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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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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 1,034) and their pollution load by 29 percent (from 20,236,565 p.e. in 2016 to 14,249,306 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 27.7 billion (€5.7 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 (€16.1 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 extend 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 14.8 billion (€3.1 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 the 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 treatment[2].

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 (MoWF[3]) 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 costs[4];
(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 cycle[5]). 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 10^{-th} 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 Romania[6]. 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	Compliant		Total	Compliant	
	(no)	(no)	%	(p.e.)	(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 percent[7]. 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

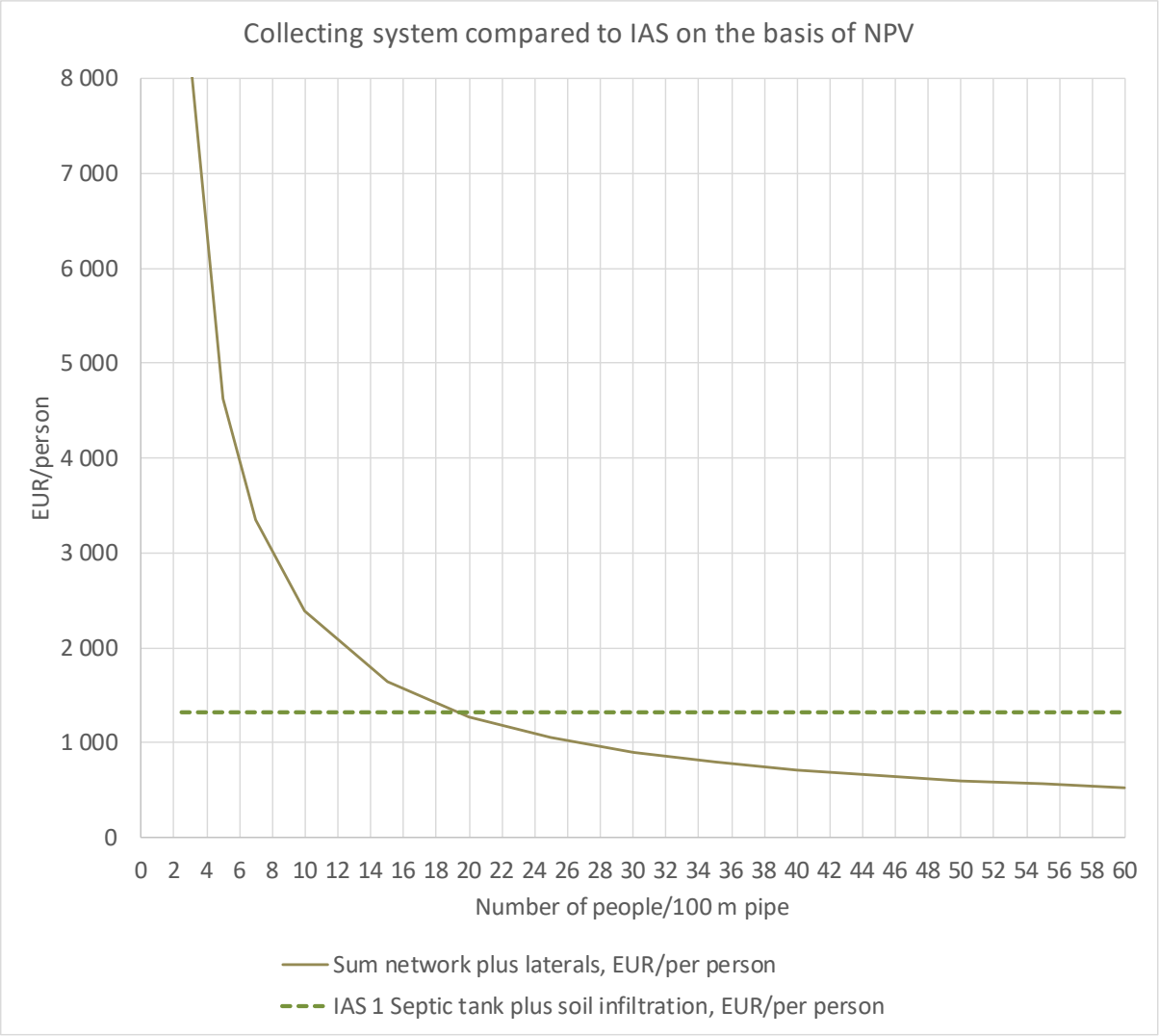
[7] Data from the draft 10th UWWTD Implementation Report.

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 Romania[8]. 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/100 m of pipe. A criterion of 250 m. is used to decide on whether two close settlements should belong to one agglomeration.

[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

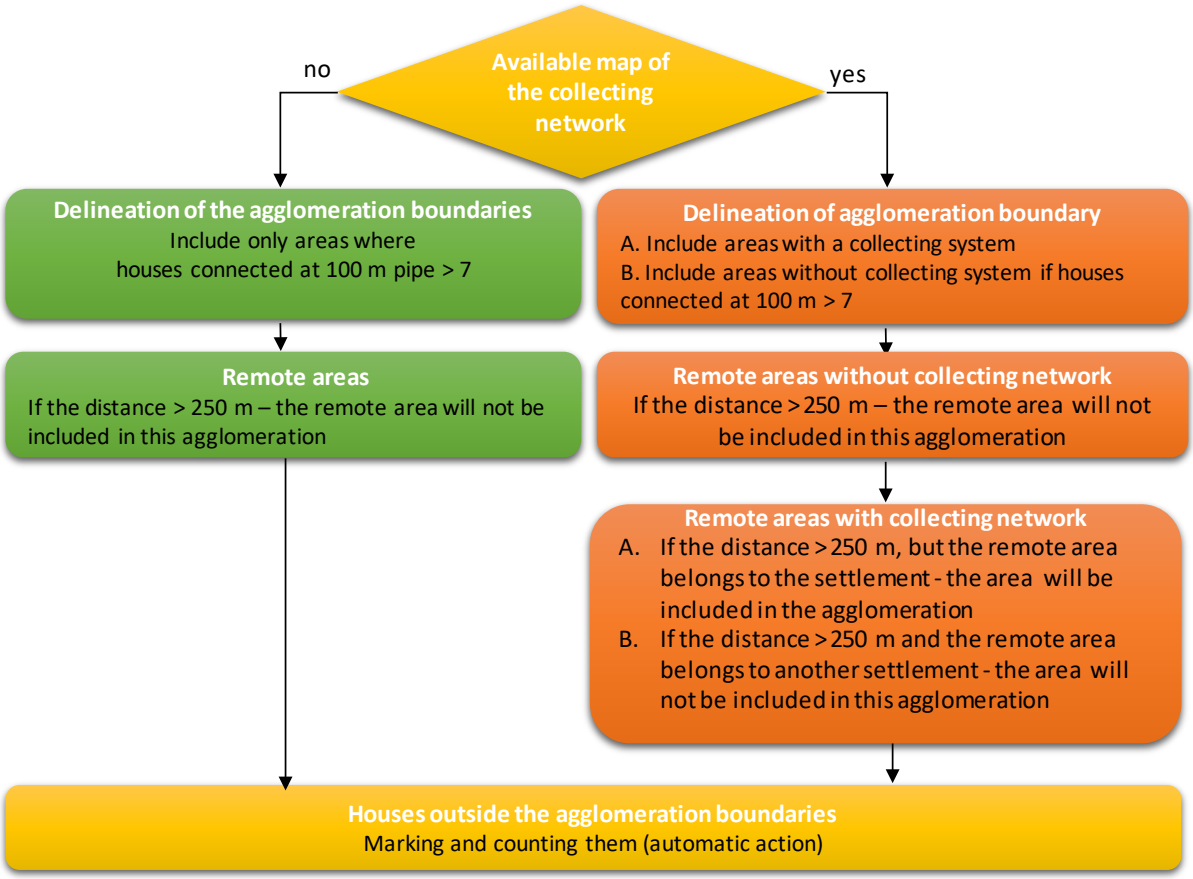
Figure 1: Collecting system in Romania compared to IAS on the basis of NPV



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 gBOD_5/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 as[9]:

$$\boldsymbol{aggGenerated = L_{aggC1} + L_{aggC2} + L_{\text{aggWithoutTreatment}}}$$

agg	Generated the generated load within the agglomeration in p.e.;
LaggC1	the generated load of agglomeration collected through CS, in p.e.;
LaggC2	the generated load of agglomeration addressed through IAS, in p.e.;
$L_{\text{agg WithoutTreatment}}$	the generated load of agglomeration not collected through CS and not addressed through IAS, in p.e.

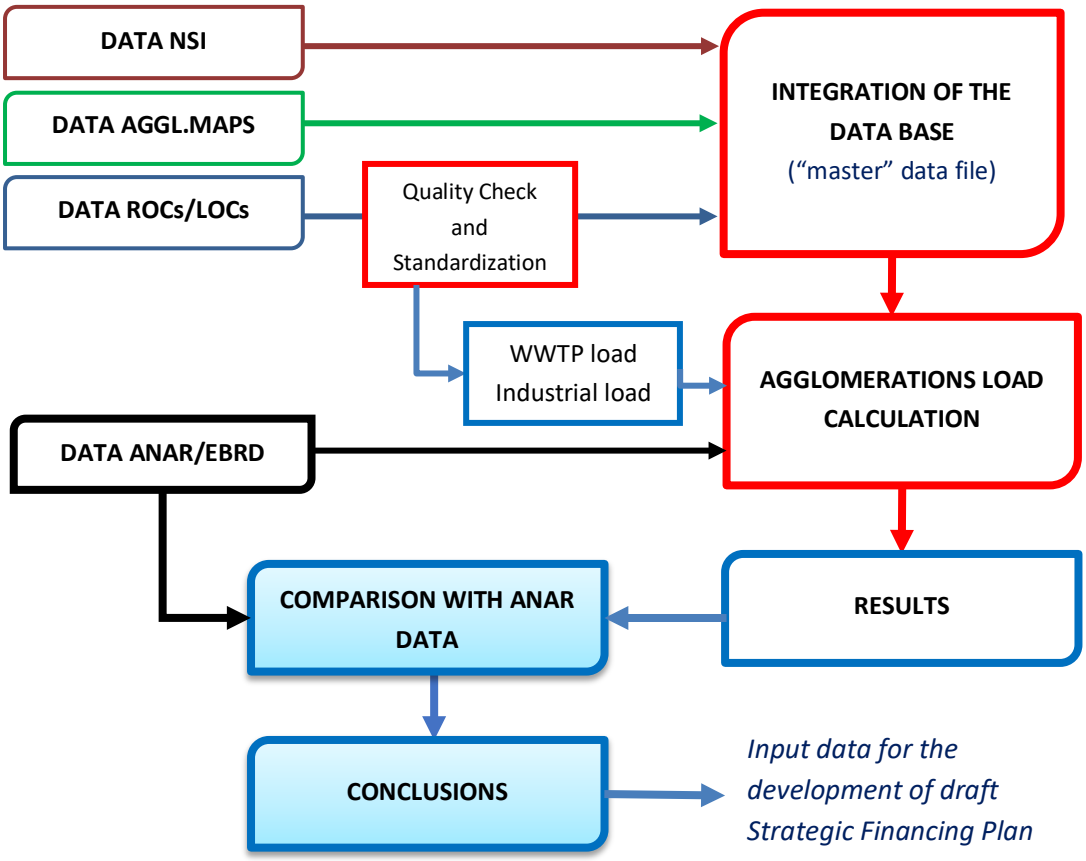
60. Extensive data base had been collected from different sources (e.g. the NSI, ROCs/LOCs, EBRD Reports, ANAR data base) in order to determine the agglomerations load in 2018.

[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. 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

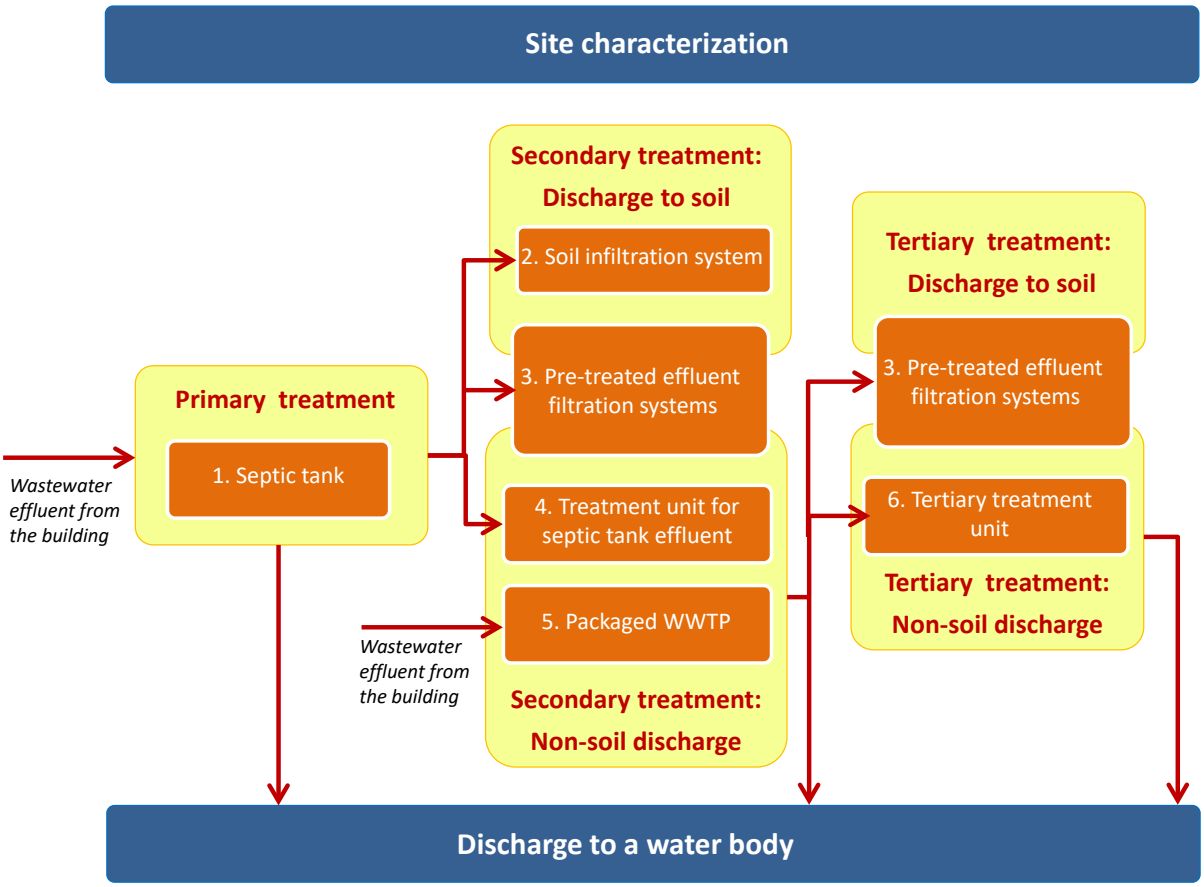


Source: Output 2, the WB

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 units[10], their combination, treatment levels and discharge possibilities



Source: Output 2, the WB

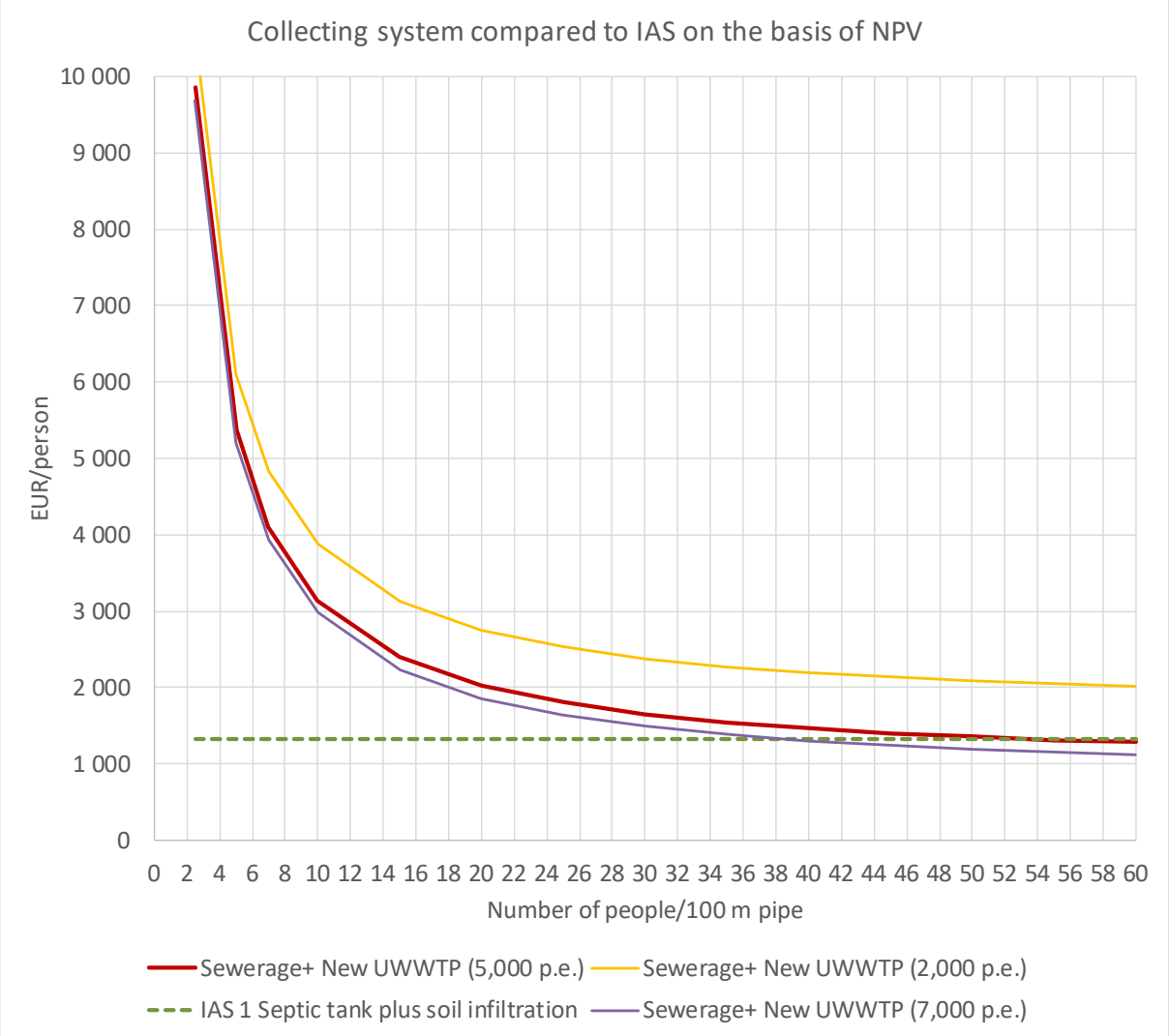
63. A financial criterion was applied to outline the applicability of IAS inside agglomeration boundaries in Romania. At present, agglomeration without collecting systems in Romania are almost exclusively below 10,000 p.e. Agglomerations around 2,000 p.e.; 5,000 p.e. and 7,000 p.e. have been analyzed to assess compliance costs for building a collecting system and a UWWTP (as explained below in same 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 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

[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).

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 Romania[11]. 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

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 houses[12]/100 m

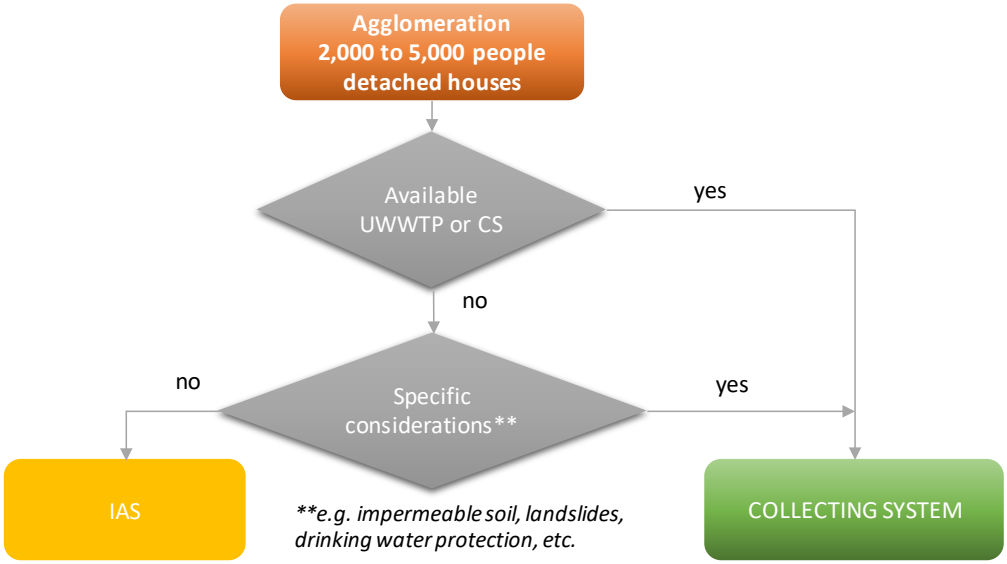
[11] More information is available in Annex 2 (Output 2)
[12] Using 2.67 people/house, NSI, census 2011

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).

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

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

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 **1,034** of which 90 percent have already been considered in the last reporting (ANAR list) and 10 percent are newly formed agglomerations (see **Figure 7**).

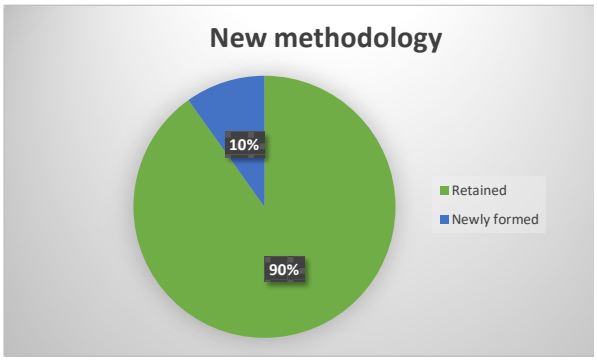


Figure 7: Distribution of the agglomeration number

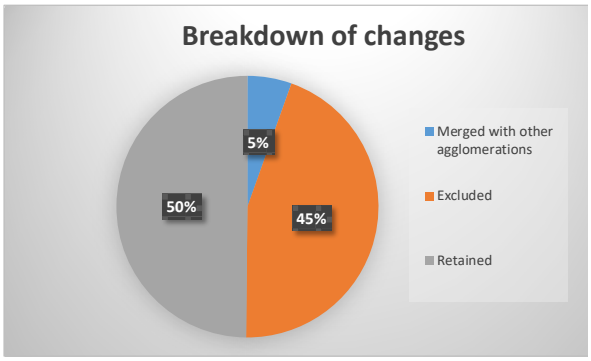


Figure 8: Changes to existing ANAR lists

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 (102 agglomerations) were merged with other agglomerations, however, the same number of new agglomerations was added.

70. In addition, a significant number of agglomerations – **836**, 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.

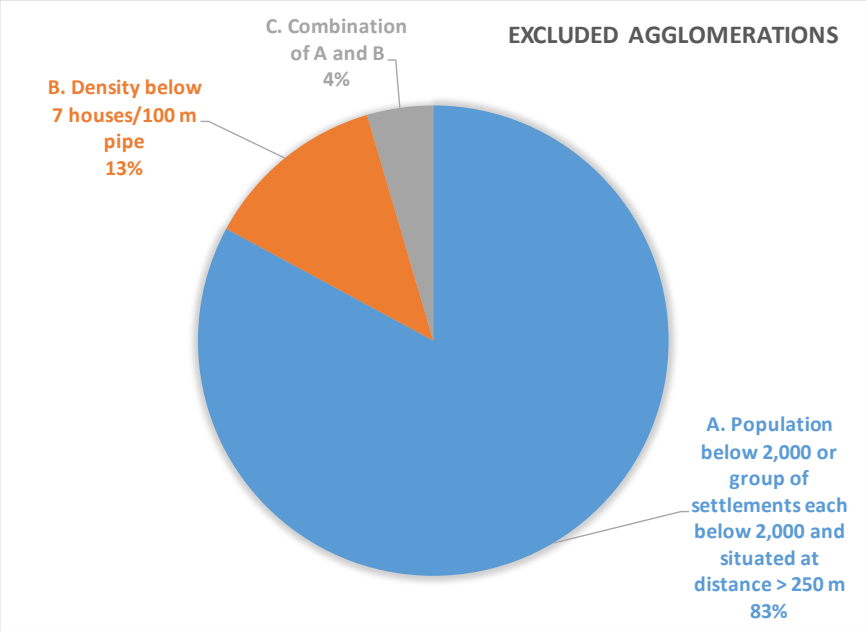
71. The analysis shows that the most common reason for exclusion of the reported agglomerations (83 percent) is “Population in an agglomeration is below 2,000 or the reported agglomeration consists of a number of settlements, each below 2,000 people and situated at distance longer than 250 m” (see **Figure 9**).

