Galati
426	TECUCI	Galati	GL94	32.773	39.033	2022	2022	Prior 2020	ROC Galati
427	LIESTI	Galati	GL92	30.029	31.952	2022	2022	Prior 2020	ROC Galati
428	PECHEA	Galati	GL93	15.917	17.149	2023	2023	2023	ROC Galati
429	MATCA	Galati	GLN07	10.517	10.517	2024	2024	2024	ROC Galati
430	TOFLEA	Galati	GLN10	7.054	7.054	2026	2026	2026	ROC Galati

431	CUDALBI	Galati	GL671	5.879	5.879	2028	2028	2028	ROC Galati
432	COROD	Galati	GL668	5.687	5.687	2030	2030	2030	ROC Galati
433	TG. BUJOR	Galati	GL689	4.738	4.975	2030	2030	Prior 2020	ROC Galati
434	SCHELA	Galati	GL684	2.804	2.944	2030	2030	2031	ROC Galati
435	GRIVITA	Galati	GL675	2.265	2.378	2030	2030	2031	ROC Galati
436	SIVITA	Galati	GLN08	2.177	2.286	2030	2030	2031	ROC Galati
437	COSTACHE NEGRI	Galati	GL669	2.150	2.258	2030	2030	2031	ROC Galati
438	GHIDIGENI	Galati	GLN04	2.726	2.863	2031	2031	2032	ROC Galati
439	BALENI	Galati	GL663	2.011	2.112	2031	2031	2033	ROC Galati
440	T. VLADIMIRESCU	Galati	GL687	4.539	4.539	2032	2032	IAS	ROC Galati
441	MUNTENI	Galati	GL678	4.205	4.205	2032	2032	IAS	ROC Galati
442	INDEPENDENTA	Galati	GL676	4.147	4.147	2033	2033	IAS	ROC Galati
443	PISCU	Galati	GL682	4.001	4.001	2034	2034	IAS	ROC Galati
444	FRUMUSITA	Galati	GL673	3.472	3.472	2034	2034	IAS	ROC Galati
445	MOVILENI	Galati	GL677	3.063	3.063	2035	2035	IAS	ROC Galati
446	SMARDAN	Galati	GLN09	2.371	2.371	2035	2035	IAS	ROC Galati
447	SENDRENI	Galati	GL685	2.277	2.277	2035	2035	IAS	ROC Galati
448	HANU CONACHI	Galati	GLN05	2.159	2.159	2036	2036	IAS	ROC Galati
449	FURCENII NOI	Galati	GLN03	2.077	2.077	2036	2036	IAS	ROC Galati
450	FARTANESTI	Galati	GLN02	4.867	4.983	2037	2037	2034	ROC Galati
451	TULUCESTI	Galati	GL690	3.642	3.642	2037	2037	IAS	ROC Galati
452	BERESTI	Galati	GL664	2.893	3.024	2038	2038	2034	ROC Galati
453	VL. MARULUI	Galati	GL692	2.482	2.482	2038	2038	IAS	ROC Galati
454	BRANISTEA	Galati	GLN01	2.221	2.221	2039	2039	IAS	ROC Galati
455	NEGRILESTI	Galati	GL680	2.135	2.135	2039	2039	IAS	ROC Galati

Giurgiu County

No.	Agglomeration name	County	Agglomeration code	Population, #	Population, p.e.	Meeting the target for UWWTD			County based extended ROC area
						BAU	MAX	ACC	
456	GIURGIU	Giurgiu	GR96	60.111	71.752	2025	2024	2024	ROC Giurgiu
457	BOLINTIN-VALE	Giurgiu	GRN001	7.793	8.572	Prior 2020	Prior 2020	Prior 2020	ROC Giurgiu
458	VALEA DRAGULUI	Giurgiu	GR734	9.077	9.077	2027	2027	2027	ROC Giurgiu
459	BOLINTIN DEAL	Giurgiu	GR695	5.446	5.446	2028	2028	2028	ROC Giurgiu
460	GOSTINARI	Giurgiu	GR709	5.126	5.126	2030	2030	2030	ROC Giurgiu
461	MIHAILESTI	Giurgiu	GR722	4.540	4.767	Prior 2020	Prior 2020	Prior 2020	ROC Giurgiu
462	PRUNDU	Giurgiu	GR724	3.330	3.497	2030	2030	2030	ROC Giurgiu
463	ROATA DE JOS	Giurgiu	GR727	3.784	3.974	2030	2030	2031	ROC Giurgiu
464	CARTOJANI	Giurgiu	GRN002	3.496	3.671	2030	2030	2032	ROC Giurgiu
465	MALU	Giurgiu	GR718	2.267	2.380	2030	2030	2032	ROC Giurgiu
466	SLOBOZIA	Giurgiu	GRN007	2.261	2.374	2030	2030	2032	ROC Giurgiu
467	COSOBA	Giurgiu	GR701	4.236	4.236	2034	2031	IAS	ROC Giurgiu
468	TRESTIENI	Giurgiu	GRN009	4.079	4.079	2036	2031	IAS	ROC Giurgiu

469	FLORESTI	Giurgiu	GR704	3.957	3.957	2038	2032	IAS	ROC Giurgiu
470	OGREZENI	Giurgiu	GR723	3.665	3.665	2039	2032	IAS	ROC Giurgiu
471	MALU SPART	Giurgiu	GR719	3.537	3.537	NO	2033	IAS	ROC Giurgiu
472	ADUNATII-COPACENI	Giurgiu	GR693	3.047	3.047	NO	2033	IAS	ROC Giurgiu
473	VEDEA	Giurgiu	GR736	2.958	2.958	NO	2034	IAS	ROC Giurgiu
474	SABARENI	Giurgiu	GR728	2.746	2.746	NO	2034	IAS	ROC Giurgiu
475	PALANCA	Giurgiu	GRN006	2.564	2.564	NO	2035	IAS	ROC Giurgiu
476	NOVACI	Giurgiu	GRN005	2.229	2.229	NO	2035	IAS	ROC Giurgiu
477	CALUGARENI	Giurgiu	GR698	2.145	2.145	NO	2035	IAS	ROC Giurgiu
478	HOTARELE	Giurgiu	GR714	4.956	4.956	NO	2036	IAS	ROC Giurgiu
479	BANEASA	Giurgiu	GR694	2.868	2.868	NO	2036	IAS	ROC Giurgiu
480	MARSA	Giurgiu	GR720	2.629	2.629	NO	2037	IAS	ROC Giurgiu
481	IZVOARELE	Giurgiu	GR715	2.564	2.564	NO	2037	IAS	ROC Giurgiu
482	CREVEDIA MARE	Giurgiu	GR702	2.442	2.442	NO	2038	IAS	ROC Giurgiu
483	MIHAI BRAVU	Giurgiu	GR721	2.409	2.409	NO	2038	IAS	ROC Giurgiu
484	GHIMPATI	Giurgiu	GR708	2.408	2.408	NO	2038	IAS	ROC Giurgiu
485	FRATESTI	Giurgiu	GR705	2.400	2.400	NO	2039	IAS	ROC Giurgiu
486	GAISENI	Giurgiu	GR706	2.095	2.095	NO	2039	IAS	ROC Giurgiu
487	DARASTI-VLASCA	Giurgiu	GRN004	2.000	2.000	NO	2039	IAS	ROC Giurgiu

Gorj County

No.	Agglomeration name	County	Agglomeration code	Population, #	Population, p.e.	Meeting the target for UWWTD			County based extended ROC area
						BAU	MAX	ACC	
488	TARGU JIU	Gorj	GJ90	82.329	96.806	2025	2023	2023	ROC Gorj
489	MOTRU	Gorj	GJ88	18.268	21.163	2025	2024	2024	ROC Gorj
490	ROVINARI	Gorj	GJ89	10.910	12.995	2025	2024	2024	ROC Gorj
491	BUMBESTI JIU	Gorj	GJ743	7.773	8.452	2025	2025	2025	ROC Gorj
492	BALTENI	Gorj	GJ742	8.011	8.315	2027	2027	2027	ROC Gorj
493	MATASARI	Gorj	GJ750	5.319	5.584	2027	2027	2027	ROC Gorj
494	URDARI	Gorj	GJ763	5.491	5.491	2030	2030	2030	ROC Gorj
495	TICLENI	Gorj	GJ759	3.969	4.167	Prior 2020	Prior 2020	Prior 2020	ROC Gorj
496	TARGU-CARBUNESTI	Gorj	GJ758	4.045	4.247	2030	2030	2030	ROC Gorj
497	TURCENI	Gorj	GJ762	3.670	3.845	2030	2030	2030	ROC Gorj
498	NOVACI	Gorj	GJ751	2.908	3.738	2031	2031	2031	ROC Gorj
499	FLORESTI	Gorj	GJ749	2.465	2.465	2033	2033	IAS	ROC Gorj
500	RUNCU	Gorj	GJ755	1.979	2.136	2035	2035	IAS	ROC Gorj
501	BALTA	Gorj	GJ740	2.095	2.095	2037	2037	IAS	ROC Gorj
502	BAIA DE FIER	Gorj	GJ739	2.060	2.821	2039	2039	IAS	ROC Gorj

Harghita County

No.	Agglomeration name	County	Agglomeration code	Population, #	Population, p.e.	Meeting the target for UWWTD			County based extended ROC area
						BAU	MAX	ACC	
503	MIERCUREA CIUC	Harghita	HR106	37.755	44.746	2022	2022	Prior 2020	ROC Harghita
504	ODORHEIU SECUIESC	Harghita	HR107	36.150	43.326	2022	2022	Prior 2020	ROC Harghita
505	GHEORGHENI	Harghita	HR105	17.398	17.436	2023	2023	2022	ROC Harghita
506	SANDOMINIC	Harghita	HR109	13.332	14.294	2023	2023	Prior 2020	ROC Harghita
507	TOPLITA	Harghita	HR110	10.610	11.844	2023	2023	2023	ROC Harghita
508	REMETEA	Harghita	HR108	10.320	11.123	2024	2024	2024	ROC Harghita
509	VLAHITA	Harghita	HR798	6.122	6.734	2025	2025	Prior 2020	ROC Harghita
510	BALAN	Harghita	HR766	5.800	6.380	2026	2026	2026	ROC Harghita
511	CICEU	Harghita	HRN001	5.076	5.330	2026	2026	Prior 2020	ROC Harghita
512	CORUND	Harghita	HR772	4.944	5.191	2030	2030	2030	ROC Harghita
513	JOSENI	Harghita	HR777	4.641	4.641	2031	2031	2032	ROC Harghita
514	ZETEA	Harghita	HR799	4.256	4.469	2031	2031	2032	ROC Harghita
515	PRAID	Harghita	HR787	3.288	4.466	2031	2031	2033	ROC Harghita
516	BAILE TUSNAD	Harghita	HR 765	1.535	3.618	2031	2031	2033	ROC Harghita
517	LAZAREA	Harghita	HR778	3.101	3.256	2032	2032	2033	ROC Harghita
518	FRUMOASA	Harghita	HR775	2.823	2.911	2032	2032	Prior 2020	ROC Harghita
519	SANMARTIN	Harghita	HR789	2.264	2.377	2032	2032	Prior 2020	ROC Harghita
520	MADARAS	Harghita	HRN003	2.136	2.243	2032	2032	Prior 2020	ROC Harghita
521	RACU	Harghita	HRN004	2.093	2.148	2032	2032	Prior 2020	ROC Harghita
522	BORSEC	Harghita	HR768	2.336	2.772	2032	2032	2034	ROC Harghita
523	CAPALNITA	Harghita	HR770	1.953	2.051	2032	2032	2035	ROC Harghita
524	SUSENI	Harghita	HR795	4.830	4.830	2034	2034	IAS	ROC Harghita
525	CIUMANI	Harghita	HRN002	4.171	4.171	2036	2036	IAS	ROC Harghita
526	CIUCSANGEORGII	Harghita	HR771	3.390	3.390	2037	2037	IAS	ROC Harghita
527	LUETA	Harghita	HR779	3.256	3.256	2038	2038	IAS	ROC Harghita
528	SANCRAIENI	Harghita	HR788	2.457	2.457	2039	2039	IAS	ROC Harghita
529	SANSIMION	Harghita	HR790	2.339	2.339	2039	2039	2035	ROC Harghita
530	CRISTURU SECUIESC	Harghita	HR104	8.667	9.480	Prior 2020	Prior 2020	Prior 2020	ROC Mures

Hunedoara County

No.	Agglomeration name	County	Agglomeration code	Population, #	Population, p.e.	Meeting the target for UWWTD			County based extended ROC area
						BAU	MAX	ACC	
531	DEVA	Hunedoara	HD98	54.320	68.728	2021	2021	Prior 2020	ROC Hunedoara
532	HUNEDOARA	Hunedoara	HD100	53.080	54.160	2024	2024	2024	ROC Hunedoara
533	ORASTIE	Hunedoara	HD101	16.608	17.051	2024	2024	2024	ROC Hunedoara
534	BRAD	Hunedoara	HD97	10.453	10.673	2024	2024	2024	ROC Hunedoara

535	SIMERIA	Hunedoara	HD103	9.805	9.912	2026	2026	Prior 2020	ROC Hunedoara
536	HATEG	Hunedoara	HD99	8.536	8.664	2027	2027	2027	ROC Hunedoara
537	CALAN	Hunedoara	HD805	7.734	8.482	2030	2030	2030	ROC Hunedoara
538	GEOAGIU-BAI	Hunedoara	HDN4	361	2.118	2030	2030	2030	ROC Hunedoara
539	GEOAGIU	Hunedoara	HD808	2.418	4.068	2033	2033	2030	ROC Hunedoara
540	CRISCIOR	Hunedoara	HDN1	3.332	3.499	2036	2036	2031	ROC Hunedoara
541	PETROSANI-PETRILA	Hunedoara	HD102	51.907	53.659	2021	2021	Prior 2020	ROC Valea Jiului
542	VULCAN	Hunedoara	HDN2	26.293	26.984	2024	2024	2023	ROC Valea Jiului
543	LUPENI	Hunedoara	HDN3	21.467	21.981	2024	2024	2024	ROC Valea Jiului
544	URICANI	Hunedoara	HD820	7.339	10.137	2024	2024	2024	ROC Valea Jiului

Ialomita County

No.	Agglomeration name	County	Agglomeration code	Population, #	Population, p.e.	Meeting the target for UJWTD			County based extended ROC area
						BAU	MAX	ACC	
545	SLOBOZIA	Ialomita	IL122	41.582	49.538	2027	2021	Prior 2020	ROC Ialomita
546	FETESTI-GARA	Ialomita	ILN002	18.488	22.186	2038	2024	2024	ROC Ialomita
547	AMARA	Ialomita	IL822	6.713	9.048	2039	2026	2026	ROC Ialomita
548	BARBULESTI	Ialomita	IL823	5.510	5.510	NO	2030	2030	ROC Ialomita
549	FACAENI	Ialomita	IL830	4.336	4.553	NO	2030	2033	ROC Ialomita
550	BORDUSANI	Ialomita	IL825	4.396	4.396	NO	2031	IAS	ROC Ialomita
551	COSERENI	Ialomita	IL828	4.138	4.138	NO	2032	IAS	ROC Ialomita
552	GARBOVI	Ialomita	IL832	3.657	3.657	NO	2032	IAS	ROC Ialomita
553	TRAIAN	Ialomita	IL846	2.956	2.956	NO	2033	IAS	ROC Ialomita
554	MIHAIL KOGALNICEANU	Ialomita	IL839	2.692	2.692	NO	2033	IAS	ROC Ialomita
554	SAVENI	Ialomita	IL844	2.649	2.649	NO	2034	IAS	ROC Ialomita
555	GHEORGHE DOJA	Ialomita	IL833	2.248	2.248	NO	2034	IAS	ROC Ialomita
556	GRIVITA	Ialomita	IL836	2.200	2.200	NO	2035	IAS	ROC Ialomita
557	SLOBOZIA NOUA	Ialomita	ILN003	2.132	2.132	NO	2035	2033	ROC Ialomita
558	BORANESTI	Ialomita	IL824	2.110	2.110	NO	2035	IAS	ROC Ialomita
559	GRINDU	Ialomita	IL835	2.050	2.050	NO	2036	IAS	ROC Ialomita
560	OGRADA	Ialomita	IL842	2.012	2.012	NO	2036	IAS	ROC Ialomita
561	ROSIORI	Ialomita	IL843	2.011	2.011	NO	2037	IAS	ROC Ialomita
562	MUNTENI-BUZAU	Ialomita	IL841	3.059	3.059	NO	2037	IAS	ROC Ialomita
563	JILAVELE	Ialomita	IL838	2.818	2.818	NO	2038	IAS	ROC Ialomita
564	SCANTEIA	Ialomita	IL845	2.587	2.587	NO	2038	IAS	ROC Ialomita
565	ALEXENI	Ialomita	ILN001	2.166	2.166	NO	2039	IAS	ROC Ialomita
566	GHEORGHE LAZAR	Ialomita	IL834	2.116	2.116	NO	2039	IAS	ROC Ialomita
567	URZICENI	Ialomita	IL124	18.727	22.475	2024	2024	2024	ROC Calarasi
568	FETESTI	Ialomita	IL121	9.254	18.521	2024	2024	2024	ROC Constanta
569	TANDAREI	Ialomita	IL123	12.611	15.133	2024	2024	2024	ROC Constanta
570	DRIDU	Ialomita	IL829	5.860	6.152	2028	2028	2028	ROC Constanta

571	CAZANESTI	Ialomita	IL827	3.121	3.121	2033	2033	IAS	ROC Constanta
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Iasi County