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

County	CODE	AGGLOMERATIONS PROJECT		AGGLOMERATIONS PROJECT		AGGLOMERATIONS		CODE	AGGLOMERATIONS ANAR		AGGLOMERATIONS ANAR		AGGLOMERATIONS	
		over 10,000 p.e.		2,000-10,000		TOTAL			over 10,000 p.e.		2,000-10,000		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	6	354,019	10	43,546	**16**	**397,565**	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	294,296	21	73,820	**27**	**368,116**	BC	8	362,029	71	330,132	**79**	**692,161**
BIHOR	BH	4	220,430	23	94,197	**27**	**314,627**	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	368,234	20	94,758	**25**	**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	184,984	31	105,248	**33**	**290,232**	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	45,791	**13**	**177,768**	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	692,668	23	104,755	**33**	**797,423**	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**
DAMBOVITSA	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	106,881	**32**	**178,633**	GR	2	87,370	44	185,622	**46**	**272,992**
HARGHITA	HR	6	142,769	22	87,256	**28**	**230,025**	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	253,577	22	86,646	**26**	**340,223**	MM	5	293,391	41	182,091	**46**	**475,482**
MURES	MS	6	366,278	16	50,022	**22**	**416,300**	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	12	359,994	40	157,995	**52**	**517,989**	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	153,967	19	67,866	**22**	**221,833**	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	242,210	30	124,100	**37**	**366,310**	SV	8	250,585	74	313,191	**82**	**563,776**
TELEORMAN	TR	4	104,012	24	80,582	**28**	**184,594**	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	126,017	12	36,777	**15**	**162,794**	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		**171**	**10,947,272**	**863**	**3,302,034**	**1,034**	**14,249,306**		**207**	**13,624,623**	**1,663**	**6,611,943**	**1,870**	**20,236,565**
% difference		-17.4%	-19.7%	-48.1%	-50.1%	-44.7%	-29.6%							

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	1,034	-46
Total pollution load of agglomerations above 2,000 p.e.	20,236,565	14,249,306	-29
Total number of agglomerations above 10,000 p.e.	207	171	-17
Total pollution load of agglomerations above 10,000 p.e.	13,624,623	10,947,272	-20
Total number of agglomerations between 10,000 and 2,000 p.e.	1,663	863	-48
Total pollution load of agglomerations between 10,000 and 2,000 p.e.	6,611,943	3,302,034	-50

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%	12.6%
New methodologies**	1,034	14,249,306	16	438,905	1.5%	3.1 %

** 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).*

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 system[14]. 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

	ANAR, 2016				New methodologies			
Agglomeration size	Agg.	Load generated	Load connected CS		Agg.	Load generated	Load connected to CS	
p.e.	nr	p.e.	p.e.	%	nr	p.e.	p.e.	%
existing CS								
≥100,000	27	8,631,853	7,906,839	91.6	23	6,700,369	6,040,877	90.2
10,000-100,000	175	4,930,222	3,655,914	74.2	146	4,223,797	3,241,590	76.7
2,000-10,000	689	3,168,148	1,107,697	35.0	382	1,752,219	855,358	48.8
Subtotal	**891**	**16,730,222**	**12,670,451**		**551**	**12,676,385**	**10,137,825**	
% of total	47.6	82.7	62.6		53.3	89.0	71.1	
Total	**1 870**		**20,236,565**		**1,034**		**14,249,306**	

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:

- **18 agglomerations** with total generated load of 1,466,272 p.e. have connection rate to collecting system between **95 and 98 percent** (of which 5 are above 100,000 p.e. and 9 between 10,000 and 100,000 p.e.). These agglomerations have significant potential to reach compliance very soon;
- **76 agglomerations** with total load of 6,138,340 p.e. have connection rate to collecting system between **85 and 95 percent** (of which 13 are above 100,000 p.e. and 34 between 10,000 and 100,000 p.e.);
- 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 will increase the number of agglomerations in compliance up to 110 and the total compliant load will be 8,043,517 p.e. (56 % of total).**

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 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%	82%
BISTRITA NASAUD	55%	75%
CARAS SEVERIN	64%	87%
DAMBOVITA	36%	44%

County	People with contract to operator	People with access to CS
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:

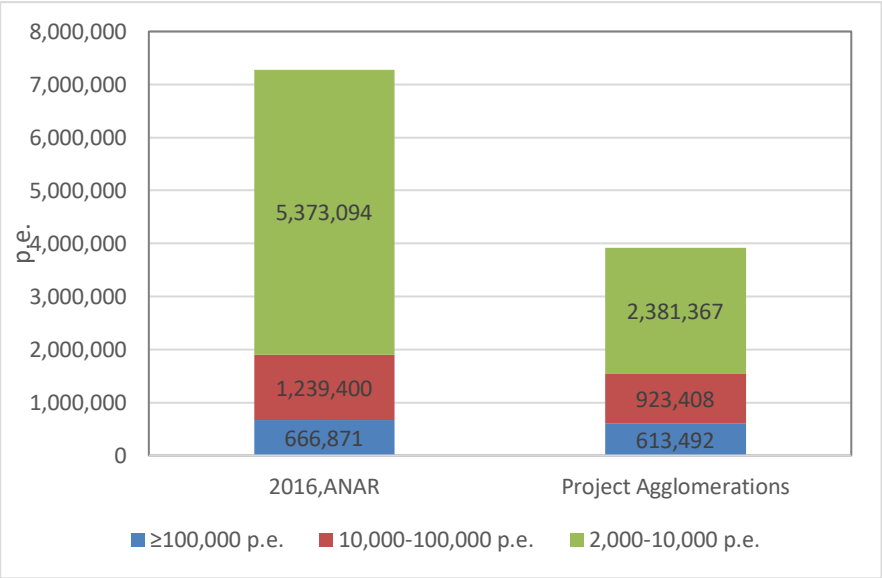
- The analyses regarding UWWTD compliance, presented above, are based on the number of people and industrial load (both presented in p.e.) legally connected to collecting system i.e. households having contracts with an operator and paying for wastewater collecting and treatment services;
- The estimation 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

	ANAR, 2016			**New methodologies**		
Agglomeration size	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	6 700 369	613 492	9.2
10,000-100,000	4 992 770	1 239 400	24.8	4 246 903	923 408	21.7
2,000-10,000	6 611 943	5 373 094	81.3	3 302 034	2 381 367	72.1
TOTAL	**20 236 565**	**7 279 365**	**36.0**	**14 249 306**	**3 918 267**	**27.5**

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 94 agglomerations, defined by the new methodologies that are very close to compliance according to Art. 3 and which represent around 53 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.

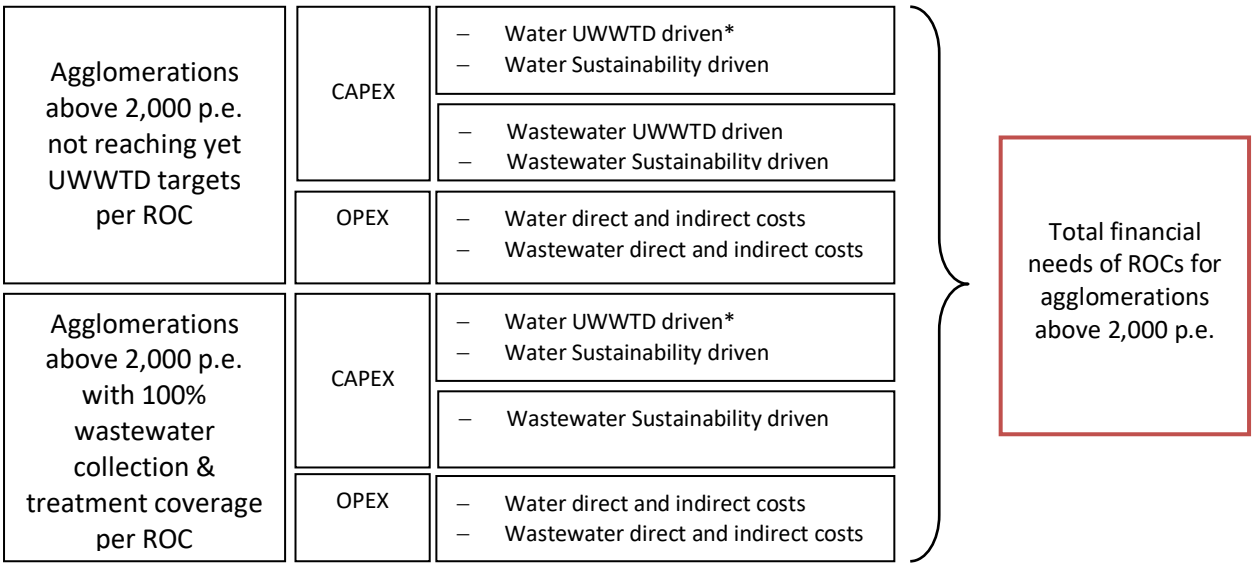
Chapter 4. **Pillar II: Prioritization of investments**

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 Denmark[15]. 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 approach[16]



** 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

[15] http://www.oecd.org/environment/outreach/improvingfeasibleandextendingfinancingstrategymethodologybeyondwatersupplyandsanitationtoissuesofwaterresourcesmanagement.html

[16] 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	– Rehabilitation costs of large collectors, sewer network and pumping stations; – Rehabilitation costs of existing WWTPs
UWWTD driven CAPEX	– 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 cost[17] 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

[17] 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 cost[18] 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 ROC[19].** 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).

[18] Ibid.

[19] 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 ROC

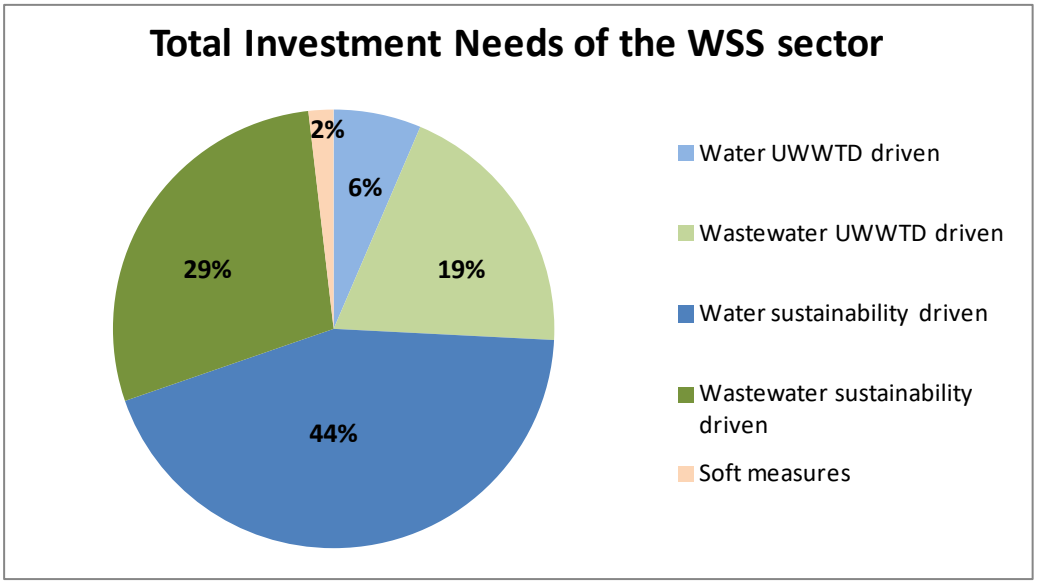
in million RON

ROC	Water CAPEX		Wastewater CAPEX		Soft Measures	TOTAL Water CAPEX	TOTAL Wastewater CAPEX
	UWWTD driven[20]	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	1 014	474	816	45	1 111	1 290
Bacau	246	1 130	525	556	45	1 377	1 081
Bihor	38	1 660	297	1 023	45	1 698	1 320
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	120	1 054	391	702	45	1 175	1 093
Bucuresti	297	1 813	614	2 509	45	2 110	3 123
Buzau	89	990	776	360	45	1 079	1 136
Calarasi	120	670	701	307	45	790	1 008
Caras Severin	205	650	494	327	45	854	821
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	274	262	679	341	45	536	1 019
Gorj	64	943	431	386	45	1 007	817
Harghita	63	781	228	667	45	844	896
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
Ilfov	126	649	444	652	45	775	1 096
Maramures	290	1 382	731	808	45	1 672	1 539
Medias	3	204	32	275	45	208	307
Mehedinti	33	475	159	290	45	508	449
Mures	87	1 209	333	899	45	1 296	1 232
Neamt	318	1 365	453	677	45	1 683	1 130
Olt	386	623	920	369	45	1 009	1 289
Prahova	204	2 596	1 345	1 044	45	2 800	2 389
Satu Mare	71	791	273	601	45	862	874
Sibiu	105	1 099	245	799	45	1 204	1 045
Suceava	479	1 455	915	896	45	1 934	1 811
Teleorman	201	591	743	298	45	792	1 041
Timis	63	1 418	488	1 028	45	1 481	1 516
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	119	784	374	429	45	903	803
Vrancea	263	786	561	275	45	1 049	836
TOTAL	***6 934***	***47 199***	***20 815***	***30 607***	***1 983***	***54 133***	***51 421***

[20] 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**.

The overall investment needs of the WSS sector in Romania amount to more than RON 107.5 billion (€22 billion), with 51.4 percent for water and 48.6 percent for wastewater. Remaining UWWTD driven investments represent just one quarter of the overall CAPEX needs (RON 30 billion, €6.2 billion) which corresponds to 70 percent of the initial UWWTD compliance costs estimated in the 2004 Implementation Plan (RON 46 billion, €9.5 billion), and 94 percent of the CAPEX spent from 2004 to 2019 for UWWTD compliance (RON 32 billion, €6.6 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 (€106 million) while other like Iasi need to invest ten times more (RON 5 461 million, €1 130 million).

Figure 12: Investment needs in the sector



CAPEX needs (mill. RON)	Water	Wastewater	Soft measures	TOTAL
UWWTD driven	6 934	20 815	*1 983*	***29 732***
Sustainability driven	47 199	30 607		***77 806***
TOTAL	***54 133***	***51 422***	***1 983***	***107 538***

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.

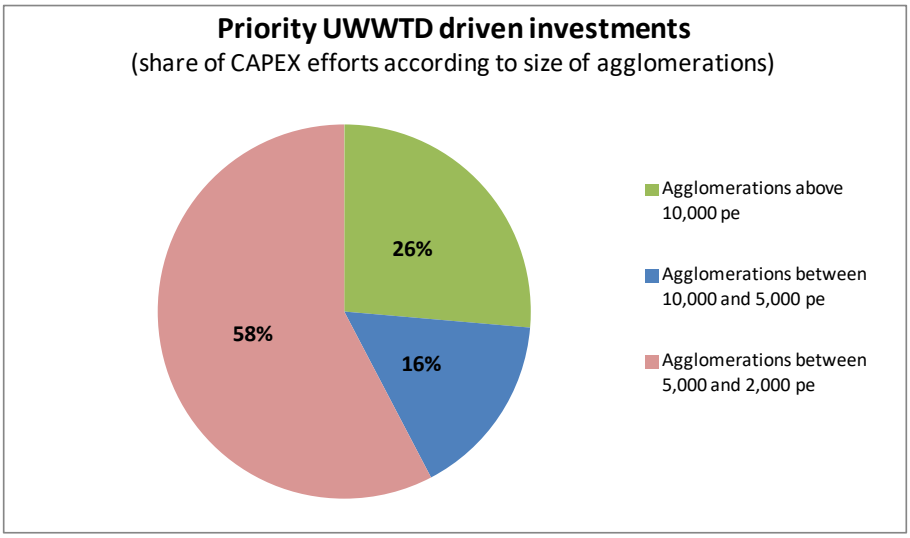
Table 12: Prioritization of investments per ROC

in million RON	Agg. above 10,000 pe			Agg. between 10,000 and 5,000 pe			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
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	6	6	284 638	3	3	93 749	7	7	192 536
Bacau	5	5	221 420	3	3	77 767	18	17	472 273
Bihor	4	3	41 410	5	5	81 063	18	15	211 611
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	203 982	5	4	127 281	14	13	180 111
Bucuresti	1	1	911 396		0	-		0	-
Buzau	2	2	89 647	2	2	19 477	29	29	755 928
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	61 337
Cluj Salaj	4	4	162 931	5	5	20 553	9	9	142 910
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	150 385	27	26	754 185
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	359 481	4	4	158 221	18	18	503 400
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	154 049	3	3	29 025	14	14	236 424
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	12	12	503 792	9	9	301 688	30	30	743 386
Satu Mare	3	3	53 975	1	0	-	18	16	289 293
Sibiu	3	3	80 313	5	5	91 509	14	12	178 874
Suceava	7	7	433 399	9	9	334 623	21	21	626 673

Teleorman	4	4	127 286	4	4	192 890	20	20	624 026
Timis	4	4	92 602	5	5	36 415	31	31	422 262
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	104 279	1	1	12 165	11	11	375 653
Vrancea	2	2	88 669	6	6	156 445	17	17	579 344
TOTAL	***171***	***165***	***7 318 270***	***170***	***163***	***4 431 939***	***693***	***678***	***15 998 518***

First priority investments should be implemented in 165 agglomerations throughout the country and represent a CAPEX effort of RON 7.3 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 4.4 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 16 billion (€3.3 billion) to be invested in 678 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			
Electricity	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.		
Chemicals	Chemical price is kept constant using 2018 value as a reference. Chemical costs vary according to water and wastewater volumes treated.		
Water abstraction fee	Water abstraction fee is calculated using 2018 fee (kept constant). It varies according to the volume of water abstracted.		
Wastewater discharge costs		Wastewater discharge fee is calculated using 2018 unit cost (kept constant). It varies according to the volume of wastewater collected and treated.	
Sludge disposal costs			Sludge disposal costs is calculated using 2018 unit cost.
Maintenance	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			
Personnel	Personnel costs are calculated using 2018 constant values and assuming that salaries will increase, while personnel will decrease.[21]		
Other expenses	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.

[21] 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	- Directly related to the services – usually, investments in infrastructure result in higher tariffs - Reflect the service (quantity- and quality-wise) - Good accountability	- They have limitations due to the affordability - Increasing the tariffs is unpopular with the public	- Investment - Repairs - Generation of profit for the utility owners
Taxes and levies	- May be used for social support to certain users - May be grant sources of financing	- Sporadic, unsustainable over time - Limit other government spending and investments	- Targeted subsidies for investments in certain regions and projects - "rescuing" of operators
Transfers	- May be grant sources of financing	- Limited in amount and scope	- 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.

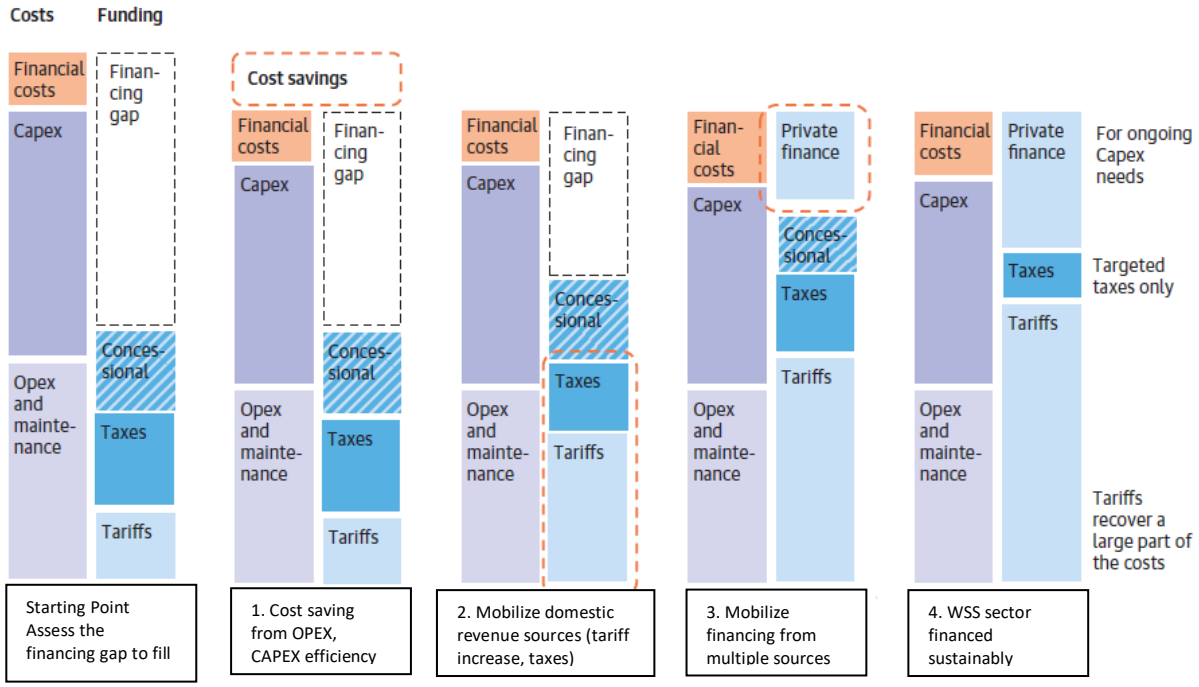
In the WSS sector, it is well accepted amongst practitioners that tariffs should be the largest and most stable source of sector revenues, in order to ensure both financial sustainability in the long term and that the utilities can focus their attention on serving their customers (instead of lobbying 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.

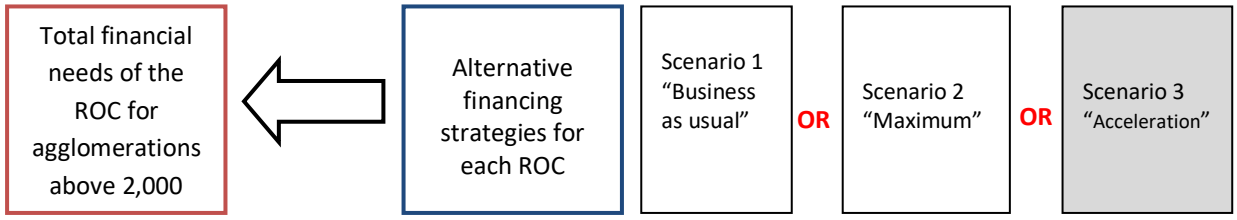
91. **Financial options to sustain WSS investments.** In the context of Romania, the WB team used the MFD approach to propose an overall financing plan to reach UWWTD targets and sustain WSS investment. In all scenarios, the above-mentioned potential pathways have been considered to finance the WSS sector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

		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.		
	Taxes	National co-financing of EU grant funds	– 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.		– 100% coverage for water supply and for wastewater collection and treatment in agglomerations above 100,000 p.e.[22] – 98% coverage for wastewater collection and treatment in agglomerations between 5,000 p.e. and 100,000 p.e.[23] – 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 47 percent (and total tariff increase of 79% over the period), followed by transfers and commercial loans. In scenario 3, tariffs stand for 48 percent of the funding mix (with an increase of 73% of the tariffs over the period) and commercial loans for one quarter.

Table 16: Breakdown of funding and financing mix

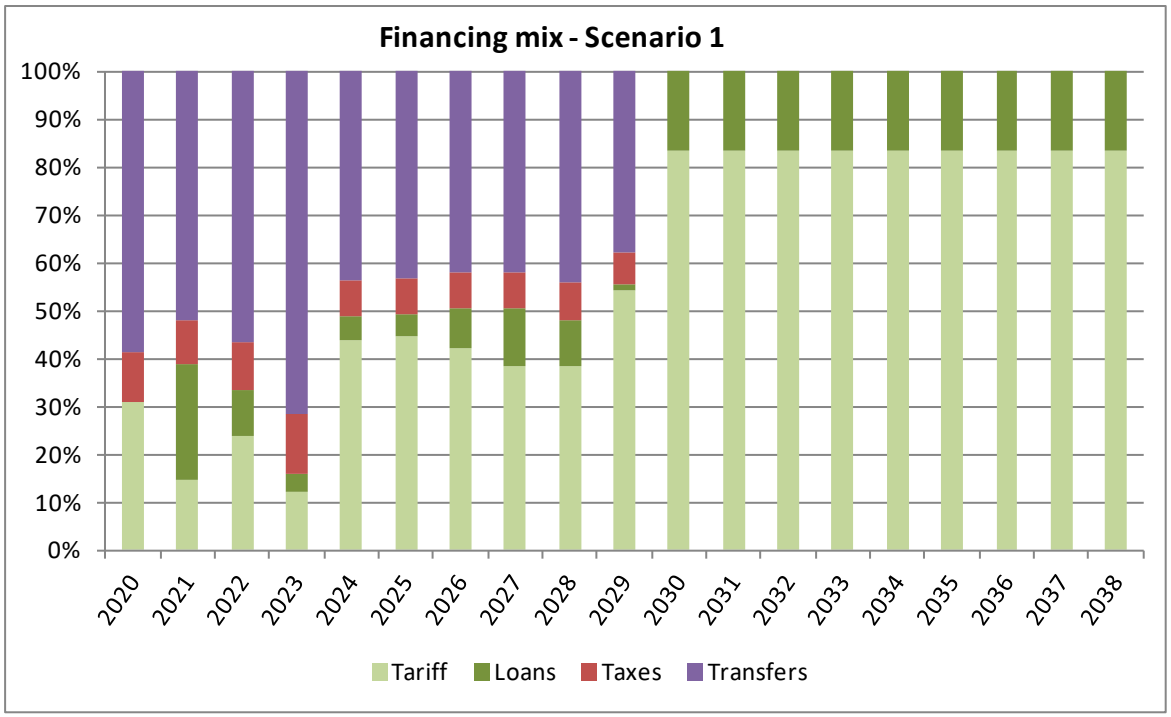
Financing Mix	Scenario 1 *Business as usual*	Scenario 2 *Maximum*	Scenario 3 *Acceleration*	2004 Implementation Plan
Efficiency gains (as share of direct water OPEX)	3.8%	3.8%	5.4%	
Tariffs	55%	47%	48%	30%
Tariff increase planned	*66%*	*79%*	*73%*	
Taxes (fiscal resources)	5%	7%	4%	30%
Transfers (EU funds)	28%	23%	23%	40%
Commercial loans (to be repaid by tariffs)	12%	23%	25%	

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

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

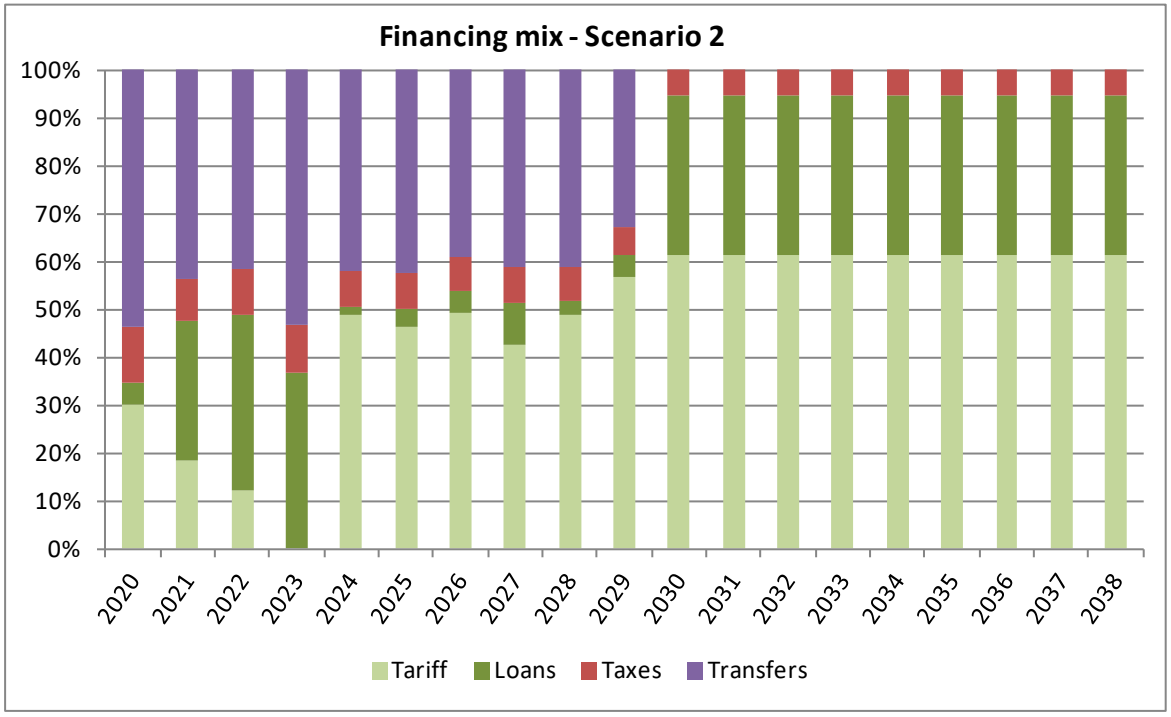
[23] Compliance with Art. 3 – the rate of connection to collection systems in agglomerations larger than 2,000 p.e. must be of at least 98% and the remaining 2% should cover less than 2,000 p.e.

Figure 16: Scenario 1 investment needs financing sources



For Scenario 1 (Business as usual), transfers represent from two thirds to half 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.