No.	Agglomeration name	County	Agglomeration code	Population, #	Population, p.e.	Meeting the target for UWWTD			County based extended ROC area
						BAU	MAX	ACC	
572	IASI	Iasi	IS126	335.393	582.439	2023	2023	2023	ROC Iasi
573	PASCANI	Iasi	IS127	27.619	40.753	2024	2024	2024	ROC Iasi
574	TARGU FRUMOS	Iasi	IS129	12.468	24.607	2024	2024	2024	ROC Iasi
575	HARLAU	Iasi	IS125	12.038	17.546	2024	2024	2024	ROC Iasi
576	PODU ILOAIEI	Iasi	IS128	6.925	7.618	2025	2025	2025	ROC Iasi
577	BELCESTI	Iasi	IS849	6.611	6.806	2028	2028	2028	ROC Iasi
578	RUGINOASA	Iasi	IS886	4.983	5.061	2030	2030	2030	ROC Iasi
579	RADUCANENI	Iasi	IS885	3.909	4.104	2030	2030	2030	ROC Iasi
580	TODIRESTI	Iasi	IS896	3.780	3.969	2031	2031	2031	ROC Iasi
581	LETCANI	Iasi	IS874	3.422	3.593	2031	2031	2031	ROC Iasi
582	MIRONEASA	Iasi	IS875	3.053	3.053	2032	2032	2032	ROC Iasi
583	CRISTESTI	Iasi	IS859	2.833	2.975	2032	2032	2032	ROC Iasi
584	DUMESTI	Iasi	IS861	2.756	2.894	2032	2032	2032	ROC Iasi
585	PRISACANI	Iasi	IS883	2.348	2.466	2033	2033	2033	ROC Iasi
586	ERBICENI	Iasi	IS862	2.144	2.242	2033	2033	2033	ROC Iasi
587	FANTANELE	Iasi	IS863	2.112	2.218	2033	2033	2033	ROC Iasi
588	BIVOLARI	Iasi	IS850	2.106	2.211	2033	2033	2033	ROC Iasi
589	MOTCA	Iasi	IS879	3.335	3.502	2034	2034	2034	ROC Iasi
590	HALAUCESTI	Iasi	IS869	4.477	4.701	2035	2035	2034	ROC Iasi
591	GATESTI	Iasi	ISN001	4.465	4.465	2035	2035	IAS	ROC Iasi
592	FOCURI	Iasi	IS864	3.502	3.502	2036	2036	IAS	ROC Iasi
593	RACHITENI	Iasi	ISN003	2.791	2.791	2036	2036	IAS	ROC Iasi
594	VOINESTI	Iasi	IS902	2.476	2.476	2037	2037	IAS	ROC Iasi
595	GLODENI	Iasi	ISN002	2.453	2.453	2038	2038	IAS	ROC Iasi
596	POPRICANI	Iasi	IS882	2.179	2.179	2038	2038	IAS	ROC Iasi
597	IUGANI	Iasi	IS 872	2.084	2.084	2039	2039	IAS	ROC Iasi
598	OTELANI	Iasi	IS880	2.074	2.074	2039	2039	IAS	ROC Iasi
599	BUTEA	Iasi	IS851	2.063	2.063	2039	2039	IAS	ROC Iasi

Ifov County

No.	Agglomeration name	County	Agglomeration code	Population, #	Population, p.e.	Meeting the target for UWWTD			County based extended ROC area
						BAU	MAX	ACC	
600	BALOTESTI	Ifov	IF907	15.614	16.095	2021	2021	2021	ROC Ifov
601	BRANESTI	Ifov	IF909	9.950	10.874	2022	2022	2022	ROC Ifov
602	1 DECEMBRIE	Ifov	IF904	12.589	12.589	2024	2024	2024	ROC Ifov
603	CORNETU	Ifov	IFN001	7.538	8.244	2024	2024	2024	ROC Ifov
604	STEFANESTII DE JOS	Ifov	IF931	6.776	7.115	2025	2025	2025	ROC Ifov
605	GLINA	Ifov	IF922	6.453	7.098	2025	2025	2025	ROC Ifov

606	MOARA VLASIEI	Ifov	IF925	5.119	5.631	2026	2026	2026	ROC Ifov
607	GHERMANESTI	Ifov	IFN003	8.239	8.723	2027	2027	2027	ROC Ifov
608	BERCENI	Ifov	IF908	7.010	7.010	2028	2028	2028	ROC Ifov
609	PERIS	Ifov	IF927	6.583	6.583	2030	2030	2030	ROC Ifov
610	CERNICA	Ifov	IF911	3.691	3.876	2030	2030	2030	ROC Ifov
611	TANGANU	Ifov	IF933	3.529	3.529	2030	2030	2031	ROC Ifov
612	BALACEANCA	Ifov	IF906	3.280	3.444	2031	2031	2031	ROC Ifov
613	SAFTICA	Ifov	IFN005	2.327	2.443	2031	2031	2031	ROC Ifov
614	CACIULATI	Ifov	IFN006	2.232	2.344	2031	2031	2031	ROC Ifov
615	DARASTI-ILFOV	Ifov	IF916	3.538	3.538	2032	2032	IAS	ROC Ifov
616	CIOPLANI	Ifov	IF912	3.236	3.236	2033	2033	IAS	ROC Ifov
617	GRUIU	Ifov	IF924	3.180	3.180	2034	2034	IAS	ROC Ifov
618	DRAGOMIRESTI -DEAL	Ifov	IFN002	3.141	3.141	2035	2035	IAS	ROC Ifov
619	DRAGOMIRESTI VALE	Ifov	IF920	2.935	3.082	2036	2036	2032	ROC Ifov
620	SILISTEA SNAGOVULUI	Ifov	IF929	2.775	2.775	2036	2036	IAS	ROC Ifov
621	DASCALU	Ifov	IF917	2.734	2.734	2037	2037	IAS	ROC Ifov
622	LIPIA	Ifov	IFN004	2.627	2.627	2038	2038	IAS	ROC Ifov
623	GRADISTEA	Ifov	IF923	2.401	2.401	2039	2039	IAS	ROC Ifov
624	PETRACHIOAIA	Ifov	IF928	2.331	2.331	2039	2039	IAS	ROC Ifov

Maramures County

No.	Agglomeration name	County	Agglomeration code	Population, #	Population, p.e.	Meeting the target for UWWTD			County based extended ROC area
						BAU	MAX	ACC	
625	BAIA MARE	Maramures	MM131	132.607	157.559	2024	2022	2022	ROC Maramures
626	SIGHETU MARMATIEI	Maramures	MM134	32.803	39.128	2024	2022	2022	ROC Maramures
627	BORSA	Maramures	MM132	31.194	37.282	2026	2024	2024	ROC Maramures
628	VESEU DE SUS	Maramures	MM135	12.549	14.778	2027	2024	2024	ROC Maramures
629	SEINI	Maramures	MM969	7.364	8.026	2027	2025	2025	ROC Maramures
630	POENILE DE SUB MUNTE	Maramures	MM133	8.374	8.374	2027	2027	2027	ROC Maramures
631	IEUD	Maramures	MMN002	5.795	5.795	2029	2029	2029	ROC Maramures
632	TARGU LAPUS	Maramures	MM973	5.025	5.528	2030	2030	2030	ROC Maramures
633	TAUTII-MAGHERAUS	Maramures	MM974	4.674	4.830	2030	2030	IAS	ROC Maramures
634	SOMCUTA MARE	Maramures	MM970	3.593	3.773	2030	2030	2030	ROC Maramures
635	CAVNIC	Maramures	MM944	4.541	4.768	2030	2030	2030	ROC Maramures
636	VESEU DE JOS	Maramures	MMN005	4.271	4.391	2031	2031	2031	ROC Maramures
637	LAPUS	Maramures	MM953	3.377	3.546	2031	2031	2031	ROC Maramures
638	COLTAU	Maramures	MMN001	2.060	2.163	2032	2032	2031	ROC Maramures
639	RUSCOVA	Maramures	MM954	4.785	4.785	2033	2033	IAS	ROC Maramures
640	SALISTEA DE SUS	Maramures	MM964	4.025	4.025	2033	2033	IAS	ROC Maramures
641	ROZALVEA	Maramures	MM961	3.977	3.977	2034	2034	IAS	ROC Maramures
642	DRAGOMIRESTI	Maramures	MM949	2.890	3.035	2034	2034	2032	ROC Maramures

643	BARSANA	Maramures	MM938	2.927	2.927	2035	2035	IAS	ROC Maramures
644	CAMPULUNG LA TISA	Maramures	MM943	2.357	2.357	2035	2035	IAS	ROC Maramures
645	REMETI	Maramures	MM959	2.348	2.348	2036	2036	IAS	ROC Maramures
646	BOTIZA	Maramures	MM940	2.346	2.346	2036	2036	IAS	ROC Maramures
647	SARASAU	Maramures	MM967	2.025	2.025	2037	2037	IAS	ROC Maramures
648	SACEL	Maramures	MM963	2.827	2.827	2037	2037	IAS	ROC Maramures
649	VADU IZEI	Maramures	MMN004	2.770	2.770	2038	2038	IAS	ROC Maramures
650	SAPANTA	Maramures	MM966	2.533	2.533	2038	2038	IAS	ROC Maramures
651	RONA DE SUS	Maramures	MM960	2.284	2.284	2039	2039	IAS	ROC Maramures
652	ROGOZ	Maramures	MMN003	2.011	2.011	2039	2039	IAS	ROC Maramures

Mehedinti County

No.	Agglomeration name	County	Agglomeration code	Population, #	Population, p.e.	Meeting the target for UWWTD			County based extended ROC area
						BAU	MAX	ACC	
653	DROBETA TURNU SEVERIN	Mehedinti	MH130	82.591	98.186	2024	2024	2024	ROC Mehedinti
654	ORSOVA	Mehedinti	MH982	8.802	9.682	2027	2027	2027	ROC Mehedinti
655	STREHAIA	Mehedinti	MH986	5.867	6.454	2030	2030	2030	ROC Mehedinti
656	VANJU MARE	Mehedinti	MH987	2.462	2.585	2030	2030	Prior 2020	ROC Mehedinti
657	ESELNITA	Mehedinti	MH979	2.340	2.457	2030	2030	2031	ROC Mehedinti
658	CERNETI	Mehedinti	MHN001	2.957	3.105	2031	2031	2033	ROC Mehedinti
659	SIMIAN	Mehedinti	MH985	3.834	4.026	2033	2033	2034	ROC Mehedinti
660	GARLA MARE	Mehedinti	MH980	3.130	3.130	2036	2036	IAS	ROC Mehedinti
661	PATULELE	Mehedinti	MH983	2.756	2.756	2038	2038	IAS	ROC Mehedinti
662	SALCIA	Mehedinti	MH984	2.542	2.542	2039	2039	IAS	ROC Mehedinti