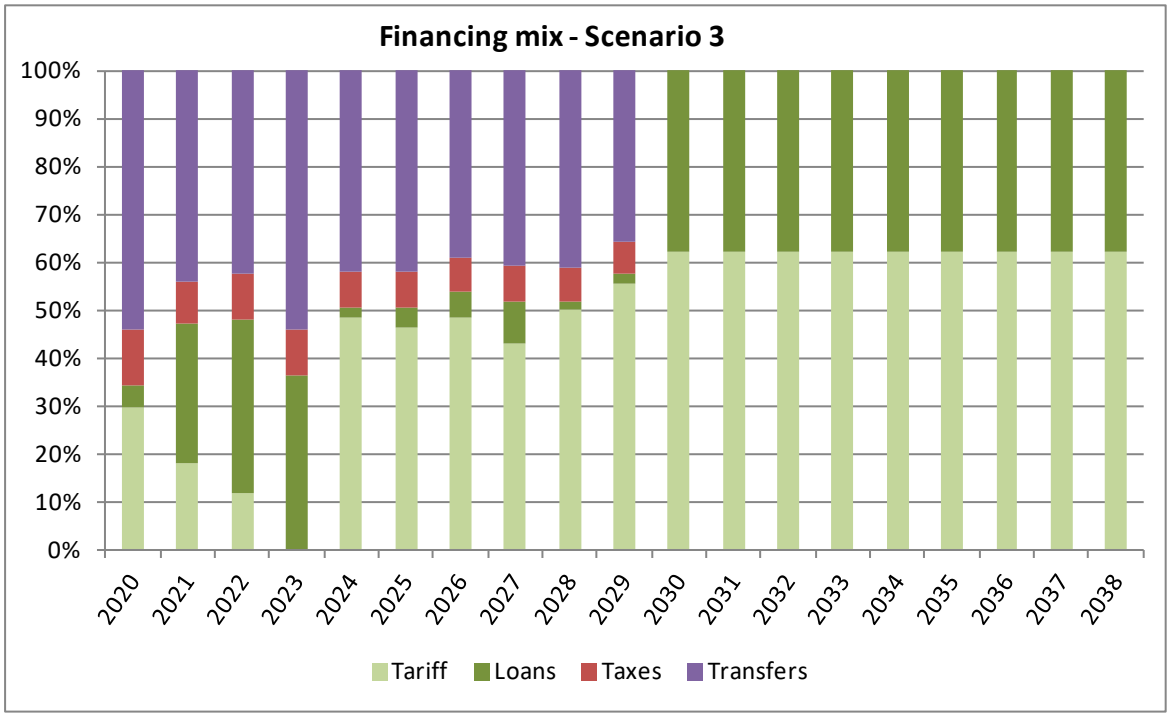
Figure 17: Scenario 2 investment needs financing sources



For Scenario 2 (Maximum results), transfers represent from 40 to 60 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 around half 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 m^3/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 (42% for Scenario 1, 29% 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

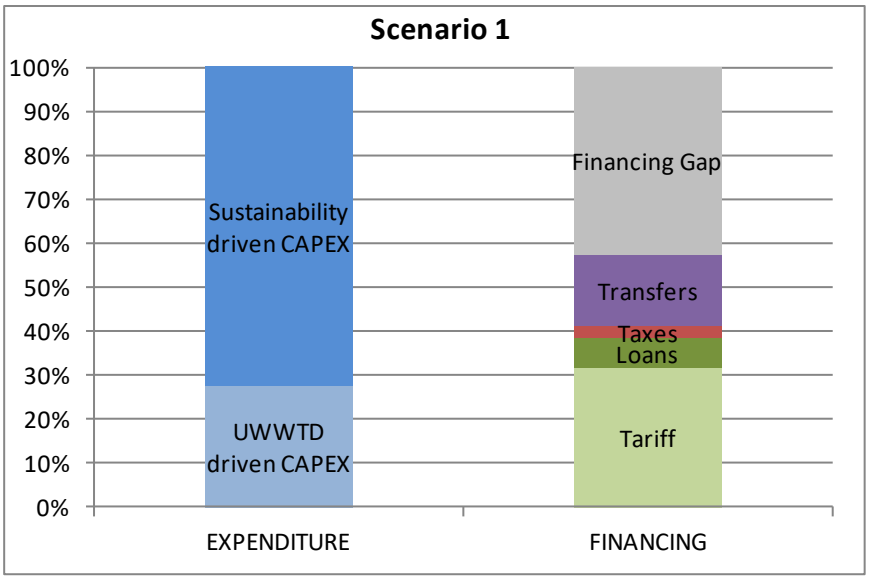


Figure 20: Scenario 2 remaining financing gap

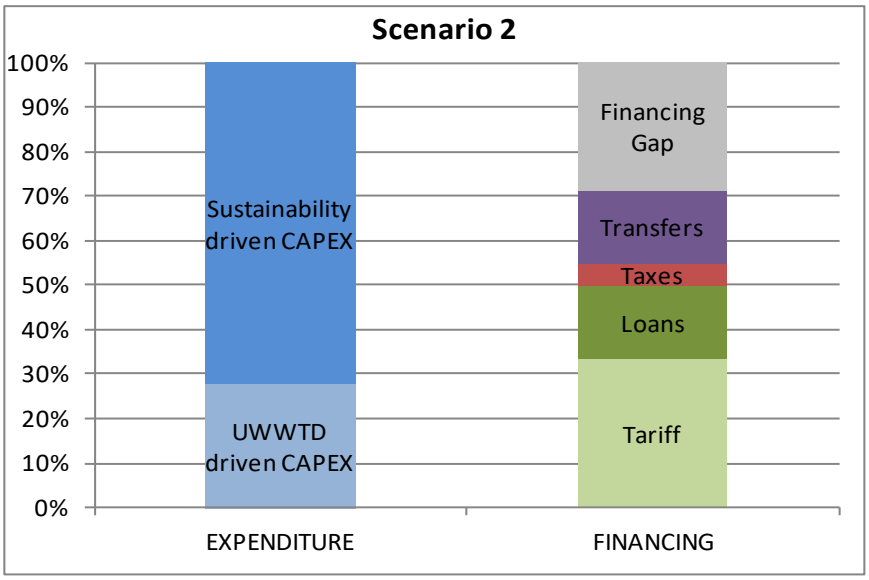
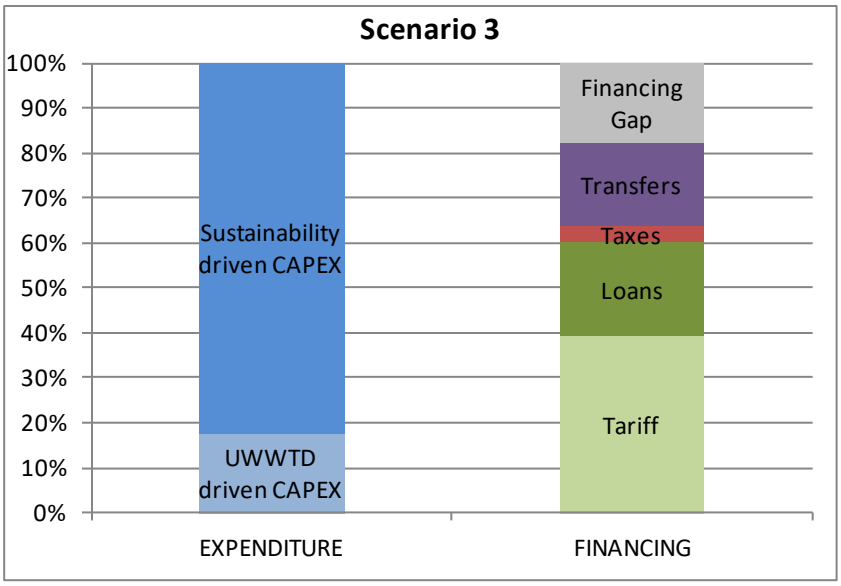


Figure 21: Scenario 3 remaining financing gap



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 82 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	27 749	77 806	1 983
Scenario 3	14 793[24]	77 806	1 983

It should be clear that the team is not pre-determining a specific compliance period. All scenarios assess through financial modelling 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

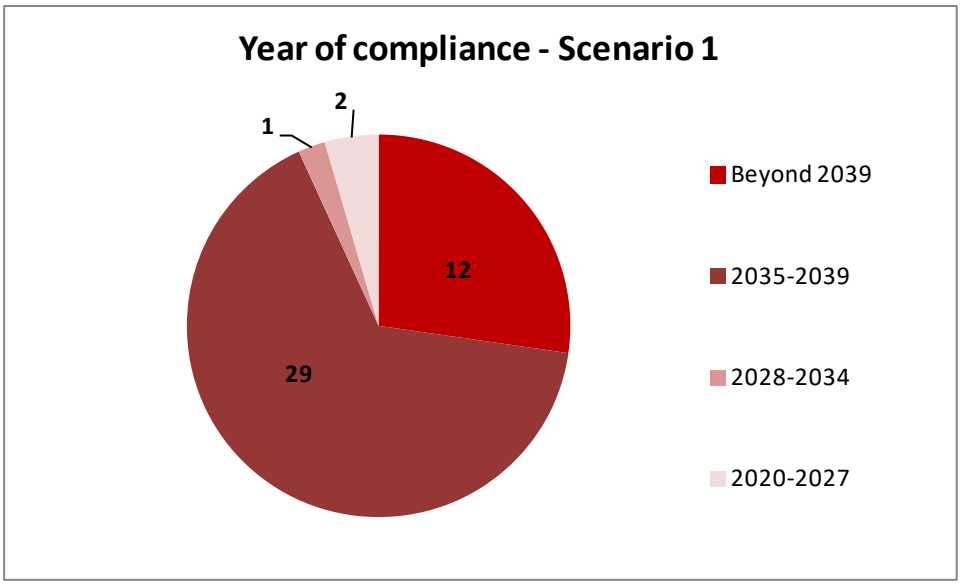
SCENARIO 1							
ROC	Compliance year	Tariffs	Loans	Transfers (EU Funds)	Taxes (national co-funding)	Financing gap	Agg. not meeting target
Alba	2039	705	167	391	69	42%	0
Arad	2039	777	179	348	61	55%	0
Arges	2039	1 166	293	382	67	22%	0
Bacau	2039	732	150	801	141	27%	0
Bihor	2039	1 131	250	-	-	55%	0
Bistrita	2039	553	23	547	97	42%	0
Botosani	Beyond 2039	217	89	20	4	84%	7
Braila	2039	494	99	300	53	54%	0
Brasov	2036	1 615	159	420	74	2%	0
Bucuresti	2024	4 547	474	219	39	0%	0
Buzau	Beyond 2039	636	129	326	57	49%	7
Calarasi	Beyond 2039	205	106	548	97	48%	10
Caras Severin	Beyond 2039	157	-	262	46	73%	11
Cluj Salaj	2039	1 686	499	852	150	28%	0
Cluj Turda	2030	375	-	115	20	0%	0
Constanta	2039	1 231	488	879	155	40%	0
Covasna	2039	315	95	130	23	61%	0
Dambovita	Beyond 2039	558	200	524	93	52%	6
Dolj	Beyond 2039	1 430	353	731	129	37%	3
Galati	2039	956	179	453	80	36%	0
Giurgiu	Beyond 2039	126	56	305	54	66%	17

[24] 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.

Gorj	2039	162	97	508	90	54%	0
Harghita	2039	451	123	427	75	40%	0
Hunedoara	2036	262	35	670	118	36%	0
Ialomita	Beyond 2039	69	29	-	-	93%	20
Iasi	2039	1 735	537	665	117	44%	0
Ilfov	2039	621	144	342	60	39%	0
Maramures	2039	870	135	532	94	50%	0
Medias	2039	100	53	95	17	53%	0
Mehedinti	2039	163	43	321	57	42%	0
Mures	2039	1 348	234	46	8	36%	0
Neamt	2039	668	135	-	-	72%	0
Olt	Beyond 2039	345	135	561	99	51%	18
Prahova	2039	1 362	154	779	137	54%	0
Satu Mare	2039	460	103	299	53	49%	0
Sibiu	2039	1 059	274	511	90	16%	0
Suceava	Beyond 2039	617	174	521	92	63%	6
Teleorman	Beyond 2039	213	113	403	71	57%	10
Timis	2039	2 223	219	510	90	0%	0
Tulcea	2039	313	83	283	50	23%	0
Valcea	2038	437	150	598	106	46%	0
Valea Jiului	2024	162	43	133	23	37%	0
Vaslui	2039	390	48	624	110	33%	0
Vrancea	Beyond 2039	451	100	267	47	55%	7
TOTAL	***Beyond 2039***	***34 089***	***7 149***	***17 647***	***3 114***	***42%***	***122***

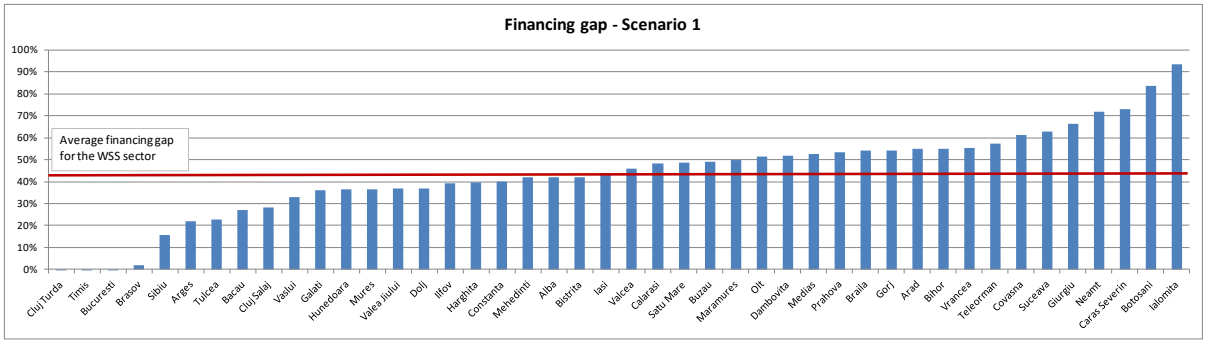
In the business as usual scenario, 32 ROCs (73%) manage to achieve UWWTD targets in all their agglomerations by the end of 2039. However, among them, only 3 ROCs (Bucuresti, Cluj Turda and Timis) manage to cover all their CAPEX needs (financing gap at 0%). This means the other 29 ROCs face a financing 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



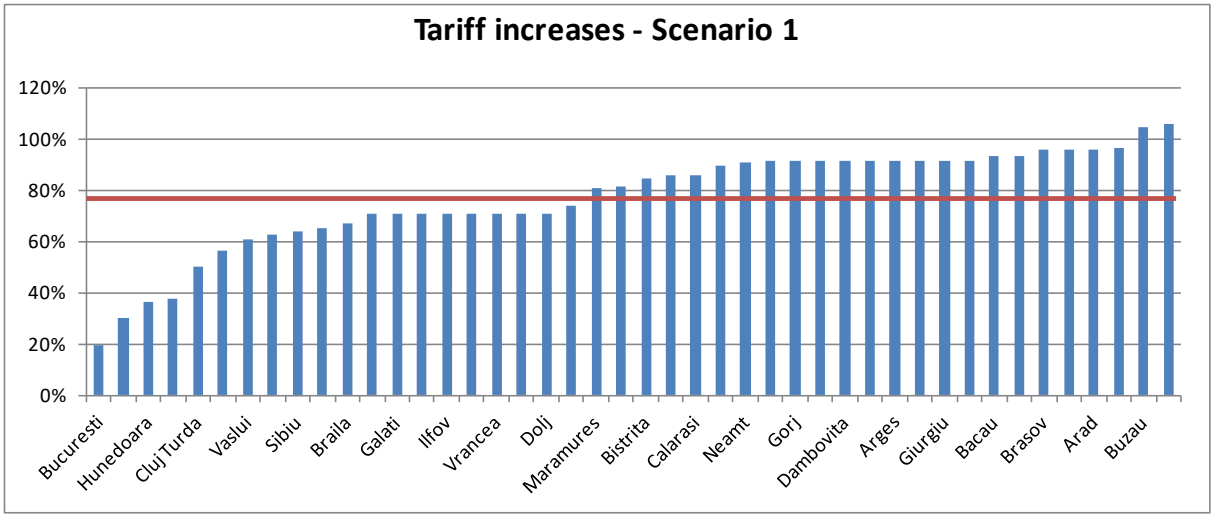
As mentioned above, in this scenario, a large financing gap remains for 41 ROCs, which are unable to finance UWWTD and/or sustainability driven investments. This financing gap represents 42 percent of the total WSS financial needs.

Figure 23: Scenario 1 breakdown of financing gap



The BAU scenario includes important tariff increases along the planning period which represent a total of 66 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/m^3 in 2019 to 12.07 RON/m^3 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 3.8 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	**6,045**	**3,472**	-	2,033	359	-	-	1,081	2,573	1%
2021	**6,045**	**3,419**	8	1,774	313	-	824	508	2,626	4%
2022	**6,046**	**3,085**	20	1,741	307	-	307	730	2,960	4%
2023	**6,113**	**4,366**	24	3,119	550	-	156	540	1,747	4%
2024	**4,991**	**3,774**	29	1,647	291	-	179	1,657	1,217	3%
2025	**4,990**	**3,709**	32	1,599	282	-	172	1,655	1,282	3%
2026	**4,989**	**3,611**	36	1,524	269	-	302	1,516	1,378	3%
2027	**4,991**	**3,452**	41	1,450	256	-	415	1,332	1,539	3%
2028	**4,989**	**3,208**	45	1,416	250	-	316	1,227	1,781	3%
2029	**5,895**	**3,552**	45	1,343	237	-	43	1,928	2,343	3%
2020-2029	*55,094*	*35,648*	*190*	*17,647*	*3,114*	-	*2,714*	*12,173*	*19,446*	*36%*
2030-2038	*52,444*	*26,351*	*732*	-	-	-	*4,435*	*21,916*	*26,093*	*22%*
Total	**107,538**	**61,999**	**922**	**17,647**	**3,114**	**-**	**7,149**	**34,089**	**45,539**	**66%**

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 (+149%), which is enhanced by the revenue increase as well as additional funding from taxes (+71%).

Table 20: Scenario 2 compliance results

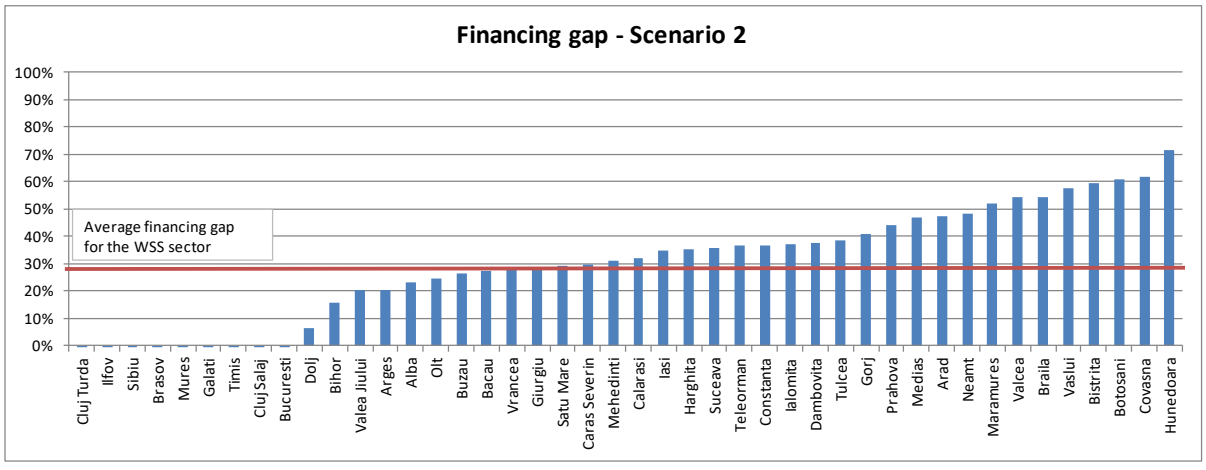
SCENARIO 2							
ROC	Compliance Year	Tariffs	Loans	Transfers	Taxes (incl. national co-funding)	Financing gap	Agg. not meeting target
Alba	2039	774	396	499	88	23%	0
Arad	2039	753	430	348	61	47%	0
Arges	2039	821	830	252	45	20%	0
Bacau	2039	800	686	266	61	28%	0
Bihor	2039	1 862	545	148	26	16%	0
Bistrita	2039	394	309	128	23	60%	0
Botosani	2039	267	288	195	34	61%	0
Braila	2039	364	227	300	53	54%	0
Brasov	2036	1 693	235	327	58	0%	0
Bucuresti	2024	2 419	2 602	219	39	0%	0
Buzau	2039	710	364	499	88	26%	0
Calarasi	2039	125	163	556	406	32%	0
Caras Severin	2034	210	194	639	163	30%	0
Cluj Salaj	2039	3 312	-	968	171	0%	0
Cluj Turda	2030	329	46	115	20	0%	0
Constanta	2039	1 009	539	1 141	201	37%	0
Covasna	2039	182	252	100	18	62%	0
Dambovita	2039	485	649	534	103	38%	0
Dolj	2039	1 601	805	1 271	224	7%	0
Galati	2039	1 392	331	755	133	0%	0
Giurgiu	2039	178	264	346	352	29%	0
Gorj	2039	283	413	323	89	41%	0
Harghita	2039	701	364	76	13	35%	0
Hunedoara	2036	200	181	75	25	72%	0
Ialomita	2039	58	50	194	621	37%	0
Iasi	2039	2 230	1 007	273	48	35%	0
Ilfov	2039	814	328	658	116	0%	0
Maramures	2039	716	312	396	135	52%	0
Medias	2039	117	67	95	17	47%	0
Mehedinti	2039	285	219	159	28	31%	0
Mures	2039	2 167	192	182	32	0%	0
Neamt	2039	743	161	488	86	48%	0
Olt	2039	258	366	596	546	25%	0
Prahova	2039	894	1 247	666	118	44%	0
Satu Mare	2039	579	324	299	53	29%	0
Sibiu	2039	1 494	580	186	33	0%	0
Suceava	2039	589	450	1 182	209	36%	0
Teleorman	2039	119	167	426	479	37%	0
Timis	2039	2 266	-	660	116	0%	0
Tulcea	2039	289	163	108	19	38%	0

Valcea	2038	379	515	167	29	54%	0
Valea Jiului	2024	196	102	133	23	20%	0
Vaslui	2039	342	208	164	29	58%	0
Vrancea	2039	517	239	536	95	28%	0
TOTAL	***2039***	***35 920***	***17 810***	***17 647***	***5 326***	***29%***	***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 3 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 11 ROCs would be able to fully cover their CAPEX needs (financing gap at 0%) while the other **33 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 almost one quarter 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.

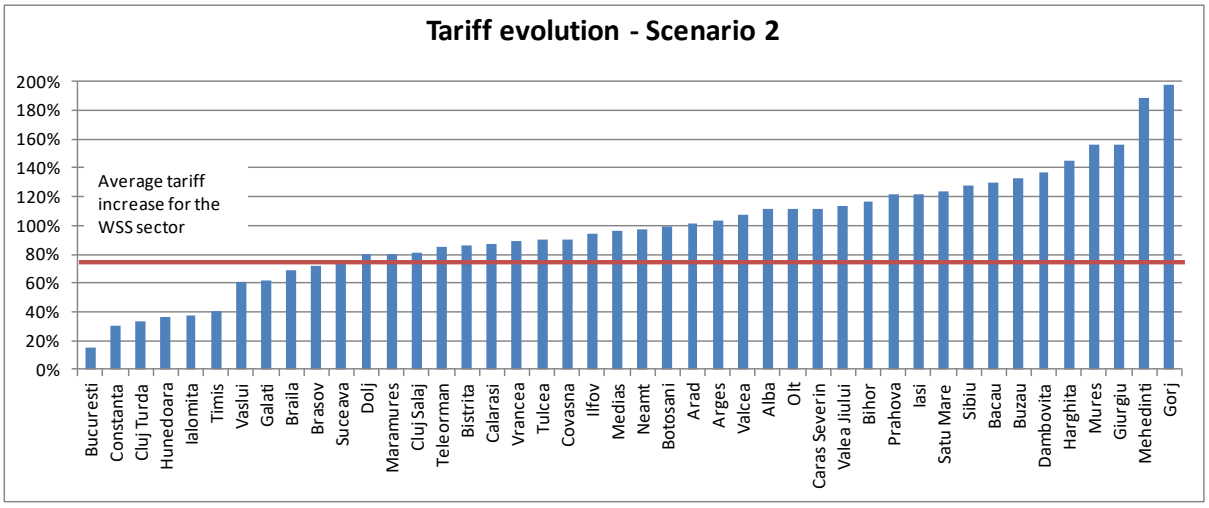
100. In this scenario, a financing gap remains for 33 ROCs, which are unable to finance both UWWTD and sustainability investments. This gap represents 29 percent of the total financial CAPEX needs, for the entire WSS sector.

Figure 25: Scenario 2 breakdown of financing gap



The Maximum scenario includes significant tariff increases along the planning period from 7.27 RON/m^3 in 2019 to 13.02 RON/m^3 in 2038 which represent a total of 79 percent increase in the sector. Those increases range from 19 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 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 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

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	**6,045**	**3,899**	2	2,033	359	99	176	1,171	2,146	1%
2021	**6,045**	**4,046**	15	1,774	313	27	1,189	744	1,999	8%
2022	**6,046**	**4,040**	42	1,741	307	74	1,484	495	2,006	13%
2023	**6,113**	**4,654**	76	3,119	550	28	1,852	(359)	1,459	6%
2024	**4,991**	**3,809**	93	1,647	291	-	71	1,858	1,182	3%
2025	**4,990**	**3,940**	87	1,599	282	-	158	1,819	1,050	3%
2026	**4,989**	**4,029**	82	1,524	269	-	185	1,989	960	2%
2027	**4,991**	**3,762**	76	1,450	256	-	328	1,604	1,229	2%
2028	**4,989**	**3,824**	70	1,416	250	-	105	1,873	1,165	2%
2029	**5,895**	**4,453**	61	1,343	237	5	199	2,522	1,442	2%
2020-2029	*55,094*	*40,456*	*473*	*17,647*	*3,114*	*234*	*5,747*	*13,714*	*14,638*	*51%*
2030-2038	*52,444*	*36,246*	*2,189*	-	-	*1,977*	*12,063*	*22,206*	*16,198*	*19%*
Total	**107,538**	**76,703**	**2,662**	**17,647**	**3,114**	**2,211**	**17,810**	**35,920**	**30,836**	**79%**

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 47 percent, thus decreasing both CAPEX and OPEX, which is then reflected in the required tariff increases (improving affordability). This scenario also relies significantly on commercial loans, which represent one quarter 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.