Mures County

No.	Agglomeration name	County	Agglomeration code	Population, #	Population, p.e.	Meeting the target for UWWTD			County based extended ROC area
						BAU	MAX	ACC	
663	TARGU MURES	Mures	MS140	156.961	265.972	2022	2022	2022	ROC Mures
664	REGHIN	Mures	MS137	34.629	30.285	2023	2023	2023	ROC Mures
665	SIGHISOARA	Mures	MS138	27.751	25.343	2023	2023	2023	ROC Mures
666	TARNAVENI	Mures	MS141	20.333	19.695	2024	2024	2024	ROC Mures
667	LUDUS	Mures	MS136	11.801	12.708	2024	2024	2024	ROC Mures
668	SOVATA	Mures	MS139	8.736	12.275	2024	2024	2024	ROC Mures
669	IERNUT	Mures	MS1010	5.113	5.624	2024	2024	Prior 2020	ROC Mures
670	SANGEORGIIU DE PADURE	Mures	MS1017	5.015	5.224	2030	2030	2030	ROC Mures
671	IBANESTI	Mures	MS1009	3.940	4.013	2030	2030	2030	ROC Mures
672	MIERCUREA NIRAJULUI	Mures	MS1013	3.329	3.495	2031	2031	2031	ROC Mures
673	OGRA-SANPAUL	Mures	MS001	3.334	3.421	2031	2031	2031	ROC Mures
674	ERNEI	Mures	MSN1	1.998	2.956	2031	2031	2031	ROC Mures
675	GLODENI	Mures	MS1007	2.586	2.715	2032	2032	2032	ROC Mures

676	FANTANELE	Mures	MS1003	2.121	2.227	2032	2032	2032	ROC Mures
677	ZAU DE CAMPIE	Mures	MS1020	2.095	2.200	2032	2032	2032	ROC Mures
678	GURGHUIU	Mures	MS1008	2.040	2.142	2032	2032	2032	ROC Mures
679	UNGHENI	Mures	MS1018	3.588	3.588	2033	2033	IAS	ROC Mures
680	SARMASU	Mures	MS1016	3.300	3.300	2034	2034	IAS	ROC Mures
681	PETELEA	Mures	MS1015	2.517	2.517	2035	2035	IAS	ROC Mures
682	PANET	Mures	MS1014	2.270	2.270	2035	2035	IAS	ROC Mures
683	LIVEZENI	Mures	MS1011	2.135	2.135	2036	2036	IAS	ROC Mures
684	GANESTI	Mures	MS1004	2.088	2.088	2036	2036	IAS	ROC Mures
685	DANES	Mures	MS1000	2.036	2.036	2037	2037	IAS	ROC Mures
686	BAND	Mures	MS994	3.634	3.634	2038	2038	IAS	ROC Mures

Neamt County

No.	Agglomeration name	County	Agglomeration code	Population, #	Population, p.e.	Meeting the target for UWWTD			County based extended ROC area
						BAU	MAX	ACC	
687	PIATRA NEAMT	Neamt	NT142	107.905	126.515	2023	2023	2023	ROC Neamt
688	ROMAN	Neamt	NT143	49.265	58.701	2024	2024	2024	ROC Neamt
689	TARGU NEAMT	Neamt	NT145	21.875	25.087	2024	2024	2024	ROC Neamt
690	PIATRA SOIMULUI	Neamt	NT1059	9.662	9.704	2029	2027	2026	ROC Neamt
691	SABAOANI	Neamt	NTN001	8.064	8.064	2030	2027	2027	ROC Neamt
692	ADJUDENI	Neamt	NT1021	5.826	5.826	2031	2028	2027	ROC Neamt
693	HORIA	Neamt	NT1049	5.415	5.686	2032	2028	2028	ROC Neamt
694	BICAZ	Neamt	NT1028	5.282	5.546	2032	2028	2028	ROC Neamt
695	BICAZ CHEI	Neamt	NT1029	5.003	5.003	2034	2030	2030	ROC Neamt
696	SAGNA	Neamt	NT1066	2.544	2.544	2034	2031	2030	ROC Neamt
697	BALTATESTI	Neamt	NT1024	2.939	3.431	2035	2032	IAS	ROC Neamt
698	PILDESTI	Neamt	NT1060	3.070	3.070	2035	2033	IAS	ROC Neamt
699	NISIPORESTI	Neamt	NT1054	2.343	2.343	2036	2034	IAS	ROC Neamt
700	BARTICESTI	Neamt	NT1027	2.295	2.295	2037	2035	IAS	ROC Neamt
701	TIBUCANI	Neamt	NT1073	2.160	2.160	2037	2036	IAS	ROC Neamt
702	ION CREANGA	Neamt	NT1050	2.005	2.005	2038	2037	IAS	ROC Neamt
703	URECHENI	Neamt	NT1076	2.708	2.708	2038	2038	IAS	ROC Neamt
704	OGLINZI	Neamt	NT01	2.604	2.604	2039	2039	IAS	ROC Neamt
705	BURUIENESTI	Neamt	NT1035	3.629	3.810	2030	2030	2030	ROC Iasi
706	GHERAIESTI	Neamt	NT1046	3.439	3.611	2030	2030	2030	ROC Iasi

Olt County

No.	Agglomeration name	County	Agglomeration code	Population, #	Population, p.e.	Meeting the target for UWWTD			County based extended ROC area
						BAU	MAX	ACC	
707	SLATINA	Olt	OT150	64.653	77.435	2024	2022	2022	ROC Olt
708	CARACAL	Olt	OT147	28.343	34.012	2024	2022	Prior 2020	ROC Olt
709	BALS	Olt	OT146	16.227	19.146	2025	2023	2023	ROC Olt
710	CORABIA	Olt	OT148	14.133	16.960	2025	2024	2024	ROC Olt

711	DRAGANESTI-OLT	Olt	OT149	8.399	9.107	2026	2026	2026	ROC Olt
712	POTCOAVA	Olt	OT1118	7.310	7.409	2028	2028	2028	ROC Olt
713	VALENI	Olt	OT1143	5.325	5.325	2030	2030	2030	ROC Olt
714	PIATRA-OLT	Olt	OT1115	4.670	4.904	2030	2030	2030	ROC Olt
715	OSICA DE SUS	Olt	OT1112	3.105	3.260	2030	2030	2031	ROC Olt
716	CURTISOARA	Olt	OT1091	2.882	2.903	2030	2030	2031	ROC Olt
717	SCORNICESTI	Olt	OT1126	4.032	4.234	2030	2030	2031	ROC Olt
718	IZBICENI	Olt	OT1105	4.280	4.280	2030	2030	IAS	ROC Olt
719	BABICIU	Olt	OT1078	4.205	4.205	2031	2031	IAS	ROC Olt
720	FARCASELE	Olt	OT1096	4.186	4.186	2031	2031	IAS	ROC Olt
721	BRASTAVATU	Olt	OT1082	3.194	3.194	2032	2032	IAS	ROC Olt
722	RUSANESTI	Olt	OT1122	3.004	3.004	2033	2032	IAS	ROC Olt
723	IANCU JIANU	Olt	OT1104	2.775	2.775	2035	2032	IAS	ROC Olt
724	PARSCOVENI	Olt	OT1113	2.619	2.619	2036	2033	IAS	ROC Olt
725	SERBANESTI	Olt	OT1128	2.438	2.438	2038	2033	IAS	ROC Olt
726	BREBENI	Olt	OT1083	2.403	2.403	2038	2033	IAS	ROC Olt
727	TUFENI	Olt	OT1138	2.378	2.378	2039	2033	IAS	ROC Olt
728	FALCOIU	Olt	OT1095	2.350	2.350	2039	2034	IAS	ROC Olt
729	STOICANESTI	Olt	OT1132	2.183	2.183	2039	2034	IAS	ROC Olt
730	MARUNTEI	Olt	OT1107	2.179	2.179	NO	2034	IAS	ROC Olt
731	COTEANA	Olt	OT1089	2.175	2.175	NO	2034	IAS	ROC Olt
732	GIUVARASTI	Olt	OT1099	2.160	2.160	NO	2035	IAS	ROC Olt
733	STOENESTI	Olt	OT1131	2.115	2.115	NO	2035	IAS	ROC Olt
734	IANCA	Olt	OT1103	2.110	2.110	NO	2035	IAS	ROC Olt
735	TIA MARE	Olt	OT1136	3.891	3.891	NO	2036	IAS	ROC Olt
736	PERIETI	Olt	OT1114	3.177	3.177	NO	2036	IAS	ROC Olt
737	VADASTRITA	Olt	OT1140	3.062	3.062	NO	2036	IAS	ROC Olt
738	SARBII MAGURA (VITANESTI)	Olt	OT1123	3.014	3.014	NO	2037	IAS	ROC Olt
739	TRAIAN	Olt	OT1137	2.922	2.922	NO	2037	IAS	ROC Olt
740	CILIENTI	Olt	OT1086	2.852	2.852	NO	2038	IAS	ROC Olt
741	COMANI	Olt	OTN001	2.609	2.739	NO	2038	2032	ROC Olt
742	VISINA	Olt	OT1145	2.614	2.614	NO	2038	IAS	ROC Olt
743	GROJDIBODU	Olt	OT1102	2.583	2.583	NO	2039	IAS	ROC Olt
744	ROTUNDA	Olt	OT1121	2.508	2.508	NO	2039	IAS	ROC Olt
745	ORLEA	Olt	OT1111	2.080	2.080	NO	2039	IAS	ROC Olt
746	SCARISOARA	Olt	OT1124	2.012	2.012	NO	2039	IAS	ROC Olt