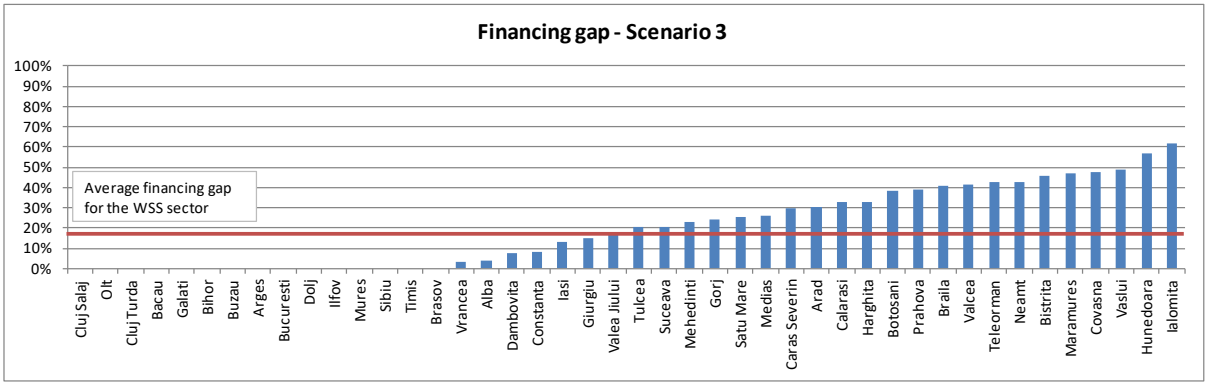
Table 22: Scenario 2 compliance results

SCENARIO 3							
ROC	Compliance Year	Tariffs	Loans	Transfers	Taxes (incl. national co-funding)	Financing gap	Agg. not meeting target
Alba	2035	1 091	502	499	88	4%	0
Arad	2033	857	567	348	61	31%	0
Arges	2034	1 240	794	252	45	0%	0
Bacau	2032	1 143	625	266	60	0%	0
Bihor	2035	2 040	706	148	26	0%	0
Bistrita	2033	590	392	128	23	46%	0
Botosani	2033	424	368	195	34	38%	0
Braila	2032	344	397	300	53	41%	0
Brasov	2031	1 531	260	327	58	0%	0
Bucuresti	2024	2 419	2 602	219	39	0%	0
Buzau	2035	788	336	499	88	0%	0
Calarasi	2031	104	149	556	108	33%	0
Caras Severin	2033	208	198	639	142	30%	0
Cluj Salaj	2034	3 224	-	968	171	0%	0
Cluj Turda	2024	303	70	115	20	0%	0
Constanta	2034	994	1 588	1 141	201	8%	0
Covasna	2033	265	288	100	18	48%	0
Dambovita	2031	645	679	534	99	7%	0
Dolj	2032	1 639	-	1 271	224	0%	0
Galati	2034	1 188	163	755	133	0%	0
Giurgiu	2032	127	216	346	82	15%	0
Gorj	2031	488	434	323	88	24%	0
Harghita	2035	653	329	76	13	33%	0
Hunedoara	2031	289	346	75	20	57%	0
Ialomita	2033	34	43	194	49	62%	0
Iasi	2034	2 771	1 407	273	48	13%	0
Ilfov	2032	598	328	658	116	0%	0
Maramures	2032	675	312	396	132	47%	0
Medias	2031	128	162	95	17	26%	0
Mehedinti	2034	275	219	159	28	23%	0
Mures	2032	1 988	192	182	32	0%	0
Neamt	2030	530	372	488	86	43%	0
Olt	2032	341	329	596	105	0%	0

Prahova	2033	828	1 247	666	118	39%	0
Satu Mare	2035	525	295	299	53	25%	0
Sibiu	2032	1 214	722	186	33	0%	0
Suceava	2033	621	656	1 182	209	20%	0
Teleorman	2031	96	153	426	96	43%	0
Timis	2034	1 962	-	660	116	0%	0
Tulcea	2035	251	283	108	19	20%	0
Valcea	2035	589	589	167	29	41%	0
Valea Jiului	2024	194	112	133	23	16%	0
Vaslui	2032	329	208	164	29	49%	0
Vrancea	2031	475	199	536	95	4%	0
TOTAL	***2035***	***37 020***	***19 837***	***17 647***	***3 326***	***18%***	***0***

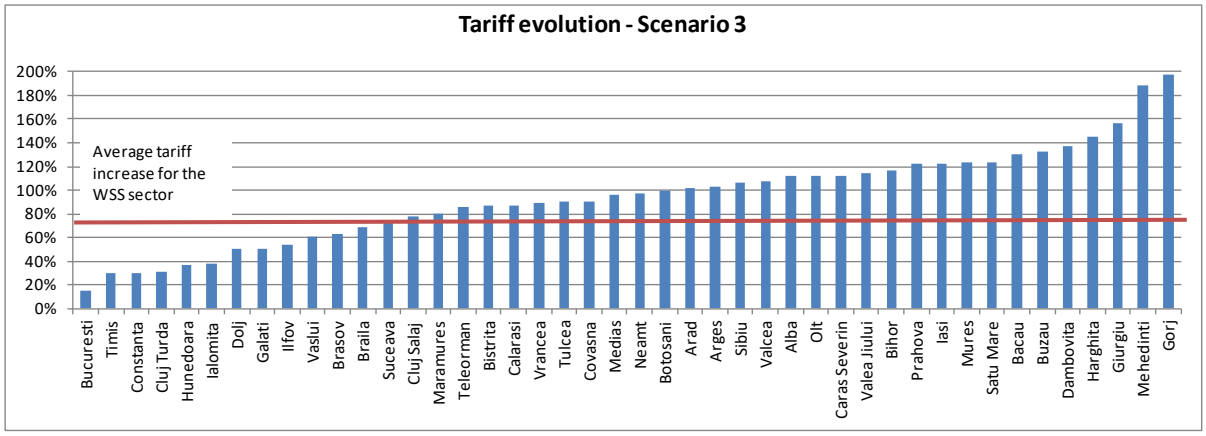
In **Scenario 3**, the **UWWTD targets are reached by 2035 for all ROCs with 622 agglomerations achieving 100 percent coverage for wastewater collection and treatment, and 412 agglomerations below 5,000 p.e. relying on IAS**. It is expected that 15 ROCs would be able to fully cover their CAPEX needs (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 (42%) and 2 (29%) 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/m^3 in 2019 to 12.57 RON/m^3 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	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	**6,000**	**3,863**	2	2,086	368	90	180	1,139	2,137	1%
2021	**6,000**	**4,003**	15	1,774	313	24	1,175	717	1,998	8%
2022	**6,003**	**3,998**	42	1,689	298	90	1,449	471	2,005	12%
2023	**6,094**	**4,683**	74	2,663	470	7	1,790	(246)	1,410	6%
2024	**4,988**	**3,796**	91	1,598	282	-	79	1,837	1,192	3%
2025	**4,988**	**3,969**	85	1,669	295	-	162	1,843	1,019	2%
2026	**4,988**	**4,023**	81	1,577	278	-	224	1,944	966	2%
2027	**4,991**	**3,802**	76	1,556	275	-	335	1,637	1,188	2%
2028	**4,989**	**3,815**	69	1,569	277	-	57	1,912	1,174	2%
2029	**5,256**	**4,083**	60	1,467	259	-	85	2,272	1,173	2%
2020-2029	*54,297*	*40,035*	*595*	*17,647*	*3,114*	***211***	***5,536***	*13,527*	*14,261*	*50%*
2030-2038	*40,286*	*37,794*	*1,448*	-	-	-	*14,301*	*23,493*	*2,492*	*16%*
Total	**94,583**	**77,829**	**2,042**	**17,647**	**3,114**	**211**	**19,837**	**37,019**	**16,754**	**73%**

This Scenario demonstrates significant investment need savings RON 12.9 billion (€2.7 billion), compared to Scenarios 1 & 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

Population IAS, #	1,195,771
Household size, #	2.63
Households, #	454,666
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	**3,851**

RON 3.9 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 have 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: Investment needs for IAS

Indictor	**Scenario 1**	**Scenario 2**	**Scenario 3**
Compliance Investment needs (in billion RON)	27.75	27.75	14.79
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		2.2	

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 stablished 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 EBRD[25] has been looking at potential options to help the aggregation process and further consolidate the sector. The report[26], 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,

[25] Under the EU Technical Assistance Operational Program 2014-2020.
[26] 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 ¾ 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 m^3 (about 0.04 Euros per m^3) could generate an additional 120 million RON per year[27] 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

[27] Based on total billed volume nationwide for ROCs of 600 million m^3 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

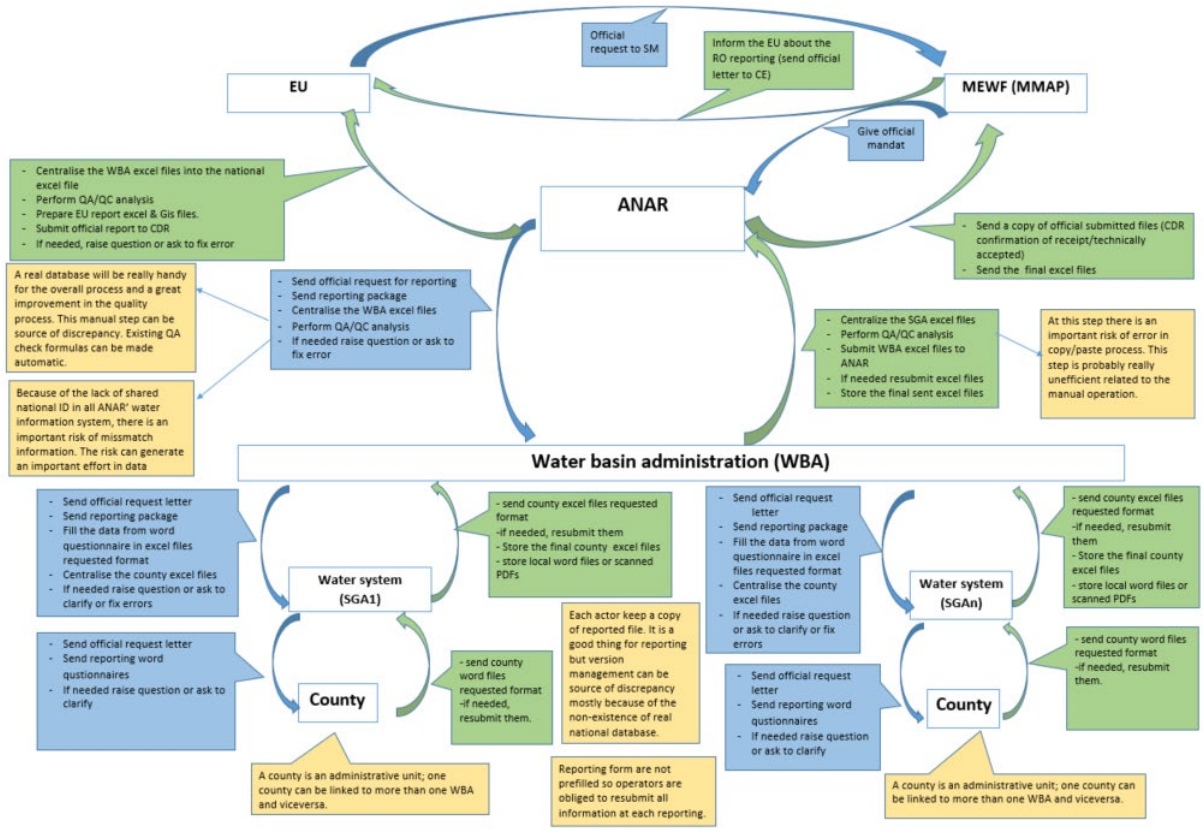
122. As mentioned under **section 1.2**, the Bank is supporting the MEWF to assess the existing national UWWTD reporting systems and their compatibility with the SIIF requirements. As a result, the team will propose improvements to data collection, verification and reporting process as well as the development 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 solutions[28]: 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.

[28] 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	9	1034	141	272	332	544	1034	1034	1034
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	14.8 bill.	7.3 bill.	9.7 bill.	12.3 bill.	14.4 bill.	14.8 bill.	14.8 bill.	14.8 bill.
Total adjusted sustainability investments (RON)	Recorded since the adoption of AIP	Annual	ROCs	MEF, MPWDA	0	61.1 bill.	9.0 bill.	18.2 bill.	27.0 bill.	35.2 bill.	43.9 bill.	54.0 bill.	61.1 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.	8.2 bill.	13.1 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	3.3 bill.	1.7 bill.	2.5 bill.	3.3 bill.	3.3 bill.	3.3 bill.	3.3 bill.	3.3 bill.
ROC own investments (RON)	Recorded since the adoption of AIP	Annual	ROCs	IDAs	0	56.9 bill.	6.7 bill.	12.8 bill.	19.1 bill.	29.5 bill.	38.8 bill.	49.2 bill.	56.9 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

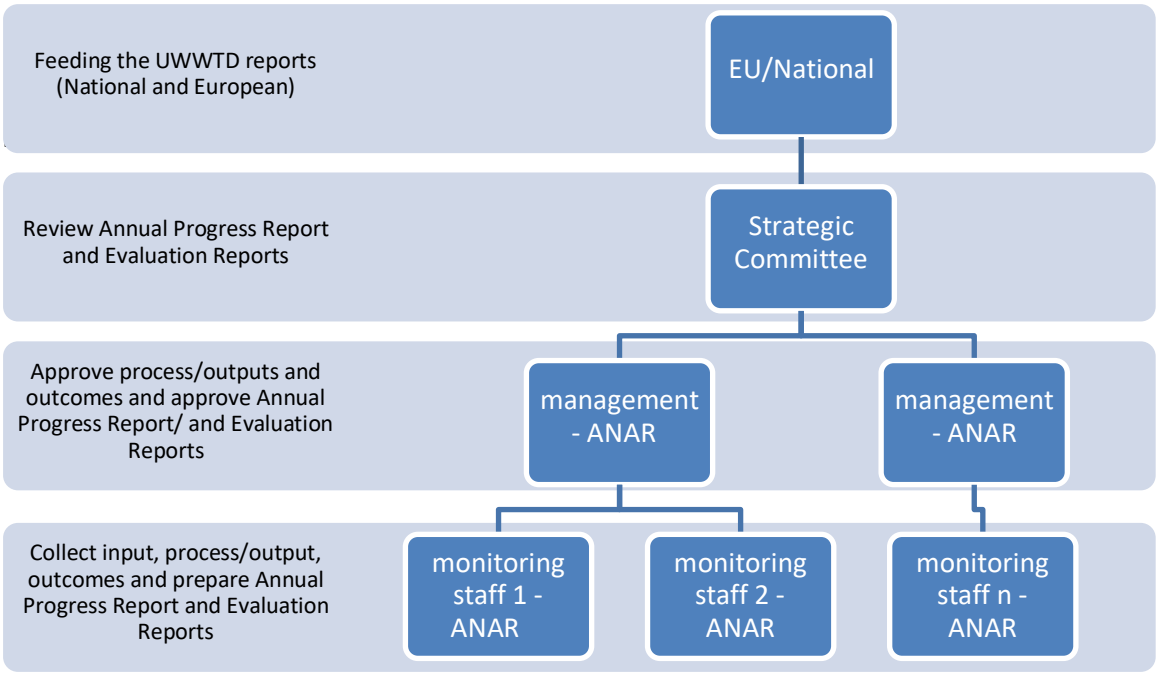
Source	Description	Quantitative	Qualitative
Standard Forms distributed by ANAR each semester for UWWTD reporting purpose or additional sheet	Data collected from authorities directly responsible with Implementation Acceleration Plan	x	x
Administrative Data	National Institute of Statistics, other sources 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.

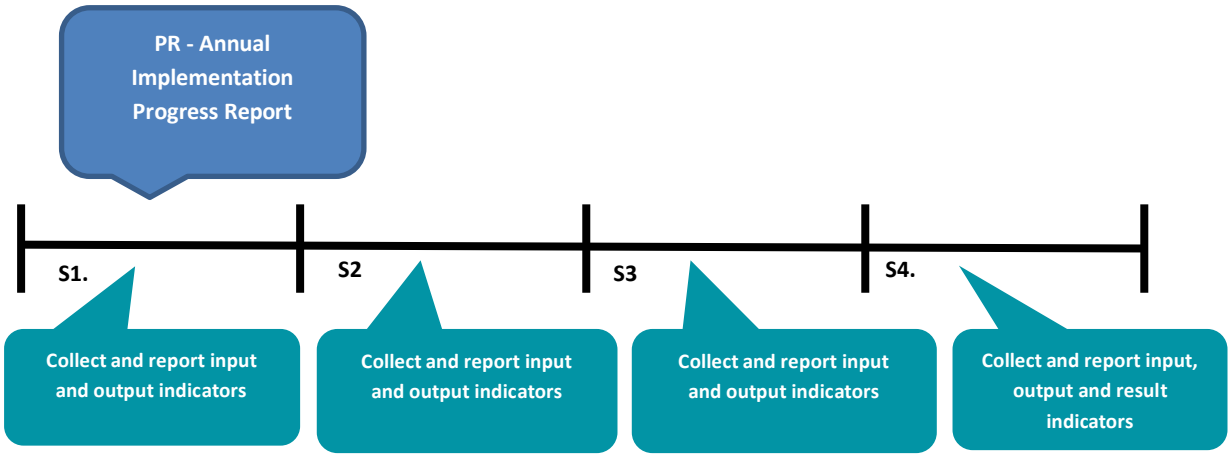
Figure 30: Reporting process



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.

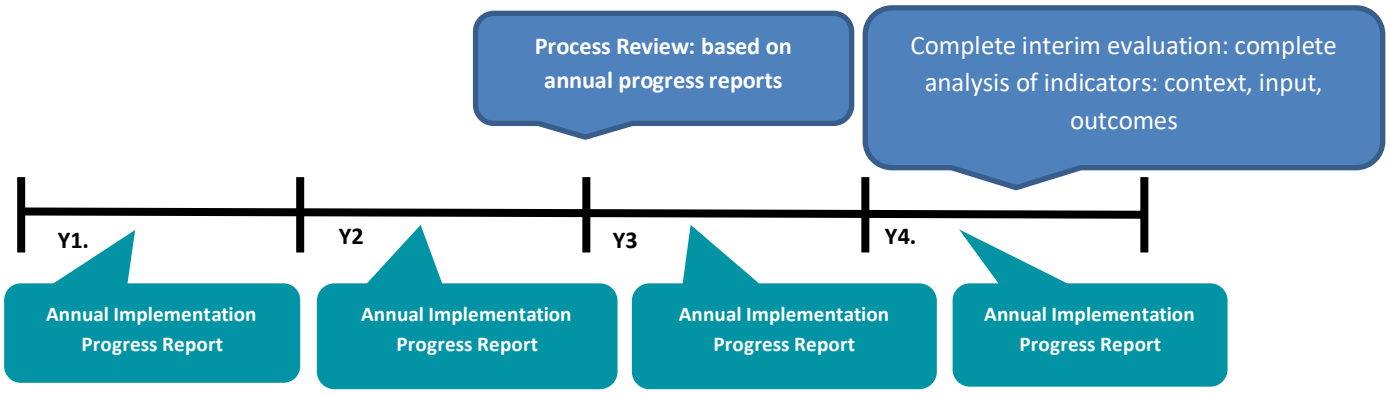
137. **Process Review** will be performed every 3 years with the goal to check whether the process is implemented according to what was planned, it is timely, it captures possible delays and also limitations in data collection and key stakeholders' involvement. It will answer the questions like:

- 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

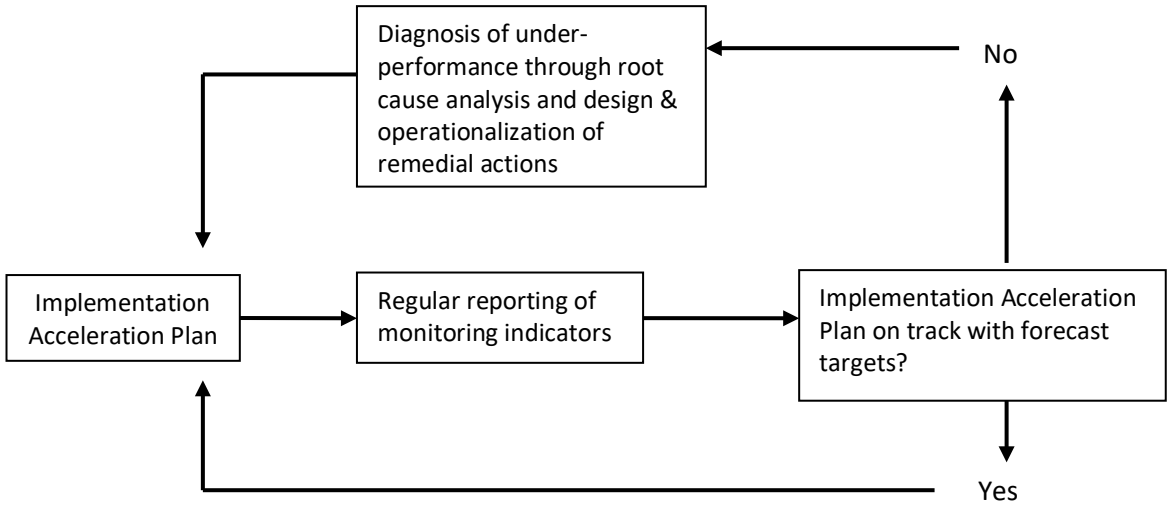


139. The evaluation design as well as the Evaluation Reports will be discussed and approved by the Strategic Committee. Resources should be allocated to ANAR to perform or outsource the evaluation. Following the observations and findings of the evaluation, the plan may be reviewed and adjusted as necessary.

7.4 Opportunities for adjustments during the implementation process

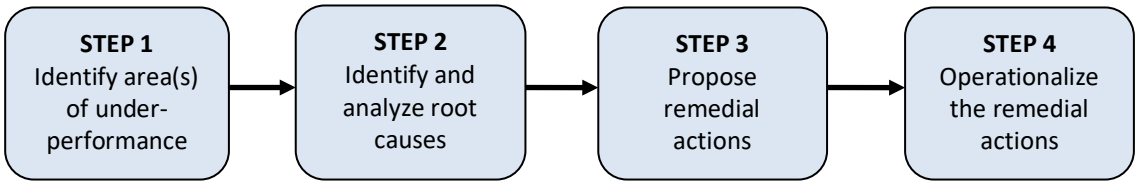
140. Every Action/Implementation plan, like this one, is a living document, which requires monitoring, regular reviews, adjustments and fine-tuning in order to achieve its planned results. As mentioned above the team is proposing that every three years, a more in-depth review of the Implementation Acceleration 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



Step 1 – Areas of under-performance

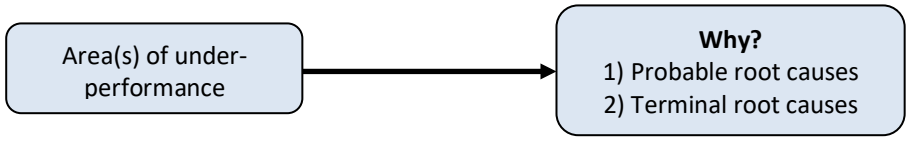
142. Areas of under-performance of the AIP should be appraised against the progress as captured by the indicators. Additional information can also be used (for example from the developed IT system for UWWTD reporting) to provide the most up to date picture of the status of play.

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 **1,034** compared to **1,870** according to the latest report of ANAR; the total estimated load generated by the new agglomerations is **14,249,306** 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 27.7 billion (€5.7 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 (€16.1 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 (€0.4 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 (€0.4 billion). Yet again, in this Scenario (like in Scenario 1) less but still quite worrying amounts of sustainability investments of RON 31 billion (€6.4 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 14.8 billion/€3.1 billion**) and sustainability (**RON 79.8 billion/€16.4 billion, including soft measures**) are going to be **RON 94.6 billion (€19.5 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

1.2 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.

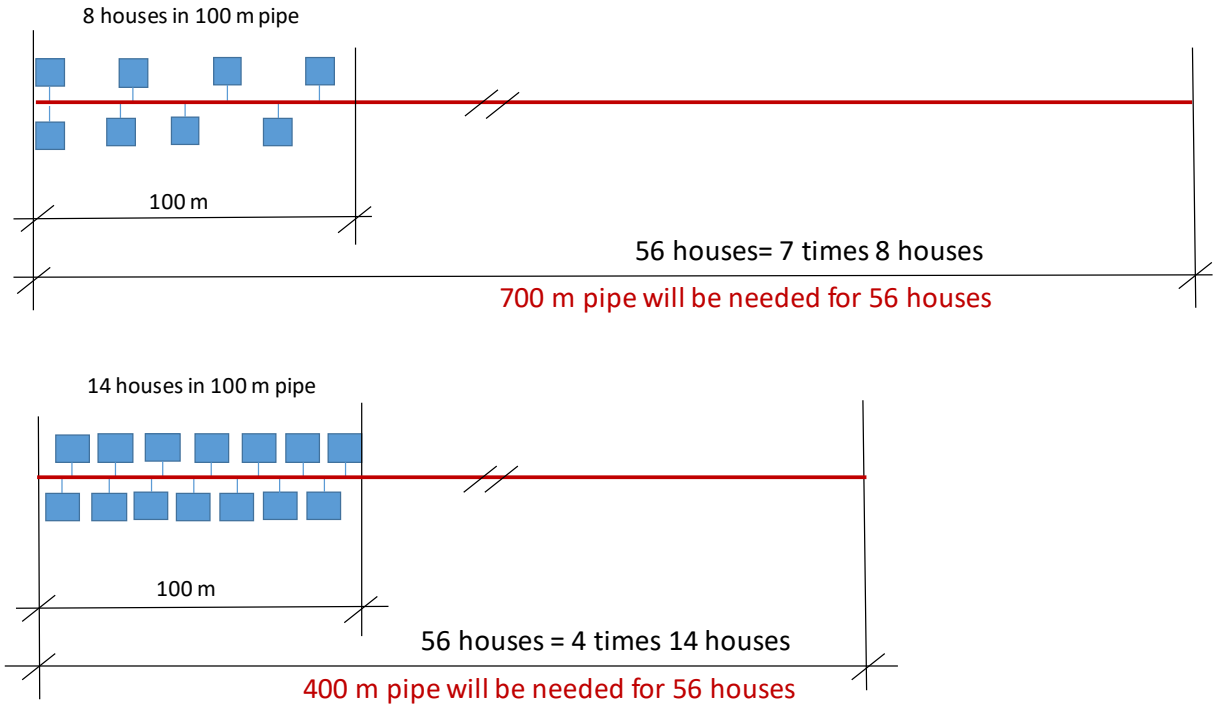


Figure 39: Visualization for calculation of the length of the network

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.

1.3 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.

1.4 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.

1.5 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.

1.6 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 assumed[29].

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

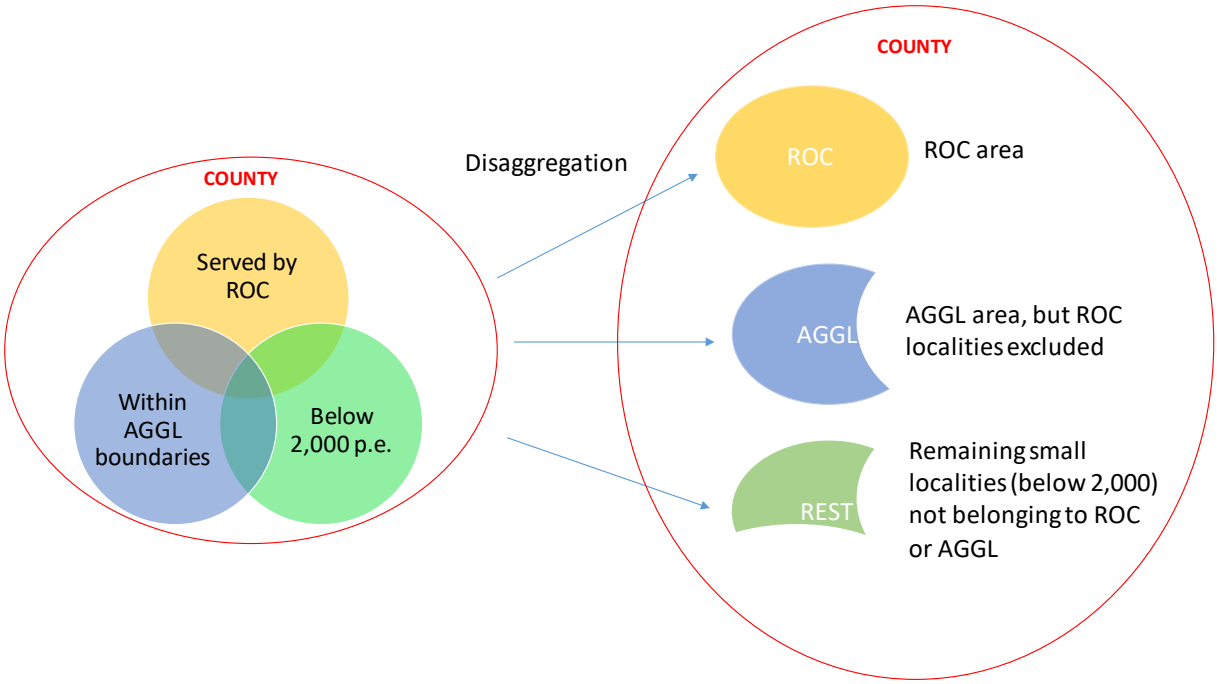


Figure 40: Visualization of the disaggregation of the county by three groups

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*	*Pphh*
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:

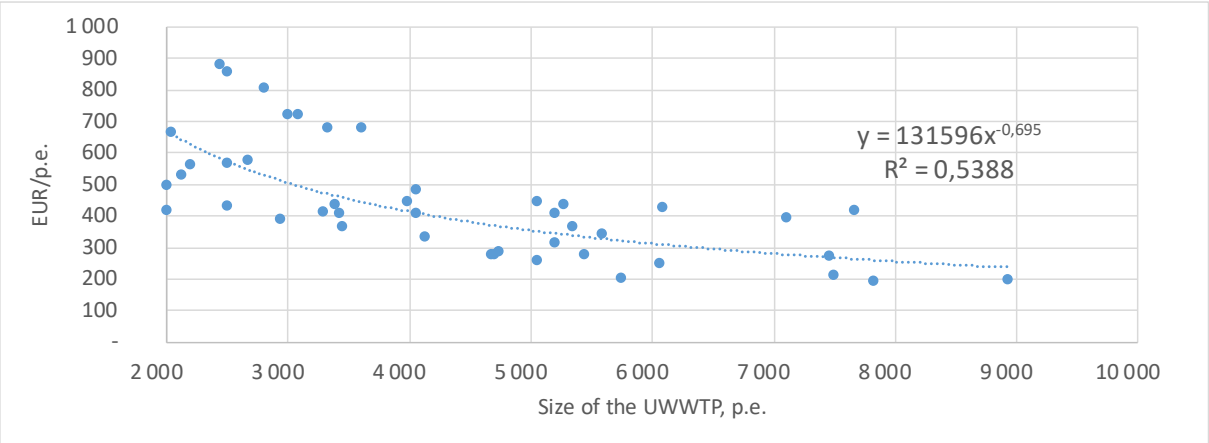
CAPEX for the collecting systems: information on estimated project costs from FS financed under LIOP has been analyzed. In total 96 projects are included in this analysis. The data include the following information:

- 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	$CAPEX_{WWTP} = N_{p.e.} * Unit\ cost_{UWWTP}$