Prahova County

No.	Agglomeration name	County	Agglomeration code	Population, #	Population, p.e.	Meeting the target for UWWTD			County based extended ROC area
						BAU	MAX	ACC	
747	PLOIESTI	Prahova	PH158	209.612	170.574	2022	2021	2021	ROC Prahova
748	CAMPINA	Prahova	PH155	30.743	37.289	2023	2022	2022	ROC Prahova

749	VALENI DE MUNTE	Prahova	PH162	12.692	26.062	2024	2022	2022	ROC Prahova
750	BAICOI	Prahova	PH151	16.849	19.239	2024	2022	2022	ROC Prahova
751	SINAIA	Prahova	PH160	9.495	18.608	2024	2022	2022	ROC Prahova
752	MIZIL	Prahova	PH157	13.472	16.084	2024	2022	2022	ROC Prahova
753	BOLDESTI-SCAENI	Prahova	PH152	14.229	15.166	2024	2023	2023	ROC Prahova
754	BREAZA DE SUS	Prahova	PH153	14.486	13.650	2025	2023	2023	ROC Prahova
755	BUSTENI	Prahova	PH154	8.370	11.711	2025	2023	2023	ROC Prahova
756	BARCANESTI	Prahova	PH1158	10.555	10.968	2025	2024	2024	ROC Prahova
757	COMARNIC	Prahova	PH156	10.179	10.350	2026	2024	2024	ROC Prahova
758	PLOPENI	Prahova	PH159	7.276	8.171	2026	2025	2025	ROC Prahova
759	URLATI	Prahova	PH161	6.982	7.623	2026	2025	2025	ROC Prahova
760	BREBU	Prahova	PH1164	5.214	5.355	2027	2025	2025	ROC Prahova
761	AZUGA	Prahova	PH1154	4.105	5.059	2027	2025	Prior 2020	ROC Prahova
762	MANECIU	Prahova	PH1196	8.713	9.149	2027	2026	2026	ROC Prahova
763	FILIPESTII DE PADURE	Prahova	PH1180	8.401	8.821	2028	2027	2027	ROC Prahova
764	VALEA CALUGAREASCA	Prahova	PH1230	6.610	6.940	2028	2028	2028	ROC Prahova
765	STREJNICU	Prahova	PH1220	5.790	6.369	2029	2029	2029	ROC Prahova
766	PUCHENII MARI	Prahova	PH1210	6.043	6.345	2030	2030	2029	ROC Prahova
767	CIORANII DE JOS	Prahova	PH1170	6.251	6.251	2030	2030	2030	ROC Prahova
768	BUCOV	Prahova	PH1165	4.284	4.498	2030	2030	2030	ROC Prahova
769	SLANIC	Prahova	PH1215	3.622	4.586	2030	2030	2030	ROC Prahova
770	ARICESTII RAHTIVANI	Prahova	PH1153	4.934	4.934	2031	2031	IAS	ROC Prahova
771	MAGURENI	Prahova	PH1195	4.676	4.676	2031	2031	IAS	ROC Prahova
772	MAGURELE	Prahova	PH1194	4.377	4.377	2032	2032	IAS	ROC Prahova
773	FLORESTI	Prahova	PH1182	4.086	4.290	2032	2032	2031	ROC Prahova
774	PLEASA	Prahova	PH1204	3.927	4.123	2032	2032	2031	ROC Prahova
775	BRAZII DE SUS	Prahova	PH1163	3.670	3.752	2033	2033	2032	ROC Prahova
776	SIRNA	Prahova	PH1014	3.430	3.430	2033	2033	IAS	ROC Prahova
777	MARGINENII DE JOS	Prahova	PH1198	3.002	3.002	2033	2033	IAS	ROC Prahova
778	BANESTI	Prahova	PH1157	2.954	2.954	2034	2034	IAS	ROC Prahova
779	STARCHIOJD	Prahova	PH1218	2.926	2.926	2034	2034	IAS	ROC Prahova
780	VADU PARULUI	Prahova	PH1227	2.869	2.869	2034	2034	IAS	ROC Prahova
781	GORGOTA	Prahova	PH1185	2.647	2.647	2035	2035	IAS	ROC Prahova
782	BERCENI	Prahova	PH1160	2.408	2.408	2035	2035	IAS	ROC Prahova
783	CATINA	Prahova	PH1167	2.228	2.340	2035	2035	2032	ROC Prahova
784	DUMBRAVA	Prahova	PH1178	2.306	2.306	2035	2035	IAS	ROC Prahova
785	GORNET	Prahova	PH1186	2.223	2.223	2036	2036	IAS	ROC Prahova
786	HOMORACIU	Prahova	PH1190	2.056	2.056	2036	2036	IAS	ROC Prahova
787	PALANCA	Prahova	PHN001	2.007	2.007	2036	2036	IAS	ROC Prahova

788	CORNU	Prahova	PH1174	4.143	4.350	2037	2037	2032	ROC Prahova
789	VALEA DOFTANEI	Prahova	PH1231	2.792	2.932	2037	2037	2033	ROC Prahova
790	POIANA CAMPINA	Prahova	PH1207	2.700	2.835	2037	2037	2033	ROC Prahova
791	TELEGA-SCORTENI	Prahova	PH1223	2.810	2.810	2038	2038	IAS	ROC Prahova
792	TOMSANI	Prahova	PH1225	2.661	2.661	2038	2038	IAS	ROC Prahova
793	FILIPESTII DE TARG	Prahova	PH1181	2.405	2.405	2038	2038	IAS	ROC Prahova
794	CEPTURA DE JOS	Prahova	PH1168	2.168	2.276	2039	2039	2033	ROC Prahova
795	GAGENI	Prahova		2.017	2.228	2039	2039	IAS	ROC Prahova
796	VALCANESTI	Prahova	PH1228	2.132	2.132	2039	2039	IAS	ROC Prahova
797	COLCEAG	Prahova	PH1173	2.028	2.028	2039	2039	IAS	ROC Prahova
798	COCORASTI GRIND	Prahova	PH1171	2.302	2.302	2033	2033	IAS	ROC Constanta

Salaj County

No.	Agglomeration name	County	Agglomeration code	Population, #	Population, p.e.	Meeting the target for UWWTD			County based extended ROC area
						BAU	MAX	ACC	
799	ZALAU	Salaj	SJ170	53.795	58.818	2023	2023	Prior 2020	ROC Cluj-Salaj
800	SIMLEU SILVANIEI	Salaj	SJ169	10.544	9.006	2025	2025	2025	ROC Cluj-Salaj
801	JIBOU	Salaj	SJ168	8.120	7.164	2029	2029	2029	ROC Cluj-Salaj
802	CEHU SILVANIEI	Salaj	SJ1234	4.530	5.906	2030	2030	2030	ROC Cluj-Salaj
803	CRASNA	Salaj	SJ1237	3.944	4.141	2031	2031	2031	ROC Cluj-Salaj
804	SARMASAG	Salaj	SJ1240	3.651	3.834	2032	2032	2032	ROC Cluj-Salaj
805	PERICEI	Salaj	SJ1239	2.401	2.280	2034	2034	2034	ROC Cluj-Salaj
806	NUSFALAU	Salaj	SJ1238	2.863	2.863	2036	2036	IAS	ROC Cluj-Salaj

Satu Mare County

No.	Agglomeration name	County	Agglomeration code	Population, #	Population, p.e.	Meeting the target for UWWTD			County based extended ROC area
						BAU	MAX	ACC	
807	SATU MARE	Satu Mare	SM173	98.857	118.044	2022	2022	2022	ROC Satu Mare
808	CAREI	Satu Mare	SM171	19.625	23.550	2023	2023	2023	ROC Satu Mare
809	NEGRESTI-OAS	Satu Mare	SM172	14.114	15.149	2024	2024	2024	ROC Satu Mare
810	TASNAD	Satu Mare	SM1275	6.439	6.810	Prior 2020	Prior 2020	Prior 2020	ROC Satu Mare
811	TURT	Satu Mare	SM1278	5.035	5.287	2025	2025	2025	ROC Satu Mare
812	HALMEU	Satu Mare	SM1258	4.938	4.938	2031	2031	IAS	ROC Satu Mare
813	LIVADA	Satu Mare	SM1262	4.543	4.770	2031	2031	Prior 2020	ROC Satu Mare
814	ODOREU	Satu Mare	SM1266	4.148	4.355	Prior 2020	Prior 2020	Prior 2020	ROC Satu Mare
815	ARDUD	Satu Mare	SM1246	3.805	3.995	Prior 2020	Prior 2020	Prior 2020	ROC Satu Mare
816	BOTIZ	Satu Mare	SM1251	3.161	3.319	2031	2031	2030	ROC Satu Mare
817	MEDIESU AURIT	Satu Mare	SM1263	3.049	3.167	2031	2031	2032	ROC Satu Mare
818	VETIS	Satu Mare	SM1281	3.160	3.160	2032	2032	2033	ROC Satu Mare