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

N	County	ANAR list	Dropouts from ANAR list:		Implementation of the new methodology		
		Total	Merged with other agglomerations	Excluded	Retained	Newly formed	Total
1	ALBA	45		31	14	6	20
2	ARGES	61	1	47	13	3	16
3	ARAD	49		17	32	3	35
4	BACAU	79	1	53	25	2	27
5	BIHOR	47	2	19	26	1	27
6	BISTRITA NASAUD	23		11	12	7	19
7	BOTOSANI	33		20	13	0	13
8	BRAILA	25	1	7	17	0	17
9	BRASOV	41	3	16	22	3	25
10	BUCHAREST	1		0	1	0	1
11	BUZAU	46		16	30	3	33
12	CALARASI	43		14	29	2	31
13	CARAS SEVERIN	14		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		9	25	6	31
21	GIURGIU	46	2	19	25	7	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		4	9	1	10
28	MARAMURES	46	2	24	20	6	26
29	MURES	38		17	21	1	22
30	NEAMT	61	7	36	18	2	20
31	OLT	78	5	34	39	1	40
32	PRAHOVA	94	6	37	51	1	52
33	SALAJ	13		5	8	0	8
34	SATU MARE	43	1	22	20	2	22
35	SIBIU	41	2	15	24	2	26
36	SUCEAVA	82	2	44	36	1	37
37	TELEORMAN	70	6	38	26	2	28
38	TIMIS	60	2	19	39	1	40
39	TULCEA	31		14	17	0	17
40	VALCEA	67	11	39	17	1	18
41	VASLUI	31		17	14	1	15
42	VRANCEA	37	2	14	21	4	25
	TOTAL	**1870**	**102**	**836**	**932**	**102**	**1034**

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	p.e.	aggl.nr	p.e.	aggl.nr	p.e.	aggl.nr	p.e.
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	16	397,565	0	0	0	0	3	278,407	7	28,410
ARAD	AR	35	326,846	0	0	1	184,157	0	0	16	40,825
BACAU	BC	27	368,116	1	2,526	0	0	4	224,944	11	36,492
BIHOR	BH	27	314,627	0	0	1	10,947	0	0	9	30,573
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	25	462,992	2	13,129	2	18,185	3	327,898	8	32,938
BUCHAREST	B	1	1,841,807	0	0	0	0	1	1,841,807	0	0
BUZAU	BZ	33	290,232	0	0	1	143,246	1	5,067	20	57,592
CALARASI	CL	31	213,979	0	0	0	0	1	27,869	24	99,288
CARAS SEVERIN	CS	13	177,768	0	0	0	0	1	2,745	4	14,769
CLUJ	CJ	13	481,655	0	0	0	0	4	356,145	2	4,460
CONSTANTA	CT	33	797,423	1	80,911	1	14,259	5	552,342	10	28,770
COVASNA	CV	16	171,036	2	109,341	0	0	0	0	6	17,076
DAMBOVITA	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	178,633	0	0	0	0	0	0	24	77,646
HARGHITA	HR	28	230,025	0	0	0	0	7	135,576	7	25,084
HUNEDOARA	HD	14	300,116	2	78,640	4	38,506	3	89,125	0	0
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

County	CODE	Total		≥98 % connection CS		95-98 % connection CS		85-95 % connection CS		no sewer	
		aggl.nr	p.e.	aggl.nr	p.e.	aggl.nr	p.e.	aggl.nr	p.e.	aggl.nr	p.e.
1	2	3	4	5	6	7	8	9	10	11	12
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	26	340,223	0	0	0	0	1	162,389	15	55,807
MURES	MS	22	416,300	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	517,989	0	0	1	18,608	1	16,084	22	66,352
SALAJ	SJ	8	94,012	1	58,818	0	0	2	14,912	1	2,863
SATU MARE	SM	22	221,833	0	0	1	117,718	2	27,905	10	29,150
SIBIU	SB	26	336,611	1	51,538	0	0	6	206,755	11	37,141
SUCEAVA	SV	37	366,310	1	5,157	0	0	3	141,130	11	36,340
TELEORMAN	TR	28	184,594	0	0	0	0	0	0	22	69,375
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	15	162,794	0	0	1	49,250	0	0	8	22,768
VRANCEA	VN	25	193,840	0	0	0	0	1	84,378	16	53,376
TOTAL		**1 034**	**14,249,306**	**16**	**438,905**	**18**	**1,466,272**	**76**	**6,138,340**	**483**	**1,572,921**

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

Annex 7: List of agglomerations following the implementation of the new methodologies and their compliance deadlines (including with and withouth 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[30]
						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	DAIA 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[31]**	ROC Alba
20	UNIREA	Alba	AB36	4.353	4.353	**2039**	**2039**	**2035**	ROC Alba

[30] 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.

[31] As 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	177.866	208.790	**2021**	**2021**	**2021**	ROC Arges
57	CAMPULUNG	Arges	AG7	39.871	46.088	**2022**	**2022**	**2022**	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	**2023**	**2023**	**2023**	ROC Arges
60	TOPOLOVENI	Arges	AG12	15.744	16.746	**2024**	**2024**	**2024**	ROC Arges
61	STEFANESTII NOI	Arges	AGN004	12.198	12.778	**2024**	**2024**	**2024**	ROC Arges
62	COSTESTI	Arges		9.143	9.955	**2025**	**2025**	**2025**	ROC Arges
63	RUCAR	Arges	AG123	5.200	5.200	**2027**	**2027**	**2027**	ROC Arges
64	TITESTI	Arges	AGN005	5.195	5.195	**2030**	**2030**	**2030**	ROC Arges
65	COSESTI	Arges	AG98	4.307	4.307	**2031**	**2031**	**2031**	ROC Arges
66	DOMNESTI	Arges	AG101	2.919	3.065	**2032**	**2032**	**2032**	ROC Arges
67	IZVORU	Arges	AG107	2.843	2.843	**2033**	**2033**	**2033**	ROC Arges
68	BARLA	Arges	AG87	2.020	2.116	**2034**	**2034**	**2034**	ROC Arges
69	SLOBOZIA	Arges	AG126	3.983	3.983	**2036**	**2036**	**IAS**	ROC Arges
70	PIETROSANI	Arges	AG118	3.792	3.792	**2038**	**2038**	**IAS**	ROC Arges
71	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	
72	BACAU	Bacau	BC18	148.698	176.289	**2022**	**2022**	**2022**	ROC Bacau
73	BUHUSI	Bacau	BC19	12.857	22.704	**2022**	**2022**	**2022**	ROC Bacau
74	MOINESTI	Bacau	BC23	19.716	21.624	**2023**	**2023**	**2023**	ROC Bacau
75	COMANESTI	Bacau	BC20	16.539	19.847	**2024**	**2024**	**2024**	ROC Bacau
76	TARGU OCNA	Bacau	BC25	9.063	10.758	**2024**	**2024**	**2024**	ROC Bacau
77	OITUZ	Bacau	BC177	5.010	5.511	**2025**	**2025**	**2025**	ROC Bacau
78	DARMANESTI	Bacau	BC21	8.151	8.966	**2028**	**2028**	**2028**	ROC Bacau
79	DOFTEANA	Bacau	BC22	6.025	6.025	**2030**	**2030**	**2030**	ROC Bacau
80	NICOLAE BALCESCU	Bacau	BC176	3.349	3.516	**2030**	**2030**	**2030**	ROC Bacau
81	RACACIUNI	Bacau	BC187	2.455	2.578	**2030**	**2030**	**2030**	ROC Bacau
82	FARAOANI	Bacau	BCN002	3.498	3.673	**2030**	**2030**	**2031**	ROC Bacau
83	VALEA SEACA	Bacau	BC207	2.860	3.003	**2030**	**2030**	**2031**	ROC Bacau
84	GIOSENI	Bacau	BCN003	2.824	2.965	**2031**	**2031**	**2032**	ROC Bacau
85	SL. MOLDOVA	Bacau	BC196	1.160	2.526	**Prior 2020**	**Prior 2020**	**Prior 2020**	ROC Bacau
86	PODU TURCULUI	Bacau	BC185	2.336	2.453	**2031**	**2031**	**2032**	ROC Bacau
87	SAUCESTI	Bacau	BC193	2.035	2.137	**2031**	**2031**	**2032**	ROC Bacau
88	GARLENI de SUS	Bacau	BC162	3.586	3.586	**2032**	**2032**	**IAS**	ROC Bacau
89	LUIZI-CALUGARA	Bacau	BCN004	3.205	3.205	**2033**	**2033**	**IAS**	ROC Bacau

90	MANASTIREA CASIN	Bacau	BC174	2.779	2.779	**2034**	**2034**	**IAS**	ROC Bacau
91	SATU NOU	Bacau	BCN006	2.238	2.238	**2034**	**2034**	**IAS**	ROC Bacau
92	CLEJA	Bacau	BC152	3.898	3.898	**2035**	**2035**	**IAS**	ROC Bacau
93	BALCANI	Bacau	BC142	3.554	3.554	**2036**	**2036**	**IAS**	ROC Bacau
94	APA ASAU	Bacau	BC140	3.302	3.302	**2037**	**2037**	**IAS**	ROC Bacau
95	BLAGESTI	Bacau	BCN001	3.167	3.167	**2038**	**2038**	**IAS**	ROC Bacau
96	PODURI	Bacau	BC186	2.396	2.396	**2039**	**2039**	**IAS**	ROC Bacau
97	CASIN	Bacau	BC151	2.342	2.342	**2039**	**2039**	**IAS**	ROC Bacau
98	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	
99	ORADEA	Bihor	BH29	204.354	172.804	**Prior 2020**	**Prior 2020**	**Prior 2020**	ROC Bihor
100	SALONTA	Bihor	BH30	17.166	20.599	**2023**	**2023**	**2023**	ROC Bihor
101	MARGHITA	Bihor	BH28	13.400	16.080	**2024**	**2024**	**2024**	ROC Bihor
102	BEIUS	Bihor	BH27	9.952	10.947	**2024**	**2024**	**2024**	ROC Bihor
103	VALEA LUI MIHAI	Bihor	BH31	9.438	9.438	**2025**	**2025**	**2025**	ROC Bihor
104	ALESD	Bihor	BH26	8.081	8.840	**2026**	**2026**	**2026**	ROC Bihor
105	STEI	Bihor	BH241	7.679	8.315	**2026**	**2026**	**2026**	ROC Bihor
106	SACUENI	Bihor	BH235	6.615	7.277	**2028**	**2028**	**2028**	ROC Bihor
107	DIOSIG	Bihor	BH219	5.988	6.587	**2030**	**2030**	**2030**	ROC Bihor
108	TILEAGD	Bihor	BH245	4.677	4.911	**2031**	**2031**	**2031**	ROC Bihor
109	TINCA	Bihor	BH246	4.446	4.668	**Prior 2020**	**Prior 2020**	**Prior 2020**	ROC Bihor
110	SANTANDREI	Bihor	BH239	4.549	4.347	**2031**	**2031**	**2031**	ROC Bihor
111	GIRISU DE CRIS	Bihor	BH222	3.273	3.273	**Prior 2020**	**Prior 2020**	**Prior 2020**	ROC Bihor
112	BORS	Bihor	BH213	2.984	3.133	**2031**	**2031**	**2032**	ROC Bihor
113	POPESTI	Bihor	BH231	2.972	3.121	**2031**	**2031**	**2032**	ROC Bihor
114	VADU CRISULUI	Bihor	BH249	2.729	2.865	**2032**	**2032**	**2032**	ROC Bihor
115	VASCAU	Bihor	BH250	2.331	2.404	**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**	**2033**	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	TULCA	Bihor	BH248	2.224	2.224	**2036**	**2036**	**IAS**	ROC Bihor
122	VOIVOZI	Bihor	BHN01	2.072	2.175	**2037**	**2037**	**2035**	ROC Bihor
123	CURTUISENI	Bihor	BH218	2.730	2.730	**2038**	**2038**	**IAS**	ROC Bihor
124	TAUTEU	Bihor	BH244	2.301	2.301	**2039**	**2039**	**IAS**	ROC Bihor
125	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	
126	BISTRITA	Bistrita-Nasaud	BN33	72.723	86.486	**2024**	**2022**	**2022**	ROC Bistrita
127	BECLEAN	Bistrita-Nasaud	BN32	9.138	11.787	**2024**	**2023**	**2023**	ROC Bistrita
128	PRUNDU BARGAULUI	Bistrita-Nasaud	BN003	9.993	10.440	**2024**	**2024**	**2024**	ROC Bistrita
129	SANGEORZ-BAI	Bistrita-Nasaud	BN35	8.145	9.848	**2025**	**2025**	**2025**	ROC Bistrita
130	NASAUD	Bistrita-Nasaud	BN34	8.952	9.807	**2026**	**2026**	**2026**	ROC Bistrita
131	Lunca Ilvei	Bistrita-Nasaud	BN261	2.937	6.620	**2028**	**2028**	**2028**	ROC Bistrita
132	RODNA	Bistrita-Nasaud	BN006	4.910	5.156	**2030**	**2030**	**2030**	ROC Bistrita
133	MAIERU	Bistrita-Nasaud	BN002	4.544	4.771	**2030**	**2030**	**IAS**	ROC Bistrita
134	FELDRU	Bistrita-Nasaud	BN256	4.386	4.605	**2030**	**2030**	**2030**	ROC Bistrita
135	RETEAG	Bistrita-Nasaud	BN005	3.765	3.881	**2032**	**2032**	**2031**	ROC Bistrita
136	LECHINTA	Bistrita-Nasaud	BN259	3.303	3.441	**2032**	**2032**	**IAS**	ROC Bistrita
137	SANT	Bistrita-Nasaud	BN265	2.501	2.626	**2033**	**2033**	**2032**	ROC Bistrita
138	TEACA	Bistrita-Nasaud	BN268	1.675	2.162	**2034**	**2034**	**2032**	ROC Bistrita
139	LIVEZILE	Bistrita-Nasaud	BN001	1.934	2.031	**2034**	**2034**	**IAS**	ROC Bistrita
140	TELCIU	Bistrita-Nasaud	BN269	2.862	3.005	**2034**	**2034**	**IAS**	ROC Bistrita
141	REBRISOARA	Bistrita-Nasaud	BN004	2.425	2.546	**2035**	**2035**	**2033**	ROC Bistrita
142	ILVA MICA	Bistrita-Nasaud	BN258	1.909	2.004	**2035**	**2035**	**2033**	ROC Bistrita
143	SALVA	Bistrita-Nasaud	BN007	2.368	2.368	**2038**	**2038**	**2033**	ROC Bistrita
144	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	
145	BOTOSANI	Botosani	BT37	103.130	123.119	**2025**	**2022**	**2023**	ROC Botosani
146	DOROHOI	Botosani	BT38	23.719	28.017	**2033**	**2024**	**2024**	ROC Botosani
147	FLAMANZI	Botosani	BT39	7.532	7.909	**2034**	**2026**	**2026**	ROC Botosani
148	DARABANI	Botosani	BT277	5.780	6.358	**2036**	**2028**	**2028**	ROC Botosani
149	SAVENI	Botosani	BT289	4.929	5.155	**2037**	**2030**	**2030**	ROC Botosani
150	STEFANESTI	Botosani	BT290	2.765	2.765	**2039**	**2031**	**2033**	ROC Botosani
151	BUCECEA	Botosani	BT271	2.568	2.696	**NO**	**2032**	**IAS**	ROC Botosani
152	TUDORA	Botosani	BT40	4.047	4.047	**NO**	**2033**	**IAS**	ROC Botosani
153	CORNI	Botosani	BT274	3.445	3.445	**NO**	**2035**	**IAS**	ROC Botosani
154	VORNICENI	Botosani	BT298	2.912	2.912	**NO**	**2036**	**IAS**	ROC Botosani
155	TODIRENI	Botosani	BT293	2.402	2.402	**NO**	**2038**	**IAS**	ROC Botosani
156	DERSCA	Botosani	BT278	2.354	2.354	**NO**	**2039**	**IAS**	ROC Botosani

157	HAVARNA	Botosani	BT280	2.107	2.107	**NO**	**2039**	**IAS**	ROC Botosani

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	
158	BRAILA	Braila	BR36	167.677	154.365	**2023**	**2023**	**2023**	ROC Braila
159	IANCA	Braila	BR306	7.628	29.353	**2024**	**2024**	**2024**	ROC Braila
160	INSURATEI	Braila	BR307	5.070	6.096	**Prior 2020**	**Prior 2020**	**Prior 2020**	ROC Braila
161	TUFESTI	Braila	BR316	4.861	5.455	**Prior 2020**	**Prior 2020**	**Prior 2020**	ROC Braila
162	FAUREI	Braila	BR303	3.180	3.339	**2030**	**2030**	**2030**	ROC Braila
163	GROPENI	Braila	BR305	2.916	3.062	**2030**	**2030**	**2031**	ROC Braila
164	VIZIRU	Braila	BR321	3.310	3.814	**Prior 2020**	**Prior 2020**	**Prior 2020**	ROC Braila
165	MOVILA MIRESII	Braila	BR311	2.614	2.745	**2031**	**2031**	**2032**	ROC Braila
166	VADENI	Braila	BR318	2.134	2.120	**2031**	**2031**	**2032**	ROC Braila
167	JIRLAU	Braila	BR308	2.818	2.818	**2032**	**2032**	**IAS**	ROC Braila
168	SUTESTI	Braila	BR313	3.803	3.803	**2033**	**2033**	**IAS**	ROC Braila
169	CHISCANI	Braila	BR301	3.294	3.528	**2034**	**2034**	**IAS**	ROC Braila
170	TICHILESTI	Braila	BR314	3.332	3.332	**2035**	**2035**	**IAS**	ROC Braila
171	ULMU	Braila	BR317	2.589	2.589	**2036**	**2036**	**IAS**	ROC Braila
172	BARAGANUL	Braila	BR299	2.388	2.388	**2037**	**2037**	**IAS**	ROC Braila
173	ZAVOAIA	Braila	BR322	2.150	2.150	**2038**	**2038**	**IAS**	ROC Braila
174	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	
175	BRASOV	Brasov	BV41	285.442	266.727	**2023**	**2023**	**2023**	ROC Brasov
176	ZARNESTI	Brasov	BV47	21.625	25.950	**2024**	**2024**	**2024**	ROC Brasov
177	CODLEA	Brasov	BV42	21.186	25.423	**Prior 2020**	**Prior 2020**	**Prior 2020**	ROC Brasov
178	RASNOV	Brasov	BV46	14.359	14.386	**2024**	**2024**	**2024**	ROC Brasov
179	PREJMER	Brasov	BV45	8.335	9.021	**2025**	**2025**	**2025**	ROC Brasov
180	VICTORIA	Brasov	BV353	7.251	7.976	**Prior 2020**	**Prior 2020**	**Prior 2020**	ROC Brasov
181	BRAN	Brasov	BV325	5.707	6.549	**2028**	**2028**	**2028**	ROC Brasov
182	POIANA BRASOV	Brasov	BVN3	379	5.153	**2028**	**2028**	**Prior 2020**	ROC Brasov
183	TARLUNGENI	Brasov	BV348	8.215	8.215	**2030**	**2030**	**2030**	ROC Brasov
184	RUPEA	Brasov	BV343	4.736	4.973	**2030**	**2030**	**2030**	ROC Brasov
185	FELDIOARA	Brasov	BV330	4.515	4.741	**2030**	**2030**	**Prior 2020**	ROC Brasov
186	CRISTIAN	Brasov	BVN1	4.528	4.269	**2030**	**2030**	**2030**	ROC Brasov
187	HARMAN	Brasov	BV333	4.078	3.799	**2030**	**2030**	**2030**	ROC Brasov
188	VULCAN	Brasov	BV356	3.679	3.679	**2030**	**2030**	**2030**	ROC Brasov
189	HALCHIU	Brasov	BV332	3.107	3.262	**2030**	**2030**	**2030**	ROC Brasov

190	HOGHIZ	Brasov	BV334	2.223	2.334	**Prior 2020**	**Prior 2020**	**Prior 2020**	ROC Brasov
191	BOD	Brasov	BV324	3.345	3.420	**2031**	**2031**	**2031**	ROC Brasov
192	CRIZBAV	Brasov	BVN2	2.604	2.604	**2031**	**2031**	**2031**	ROC Brasov
193	BUDILA	Brasov	BV326	4.319	4.319	**2033**	**2033**	**IAS**	ROC Brasov
194	TELIU	Brasov	BV349	4.119	4.119	**2034**	**2034**	**IAS**	ROC Brasov
195	DUMBRAVITA	Brasov	BV329	3.771	3.771	**2035**	**2035**	**IAS**	ROC Brasov
196	APATA	Brasov	BV323	3.237	3.237	**2036**	**2036**	**IAS**	ROC Brasov
197	RACOS	Brasov	BV342	2.994	2.994	**2036**	**2036**	**IAS**	ROC Brasov
198	PREDEAL	Brasov	BV44	3.616	6.323	**2028**	**2028**	**2028**	ROC Constanta
199	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	
200	Bucuresti	Bucuresti		2.143.098	1.841.807	**2024**	**2024**	**2024**	Bucuresti Operator

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	
201	BUZAU	Buzau	BZ48	106.718	143.246	**2022**	**2022**	**2022**	ROC Buzau
202	RAMNICU SARAT	Buzau	BZ50	40.508	41.738	**2024**	**2024**	**2024**	ROC Buzau
203	MARACINENI	Buzau	BZ376	9.008	9.388	**2029**	**2029**	**2029**	ROC Buzau
204	POGOANELE	Buzau	BZ384	4.826	5.067	**2030**	**2030**	**2030**	ROC Buzau
205	CISLAU	Buzau	BZ365	3.839	3.937	**2030**	**2030**	**2030**	ROC Buzau
206	SMEENI	Buzau	BZ392	2.926	3.072	**2030**	**2030**	**2031**	ROC Buzau
207	NEHOIU	Buzau	BZ49	4.431	4.652	**2030**	**2030**	**2031**	ROC Buzau
208	BECENI	Buzau	BZ358	3.964	3.988	**2031**	**2031**	**2032**	ROC Buzau
209	PATARLAGELE	Buzau	BZ381	3.346	3.438	**2031**	**2031**	**2032**	ROC Buzau
210	SAPOCA	Buzau	BZ391	3.287	3.331	**2031**	**2031**	**2033**	ROC Buzau
211	BERCA	Buzau	BZ359	2.945	3.092	**2031**	**2031**	**2033**	ROC Buzau
212	SCURTEŞTI	Buzau	BZN003	3.728	3.728	**2032**	**2032**	**IAS**	ROC Buzau
213	PADINA	Buzau	BZ379	3.679	3.679	**2032**	**2032**	**IAS**	ROC Buzau
214	VADU PASII	Buzau	BZ396	3.473	3.473	**2032**	**2032**	**IAS**	ROC Buzau
215	RAMNICELU	Buzau	BZ388	3.199	3.199	**2033**	**2033**	**IAS**	ROC Buzau
216	RUSETU	Buzau	BZ389	3.179	3.179	**2033**	**2033**	**IAS**	ROC Buzau
217	LUNCA JARISTEI	Buzau	BZN005	2.977	2.977	**2034**	**2034**	**IAS**	ROC Buzau
218	PUIESTI	Buzau	BZ387	2.910	2.910	**2035**	**2034**	**IAS**	ROC Buzau
219	PIETROASELE	Buzau	BZ006	2.892	2.892	**2036**	**2034**	**IAS**	ROC Buzau
220	STALPU	Buzau	BZ393	2.886	2.886	**2037**	**2035**	**IAS**	ROC Buzau
221	TABARASTI	Buzau	BZ394	2.767	2.767	**2037**	**2035**	**IAS**	ROC Buzau
222	CANDESTI	Buzau	BZ363	2.721	2.721	**2038**	**2035**	**IAS**	ROC Buzau
223	GHERASENI	Buzau	BZ368	2.697	2.697	**2038**	**2036**	**IAS**	ROC Buzau
224	COSTESTI	Buzau	BZ367	2.452	2.452	**2039**	**2036**	**IAS**	ROC Buzau

225	POSTA CALNAU	Buzau	BZ386	2.289	2.289	**2039**	**2036**	**IAS**	ROC Buzau
226	COCHIRLEANCA	Buzau	BZ366	2.250	2.250	**2039**	**2037**	**IAS**	ROC Buzau
227	BOLDU	Buzau	BZ360	2.167	2.167	**NO**	**2037**	**IAS**	ROC Buzau
228	MEREI	Buzau	BZ005	3.899	4.812	**NO**	**2038**	**2035**	ROC Buzau
229	FUNDENI	Buzau	BZN001	3.280	3.280	**NO**	**2038**	**IAS**	ROC Buzau
230	GLODEANU SARAT	Buzau	BZ369	3.082	3.082	**NO**	**2038**	**IAS**	ROC Buzau
231	GREBANU	Buzau	BZN004	2.932	2.932	**NO**	**2039**	**IAS**	ROC Buzau
232	UNGURIU	Buzau	BZ395	2.778	2.879	**NO**	**2039**	**2035**	ROC Buzau
233	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	
234	CALARASI	Calarasi	CL56	60.814	67.278	**2024**	**2023**	**2023**	ROC Calarasi
235	OLTENITA	Calarasi	CL57	23.224	27.869	**2024**	**2023**	**2023**	ROC Calarasi
236	FUNDULEA	Calarasi	CL415	5.466	6.013	**2025**	**2025**	**2025**	ROC Calarasi
237	MODELU	Calarasi	CL426	9.137	9.137	**2026**	**2026**	**2026**	ROC Calarasi
238	CHIRNOGI	Calarasi	CL403	6.773	6.773	**2027**	**2027**	**2027**	ROC Calarasi
239	DRAGALINA	Calarasi	CL411	5.686	5.686	**2028**	**2028**	**2028**	ROC Calarasi
240	ROSETI	Calarasi	CL431	5.653	5.653	**2029**	**2029**	**2029**	ROC Calarasi
241	CURCANI	Calarasi	CL406	5.202	5.202	**2031**	**2030**	**2030**	ROC Calarasi
242	BUDESTI	Calarasi	CL402	4.470	4.694	**2030**	**2030**	**2031**	ROC Calarasi
243	LEHLIU-GARA	Calarasi	CL421	3.372	3.541	**2030**	**2030**	**2031**	ROC Calarasi
244	STEFAN CEL MARE	Calarasi	CL435	2.899	3.044	**2031**	**2031**	**2031**	ROC Calarasi
245	RAZVANI	Calarasi	CLN001	2.145	2.252	**2031**	**2031**	**2031**	ROC Calarasi
246	FUNDENI	Calarasi	CL414	4.760	4.760	**2032**	**2032**	**IAS**	ROC Calarasi
247	ULMENI	Calarasi	CL437	4.494	4.494	**2032**	**2032**	**IAS**	ROC Calarasi
248	PERISORU	Calarasi	CL428	3.816	3.816	**2033**	**2033**	**IAS**	ROC Calarasi
249	GRADISTEA	Calarasi	CL417	3.717	3.717	**2035**	**2033**	**IAS**	ROC Calarasi
250	FRUMUSANI	Calarasi	CL413	3.652	3.652	**2037**	**2034**	**IAS**	ROC Calarasi
251	GALBINASI	Calarasi	CL416	3.369	3.369	**2038**	**2034**	**IAS**	ROC Calarasi
252	MANASTIREA	Calarasi	CL424	3.282	3.282	**2039**	**2035**	**IAS**	ROC Calarasi
253	RADOVANU	Calarasi	CL430	3.237	3.237	**NO**	**2035**	**IAS**	ROC Calarasi
254	NANA	Calarasi	CL427	2.382	2.382	**NO**	**2035**	**IAS**	ROC Calarasi
255	SOLDANU	Calarasi	CL433	2.196	2.196	**NO**	**2036**	**IAS**	ROC Calarasi
256	UNIREA	Calarasi	CL438	2.006	2.006	**NO**	**2036**	**IAS**	ROC Calarasi
257	CIOCANESTI	Calarasi	CL405	4.305	4.305	**NO**	**2037**	**IAS**	ROC Calarasi
258	CUZA VODA	Calarasi	CL407	3.400	3.400	**NO**	**2037**	**IAS**	ROC Calarasi
259	VASILATI	Calarasi	CL439	3.267	3.267	**NO**	**2038**	**IAS**	ROC Calarasi
260	DOR MARUNT	Calarasi	CL409	3.260	3.260	**NO**	**2038**	**IAS**	ROC Calarasi
261	CHISELET	Calarasi	CL404	3.092	3.092	**NO**	**2039**	**IAS**	ROC Calarasi
262	STANCEA	Calarasi	CLN002	2.530	2.530	**NO**	**2039**	**IAS**	ROC Calarasi
263	BORCEA	Calarasi	CL401	7.383	7.383	**2030**	**2030**	**2030**	ROC Constanta
264	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	
265	RESITA	Caras-Severin	CS60	64.766	77.468	**2038**	**2024**	**2024**	ROC Caras-Severin
266	CARANSEBES	Caras-Severin	CS59	21.449	25.739	**2039**	**2024**	**2024**	ROC Caras-Severin
267	BOCSA	Caras-Severin	CS58	14.284	17.141	**NO**	**2024**	**2024**	ROC Caras-Severin
268	OTELU ROSU	Caras-Severin	CS449	10.768	11.629	**NO**	**2024**	**2024**	ROC Caras-Severin
269	BAILE HERCULANE	Caras-Severin	CS442	4.460	9.894	**NO**	**2025**	**2025**	ROC Caras-Severin
270	ORAVITA	Caras-Severin	CS448	8.284	9.112	**NO**	**2027**	**2027**	ROC Caras-Severin
271	MOLDOVA VECHE	Caras-Severin	CSN001	7.677	7.677	**NO**	**2029**	**2029**	ROC Caras-Severin
272	ANINA	Caras-Severin	CS441	6.637	7.156	**NO**	**2030**	**2030**	ROC Caras-Severin
273	BOZOVICI	Caras-Severin	CS444	2.014	2.115	**NO**	**2031**	**2031**	ROC Caras-Severin
274	MOLDOVA NOUA	Caras-Severin	CS447	2.614	2.745	**NO**	**2032**	**2032**	ROC Caras-Severin
275	TEREGOVA	Caras-Severin	CS450	2.535	2.535	**NO**	**2033**	**2033**	ROC Caras-Severin
276	MEHADIA	Caras-Severin	CS446	2.047	2.427	**NO**	**2034**	**IAS**	ROC Caras-Severin
277	CARASOVA	Caras-Severin	CS445	2.130	2.130	**NO**	**2034**	**2033**	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	
278	CLUJ NAPOCA	Cluj	CJ52	359.259	304.528	**2022**	**2022**	**2022**	ROC Cluj-Salaj
279	DEJ	Cluj	CJ53	35.764	29.668	**2024**	**2024**	**2024**	ROC Cluj-Salaj
280	GHERLA	Cluj	CJ54	22.247	18.927	**2024**	**2024**	**2024**	ROC Cluj-Salaj
281	HUEDIN	Cluj	CJ467	8.556	9.412	**2025**	**2025**	**Prior 2020**	ROC Cluj-Salaj
282	GILAU	Cluj	CJN001	9.118	8.336	**2027**	**2027**	**2027**	ROC Cluj-Salaj
283	BONTIDA	Cluj	CJ456	3.115	3.271	**2032**	**2032**	**Prior 2020**	ROC Cluj-Salaj
284	IARA	Cluj	CJ468	2.187	2.280	**2033**	**2033**	**2033**	ROC Cluj-Salaj
285	AGHIRESU-FABRICI	Cluj	CJ452	3.344	3.511	**2034**	**2034**	**2034**	ROC Cluj-Salaj
286	COJOCNA	Cluj	CJ462	2.299	2.299	**2038**	**2038**	**IAS**	ROC Cluj-Salaj
287	TRITENII DE JOS	Cluj	CJ474	2.161	2.161	**2039**	**2039**	**IAS**	ROC Cluj-Salaj
288	TURDA	Cluj	CJ55	52.708	63.194	**2023**	**2023**	**2023**	ROC Turda
289	CAMPIA TURZII	Cluj	CJ51	24.629	29.179	**2024**	**2024**	**2024**	ROC Turda
290	VIISOARA	Cluj	CJN002	4.656	4.889	**2030**	**2030**	**IAS**	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	
291	CONSTANTA	Constanta	CT62	307.145	420.633	**2022**	**2022**	**2022**	ROC Constanta
292	MANGALIA	Constanta	CT67	35.156	80.911	**2022**	**2022**	**2022**	ROC Constanta
293	EFORIE	Constanta	CT64	15.930	58.903	**2023**	**2023**	**2023**	ROC Constanta

294	MEDGIDIA	Constanta	CT68	36.773	44.128	**2023**	**2023**	**Prior 2020**	ROC Constanta
295	CERNAVODA	Constanta	CT61	16.285	19.542	**Prior 2020**	**Prior 2020**	**Prior 2020**	ROC Constanta
296	CUMPANA	Constanta	CT63	12.465	14.571	**2024**	**2024**	**2024**	ROC Constanta
297	COSTINESTI	Constanta	CT485	2.716	14.259	**2024**	**2024**	**2024**	ROC Constanta
298	TECHIRGHIOL	Constanta	CT496	6.869	13.733	**2024**	**2024**	**Prior 2020**	ROC Constanta
299	OVIDIU	Constanta	CT72	11.386	13.663	**Prior 2020**	**Prior 2020**	**Prior 2020**	ROC Constanta
300	VALUL LUI TRAIAN	Constanta	CT499	12.275	12.325	**2024**	**2024**	**2024**	ROC Constanta
301	HARSOVA	Constanta	CT65	8.903	9.793	**Prior 2020**	**Prior 2020**	**Prior 2020**	ROC Constanta
302	MURFATLAR	Constanta	CT70	8.813	9.136	**2025**	**2025**	**2025**	ROC Constanta
303	LUMINA	Constanta	CT487	7.889	8.678	**2026**	**2026**	**2026**	ROC Constanta
304	MIHAIL KOGALNICEANU	Constanta	CT69	8.381	8.358	**2027**	**2027**	**2027**	ROC Constanta
305	COBADIN	Constanta	CT482	6.572	7.229	**2028**	**2028**	**2028**	ROC Constanta
306	AGIGEA	Constanta	CT478	4.759	5.908	**2028**	**2028**	**2028**	ROC Constanta
307	POARTA ALBA	Constanta	CT73	4.683	4.738	**Prior 2020**	**Prior 2020**	**Prior 2020**	ROC Constanta
308	2 MAI	Constanta	CT66	2.816	3.707	**2030**	**2030**	**2031**	ROC Constanta
309	CORBU	Constanta	CT484	4.601	4.831	**2030**	**2030**	**2031**	ROC Constanta
310	NEGRU VODA	Constanta	CT488	3.839	4.031	**2031**	**2031**	**2032**	ROC Constanta
311	LIMANU	Constanta		2.880	3.478	**2031**	**2031**	**2033**	ROC Constanta
312	COGEALAC	Constanta	CT483	2.931	3.078	**2032**	**2032**	**2033**	ROC Constanta
313	TOPRAISAR	Constanta	CT497	3.154	3.154	**2032**	**2032**	**IAS**	ROC Constanta
314	CUZA VODA	Constanta	CT486	3.632	3.632	**2034**	**2034**	**IAS**	ROC Constanta
315	NICOLAE BALCESCU	Constanta	CT489	3.070	3.070	**2035**	**2035**	**IAS**	ROC Constanta
316	BANEASA	Constanta	CT479	2.876	3.020	**2035**	**2035**	**2034**	ROC Constanta
317	CASTELU	Constanta	CT480	2.903	2.903	**2036**	**2036**	**IAS**	ROC Constanta
318	CIOBANU	Constanta	CT481	2.865	2.865	**2037**	**2037**	**IAS**	ROC Constanta
319	SATU NOU	Constanta	CT495	2.858	2.858	**2037**	**2037**	**IAS**	ROC Constanta
320	23 AUGUST	Constanta	CT477	2.798	2.798	**2038**	**2038**	**IAS**	ROC Constanta
321	PECINEAGA	Constanta	CT491	2.722	2.722	**2038**	**2038**	**IAS**	ROC Constanta
322	OSTROV	Constanta	CT490	2.595	2.595	**2039**	**2039**	**IAS**	ROC Constanta
323	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	
324	SFÂNTU GHEORGHE	Covasna	CV75	51.116	90.995	**2021**	**2021**	**Prior 2020**	ROC Covasna
325	COVASNA	Covasna	CV74	8.780	18.346	**2021**	**2021**	**2021**	ROC Covasna
326	TARGU SECUIESC	Covasna	CV76	15.289	14.683	**2024**	**2024**	**2024**	ROC Covasna
327	INTORSURA BUZAULUI	Covasna	CV515	9.209	9.923	**2028**	**2028**	**2028**	ROC Covasna
328	BARAOLT	Covasna	CV501	4.897	5.142	**2030**	**2030**	**2030**	ROC Covasna
329	OZUN	Covasna	CV518	2.403	2.523	**2030**	**2030**	**2030**	ROC Covasna

330	BRETCU	Covasna	CV507	2.228	2.339	**2030**	**2030**	**2030**	ROC Covasna
331	GHELNITA	Covasna	CV511	4.042	4.042	**2031**	**2031**	**2031**	ROC Covasna
332	TURIA	Covasna	CV522	3.370	3.539	**2032**	**2032**	**2032**	ROC Covasna
333	ZAGON	Covasna	CV526	3.095	3.250	**2033**	**2033**	**2033**	ROC Covasna
334	CERNAT	Covasna	CV509	3.067	3.220	**2033**	**2033**	**2033**	ROC Covasna
335	OJDULA	Covasna	CV517	2.931	2.931	**2035**	**2035**	**IAS**	ROC Covasna
336	BELIN	Covasna	CV500	2.799	2.799	**2036**	**2036**	**IAS**	ROC Covasna
337	ZABALA	Covasna	CV525	2.606	2.606	**2037**	**2037**	**IAS**	ROC Covasna
338	SANZIENI	Covasna	CV520	2.591	2.591	**2039**	**2039**	**IAS**	ROC Covasna
339	ARACI	Covasna	CV523	2.107	2.107	**2039**	**2039**	**IAS**	ROC Covasna

Dambovita County

No.	Agglomeration name	County	Agglomeration code	Population, #	Population, p.e.	Meeting the target for UWWTD			County based extended ROC area
						BAU	MAX	ACC	
340	TARGOVISTE	Dambovita	DB80	74.767	80.846	**2021**	**2021**	**2021**	ROC Dambovita
341	MORENI	Dambovita	DB78	16.812	20.174	**2021**	**2021**	**Prior 2020**	ROC Dambovita
342	PUCIOASA	Dambovita	DB79	11.629	14.751	**2022**	**2021**	**Prior 2020**	ROC Dambovita
343	GAESTI	Dambovita	DB77	11.996	14.395	**2022**	**2021**	**Prior 2020**	ROC Dambovita
344	RAZVAD	Dambovita	DB584	13.326	13.726	**2024**	**2022**	**2022**	ROC Dambovita
345	SOTANGA	Dambovita	DB588	11.748	11.992	**2025**	**2023**	**2023**	ROC Dambovita
346	TITU	Dambovita	DB81	14.256	14.915	**2025**	**2024**	**2024**	ROC Dambovita
347	COJASCA	Dambovita	DB540	7.273	7.384	**2025**	**2025**	**2025**	ROC Dambovita
348	I.L. CARAGIALE	Dambovita	DB561	6.487	6.811	**2026**	**2026**	**2026**	ROC Dambovita
349	FIENI	Dambovita	DB553	6.113	6.669	**2026**	**2026**	**Prior 2020**	ROC Dambovita
350	COMISANI	Dambovita	DB541	5.092	5.292	**2026**	**2026**	**2026**	ROC Dambovita
351	BALENI	Dambovita	DB528	7.897	7.897	**2028**	**2028**	**2028**	ROC Dambovita
352	RACARI	Dambovita	DB581	7.799	7.799	**2029**	**2029**	**2029**	ROC Dambovita
353	DECINDENI	Dambovita	DBN002	5.314	5.314	**2030**	**2030**	**2030**	ROC Dambovita
354	DOICESTI	Dambovita	DB550	4.225	4.436	**2030**	**2030**	**2031**	ROC Dambovita
355	NICULESTI	Dambovita	DB571	2.295	2.410	**2030**	**2030**	**2031**	ROC Dambovita
356	LUDESTI	Dambovita	DB563	2.020	2.121	**2030**	**2030**	**2031**	ROC Dambovita
357	PIETROSITA-MOROENI	Dambovita	DB576	4.473	4.473	**2031**	**2031**	**IAS**	ROC Dambovita
358	ROMANESTI	Dambovita	DBN009	3.995	3.995	**2031**	**2031**	**IAS**	ROC Dambovita
359	LUNGULETU	Dambovita	DB564	3.964	3.964	**2032**	**2032**	**IAS**	ROC Dambovita
360	BREZOAIELE	Dambovita	DB533	3.847	3.847	**2032**	**2032**	**IAS**	ROC Dambovita
361	DARMANESTI	Dambovita	DB548	3.481	3.481	**2033**	**2033**	**IAS**	ROC Dambovita
362	BUCSANI	Dambovita	DB535	3.456	3.456	**2033**	**2033**	**IAS**	ROC Dambovita
363	PICIOR DE MUNTE	Dambovita	DBN007	3.274	3.274	**2033**	**2033**	**IAS**	ROC Dambovita
364	IONESTI	Dambovita	DBN005	3.236	3.236	**2034**	**2034**	**IAS**	ROC Dambovita
365	OCNITA	Dambovita	DB573	3.163	3.163	**2034**	**2034**	**IAS**	ROC Dambovita
366	POIANA	Dambovita	DB577	3.139	3.139	**2034**	**2034**	**IAS**	ROC Dambovita
367	GURA SUTII	Dambovita	DB558	3.092	3.092	**2035**	**2035**	**IAS**	ROC Dambovita

368	VACARESTI	Dambovita	DB593	2.952	2.952	**2036**	**2035**	**IAS**	ROC Dambovita
369	GLODENI	Dambovita	DB555	2.858	2.858	**2037**	**2035**	**IAS**	ROC Dambovita
370	FANTANELE	Dambovita	DBN003	2.668	2.668	**2037**	**2036**	**IAS**	ROC Dambovita
371	POTLOGI	Dambovita	DB578	2.649	2.649	**2037**	**2036**	**IAS**	ROC Dambovita
372	VLADENI	Dambovita	DB599	2.646	2.646	**2038**	**2036**	**IAS**	ROC Dambovita
373	PERSINARI	Dambovita	DBN006	2.572	2.572	**2038**	**2036**	**IAS**	ROC Dambovita
374	BEZDEAD	Dambovita	DB530	2.474	2.474	**2038**	**2037**	**IAS**	ROC Dambovita
375	TATARANI	Dambovita	DB590	2.407	2.407	**2039**	**2037**	**IAS**	ROC Dambovita
376	LUCIENI	Dambovita	DB562	2.340	2.340	**2039**	**2037**	**IAS**	ROC Dambovita
377	TEIS	Dambovita	DBN010	2.325	2.325	**2039**	**2037**	**IAS**	ROC Dambovita
378	NUCET	Dambovita	DB572	2.244	2.244	**2039**	**2038**	**IAS**	ROC Dambovita
379	MANESTI	Dambovita	DB566	2.143	2.143	**2039**	**2038**	**IAS**	ROC Dambovita
380	CIOCANESTI	Dambovita	DB538	2.124	2.124	**NO**	**2038**	**IAS**	ROC Dambovita
381	GHEBOAIA	Dambovita	DBN004	2.025	2.025	**NO**	**2038**	**IAS**	ROC Dambovita
382	DARZA	Dambovita	DBN001	2.011	2.011	**NO**	**2039**	**IAS**	ROC Dambovita
383	VISINA	Dambovita	DB597	2.549	2.549	**NO**	**2039**	**IAS**	ROC Dambovita
384	PIETRARI	Dambovita	DBN008	2.405	2.405	**NO**	**2039**	**IAS**	ROC Dambovita
385	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	
386	CRAIOVA	Dolj	DJ84	256.620	257.101	**2024**	**2024**	**2024**	ROC Dolj
387	BAILESTI	Dolj	DJ82	15.836	19.003	**2024**	**2024**	**2024**	ROC Dolj
388	DABULENI	Dolj	DJ85	14.977	17.419	**2024**	**2024**	**2024**	ROC Dolj
389	FILIASI	Dolj	DJ86	11.339	13.607	**Prior 2020**	**Prior 2020**	**Prior 2020**	ROC Dolj
390	CALAFAT	Dolj	DJ83	12.600	12.614	**2024**	**2024**	**2024**	ROC Dolj
391	POIANA MARE	Dolj	DJ87	9.654	10.507	**2024**	**2024**	**2024**	ROC Dolj
392	PODARI	Dolj	DJ651	7.371	7.559	**2025**	**2025**	**2025**	ROC Dolj
393	SEGARCEA	Dolj	DJ656	6.633	7.296	**2025**	**2025**	**2026**	ROC Dolj
394	BARCA	Dolj	DJ607	6.110	6.415	**2026**	**2026**	**2026**	ROC Dolj
395	SADOVA	Dolj	DJ654	6.044	6.044	**2027**	**2027**	**2027**	ROC Dolj
396	VALEA STANCIULUI	Dolj	DJ662	5.303	5.303	**2028**	**2028**	**2029**	ROC Dolj
397	MOTATEI	Dolj	DJ644	5.035	5.035	**2030**	**2030**	**2030**	ROC Dolj
398	ISALNITA	Dolj	DJ636	3.403	3.573	**2030**	**2030**	**2030**	ROC Dolj
399	CARCEA	Dolj	DJ614	2.766	2.904	**2030**	**2030**	**2030**	ROC Dolj
400	BISTRET	Dolj	DJ609	2.314	2.430	**2030**	**2030**	**2030**	ROC Dolj
401	CARAULA	Dolj	DJ613	2.213	2.324	**2030**	**2030**	**2030**	ROC Dolj
402	BREASTA	Dolj	DJ611	2.133	2.231	**2030**	**2030**	**2031**	ROC Dolj
403	CIUPERCENII VECHI	Dolj	DJ621	2.028	2.028	**2030**	**2030**	**2031**	ROC Dolj
404	PLENITA	Dolj	DJ650	3.545	3.722	**2030**	**2030**	**2032**	ROC Dolj
405	BECHET	Dolj	DJ608	3.382	3.551	**2030**	**2030**	**2032**	ROC Dolj
406	CETATE	Dolj	DJ619	4.468	4.468	**2031**	**2031**	**IAS**	ROC Dolj

407	GHIDICI	Dolj	DJ649	4.319	4.319	**2031**	**2031**	**IAS**	ROC Dolj
408	DESA	Dolj	DJ625	4.289	4.289	**2032**	**2032**	**IAS**	ROC Dolj
409	MARSANI	Dolj	DJ641	4.238	4.238	**2032**	**2032**	**IAS**	ROC Dolj
410	CERAT	Dolj	DJ618	3.834	3.834	**2033**	**2033**	**IAS**	ROC Dolj
411	PIELESTI	Dolj	DJ648	3.757	3.757	**2033**	**2033**	**IAS**	ROC Dolj
412	CIUPERCENII NOI	Dolj	DJ620	3.752	3.752	**2033**	**2033**	**IAS**	ROC Dolj
413	OSTROVENI	Dolj	DJ647	3.327	3.327	**2034**	**2034**	**IAS**	ROC Dolj
414	LEU	Dolj	DJ637	3.241	3.241	**2034**	**2034**	**IAS**	ROC Dolj
415	MAGLAVIT	Dolj	DJ639	3.234	3.234	**2035**	**2035**	**IAS**	ROC Dolj
416	LIPOVU	Dolj	DJ638	2.918	2.918	**2035**	**2035**	**IAS**	ROC Dolj
417	COSOVENI	Dolj	DJ622	2.917	2.917	**2036**	**2035**	**IAS**	ROC Dolj
418	URZICUTA	Dolj	DJ661	2.376	2.376	**2036**	**2036**	**IAS**	ROC Dolj
419	GIURGITA	Dolj	DJ634	2.138	2.138	**2037**	**2036**	**IAS**	ROC Dolj
420	NEGOI	Dolj	DJ646	2.090	2.090	**2037**	**2036**	**IAS**	ROC Dolj
421	GOIESTI	Dolj	DJ635	4.924	4.924	**2038**	**2037**	**IAS**	ROC Dolj
422	AMARASTII DE JOS	Dolj	DJ605	3.865	3.865	**2039**	**2037**	**IAS**	ROC Dolj
423	GALICEA MARE	Dolj	DJ630	3.857	3.857	**2039**	**2038**	**IAS**	ROC Dolj
424	DANETI	Dolj	DJ624	3.828	3.828	**2039**	**2038**	**IAS**	ROC Dolj
425	UNIREA	Dolj	DJ660	3.517	3.517	**NO**	**2039**	**IAS**	ROC Dolj
426	CELARU	Dolj	DJ617	2.723	2.723	**NO**	**2039**	**IAS**	ROC Dolj
427	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	
428	GALATI	Galati	GL91	234.874	189.419	**2022**	**2022**	**2022**	ROC Galati
429	TECUCI	Galati	GL94	32.773	39.033	**2022**	**2022**	**Prior 2020**	ROC Galati
430	LIESTI	Galati	GL92	30.029	31.952	**2022**	**2022**	**Prior 2020**	ROC Galati
431	PECHEA	Galati	GL93	15.917	17.149	**2023**	**2023**	**2023**	ROC Galati
432	MATCA	Galati	GLN07	10.517	10.517	**2024**	**2024**	**2024**	ROC Galati
433	TOFLEA	Galati	GLN10	7.054	7.054	**2026**	**2026**	**2026**	ROC Galati
434	CUDALBI	Galati	GL671	5.879	5.879	**2028**	**2028**	**2028**	ROC Galati
435	COROD	Galati	GL668	5.687	5.687	**2030**	**2030**	**2030**	ROC Galati
436	TG. BUJOR	Galati	GL689	4.738	4.975	**2030**	**2030**	**Prior 2020**	ROC Galati
437	SCHELA	Galati	GL684	2.804	2.944	**2030**	**2030**	**2031**	ROC Galati
438	GRIVITA	Galati	GL675	2.265	2.378	**2030**	**2030**	**2031**	ROC Galati
439	SIVITA	Galati	GLN08	2.177	2.286	**2030**	**2030**	**2031**	ROC Galati
440	COSTACHE NEGRI	Galati	GL669	2.150	2.258	**2030**	**2030**	**2031**	ROC Galati
441	GHIDIGENI	Galati	GLN04	2.726	2.863	**2031**	**2031**	**2032**	ROC Galati
442	BALENI	Galati	GL663	2.011	2.112	**2031**	**2031**	**2033**	ROC Galati
443	TUDOR VLADIMIRESCU	Galati	GL687	4.539	4.539	**2032**	**2032**	**IAS**	ROC Galati
444	MUNTENI	Galati	GL678	4.205	4.205	**2032**	**2032**	**IAS**	ROC Galati

445	INDEPENDENTA	Galati	GL676	4.147	4.147	**2033**	**2033**	**IAS**	ROC Galati
446	PISCU	Galati	GL682	4.001	4.001	**2034**	**2034**	**IAS**	ROC Galati
447	FRUMUSITA	Galati	GL673	3.472	3.472	**2034**	**2034**	**IAS**	ROC Galati
448	MOVILENI	Galati	GL677	3.063	3.063	**2035**	**2035**	**IAS**	ROC Galati
449	SMARDAN	Galati	GLN09	2.371	2.371	**2035**	**2035**	**IAS**	ROC Galati
450	SENDRENI	Galati	GL685	2.277	2.277	**2035**	**2035**	**IAS**	ROC Galati
451	HANU CONACHI	Galati	GLN05	2.159	2.159	**2036**	**2036**	**IAS**	ROC Galati
452	FURCENII NOI	Galati	GLN03	2.077	2.077	**2036**	**2036**	**IAS**	ROC Galati
453	FARTANESTI	Galati	GLN02	4.867	4.983	**2037**	**2037**	**2034**	ROC Galati
454	TULUCESTI	Galati	GL690	3.642	3.642	**2037**	**2037**	**IAS**	ROC Galati
455	BERESTI	Galati	GL664	2.893	3.024	**2038**	**2038**	**2034**	ROC Galati
456	VL. MARULUI	Galati	GL692	2.482	2.482	**2038**	**2038**	**IAS**	ROC Galati
457	BRANISTEA	Galati	GLN01	2.221	2.221	**2039**	**2039**	**IAS**	ROC Galati
458	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	
459	GIURGIU	Giurgiu	GR96	60.111	71.752	**2025**	**2024**	**2024**	ROC Giurgiu
460	BOLINTIN-VALE	Giurgiu	GRN001	7.793	8.572	**Prior 2020**	**Prior 2020**	**Prior 2020**	ROC Giurgiu
461	VARASTI	Giurgiu	GRN010	6.137	6.137	**2026**	**2026**	**2026**	ROC Giurgiu
462	BOLINTIN DEAL	Giurgiu	GR695	5.446	5.446	**2028**	**2028**	**2028**	ROC Giurgiu
463	GOSTINARI	Giurgiu	GR709	5.126	5.126	**2030**	**2030**	**2030**	ROC Giurgiu
464	MIHAILESTI	Giurgiu	GR722	4.540	4.767	**Prior 2020**	**Prior 2020**	**Prior 2020**	ROC Giurgiu
465	PRUNDU	Giurgiu	GR724	3.330	3.497	**2030**	**2030**	**2030**	ROC Giurgiu
466	ROATA DE JOS	Giurgiu	GR727	3.784	3.974	**2030**	**2030**	**2031**	ROC Giurgiu
467	CARTOJANI	Giurgiu	GRN002	3.496	3.671	**2030**	**2030**	**2032**	ROC Giurgiu
468	MALU	Giurgiu	GR718	2.267	2.380	**2030**	**2030**	**2032**	ROC Giurgiu
469	SLOBOZIA	Giurgiu	GRN007	2.261	2.374	**2030**	**2030**	**2032**	ROC Giurgiu
470	COSOBA	Giurgiu	GR701	4.236	4.236	**2034**	**2031**	**IAS**	ROC Giurgiu
471	TRESTIENI	Giurgiu	GRN009	4.079	4.079	**2037**	**2031**	**IAS**	ROC Giurgiu
472	FLORESTI	Giurgiu	GR704	3.957	3.957	**2038**	**2032**	**IAS**	ROC Giurgiu
473	OGREZENI	Giurgiu	GR723	3.665	3.665	**2039**	**2032**	**IAS**	ROC Giurgiu
474	MALU SPART	Giurgiu	GR719	3.537	3.537	**NO**	**2033**	**IAS**	ROC Giurgiu
475	ADUNATII-COPACENI	Giurgiu	GR693	3.047	3.047	**NO**	**2033**	**IAS**	ROC Giurgiu
476	VEDEA	Giurgiu	GR736	2.958	2.958	**NO**	**2034**	**IAS**	ROC Giurgiu
477	SABARENI	Giurgiu	GR728	2.746	2.746	**NO**	**2034**	**IAS**	ROC Giurgiu
478	PALANCA	Giurgiu	GRN006	2.564	2.564	**NO**	**2035**	**IAS**	ROC Giurgiu
479	NOVACI	Giurgiu	GRN005	2.229	2.229	**NO**	**2035**	**IAS**	ROC Giurgiu
480	CALUGARENI	Giurgiu	GR698	2.145	2.145	**NO**	**2035**	**IAS**	ROC Giurgiu
481	HOTARELE	Giurgiu	GR714	3.583	3.583	**NO**	**2036**	**IAS**	ROC Giurgiu
482	VALEA DRAGULUI	Giurgiu	GR734	2.940	2.940	**NO**	**2036**	**IAS**	ROC Giurgiu