819	CAPLENI	Satu Mare	SMN001	3.003	3.153	Prior 2020	Prior 2020	Prior 2020	ROC Satu Mare
820	LAZURI	Satu Mare	SM1261	2.435	2.435	2032	2032	IAS	ROC Satu Mare
821	BATARCI	Satu Mare	SM1248	4.100	4.100	Prior 2020	Prior 2020	Prior 2020	ROC Satu Mare
822	TARSOLT	Satu Mare	SM1274	2.624	2.624	Prior 2020	Prior 2020	Prior 2020	ROC Satu Mare
823	CAMARZANA	Satu Mare	SM1253	2.333	2.333	Prior 2020	Prior 2020	Prior 2020	ROC Satu Mare
824	LUCACENI	Satu Mare	SMN002	4.707	4.869	2033	2033	2035	ROC Satu Mare
825	CERTEZE	Satu Mare	SM1255	3.577	3.577	2034	2034	IAS	ROC Satu Mare
826	TRIP	Satu Mare	SM1277	3.555	3.555	2035	2035	IAS	ROC Satu Mare
827	SANISLAU	Satu Mare	SM1270	3.005	3.005	2036	2036	IAS	ROC Satu Mare
828	MICULA	Satu Mare	SM1264	2.829	2.829	2037	2037	IAS	ROC Satu Mare
829	TURULUNG	Satu Mare	SM1279	2.462	2.462	2037	2037	2035	ROC Satu Mare
830	PISCOLT	Satu Mare	SM1268	2.157	2.157	2038	2038	IAS	ROC Satu Mare
831	APA	Satu Mare	SM1245	2.049	2.049	2038	2038	IAS	ROC Satu Mare
832	GHERTA MICA	Satu Mare	SM1257	2.710	2.710	2039	2039	IAS	ROC Satu Mare

Sibiu County

No.	Agglomeration name	County	Agglomeration code	Population, #	Population, p.e.	Meeting the target for UWWTD			County based extended ROC area
						BAU	MAX	ACC	
833	SIBIU	Sibiu	SB167	150.302	179.725	2023	2023	2023	ROC Sibiu
834	CISNADIE	Sibiu	SB165	12.873	15.448	2024	2024	2024	ROC Sibiu
835	AVRIG	Sibiu	SB164	7.651	8.416	2025	2025	2025	ROC Sibiu
836	TALMACIU	Sibiu	SB1314	5.251	5.776	2025	2025	2025	ROC Sibiu
837	RASINARI	Sibiu	SB1306	5.001	5.501	2025	2025	2025	ROC Sibiu
838	COPSA MICA	Sibiu	SB1288	7.142	7.142	2029	2029	2029	ROC Sibiu
839	GURA RAULUI	Sibiu	SB1292	6.496	6.821	2030	2030	2030	ROC Sibiu
840	OCNA SIBIULUI	Sibiu	SB1301	3.255	4.129	2030	2030	2030	ROC Sibiu
841	CRISTIAN	Sibiu	SB1289	3.482	3.656	Prior 2020	Prior 2020	Prior 2020	ROC Sibiu
842	SALISTE	Sibiu	SB1309	2.763	2.901	2030	2030	2030	ROC Sibiu
843	RACOVITA	Sibiu	SB1305	2.065	2.168	2030	2030	2031	ROC Sibiu
844	SURA MARE	Sibiu	SB1312	2.919	3.065	2031	2031	2031	ROC Sibiu
845	VURPAR	Sibiu	SB1318	2.606	2.606	2031	2031	2031	ROC Sibiu
846	SADU	Sibiu	SB1308	2.443	2.565	Prior 2020	Prior 2020	Prior 2020	ROC Sibiu
847	SLIMNIC	Sibiu	SB1311	2.324	2.440	2031	2031	2032	ROC Sibiu
848	MARSA	Sibiu	SB001	2.317	2.317	2032	2032	2032	ROC Sibiu
849	MOSNA	Sibiu	SB1299	2.394	2.394	2033	2033	IAS	ROC Sibiu
850	BRATEIU	Sibiu	SB1287	2.298	2.298	2035	2035	IAS	ROC Sibiu
851	TARNAVA	Sibiu	SB1315	2.296	2.296	2036	2036	IAS	ROC Sibiu
852	JINA	Sibiu	SB1294	3.343	3.343	2038	2038	IAS	ROC Sibiu
853	POIANA SIBIULUI	Sibiu	SB1303	2.368	2.368	2039	2039	IAS	ROC Sibiu
854	MEDIAS	Sibiu	SB166	45.249	51.538	2024	2024	Prior 2020	ROC Medias
855	AGNITA	Sibiu	SB163	7.063	7.769	Prior 2020	Prior 2020	Prior 2020	ROC Medias

856	DUMBRAVENI	Sibiu	SB1291	5.124	4.373	Prior 2020	Prior 2020	Prior 2020	ROC Medias
857	SEICA MARE	Sibiu	SB1310	3.202	3.362	2034	2034	2031	ROC Medias
858	BAZNA	Sibiu	SBN001	1.657	2.194	2039	2039	IAS	ROC Medias

Suceava County

No.	Agglomeration name	County	Agglomeration code	Population, #	Population, p.e.	Meeting the target for UWWTD			County based extended ROC area
						BAU	MAX	ACC	
859	SUCEAVA	Suceava	SV180	95.851	113.673	2022	2022	2022	ROC Suceava
860	RADAUTI	Suceava	SV178	22.883	32.826	2023	2023	2023	ROC Suceava
861	FALTICENI	Suceava	SV175	23.900	25.667	2023	2023	2023	ROC Suceava
862	VATRA DORNEI	Suceava		12.218	19.771	Prior 2020	Prior 2020	Prior 2020	ROC Suceava
863	CAMPULUNG MOLDOVENESC	Suceava	SV174	15.462	19.234	Prior 2020	Prior 2020	Prior 2020	ROC Suceava
864	GURA HUMORULUI	Suceava	SV176	12.232	15.324	2024	2024	2024	ROC Suceava
865	MARGINEA	Suceava	SV1359	11.981	12.992	2024	2024	2024	ROC Suceava
866	VICOVU DE SUS	Suceava	SV181	8.571	8.571	2024	2024	Prior 2020	ROC Suceava
867	SIRET	Suceava	SV1380	6.975	7.652	2025	2025	2025	ROC Suceava
868	DUMBRAVENI	Suceava	SV1341	6.472	7.119	2026	2026	2026	ROC Suceava
869	BOSANCI	Suceava	SV1325	5.895	6.485	2027	2027	2027	ROC Suceava
870	PLOPENI	Suceava	SVN002	5.532	5.809	2027	2027	2027	ROC Suceava
871	IPOTESTI	Suceava	SV1356	5.317	5.583	2027	2027	2028	ROC Suceava
872	BAIA	Suceava	SV1321	4.923	5.169	2028	2028	2028	ROC Suceava
873	CAJVANA	Suceava	SV1330	6.156	6.156	2030	2030	2030	ROC Suceava
874	DORNESTI	Suceava	SV1339	3.354	3.522	2030	2030	2030	ROC Suceava
875	MIRONU	Suceava	SV1362	3.291	3.344	2030	2030	2031	ROC Suceava
876	MALINI	Suceava	SV1357	4.734	4.861	2031	2031	2031	ROC Suceava
877	ARBORE	Suceava	SV1320	4.306	4.521	2032	2031	2032	ROC Suceava
878	LITENI	Suceava	SV177	3.566	3.744	2032	2031	2032	ROC Suceava
879	FANTANELE	Suceava	SV1343	3.597	3.673	2033	2032	2033	ROC Suceava
880	Putna	Suceava	SV1374	3.195	3.518	Prior 2020	Prior 2020	Prior 2020	ROC Suceava
881	SUCEVITA	Suceava	SV001	2.331	3.150	Prior 2020	Prior 2020	Prior 2020	ROC Suceava
882	DOLHASCA	Suceava	SV1337	2.785	2.924	2033	2032	2033	ROC Suceava
883	MITOCU DRAGOMIRNEI	Suceava	SV1363	2.817	2.856	Prior 2020	Prior 2020	Prior 2020	ROC Suceava
884	BIVOLARIA	Suceava	SV1388	2.411	2.411	Prior 2020	Prior 2020	Prior 2020	ROC Suceava
885	BERCHISESTI	Suceava	SV1322	2.206	2.316	2034	2032	2034	ROC Suceava
886	CALAFINDESTI	Suceava	SV1331	2.099	2.204	2034	2032	2034	ROC Suceava
887	SIMINICEA	Suceava	SV1379	2.058	2.161	2034	2033	2034	ROC Suceava
888	POJORATA	Suceava	SV1371	1.943	2.040	2035	2033	2035	ROC Suceava
889	VOLOVAT	Suceava	SV1390	4.249	4.461	2035	2034	2035	ROC Suceava
890	COROCAIESTI	Suceava	SV1335	3.440	3.440	2036	2034	IAS	ROC Suceava
891	SATU MARE	Suceava	SV1376	2.183	2.183	2037	2035	IAS	ROC Suceava
892	PALTINOASA	Suceava	SV1367	2.145	2.145	2037	2035	IAS	ROC Suceava