483	BANEASA	Giurgiu	GR694	2.868	2.868	**NO**	**2037**	**IAS**	ROC Giurgiu
484	MARSA	Giurgiu	GR720	2.629	2.629	**NO**	**2037**	**IAS**	ROC Giurgiu
485	CREVEDIA MARE	Giurgiu	GR702	2.442	2.442	**NO**	**2038**	**IAS**	ROC Giurgiu
486	MIHAI BRAVU	Giurgiu	GR721	2.409	2.409	**NO**	**2038**	**IAS**	ROC Giurgiu
487	GHIMPATI	Giurgiu	GR708	2.408	2.408	**NO**	**2038**	**IAS**	ROC Giurgiu
488	FRATESTI	Giurgiu	GR705	2.400	2.400	**NO**	**2039**	**IAS**	ROC Giurgiu
489	GAISENI	Giurgiu	GR706	2.095	2.095	**NO**	**2039**	**IAS**	ROC Giurgiu
490	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	
491	TARGU JIU	Gorj	GJ90	82.329	96.806	**2025**	**2023**	**2023**	ROC Gorj
492	MOTRU	Gorj	GJ88	18.268	21.163	**2025**	**2024**	**2024**	ROC Gorj
493	ROVINARI	Gorj	GJ89	10.910	12.995	**2025**	**2024**	**2024**	ROC Gorj
494	BUMBESTI JIU	Gorj	GJ743	7.773	8.452	**2025**	**2025**	**2025**	ROC Gorj
495	BALTENI	Gorj	GJ742	8.011	8.315	**2027**	**2027**	**2027**	ROC Gorj
496	MATASARI	Gorj	GJ750	5.319	5.584	**2027**	**2027**	**2027**	ROC Gorj
497	URDARI	Gorj	GJ763	5.491	5.491	**2030**	**2030**	**2030**	ROC Gorj
498	TICLENI	Gorj	GJ759	3.969	4.167	**Prior 2020**	**Prior 2020**	**Prior 2020**	ROC Gorj
499	TARGU-CARBUNESTI	Gorj	GJ758	4.045	4.247	**2030**	**2030**	**2030**	ROC Gorj
500	TURCENI	Gorj	GJ762	3.670	3.845	**2030**	**2030**	**2030**	ROC Gorj
501	NOVACI	Gorj	GJ751	2.908	3.738	**2031**	**2031**	**2031**	ROC Gorj
502	FLORESTI	Gorj	GJ749	2.465	2.465	**2033**	**2033**	**IAS**	ROC Gorj
503	RUNCU	Gorj	GJ755	1.979	2.136	**2035**	**2035**	**IAS**	ROC Gorj
504	BALTA	Gorj	GJ740	2.095	2.095	**2037**	**2037**	**IAS**	ROC Gorj
505	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	
506	MIERCUREA CIUC	Harghita	HR106	37.755	44.746	**2022**	**2022**	**Prior 2020**	ROC Harghita
507	ODORHEIU SECUIESC	Harghita	HR107	36.150	43.326	**2022**	**2022**	**Prior 2020**	ROC Harghita
508	GHEORGHENI	Harghita	HR105	17.398	17.436	**2023**	**2023**	**2022**	ROC Harghita
509	SANDOMINIC	Harghita	HR109	13.332	14.294	**2023**	**2023**	**Prior 2020**	ROC Harghita
510	TOPLITA	Harghita	HR110	10.610	11.844	**2023**	**2023**	**2023**	ROC Harghita
511	REMETEA	Harghita	HR108	10.320	11.123	**2024**	**2024**	**2024**	ROC Harghita
512	VLAHITA	Harghita	HR798	6.122	6.734	**2025**	**2025**	**Prior 2020**	ROC Harghita
513	BALAN	Harghita	HR766	5.800	6.380	**2026**	**2026**	**2026**	ROC Harghita
514	CICEU	Harghita	HRN001	5.076	5.330	**2026**	**2026**	**Prior 2020**	ROC Harghita
515	CORUND	Harghita	HR772	4.944	5.191	**2030**	**2030**	**2030**	ROC Harghita

516	JOSENI	Harghita	HR777	4.641	4.641	**2031**	**2031**	**2032**	ROC Harghita
517	ZETEA	Harghita	HR799	4.256	4.469	**2031**	**2031**	**2032**	ROC Harghita
518	PRAID	Harghita	HR787	3.288	4.466	**2031**	**2031**	**2033**	ROC Harghita
519	BAILE TUSNAD	Harghita	HR 765	1.535	3.618	**2031**	**2031**	**2033**	ROC Harghita
520	LAZAREA	Harghita	HR778	3.101	3.256	**2032**	**2032**	**2033**	ROC Harghita
521	FRUMOASA	Harghita	HR775	2.823	2.911	**2032**	**2032**	**Prior 2020**	ROC Harghita
522	SANMARTIN	Harghita	HR789	2.264	2.377	**2032**	**2032**	**Prior 2020**	ROC Harghita
523	MADARAS	Harghita	HRN003	2.136	2.243	**2032**	**2032**	**Prior 2020**	ROC Harghita
524	RACU	Harghita	HRN004	2.093	2.148	**2032**	**2032**	**Prior 2020**	ROC Harghita
525	BORSEC	Harghita	HR768	2.336	2.772	**2032**	**2032**	**2034**	ROC Harghita
526	CAPALNITA	Harghita	HR770	1.953	2.051	**2032**	**2032**	**2035**	ROC Harghita
527	SUSENI	Harghita	HR795	4.830	4.830	**2034**	**2034**	**IAS**	ROC Harghita
528	CIUMANI	Harghita	HRN002	4.171	4.171	**2036**	**2036**	**IAS**	ROC Harghita
529	CIUCSANGEORGIU	Harghita	HR771	3.390	3.390	**2037**	**2037**	**IAS**	ROC Harghita
530	LUETA	Harghita	HR779	3.256	3.256	**2038**	**2038**	**IAS**	ROC Harghita
531	SANCRAIENI	Harghita	HR788	2.457	2.457	**2039**	**2039**	**IAS**	ROC Harghita
532	SANSIMION	Harghita	HR790	2.339	2.339	**2039**	**2039**	**2035**	ROC Harghita
533	CRISTURU SECUIESC	Harghita	HR104	7.478	8.226	**2025**	**2025**	**2025**	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	
534	DEVA	Hunedoara	HD98	54.320	68.728	**2021**	**2021**	**Prior 2020**	ROC Hunedoara
535	HUNEDOARA	Hunedoara	HD100	53.080	54.160	**2024**	**2024**	**2024**	ROC Hunedoara
536	ORASTIE	Hunedoara	HD101	16.608	17.051	**2024**	**2024**	**2024**	ROC Hunedoara
537	BRAD	Hunedoara	HD97	10.453	10.673	**2024**	**2024**	**2024**	ROC Hunedoara
538	SIMERIA	Hunedoara	HD103	9.805	9.912	**2026**	**2026**	**Prior 2020**	ROC Hunedoara
539	HATEG	Hunedoara	HD99	8.536	8.664	**2027**	**2027**	**2027**	ROC Hunedoara
540	CALAN	Hunedoara	HD805	7.734	8.482	**2030**	**2030**	**2030**	ROC Hunedoara
541	GEOAGIU-BAI	Hunedoara	HDN4	361	2.118	**2030**	**2030**	**2030**	ROC Hunedoara
542	GEOAGIU	Hunedoara	HD808	2.418	4.068	**2033**	**2033**	**2030**	ROC Hunedoara
543	CRISCIOR	Hunedoara	HDN1	3.332	3.499	**2036**	**2036**	**2031**	ROC Hunedoara
544	PETROSANI-PETRILA	Hunedoara	HD102	51.907	53.659	**2021**	**2021**	**Prior 2020**	ROC Valea Jiului
545	VULCAN	Hunedoara	HDN2	26.293	26.984	**2024**	**2024**	**2023**	ROC Valea Jiului
546	LUPENI	Hunedoara	HDN3	21.467	21.981	**2024**	**2024**	**2024**	ROC Valea Jiului
547	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 UWWTD			County based extended ROC area
						BAU	MAX	ACC	
548	URZICENI	Ialomita	IL124	18.727	22.475	**2024**	**2024**	**2024**	ROC Calarasi

549	FETESTI	Ialomita	IL121	9.254	18.521	**2024**	**2024**	**2024**	ROC Constanta
550	TANDAREI	Ialomita	IL123	12.611	15.133	**2024**	**2024**	**2024**	ROC Constanta
551	DRIDU	Ialomita	IL829	5.860	6.152	**2028**	**2028**	**2028**	ROC Constanta
552	CAZANESTI	Ialomita	IL827	3.121	3.121	**2033**	**2033**	**IAS**	ROC Constanta
553	SLOBOZIA	Ialomita	IL122	41.582	49.538	**2027**	**2021**	**Prior 2020**	ROC Ialomita
554	FETESTI-GARA	Ialomita	ILN002	18.488	22.186	**2038**	**2024**	**2024**	ROC Ialomita
555	AMARA	Ialomita	IL822	6.713	9.048	**2039**	**2026**	**2026**	ROC Ialomita
556	BARBULESTI	Ialomita	IL823	5.510	5.510	**NO**	**2030**	**2030**	ROC Ialomita
557	FACAENI	Ialomita	IL830	4.336	4.553	**NO**	**2030**	**2033**	ROC Ialomita
558	BORDUSANI	Ialomita	IL825	4.396	4.396	**NO**	**2031**	**IAS**	ROC Ialomita
559	COSERENI	Ialomita	IL828	4.138	4.138	**NO**	**2032**	**IAS**	ROC Ialomita
560	GARBOVI	Ialomita	IL832	3.657	3.657	**NO**	**2032**	**IAS**	ROC Ialomita
561	TRAIAN	Ialomita	IL846	2.956	2.956	**NO**	**2033**	**IAS**	ROC Ialomita
562	MIHAIL KOGALNICEANU	Ialomita	IL839	2.692	2.692	**NO**	**2033**	**IAS**	ROC Ialomita
563	SAVENI	Ialomita	IL844	2.649	2.649	**NO**	**2034**	**IAS**	ROC Ialomita
564	GHEORGHE DOJA	Ialomita	IL833	2.248	2.248	**NO**	**2034**	**IAS**	ROC Ialomita
565	GRIVITA	Ialomita	IL836	2.200	2.200	**NO**	**2035**	**IAS**	ROC Ialomita
566	SLOBOZIA NOUA	Ialomita	ILN003	2.132	2.132	**NO**	**2035**	**2033**	ROC Ialomita
567	BORANESTI	Ialomita	IL824	2.110	2.110	**NO**	**2035**	**IAS**	ROC Ialomita
568	GRINDU	Ialomita	IL835	2.050	2.050	**NO**	**2036**	**IAS**	ROC Ialomita
569	OGRADA	Ialomita	IL842	2.012	2.012	**NO**	**2036**	**IAS**	ROC Ialomita
570	ROSIORI	Ialomita	IL843	2.011	2.011	**NO**	**2037**	**IAS**	ROC Ialomita
571	MUNTENI-BUZAU	Ialomita	IL841	3.059	3.059	**NO**	**2037**	**IAS**	ROC Ialomita
572	JILAVELE	Ialomita	IL838	2.818	2.818	**NO**	**2038**	**IAS**	ROC Ialomita
573	SCANTEIA	Ialomita	IL845	2.587	2.587	**NO**	**2038**	**IAS**	ROC Ialomita
574	ALEXENI	Ialomita	ILN001	2.166	2.166	**NO**	**2039**	**IAS**	ROC Ialomita
575	GHEORGHE LAZAR	Ialomita	IL834	2.116	2.116	**NO**	**2039**	**IAS**	ROC Ialomita

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	
576	IASI	Iasi	IS126	335.393	582.439	**2023**	**2023**	**2023**	ROC Iasi
577	PASCANI	Iasi	IS127	27.619	40.753	**2024**	**2024**	**2024**	ROC Iasi
578	TARGU FRUMOS	Iasi	IS129	12.468	24.607	**2024**	**2024**	**2024**	ROC Iasi
579	HARLAU	Iasi	IS125	12.038	17.546	**2024**	**2024**	**2024**	ROC Iasi
580	PODU ILOAIEI	Iasi	IS128	6.925	7.618	**2025**	**2025**	**2025**	ROC Iasi
581	BELCESTI	Iasi	IS849	6.611	6.806	**2028**	**2028**	**2028**	ROC Iasi
582	RUGINOASA	Iasi	IS886	4.983	5.061	**2030**	**2030**	**2030**	ROC Iasi
583	RADUCANENI	Iasi	IS885	3.909	4.104	**2030**	**2030**	**2030**	ROC Iasi
584	TODIRESTI	Iasi	IS896	3.780	3.969	**2031**	**2031**	**2031**	ROC Iasi
585	LETCANI	Iasi	IS874	3.422	3.593	**2031**	**2031**	**2031**	ROC Iasi

586	MIRONEASA	Iasi	IS875	3.053	3.053	**2032**	**2032**	**2032**	ROC Iasi
587	CRISTESTI	Iasi	IS859	2.833	2.975	**2032**	**2032**	**2032**	ROC Iasi
588	DUMESTI	Iasi	IS861	2.756	2.894	**2032**	**2032**	**2032**	ROC Iasi
589	PRISACANI	Iasi	IS883	2.348	2.466	**2033**	**2033**	**2033**	ROC Iasi
590	ERBICENI	Iasi	IS862	2.144	2.242	**2033**	**2033**	**2033**	ROC Iasi
591	FANTANELE	Iasi	IS863	2.112	2.218	**2033**	**2033**	**2033**	ROC Iasi
592	BIVOLARI	Iasi	IS850	2.106	2.211	**2033**	**2033**	**2033**	ROC Iasi
593	MOTCA	Iasi	IS879	3.335	3.502	**2034**	**2034**	**2034**	ROC Iasi
594	HALAUCESTI	Iasi	IS869	4.477	4.701	**2035**	**2035**	**2034**	ROC Iasi
595	GASTESTI	Iasi	ISN001	4.465	4.465	**2035**	**2035**	**IAS**	ROC Iasi
596	FOCURI	Iasi	IS864	3.502	3.502	**2036**	**2036**	**IAS**	ROC Iasi
597	RACHITENI	Iasi	ISN003	2.791	2.791	**2036**	**2036**	**IAS**	ROC Iasi
598	VOINESTI	Iasi	IS902	2.476	2.476	**2037**	**2037**	**IAS**	ROC Iasi
599	GLODENI	Iasi	ISN002	2.453	2.453	**2038**	**2038**	**IAS**	ROC Iasi
600	POPRICANI	Iasi	IS882	2.179	2.179	**2038**	**2038**	**IAS**	ROC Iasi
601	IUGANI	Iasi	IS 872	2.084	2.084	**2039**	**2039**	**IAS**	ROC Iasi
602	OTELENI	Iasi	IS880	2.074	2.074	**2039**	**2039**	**IAS**	ROC Iasi
603	BUTEA	Iasi	IS851	2.063	2.063	**2039**	**2039**	**IAS**	ROC Iasi

Ilfov County

No.	Agglomeration name	County	Agglomeration code	Population, #	Population, p.e.	Meeting the target for UWWTD			County based extended ROC area
						BAU	MAX	ACC	
604	BALOTESTI	Ilfov	IF907	15.614	16.095	**2021**	**2021**	**2021**	ROC Ilfov
605	BRANESTI	Ilfov	IF909	9.950	10.874	**2022**	**2022**	**2022**	ROC Ilfov
606	1 DECEMBRIE	Ilfov	IF904	12.589	12.589	**2024**	**2024**	**2024**	ROC Ilfov
607	CORNETU	Ilfov	IFN001	7.538	8.244	**2024**	**2024**	**2024**	ROC Ilfov
608	STEFANESTII DE JOS	Ilfov	IF931	6.776	7.115	**2025**	**2025**	**2025**	ROC Ilfov
609	GLINA	Ilfov	IF922	6.453	7.098	**2025**	**2025**	**2025**	ROC Ilfov
610	MOARA VLASIEI	Ilfov	IF925	5.119	5.631	**2026**	**2026**	**2026**	ROC Ilfov
611	GHERMANESTI	Ilfov	IFN003	8.239	8.723	**2027**	**2027**	**2027**	ROC Ilfov
612	BERCENI	Ilfov	IF908	7.010	7.010	**2028**	**2028**	**2028**	ROC Ilfov
613	PERIS	Ilfov	IF927	6.583	6.583	**2030**	**2030**	**2030**	ROC Ilfov
614	CERNICA	Ilfov	IF911	3.691	3.876	**2030**	**2030**	**2030**	ROC Ilfov
615	TANGANU	Ilfov	IF933	3.529	3.529	**2030**	**2030**	**2031**	ROC Ilfov
616	BALACEANCA	Ilfov	IF906	3.280	3.444	**2031**	**2031**	**2031**	ROC Ilfov
617	SAFTICA	Ilfov	IFN005	2.327	2.443	**2031**	**2031**	**2031**	ROC Ilfov
618	CACIULATI	Ilfov	IFN006	2.232	2.344	**2031**	**2031**	**2031**	ROC Ilfov
619	DARASTI-ILFOV	Ilfov	IF916	3.538	3.538	**2032**	**2032**	**IAS**	ROC Ilfov
620	CIOPLANI	Ilfov	IF912	3.236	3.236	**2033**	**2033**	**IAS**	ROC Ilfov
621	GRUIU	Ilfov	IF924	3.180	3.180	**2034**	**2034**	**IAS**	ROC Ilfov
622	DRAGOMIRESTI -DEAL	Ilfov	IFN002	3.141	3.141	**2035**	**2035**	**IAS**	ROC Ilfov
623	DRAGOMIRESTI VALE	Ilfov	IF920	2.935	3.082	**2036**	**2036**	**2032**	ROC Ilfov
624	SILISTEA SNAGOVULUI	Ilfov	IF929	2.775	2.775	**2036**	**2036**	**IAS**	ROC Ilfov

625	DASCALU	Ilfov	IF917	2.734	2.734	**2037**	**2037**	**IAS**	ROC Ilfov
626	LIPIA	Ilfov	IFN004	2.627	2.627	**2038**	**2038**	**IAS**	ROC Ilfov
627	GRADISTEA	Ilfov	IF923	2.401	2.401	**2039**	**2039**	**IAS**	ROC Ilfov
628	PETRACHIOAIA	Ilfov	IF928	2.331	2.331	**2039**	**2039**	**IAS**	ROC Ilfov

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	
629	BAIA MARE	Maramures	MM131	137.281	162.389	**2024**	**2022**	**2022**	ROC Maramures
630	SIGHETU MARMATIEI	Maramures	MM134	32.803	39.128	**2024**	**2022**	**2022**	ROC Maramures
631	BORSA	Maramures	MM132	31.194	37.282	**2026**	**2024**	**2024**	ROC Maramures
632	VISEU DE SUS	Maramures	MM135	12.549	14.778	**2027**	**2024**	**2024**	ROC Maramures
633	SEINI	Maramures	MM969	7.364	8.026	**2027**	**2025**	**2025**	ROC Maramures
634	POIENILE DE SUB MUNTE	Maramures	MM133	8.374	8.374	**2027**	**2027**	**2027**	ROC Maramures
635	IEUD	Maramures	MMN002	5.795	5.795	**2029**	**2029**	**2029**	ROC Maramures
636	TARGU LAPUS	Maramures	MM973	5.025	5.528	**2030**	**2030**	**2030**	ROC Maramures
637	SOMCUTA MARE	Maramures	MM970	3.593	3.773	**2030**	**2030**	**2030**	ROC Maramures
638	CAVNIC	Maramures	MM944	4.541	4.768	**2030**	**2030**	**2030**	ROC Maramures
639	VISEU DE JOS	Maramures	MMN005	4.271	4.391	**2031**	**2031**	**2031**	ROC Maramures
640	LAPUS	Maramures	MM953	3.377	3.546	**2031**	**2031**	**2031**	ROC Maramures
641	COLTAU	Maramures	MMN001	2.060	2.163	**2031**	**2031**	**2031**	ROC Maramures
642	REMETI	Maramures	MM959	4.913	4.913	**2032**	**2032**	**IAS**	ROC Maramures
643	RUSCOVA	Maramures	MM954	4.785	4.785	**2033**	**2033**	**IAS**	ROC Maramures
644	SALISTEA DE SUS	Maramures	MM964	4.025	4.025	**2034**	**2034**	**IAS**	ROC Maramures
645	ROZALVEA	Maramures	MM961	3.977	3.977	**2035**	**2035**	**IAS**	ROC Maramures
646	DRAGOMIRESTI	Maramures	MM949	2.890	3.035	**2035**	**2035**	**2032**	ROC Maramures
647	BARSANA	Maramures	MM938	2.927	2.927	**2036**	**2036**	**IAS**	ROC Maramures
648	CAMPULUNG LA TISA	Maramures	MM943	2.357	2.357	**2036**	**2036**	**IAS**	ROC Maramures
649	BOTIZA	Maramures	MM940	2.346	2.346	**2037**	**2037**	**IAS**	ROC Maramures
650	SARASAU	Maramures	MM967	2.025	2.025	**2037**	**2037**	**IAS**	ROC Maramures
651	SACEL	Maramures	MM963	2.827	2.827	**2038**	**2038**	**IAS**	ROC Maramures
652	VADU IZEI	Maramures	MMN004	2.770	2.770	**2038**	**2038**	**IAS**	ROC Maramures
653	RONA DE SUS	Maramures	MM960	2.284	2.284	**2039**	**2039**	**IAS**	ROC Maramures
654	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	
655	DROBETA TURNU SEVERIN	Mehedinti	MH130	82.591	98.186	**2024**	**2024**	**2024**	ROC Mehedinti
656	ORSOVA	Mehedinti	MH982	8.802	9.682	**2027**	**2027**	**2027**	ROC Mehedinti
657	STREHAIA	Mehedinti	MH986	5.867	6.454	**2030**	**2030**	**2030**	ROC Mehedinti

658	VANJU MARE	Mehedinti	MH987	2.462	2.585	**2030**	**2030**	**Prior 2020**	ROC Mehedinti
659	ESELNITA	Mehedinti	MH979	2.340	2.457	**2030**	**2030**	**2031**	ROC Mehedinti
660	CERNETI	Mehedinti	MHN001	2.957	3.105	**2031**	**2031**	**2033**	ROC Mehedinti
661	SIMIAN	Mehedinti	MH985	3.834	4.026	**2033**	**2033**	**2034**	ROC Mehedinti
662	GARLA MARE	Mehedinti	MH980	3.130	3.130	**2036**	**2036**	**IAS**	ROC Mehedinti
663	PATULELE	Mehedinti	MH983	2.756	2.756	**2038**	**2038**	**IAS**	ROC Mehedinti
664	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	
665	TARGU MURES	Mures	MS140	156.961	265.972	**2022**	**2022**	**2022**	ROC Mures
666	REGHIN	Mures	MS137	34.629	30.285	**2023**	**2023**	**2023**	ROC Mures
667	SIGHISOARA	Mures	MS138	27.751	25.343	**2023**	**2023**	**2023**	ROC Mures
668	TARNAVENI	Mures	MS141	20.333	19.695	**2024**	**2024**	**2024**	ROC Mures
669	LUDUS	Mures	MS136	11.801	12.708	**2024**	**2024**	**2024**	ROC Mures
670	SOVATA	Mures	MS139	8.736	12.275	**2024**	**2024**	**2024**	ROC Mures
671	IERNUT	Mures	MS1010	5.113	5.624	**2025**	**2025**	**Prior 2020**	ROC Mures
672	SANGEORGIU DE PADURE	Mures	MS1017	5.015	5.224	**2030**	**2030**	**2030**	ROC Mures
673	IBANESTI	Mures	MS1009	3.940	4.013	**2031**	**2031**	**2031**	ROC Mures
674	MIERCUREA NIRAJULUI	Mures	MS1013	3.329	3.495	**2031**	**2031**	**2031**	ROC Mures
675	ERNEI	Mures	MSN1	1.998	2.956	**2031**	**2031**	**2031**	ROC Mures
676	GLODENI	Mures	MS1007	2.586	2.715	**2032**	**2032**	**2032**	ROC Mures
677	FANTANELE	Mures	MS1003	2.121	2.227	**2032**	**2032**	**2032**	ROC Mures
678	ZAU DE CAMPIE	Mures	MS1020	2.095	2.200	**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	**2035**	**2035**	**IAS**	ROC Mures
681	PETELEA	Mures	MS1015	2.517	2.517	**2035**	**2035**	**IAS**	ROC Mures
682	PANET	Mures	MS1014	2.270	2.270	**2036**	**2036**	**IAS**	ROC Mures
683	LIVEZENI	Mures	MS1011	2.135	2.135	**2037**	**2037**	**IAS**	ROC Mures
684	GANESTI	Mures	MS1004	2.088	2.088	**2038**	**2038**	**IAS**	ROC Mures
685	DANES	Mures	MS1000	2.036	2.036	**2038**	**2038**	**IAS**	ROC Mures
686	BAND	Mures	MS994	3.634	3.634	**2039**	**2039**	**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	BURUIENESTI	Neamt	NT1035	3.629	3.810	**2030**	**2030**	**2030**	ROC Iasi
688	GHERAIESTI	Neamt	NT1046	3.439	3.611	**2030**	**2030**	**2030**	ROC Iasi
689	PIATRA NEAMT	Neamt	NT142	107.905	126.515	**2023**	**2023**	**2023**	ROC Neamt
690	ROMAN	Neamt	NT143	49.265	58.701	**2024**	**2024**	**2024**	ROC Neamt
691	TARGU NEAMT	Neamt	NT145	21.875	25.087	**2024**	**2024**	**2024**	ROC Neamt

692	PIATRA SOIMULUI	Neamt	NT1059	9.662	9.704	**2029**	**2027**	**2026**	ROC Neamt
693	SABAOANI	Neamt	NTN001	8.064	8.064	**2030**	**2027**	**2027**	ROC Neamt
694	ADJUDENI	Neamt	NT1021	5.826	5.826	**2031**	**2028**	**2027**	ROC Neamt
695	HORIA	Neamt	NT1049	5.415	5.686	**2032**	**2028**	**2028**	ROC Neamt
696	BICAZ	Neamt	NT1028	5.282	5.546	**2032**	**2028**	**2028**	ROC Neamt
697	BICAZ CHEI	Neamt	NT1029	5.003	5.003	**2034**	**2030**	**2030**	ROC Neamt
698	SAGNA	Neamt	NT1066	2.544	2.544	**2034**	**2031**	**2030**	ROC Neamt
699	BALTATESTI	Neamt	NT1024	2.939	3.431	**2035**	**2032**	**IAS**	ROC Neamt
700	PILDESTI	Neamt	NT1060	3.070	3.070	**2035**	**2033**	**IAS**	ROC Neamt
701	NISIPORESTI	Neamt	NT1054	2.343	2.343	**2036**	**2034**	**IAS**	ROC Neamt
702	BARTICESTI	Neamt	NT1027	2.295	2.295	**2036**	**2035**	**IAS**	ROC Neamt
703	TIBUCANI	Neamt	NT1073	2.160	2.160	**2037**	**2036**	**IAS**	ROC Neamt
704	ION CREANGA	Neamt	NT1050	2.005	2.005	**2038**	**2037**	**IAS**	ROC Neamt
705	URECHENI	Neamt	NT1076	2.708	2.708	**2038**	**2038**	**IAS**	ROC Neamt
706	OGLINZI	Neamt	NT01	2.604	2.604	**2039**	**2039**	**IAS**	ROC Neamt