893	PATRAUTI	Suceava	SV1368	4.240	4.240	2038	2036	IAS	ROC Suceava
894	MILISAUTI	Suceava	SV1361	4.072	4.072	2038	2037	IAS	ROC Suceava
895	FRATAUTII VECHI	Suceava	SV1346	3.624	3.624	2039	2037	IAS	ROC Suceava
896	BOGDANESTI	Suceava	SV1323	3.442	3.442	NO	2038	IAS	ROC Suceava
897	IASLOVAT	Suceava	SV1354	2.778	2.778	NO	2039	IAS	ROC Suceava
898	STROIESTI	Suceava	SV1383	2.144	2.144	NO	2039	IAS	ROC Suceava
899	ADANCATA	Suceava	SV1319	2.116	2.116	NO	2039	IAS	ROC Suceava

Teleorman County

No.	Agglomeration name	County	Agglomeration code	Population, #	Population, p.e.	Meeting the target for UWWTD			County based extended ROC area
						BAU	MAX	ACC	
900	ALEXANDRIA	Teleorman	TR189	53.996	49.980	2024	2022	2022	ROC Teleorman
901	TURNU MAGURELE	Teleorman	TR191	26.145	25.027	2025	2024	2024	ROC Teleorman
902	ROSIORI DE VEDE	Teleorman	TR190	24.541	24.826	2025	2024	2024	ROC Teleorman
903	ZIMNICEA	Teleorman	TR193	13.483	13.489	2025	2024	2024	ROC Teleorman
904	VIDELE	Teleorman	TR192	11.574	9.957	2026	2026	2026	ROC Teleorman
905	BRAGADIRU	Teleorman	TR1398	6.219	6.219	2028	2028	2028	ROC Teleorman
906	PERETU	Teleorman	TR1431	5.502	5.502	2030	2030	2030	ROC Teleorman
907	DRAGANESTI VLASCA	Teleorman	TR1410	2.999	3.149	2031	2030	2031	ROC Teleorman
908	BUZESCU	Teleorman	TR1400	3.512	3.512	2033	2030	IAS	ROC Teleorman
909	BABAITA	Teleorman	TR1393	2.869	2.869	2034	2031	IAS	ROC Teleorman
910	ORBEASCA DE SUS	Teleorman	TRN002	2.380	2.380	2035	2031	IAS	ROC Teleorman
911	IZVOARELE	Teleorman	TR1417	2.224	2.224	2037	2032	IAS	ROC Teleorman
912	LACENI	Teleorman	TR1418	2.067	2.067	2039	2032	IAS	ROC Teleorman
913	ORBEASCA DE JOS	Teleorman	TRN001	2.006	2.006	NO	2033	IAS	ROC Teleorman
914	PLOSCA	Teleorman	TR1435	4.937	4.937	NO	2033	IAS	ROC Teleorman
915	ISLAZ	Teleorman	TR1416	3.724	3.724	NO	2034	IAS	ROC Teleorman
916	MALDAENI	Teleorman	TR1423	3.133	3.133	NO	2034	IAS	ROC Teleorman
917	PIATRA	Teleorman	TR1432	2.967	2.967	NO	2035	IAS	ROC Teleorman
918	DOBROTESTI	Teleorman	TR1408	2.641	2.641	NO	2035	IAS	ROC Teleorman
919	TATARASTII DE SUS	Teleorman	TR1450	2.636	2.636	NO	2036	IAS	ROC Teleorman
920	CERVENIA	Teleorman	TR1404	2.592	2.592	NO	2037	IAS	ROC Teleorman
921	PIETROSANI	Teleorman	TR1433	2.433	2.433	NO	2037	IAS	ROC Teleorman
922	STOROBANEASA	Teleorman	TR1446	2.366	2.366	NO	2038	IAS	ROC Teleorman
923	MAVRODIN	Teleorman	TR1425	2.271	2.271	NO	2038	IAS	ROC Teleorman
924	SLOBOZIA MANDRA	Teleorman	TRN003	2.248	2.248	NO	2039	IAS	ROC Teleorman
925	SILISTEA-GUMESTI	Teleorman	TR1444	2.242	2.242	NO	2039	IAS	ROC Teleorman
926	SUHAIA	Teleorman	TR1447	2.000	2.000	NO	2039	IAS	ROC Teleorman

Timis County

No.	Agglomeration name	County	Agglomeration code	Population, #	Population, p.e.	Meeting the target for UWWTD			County based extended ROC area
						BAU	MAX	ACC	
927	TIMISOARA	Timis	TM188	345.279	417.516	2022	2022	2022	ROC Timis
928	LUGOJ	Timis	TM186	38.194	45.833	2023	2023	2023	ROC Timis
929	SANNICOLAU MARE	Timis	TM187	11.975	12.031	2023	2023	2023	ROC Timis
930	JIMBOLIA	Timis	TM185	10.699	10.927	2024	2024	2024	ROC Timis
931	BUZIAS	Timis	TM1464	4.675	5.759	2024	2024	Prior 2020	ROC Timis
932	DETA	Timis	TM1475	5.380	5.469	2025	2025	2025	ROC Timis
933	SACALAZ	Timis	TM1502	4.672	5.416	2025	2025	2025	ROC Timis
934	PERIAM	Timis	TM1498	4.850	5.093	2026	2026	2027	ROC Timis
935	GIARMATA	Timis	TM1483	5.446	5.446	2030	2030	2030	ROC Timis
936	RECAS	Timis	TM1500	4.611	4.842	2030	2030	Prior 2020	ROC Timis
937	GATAIA	Timis	TM1481	4.544	4.550	2030	2030	2030	ROC Timis
938	CENAD	Timis	TM1467	4.287	4.501	2030	2030	2030	ROC Timis
939	CARPINIS	Timis	TM1466	3.725	3.911	2030	2030	2031	ROC Timis
940	FAGET	Timis	TM1480	3.601	3.602	2030	2030	Prior 2020	ROC Timis
941	LOVRIN	Timis	TM1490	3.391	3.561	2031	2031	2031	ROC Timis
942	DUDESTII NOI	Timis	TM1477	3.283	3.447	2031	2031	2031	ROC Timis
943	LIEBLING	Timis	TM1489	3.130	3.287	2031	2031	2032	ROC Timis
944	SANMIHAU ROMAN	Timis	TMN001	2.935	3.278	2031	2031	2032	ROC Timis
945	CIACOVA	Timis	TM1470	2.630	2.762	2031	2031	2032	ROC Timis
946	ORTISOARA	Timis	TM1494	2.409	2.529	2031	2031	2032	ROC Timis
947	COSTEIU	Timis	TM1472	2.275	2.389	2031	2031	2032	ROC Timis
948	NADRAG	Timis	TM1493	2.639	2.771	2031	2031	2032	ROC Timis
949	VOITEG	Timis	TM1513	2.086	2.190	2032	2032	2032	ROC Timis
950	VARIAS	Timis	TM1512	4.184	4.184	2032	2032	IAS	ROC Timis
951	JEBEL	Timis	TM1487	3.707	3.707	2033	2033	IAS	ROC Timis
952	TOMNATIC	Timis	TM1510	3.344	3.344	2033	2033	IAS	ROC Timis
953	PECIU NOU	Timis	TM1497	3.217	3.217	2034	2034	IAS	ROC Timis
954	SATCHINEZ	Timis	TM1508	3.141	3.141	2034	2034	IAS	ROC Timis
955	SANANDREI	Timis	TM1504	3.067	3.067	2034	2034	IAS	ROC Timis
956	BECICHERECU MIC	Timis	TM1459	2.929	2.929	2035	2035	IAS	ROC Timis
957	SARAVALE	Timis	TM1507	2.804	2.804	2035	2035	IAS	ROC Timis
958	TEREMIA MARE	Timis	TM1509	2.478	2.478	2036	2036	IAS	ROC Timis
959	SAG	Timis	TM1503	2.418	2.418	2036	2036	IAS	ROC Timis
960	SANDRA	Timis	TM1505	2.399	2.399	2037	2037	IAS	ROC Timis
961	IECEA MARE	Timis	TM1486	2.382	2.382	2037	2037	IAS	ROC Timis
962	COMLOSU MARE	Timis	TM1471	4.014	4.014	2038	2038	IAS	ROC Timis
963	DUDESTII VECHI	Timis	TM1478	3.850	3.850	2038	2038	IAS	ROC Timis
964	BILED	Timis	TM1462	3.487	3.487	2039	2039	IAS	ROC Timis

965	DENTA	Timis	TM1474	2.213	2.213	2039	2039	IAS	ROC Timis
966	PESAC	Timis	TM1499	2.072	2.072	2039	2039	IAS	ROC Timis

Tulcea County

No.	Agglomeration name	County	Agglomeration code	Population, #	Population, p.e.	Meeting the target for UWWTD			County based extended ROC area
						BAU	MAX	ACC	
967	TULCEA	Tulcea	TL184	67.550	81.060	Prior 2020	Prior 2020	Prior 2020	ROC Tulcea
968	BABADAG	Tulcea	TL182	8.052	8.857	2028	2028	2028	ROC Tulcea
969	MACIN	Tulcea	TL183	7.594	8.353	2030	2030	2030	ROC Tulcea
970	JURIOVCA	Tulcea	TL1526	1.956	2.054	2030	2030	2030	ROC Tulcea
971	GRECI	Tulcea	TL1522	4.689	4.923	2031	2031	2031	ROC Tulcea
972	ISACCEA	Tulcea	TL1523	4.088	4.292	2032	2032	2032	ROC Tulcea
973	NICULITEL	Tulcea	TL1533	3.910	4.106	2033	2033	2033	ROC Tulcea
974	SULINA	Tulcea	TL1537	3.196	3.356	Prior 2020	Prior 2020	Prior 2020	ROC Tulcea
975	LUNCAVITA	Tulcea	TL1527	3.130	3.287	2034	2034	2034	ROC Tulcea
976	TURCOAIA	Tulcea	TL1539	2.903	3.048	2034	2034	2034	ROC Tulcea
977	BAIA	Tulcea	TL1514	2.573	2.702	2034	2034	2034	ROC Tulcea
978	TOPOLOG	Tulcea	TL1538	2.268	2.381	2035	2035	2035	ROC Tulcea
979	MAHMUDIA	Tulcea	TL1528	2.169	2.277	2035	2035	2035	ROC Tulcea
980	JIJILA	Tulcea	TL1525	3.758	3.758	2037	2037	IAS	ROC Tulcea
981	SARICHIOI	Tulcea	TL1535	2.586	2.586	2038	2038	IAS	ROC Tulcea
982	CARCALIU	Tulcea	TL1515	2.277	2.277	2039	2039	IAS	ROC Tulcea
983	VACARENI	Tulcea	TL1540	2.035	2.035	2039	2039	IAS	ROC Tulcea

Valcea County

No.	Agglomeration name	County	Agglomeration code	Population, #	Population, p.e.	Meeting the target for UWWTD			County based extended ROC area
						BAU	MAX	ACC	
984	RAMNICU VALCEA	Valcea	VL197	102.756	121.387	2024	2023	2023	ROC Valcea
985	DRAGASANI	Valcea	VL196	23.551	26.809	2025	2024	2024	ROC Valcea
986	CALIMANESTI	Valcea	VL195	4.043	9.402	2025	2025	Prior 2020	ROC Valcea
987	BABENI	Valcea	VL194	6.585	7.169	2030	2030	2030	ROC Valcea
988	BERBESTI	Valcea	VL1545	4.294	4.388	2032	2032	2032	ROC Valcea
989	BARBATESTI	Valcea	VL1544	4.151	4.291	2033	2033	2032	ROC Valcea
990	BREZOI	Valcea	VL1547	3.910	4.106	2033	2033	2033	ROC Valcea
991	PRAJILA	Valcea	VL1563	2.650	3.870	2034	2034	2033	ROC Valcea
992	HOREZU	Valcea	VL1565	2.865	3.630	2034	2034	2033	ROC Valcea
993	SALATRUCCEL	Valcea	VLN002	3.067	3.122	2034	2034	2034	ROC Valcea
994	STEFANESTI	Valcea	VL1593	2.958	3.058	2034	2034	Prior 2020	ROC Valcea
995	BALCESTI	Valcea	VL1543	2.814	2.954	2035	2035	2034	ROC Valcea
996	VAIDEENI	Valcea	VL1601	2.062	2.165	2035	2035	2034	ROC Valcea
997	VOINEASA	Valcea	VLN002	1.187	2.112	2035	2035	2034	ROC Valcea
998	BUDESTI	Valcea	VL1548	2.900	2.968	2036	2036	2035	ROC Valcea

999	BUNESTI	Valcea	VL1550	2.074	2.169	2036	2036	IAS	ROC Valcea
1000	OLANESTI BAI	Valcea	VL1577	1.459	2.864	2037	2037	2035	ROC Valcea
1001	MIHAESTI	Valcea	VL1573	2.548	2.548	2038	2038	IAS	ROC Valcea

Vaslui County

No.	Agglomeration name	County	Agglomeration code	Population, #	Population, p.e.	Meeting the target for UWWTD			County based extended ROC area
						BAU	MAX	ACC	
1002	BARLAD	Vaslui	VS203	56.670	55.123	2022	2022	2022	ROC Vaslui
1003	VASLUI	Vaslui	VS206	53.158	51.316	2023	2023	2023	ROC Vaslui
1004	HUSI	Vaslui	VS204	26.391	21.644	2024	2024	2024	ROC Vaslui
1005	NEGRESTI	Vaslui	VS205	6.160	6.747	2030	2030	2026	ROC Vaslui
1006	MURGENI	Vaslui	VS1619	3.365	3.533	2030	2030	2032	ROC Vaslui
1007	FALCIU	Vaslui	VS1611	1.991	2.091	2030	2030	2033	ROC Vaslui
1008	ZORLENI	Vaslui	VS1631	4.225	4.225	2032	2032	IAS	ROC Vaslui
1009	PERIENI	Vaslui	VS1621	3.189	3.189	2033	2033	IAS	ROC Vaslui
1010	BEREZENI	Vaslui	VS1607	3.161	3.161	2034	2034	IAS	ROC Vaslui
1011	VALENI	Vaslui	VSN01	3.081	3.081	2036	2036	IAS	ROC Vaslui
1012	VETRISOARA	Vaslui	VS1629	2.449	2.449	2037	2037	IAS	ROC Vaslui
1013	POPENI	Vaslui	VS1622	2.278	2.278	2038	2038	IAS	ROC Vaslui
1014	STANILESTI	Vaslui	VS1626	2.270	2.270	2039	2039	IAS	ROC Vaslui
1015	PUSCASI	Vaslui	VS1623	2.115	2.115	2039	2039	IAS	ROC Vaslui

Vrancea County

No.	Agglomeration name	County	Agglomeration code	Population, #	Population, p.e.	Meeting the target for UWWTD			County based extended ROC area
						BAU	MAX	ACC	
1016	FOCSANI	Vrancea	VN199	82.712	84.378	2024	2024	2024	ROC Vrancea
1017	ADJUD	Vrancea	VN198	12.739	12.030	2024	2024	2024	ROC Vrancea
1018	ODOBESTI	Vrancea	VN201	8.891	9.555	2025	2025	2025	ROC Vrancea
1019	PANCIU	Vrancea	VN202	5.897	8.518	2025	2025	Prior 2020	ROC Vrancea
1020	MARASESTI	Vrancea	VN200	8.441	8.453	2025	2025	2025	ROC Vrancea
1021	HOMOCEA	Vrancea	VN1642	5.876	6.123	2026	2026	2025	ROC Vrancea
1022	GUGESTI	Vrancea	VN1641	5.132	5.645	2026	2026	2026	ROC Vrancea
1023	SLOBOZIA BRADULUI	Vrancea	VNN003	8.092	8.092	2030	2030	2030	ROC Vrancea
1024	GOLOGANU	Vrancea	VN1640	2.893	3.038	2030	2030	Prior 2020	ROC Vrancea
1025	TULNICI	Vrancea	VN1658	2.620	2.724	2030	2030	2031	ROC Vrancea
1026	PAUNESTI	Vrancea	VN1648	4.735	4.735	2031	2031	IAS	ROC Vrancea
1027	MILCOVUL	Vrancea	VN1645	2.819	2.819	2032	2032	IAS	ROC Vrancea
1028	PLOSCUTENI	Vrancea	VN1649	2.462	2.462	2032	2032	IAS	ROC Vrancea
1029	URECHESTI	Vrancea	VN1659	4.514	4.514	2033	2033	IAS	ROC Vrancea
1030	SURAI	Vrancea	VN1656	4.369	4.369	2034	2034	IAS	ROC Vrancea
1031	JARISTEA	Vrancea	VN1643	3.633	3.633	2035	2035	IAS	ROC Vrancea
1032	GAGESTI	Vrancea	VNN002	3.361	3.361	2037	2035	IAS	ROC Vrancea
1033	VULTURU	Vrancea	VN1663	3.145	3.145	2038	2036	IAS	ROC Vrancea

1034	STRAOANE	Vrancea	VN1655	2.717	2.717	NO	2036	IAS	ROC Vrancea
1035	DUMBRAVENI	Vrancea	VN001	2.619	2.619	NO	2037	IAS	ROC Vrancea
1036	TIFESTI	Vrancea	VNN004	2.555	2.555	NO	2038	IAS	ROC Vrancea
1037	SIHLEA	Vrancea	VN1653	2.170	2.170	NO	2038	IAS	ROC Vrancea
1038	MAICANESTI	Vrancea	VN1644	2.129	2.129	NO	2039	IAS	ROC Vrancea
1039	VANATORI	Vrancea	VN1660	2.041	2.041	NO	2039	IAS	ROC Vrancea
1040	SOVEJA	Vrancea	VN1654	2.015	2.015	NO	2039	IAS	ROC Vrancea

Annex 8: County and national Financial models

Financial models for each ROC and a summarized national model for Romania, as elaborated using Microsoft Office software, Excel application.

1. FMs – business as usual (Scenario 1), 44 models plus national one
2. FMs – compliance achievement (Scenario 2), 44 models plus national one
3. FMs – further optimization (Scenario 3) of compliance achievement, 44 models plus national one

(electronic files and electronic spreadsheets provided in Microsoft Excel)

Competence makes a difference!

Project selected under the Administrative Capacity Operational Program, co-financed by European Union from the European Social Fund