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	**NO**	**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	CILIENI	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	COCORASTI GRIND	Prahova	PH1171	2.302	2.302	**2034**	**2034**	**IAS**	ROC Constanta
748	PLOIESTI	Prahova	PH158	209.612	170.574	**2022**	**2021**	**2021**	ROC Prahova
749	CAMPINA	Prahova	PH155	30.743	37.289	**2023**	**2022**	**2022**	ROC Prahova
750	VALENII DE MUNTE	Prahova	PH162	12.692	26.062	**2024**	**2022**	**2022**	ROC Prahova
751	BAICOI	Prahova	PH151	16.849	19.239	**2024**	**2022**	**2022**	ROC Prahova
752	SINAIA	Prahova	PH160	9.495	18.608	**2024**	**2022**	**2022**	ROC Prahova
753	MIZIL	Prahova	PH157	13.472	16.084	**2024**	**2022**	**2022**	ROC Prahova
754	BOLDESTI-SCAENI	Prahova	PH152	14.229	15.166	**2024**	**2023**	**2023**	ROC Prahova
755	BREAZA DE SUS	Prahova	PH153	14.486	13.650	**2025**	**2023**	**2023**	ROC Prahova
756	BUSTENI	Prahova	PH154	8.370	11.711	**2025**	**2023**	**2023**	ROC Prahova
757	BARCANESTI	Prahova	PH1158	10.555	10.968	**2025**	**2024**	**2024**	ROC Prahova
758	COMARNIC	Prahova	PH156	10.179	10.350	**2026**	**2024**	**2024**	ROC Prahova
759	PLOPENI	Prahova	PH159	9.293	10.293	**2026**	**2024**	**2024**	ROC Prahova
760	URLATI	Prahova	PH161	6.982	7.623	**2026**	**2025**	**2025**	ROC Prahova
761	BREBU	Prahova	PH1164	5.214	5.355	**2027**	**2025**	**2025**	ROC Prahova
762	AZUGA	Prahova	PH1154	4.105	5.059	**2027**	**2025**	**Prior 2020**	ROC Prahova
763	MANECIU	Prahova	PH1196	8.713	9.149	**2027**	**2026**	**2026**	ROC Prahova
764	FILIPESTII DE PADURE	Prahova	PH1180	8.401	8.821	**2028**	**2027**	**2027**	ROC Prahova
765	VALEA CALUGAREASCA	Prahova	PH1230	6.610	6.940	**2028**	**2028**	**2028**	ROC Prahova
766	STREJNICU	Prahova	PH1220	5.790	6.369	**2029**	**2029**	**2029**	ROC Prahova

767	PUCHENII MARI	Prahova	PH1210	6.043	6.345	**2030**	**2030**	**2029**	ROC Prahova
768	CIORANII DE JOS	Prahova	PH1170	6.251	6.251	**2030**	**2030**	**2030**	ROC Prahova
769	BUCOV	Prahova	PH1165	4.284	4.498	**2030**	**2030**	**2030**	ROC Prahova
770	SLANIC	Prahova	PH1215	3.622	4.586	**2030**	**2030**	**2030**	ROC Prahova
771	ARICESTII RAHTIVANI	Prahova	PH1153	4.934	4.934	**2031**	**2031**	**IAS**	ROC Prahova
772	MAGURENI	Prahova	PH1195	4.676	4.676	**2031**	**2031**	**IAS**	ROC Prahova
773	MAGURELE	Prahova	PH1194	4.377	4.377	**2032**	**2032**	**IAS**	ROC Prahova
774	FLORESTI	Prahova	PH1182	4.086	4.290	**2032**	**2032**	**2031**	ROC Prahova
775	PLEASA	Prahova	PH1204	3.927	4.123	**2032**	**2032**	**2031**	ROC Prahova
776	BRAZII DE SUS	Prahova	PH1163	3.670	3.752	**2033**	**2033**	**2032**	ROC Prahova
777	SIRNA	Prahova	PH1014	3.430	3.430	**2033**	**2033**	**IAS**	ROC Prahova
778	MARGINENII DE JOS	Prahova	PH1198	3.002	3.002	**2033**	**2033**	**IAS**	ROC Prahova
779	BANESTI	Prahova	PH1157	2.954	2.954	**2034**	**2034**	**IAS**	ROC Prahova
780	STARCHIOJD	Prahova	PH1218	2.926	2.926	**2034**	**2034**	**IAS**	ROC Prahova
781	VADU PARULUI	Prahova	PH1227	2.869	2.869	**2034**	**2034**	**IAS**	ROC Prahova
782	GORGOTA	Prahova	PH1185	2.647	2.647	**2034**	**2034**	**IAS**	ROC Prahova
783	BERCENI	Prahova	PH1160	2.408	2.408	**2035**	**2035**	**IAS**	ROC Prahova
784	CATINA	Prahova	PH1167	2.228	2.340	**2035**	**2035**	**2032**	ROC Prahova
785	DUMBRAVA	Prahova	PH1178	2.306	2.306	**2035**	**2035**	**IAS**	ROC Prahova
786	GORNET	Prahova	PH1186	2.223	2.223	**2036**	**2036**	**IAS**	ROC Prahova
787	HOMORACIU	Prahova	PH1190	2.056	2.056	**2036**	**2036**	**IAS**	ROC Prahova
788	PALANCA	Prahova	PHN001	2.007	2.007	**2036**	**2036**	**IAS**	ROC Prahova
789	CORNU	Prahova	PH1174	4.143	4.350	**2037**	**2037**	**2032**	ROC Prahova
790	ALUNIS	Prahova	PH1152	2.948	2.948	**2037**	**2037**	**IAS**	ROC Prahova
791	VALEA DOFTANEI	Prahova	PH1231	2.792	2.932	**2037**	**2037**	**2033**	ROC Prahova
792	POIANA CAMPINA	Prahova	PH1207	2.700	2.835	**2038**	**2038**	**2033**	ROC Prahova
793	TELEGA-SCORTENI	Prahova	PH1223	2.810	2.810	**2038**	**2038**	**IAS**	ROC Prahova
794	TOMSANI	Prahova	PH1225	2.661	2.661	**2038**	**2038**	**IAS**	ROC Prahova
795	FILIPESTII DE TARG	Prahova	PH1181	2.405	2.405	**2039**	**2039**	**IAS**	ROC Prahova
796	CEPTURA DE JOS	Prahova	PH1168	2.168	2.276	**2039**	**2039**	**2033**	ROC Prahova
797	VALCANESTI	Prahova	PH1228	2.132	2.132	**2039**	**2039**	**IAS**	ROC Prahova
798	COLCEAG	Prahova	PH1173	2.028	2.028	**2039**	**2039**	**IAS**	ROC Prahova

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	98.547	117.718	**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	11.820	12.699	**2024**	**2024**	**2024**	ROC Satu Mare
810	TASNAD	Satu Mare	SM1275	6.272	6.643	**Prior 2020**	**Prior 2020**	**Prior 2020**	ROC Satu Mare
811	LIVADA	Satu Mare	SM1262	4.543	4.770	**2030**	**2030**	**Prior 2020**	ROC Satu Mare
812	ODOREU	Satu Mare	SM1266	4.148	4.355	**Prior 2020**	**Prior 2020**	**Prior 2020**	ROC Satu Mare
813	ARDUD	Satu Mare	SM1246	3.702	3.887	**2030**	**2030**	**2030**	ROC Satu Mare
814	BOTIZ	Satu Mare	SM1251	3.161	3.319	**2030**	**2030**	**2030**	ROC Satu Mare
815	MEDIESU AURIT	Satu Mare	SM1263	3.049	3.167	**2030**	**2030**	**2031**	ROC Satu Mare
816	CAPLENI	Satu Mare	SMN001	3.003	3.153	**Prior 2020**	**Prior 2020**	**Prior 2020**	ROC Satu Mare
817	MICULA	Satu Mare	SM1264	2.760	2.760	**2031**	**2031**	**2032**	ROC Satu Mare
818	LAZURI	Satu Mare	SM1261	2.435	2.435	**2031**	**2031**	**Prior 2020**	ROC Satu Mare
819	TURT	Satu Mare	SM1278	4.336	4.553	**2031**	**2031**	**2033**	ROC Satu Mare
820	LUCACENI	Satu Mare	SMN002	4.707	4.869	**2032**	**2032**	**2035**	ROC Satu Mare
821	HALMEU	Satu Mare	SM1258	4.718	4.718	**2033**	**2033**	**IAS**	ROC Satu Mare
822	CERTEZE	Satu Mare	SM1255	3.577	3.577	**2035**	**2035**	**IAS**	ROC Satu Mare
823	TRIP	Satu Mare	SM1277	3.555	3.555	**2036**	**2036**	**IAS**	ROC Satu Mare
824	SANISLAU	Satu Mare	SM1270	2.926	2.926	**2037**	**2037**	**IAS**	ROC Satu Mare
825	TURULUNG	Satu Mare	SM1279	2.263	2.263	**2037**	**2037**	**IAS**	ROC Satu Mare
826	PISCOLT	Satu Mare	SM1268	2.157	2.157	**2038**	**2038**	**IAS**	ROC Satu Mare
827	APA	Satu Mare	SM1245	2.049	2.049	**2039**	**2039**	**IAS**	ROC Satu Mare
828	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	
829	SIBIU	Sibiu	SB167	150.302	179.725	**2023**	**2023**	**2023**	ROC Sibiu
830	CISNADIE	Sibiu	SB165	12.873	15.448	**2024**	**2024**	**2024**	ROC Sibiu
831	AVRIG	Sibiu	SB164	7.651	8.416	**2025**	**2025**	**2025**	ROC Sibiu
832	TALMACIU	Sibiu	SB1314	5.251	5.776	**2025**	**2025**	**2025**	ROC Sibiu
833	RASINARI	Sibiu	SB1306	5.001	5.501	**2025**	**2025**	**2025**	ROC Sibiu
834	COPSA MICA	Sibiu	SB1288	7.142	7.142	**2029**	**2029**	**2029**	ROC Sibiu
835	GURA RAULUI	Sibiu	SB1292	6.496	6.821	**2030**	**2030**	**2030**	ROC Sibiu
836	OCNA SIBIULUI	Sibiu	SB1301	3.255	4.129	**2030**	**2030**	**2030**	ROC Sibiu

837	CRISTIAN	Sibiu	SB1289	3.482	3.656	**Prior 2020**	**Prior 2020**	**Prior 2020**	ROC Sibiu
838	SALISTE	Sibiu	SB1309	2.763	2.901	**2030**	**2030**	**2030**	ROC Sibiu
839	RACOVITA	Sibiu	SB1305	2.065	2.168	**2030**	**2030**	**2031**	ROC Sibiu
840	SURA MARE	Sibiu	SB1312	2.919	3.065	**2031**	**2031**	**2031**	ROC Sibiu
841	VURPAR	Sibiu	SB1318	2.606	2.606	**2031**	**2031**	**2031**	ROC Sibiu
842	SADU	Sibiu	SB1308	2.443	2.565	**Prior 2020**	**Prior 2020**	**Prior 2020**	ROC Sibiu
843	SLIMNIC	Sibiu	SB1311	2.324	2.440	**2031**	**2031**	**2032**	ROC Sibiu
844	MARSA	Sibiu	SB001	2.317	2.317	**2032**	**2032**	**2032**	ROC Sibiu
845	MOSNA	Sibiu	SB1299	2.394	2.394	**2033**	**2033**	**IAS**	ROC Sibiu
846	BRATEIU	Sibiu	SB1287	2.298	2.298	**2035**	**2035**	**IAS**	ROC Sibiu
847	TARNAVA	Sibiu	SB1315	2.296	2.296	**2036**	**2036**	**IAS**	ROC Sibiu
848	JINA	Sibiu	SB1294	3.343	3.343	**2038**	**2038**	**IAS**	ROC Sibiu
849	POIANA SIBIULUI	Sibiu	SB1303	2.368	2.368	**2039**	**2039**	**IAS**	ROC Sibiu
850	MEDIAS	Sibiu	SB166	45.249	51.538	**2024**	**2024**	**Prior 2020**	ROC Medias
851	AGNITA	Sibiu	SB163	7.063	7.769	**Prior 2020**	**Prior 2020**	**Prior 2020**	ROC Medias
852	DUMBRAVENI	Sibiu	SB1291	5.124	4.373	**Prior 2020**	**Prior 2020**	**Prior 2020**	ROC Medias
853	SEICA MARE	Sibiu	SB1310	3.202	3.362	**2034**	**2034**	**2031**	ROC Medias
854	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	
855	SUCEAVA	Suceava	SV180	95.404	113.149	**2021**	**2021**	**2021**	ROC Suceava
856	RADAUTI	Suceava	SV178	27.237	37.400	**2022**	**2022**	**2022**	ROC Suceava
857	FALTICENI	Suceava	SV175	23.503	25.270	**2022**	**2022**	**2022**	ROC Suceava
858	VATRA DORNEI	Suceava		11.975	19.528	**2023**	**2023**	**2023**	ROC Suceava
859	CAMPULUNG MOLDOVENESC	Suceava	SV174	15.083	18.779	**2023**	**2023**	**2023**	ROC Suceava
860	GURA HUMORULUI	Suceava	SV176	12.232	15.324	**2024**	**2024**	**2024**	ROC Suceava
861	MARGINEA	Suceava	SV1359	11.770	12.760	**2024**	**2024**	**2024**	ROC Suceava
862	VICOVU DE SUS	Suceava	SV181	9.719	9.810	**2027**	**2026**	**2026**	ROC Suceava
863	DUMBRAVENI	Suceava	SV1341	6.472	7.119	**2028**	**2026**	**2026**	ROC Suceava
864	SIRET	Suceava	SV1380	6.193	6.812	**2029**	**2027**	**2027**	ROC Suceava
865	VICOVU DE JOS	Suceava	SV1388	6.311	6.528	**2030**	**2027**	**2027**	ROC Suceava
866	BOSANCI	Suceava	SV1325	5.895	6.485	**2031**	**2028**	**2028**	ROC Suceava
867	IPOTESTI	Suceava	SV1356	5.317	5.583	**2031**	**2028**	**2028**	ROC Suceava
868	BAIA	Suceava	SV1321	4.923	5.169	**2032**	**2028**	**2028**	ROC Suceava
869	PLOPENI	Suceava	SVN002	4.911	5.157	**2032**	**2028**	**Prior 2020**	ROC Suceava
870	CAJVANA	Suceava	SV1330	6.156	6.156	**2034**	**2030**	**2030**	ROC Suceava
871	DORNESTI	Suceava	SV1339	3.354	3.522	**2033**	**2030**	**2030**	ROC Suceava
872	MIRONU	Suceava	SV1362	3.291	3.344	**2033**	**2030**	**2030**	ROC Suceava
873	MALINI	Suceava	SV1357	4.734	4.861	**2034**	**2031**	**2031**	ROC Suceava

874	ARBORE	Suceava	SV1320	4.306	4.521	**2034**	**2031**	**2031**	ROC Suceava
875	LITENI	Suceava	SV177	3.566	3.744	**2035**	**2031**	**2031**	ROC Suceava
876	FANTANELE	Suceava	SV1343	3.597	3.673	**2035**	**2032**	**2032**	ROC Suceava
877	DOLHASCA	Suceava	SV1337	2.582	2.711	**2035**	**2032**	**2032**	ROC Suceava
878	BERCHISESTI	Suceava	SV1322	2.206	2.316	**2036**	**2032**	**2032**	ROC Suceava
879	CALAFINDESTI	Suceava	SV1331	2.099	2.204	**2036**	**2032**	**2032**	ROC Suceava
880	SIMINICEA	Suceava	SV1379	2.058	2.161	**2036**	**2033**	**2033**	ROC Suceava
881	POJORATA	Suceava	SV1371	1.943	2.040	**2036**	**2033**	**2033**	ROC Suceava
882	COROCAIESTI	Suceava	SV1335	3.440	3.440	**2037**	**2034**	**IAS**	ROC Suceava
883	SATU MARE	Suceava	SV1376	2.183	2.183	**2037**	**2034**	**IAS**	ROC Suceava
884	PALTINOASA	Suceava	SV1367	2.145	2.145	**2038**	**2035**	**IAS**	ROC Suceava
885	PATRAUTI	Suceava	SV1368	4.240	4.240	**2039**	**2035**	**IAS**	ROC Suceava
886	MILISAUTI	Suceava	SV1361	4.072	4.072	**NO**	**2036**	**IAS**	ROC Suceava
887	FRATAUTII VECHI	Suceava	SV1346	3.624	3.624	**NO**	**2037**	**IAS**	ROC Suceava
888	BOGDANESTI	Suceava	SV1323	3.442	3.442	**NO**	**2038**	**IAS**	ROC Suceava
889	IASLOVAT	Suceava	SV1354	2.778	2.778	**NO**	**2039**	**IAS**	ROC Suceava
890	STROIESTI	Suceava	SV1383	2.144	2.144	**NO**	**2039**	**IAS**	ROC Suceava
891	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	
892	ALEXANDRIA	Teleorman	TR189	47.561	43.545	**2024**	**2022**	**2022**	ROC Teleorman
893	ROSIORI DE VEDE	Teleorman	TR190	24.541	24.826	**2024**	**2022**	**2022**	ROC Teleorman
894	TURNU MAGURELE	Teleorman	TR191	24.155	23.037	**2024**	**2024**	**2024**	ROC Teleorman
895	ZIMNICEA	Teleorman	TR193	12.598	12.604	**2024**	**2024**	**2024**	ROC Teleorman
896	VIDELE	Teleorman	TR192	9.675	8.058	**2026**	**2026**	**2025**	ROC Teleorman
897	TIGANESTI	Teleorman	TR1451	6.406	6.406	**2027**	**2027**	**2027**	ROC Teleorman
898	BRAGADIRU	Teleorman	TR1398	6.219	6.219	**2029**	**2029**	**2029**	ROC Teleorman
899	PERETU	Teleorman	TR1431	5.502	5.502	**2030**	**2030**	**2030**	ROC Teleorman
900	DRAGANESTI VLASCA	Teleorman	TR1410	2.999	3.149	**2031**	**2030**	**2031**	ROC Teleorman
901	BUZESCU	Teleorman	TR1400	3.512	3.512	**2033**	**2030**	**IAS**	ROC Teleorman
902	BABAITA	Teleorman	TR1393	2.869	2.869	**2034**	**2031**	**IAS**	ROC Teleorman
903	ORBEASCA DE SUS	Teleorman	TRN002	2.380	2.380	**2035**	**2031**	**IAS**	ROC Teleorman
904	IZVOARELE	Teleorman	TR1417	2.224	2.224	**2036**	**2032**	**IAS**	ROC Teleorman
905	LACENI	Teleorman	TR1418	2.067	2.067	**2037**	**2032**	**IAS**	ROC Teleorman
906	ORBEASCA DE JOS	Teleorman	TRN001	2.006	2.006	**2038**	**2033**	**IAS**	ROC Teleorman
907	PLOSCA	Teleorman	TR1435	4.937	4.937	**2039**	**2033**	**IAS**	ROC Teleorman
908	ISLAZ	Teleorman	TR1416	3.724	3.724	**2039**	**2034**	**IAS**	ROC Teleorman
909	MALDAENI	Teleorman	TR1423	3.133	3.133	**2039**	**2034**	**IAS**	ROC Teleorman
910	PIATRA	Teleorman	TR1432	2.967	2.967	**NO**	**2035**	**IAS**	ROC Teleorman
911	DOBROTESTI	Teleorman	TR1408	2.641	2.641	**NO**	**2035**	**IAS**	ROC Teleorman

912	TATARASTII DE SUS	Teleorman	TR1450	2.636	2.636	**NO**	**2036**	**IAS**	ROC Teleorman
913	CERVENIA	Teleorman	TR1404	2.592	2.592	**NO**	**2036**	**IAS**	ROC Teleorman
914	PIETROSANI	Teleorman	TR1433	2.433	2.433	**NO**	**2037**	**IAS**	ROC Teleorman
915	STOROBANEASA	Teleorman	TR1446	2.366	2.366	**NO**	**2037**	**IAS**	ROC Teleorman
916	MAVRODIN	Teleorman	TR1425	2.271	2.271	**NO**	**2038**	**IAS**	ROC Teleorman
917	SLOBOZIA MANDRA	Teleorman	TRN003	2.248	2.248	**NO**	**2038**	**IAS**	ROC Teleorman
918	SILISTEA-GUMESTI	Teleorman	TR1444	2.242	2.242	**NO**	**2039**	**IAS**	ROC Teleorman
919	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	
920	TIMISOARA	Timis	TM188	345.279	417.516	**2023**	**2023**	**2023**	ROC Timis
921	LUGOJ	Timis	TM186	38.194	45.833	**2024**	**2024**	**2024**	ROC Timis
922	SANNICOLAU MARE	Timis	TM187	11.975	12.031	**2024**	**2024**	**2024**	ROC Timis
923	JIMBOLIA	Timis	TM185	10.699	10.927	**2024**	**2024**	**2024**	ROC Timis
924	BUZIAS	Timis	TM1464	4.675	5.759	**2024**	**2024**	**Prior 2020**	ROC Timis
925	DETA	Timis	TM1475	5.380	5.469	**2025**	**2025**	**2025**	ROC Timis
926	SACALAZ	Timis	TM1502	4.672	5.416	**2025**	**2025**	**2025**	ROC Timis
927	PERIAM	Timis	TM1498	4.850	5.093	**2028**	**2028**	**2028**	ROC Timis
928	GIARMATA	Timis	TM1483	5.446	5.446	**2030**	**2030**	**2030**	ROC Timis
929	RECAS	Timis	TM1500	4.611	4.842	**2030**	**2030**	**Prior 2020**	ROC Timis
930	GATAIA	Timis	TM1481	4.544	4.550	**2030**	**2030**	**2030**	ROC Timis
931	CENAD	Timis	TM1467	4.287	4.501	**2030**	**2030**	**2030**	ROC Timis
932	CARPINIS	Timis	TM1466	3.725	3.911	**2030**	**2030**	**2031**	ROC Timis
933	FAGET	Timis	TM1480	3.601	3.602	**2030**	**2030**	**Prior 2020**	ROC Timis
934	LOVRIN	Timis	TM1490	3.391	3.561	**2030**	**2030**	**2031**	ROC Timis
935	DUDESTII NOI	Timis	TM1477	3.283	3.447	**2031**	**2031**	**2031**	ROC Timis
936	LIEBLING	Timis	TM1489	3.130	3.287	**2031**	**2031**	**2031**	ROC Timis
937	SANMIHAIU ROMAN	Timis	TMN001	2.935	3.278	**2031**	**2031**	**2032**	ROC Timis
938	CIACOVA	Timis	TM1470	2.630	2.762	**2031**	**2031**	**2032**	ROC Timis
939	ORTISOARA	Timis	TM1494	2.409	2.529	**2031**	**2031**	**2032**	ROC Timis
940	COSTEIU	Timis	TM1472	2.275	2.389	**2031**	**2031**	**2032**	ROC Timis
941	NADRAG	Timis	TM1493	2.639	2.771	**2031**	**2031**	**2032**	ROC Timis
942	VOITEG	Timis	TM1513	2.086	2.190	**2031**	**2031**	**2033**	ROC Timis
943	VARIAS	Timis	TM1512	4.184	4.184	**2032**	**2032**	**IAS**	ROC Timis
944	JEBEL	Timis	TM1487	3.707	3.707	**2032**	**2032**	**2033**	ROC Timis
945	TOMNATIC	Timis	TM1510	3.344	3.344	**2033**	**2033**	**IAS**	ROC Timis
946	PECIU NOU	Timis	TM1497	3.217	3.217	**2034**	**2034**	**IAS**	ROC Timis
947	SATCHINEZ	Timis	TM1508	3.141	3.141	**2034**	**2034**	**2033**	ROC Timis
948	SANANDREI	Timis	TM1504	3.067	3.067	**2034**	**2034**	**2033**	ROC Timis

949	BECICHERECU MIC	Timis	TM1459	2.929	2.929	**2035**	**2035**	**IAS**	ROC Timis
950	SARAVALE	Timis	TM1507	2.804	2.804	**2035**	**2035**	**2034**	ROC Timis
951	TEREMIA MARE	Timis	TM1509	2.478	2.478	**2036**	**2036**	**IAS**	ROC Timis
952	SAG	Timis	TM1503	2.418	2.418	**2036**	**2036**	**2034**	ROC Timis
953	SANDRA	Timis	TM1505	2.399	2.399	**2037**	**2037**	**IAS**	ROC Timis
954	IECEA MARE	Timis	TM1486	2.382	2.382	**2037**	**2037**	**IAS**	ROC Timis
955	COMLOSU MARE	Timis	TM1471	4.014	4.014	**2038**	**2038**	**IAS**	ROC Timis
956	DUDESTII VECHI	Timis	TM1478	3.850	3.850	**2038**	**2038**	**IAS**	ROC Timis
957	BILED	Timis	TM1462	3.487	3.487	**2039**	**2039**	**IAS**	ROC Timis
958	DENTA	Timis	TM1474	2.213	2.213	**2039**	**2039**	**IAS**	ROC Timis
959	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	
960	TULCEA	Tulcea	TL184	67.550	81.060	**Prior 2020**	**Prior 2020**	**Prior 2020**	ROC Tulcea
961	BABADAG	Tulcea	TL182	8.052	8.857	**2028**	**2028**	**2028**	ROC Tulcea
962	MACIN	Tulcea	TL183	7.594	8.353	**2030**	**2030**	**2030**	ROC Tulcea
963	JURILOVCA	Tulcea	TL1526	1.956	2.054	**2030**	**2030**	**2030**	ROC Tulcea
964	GRECI	Tulcea	TL1522	4.689	4.923	**2031**	**2031**	**2031**	ROC Tulcea
965	ISMINA	Tulcea	TL1523	4.088	4.292	**2032**	**2032**	**2032**	ROC Tulcea
966	NICULITEL	Tulcea	TL1533	3.910	4.106	**2033**	**2033**	**2033**	ROC Tulcea
967	SULINA	Tulcea	TL1537	3.196	3.356	**Prior 2020**	**Prior 2020**	**Prior 2020**	ROC Tulcea
968	LUNCAVITA	Tulcea	TL1527	3.130	3.287	**2034**	**2034**	**2034**	ROC Tulcea
969	TURCOAIA	Tulcea	TL1539	2.903	3.048	**2034**	**2034**	**2034**	ROC Tulcea
970	BAIA	Tulcea	TL1514	2.573	2.702	**2034**	**2034**	**2034**	ROC Tulcea
971	TOPOLOG	Tulcea	TL1538	2.268	2.381	**2035**	**2035**	**2035**	ROC Tulcea
972	MAHMUDIA	Tulcea	TL1528	2.169	2.277	**2035**	**2035**	**2035**	ROC Tulcea
973	JIJILA	Tulcea	TL1525	3.758	3.758	**2037**	**2037**	**IAS**	ROC Tulcea
974	SARICHIOI	Tulcea	TL1535	2.586	2.586	**2038**	**2038**	**IAS**	ROC Tulcea
975	CARCALIU	Tulcea	TL1515	2.277	2.277	**2039**	**2039**	**IAS**	ROC Tulcea
976	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	
977	RAMNICU VALCEA	Valcea	VL197	102.756	121.387	**2024**	**2023**	**2023**	ROC Valcea
978	DRAGASANI	Valcea	VL196	23.551	26.809	**2025**	**2024**	**2024**	ROC Valcea
979	CALIMANESTI	Valcea	VL195	4.043	9.402	**2025**	**2025**	**Prior 2020**	ROC Valcea
980	BABENI	Valcea	VL194	6.585	7.169	**2030**	**2030**	**2030**	ROC Valcea
981	BERBESTI	Valcea	VL1545	4.294	4.388	**2032**	**2032**	**2032**	ROC Valcea

982	BARBATESTI	Valcea	VL1544	4.151	4.291	**2033**	**2033**	**2032**	ROC Valcea
983	BREZOI	Valcea	VL1547	3.910	4.106	**2033**	**2033**	**2033**	ROC Valcea
984	PRAJILA	Valcea	VL1563	2.650	3.870	**2034**	**2034**	**2033**	ROC Valcea
985	HOREZU	Valcea	VL1565	2.865	3.630	**2034**	**2034**	**2033**	ROC Valcea
986	SALATRUCEL	Valcea	VLN002	3.067	3.122	**2034**	**2034**	**2034**	ROC Valcea
987	STEFANESTI	Valcea	VL1593	2.958	3.058	**2034**	**2034**	**Prior 2020**	ROC Valcea
988	BALCESTI	Valcea	VL1543	2.814	2.954	**2035**	**2035**	**2034**	ROC Valcea
989	VAIDEENI	Valcea	VL1601	2.062	2.165	**2035**	**2035**	**2034**	ROC Valcea
990	VOINEASA	Valcea	VLN002	1.187	2.112	**2035**	**2035**	**2034**	ROC Valcea
991	BUDESTI	Valcea	VL1548	2.900	2.968	**2036**	**2036**	**2035**	ROC Valcea
992	BUNESTI	Valcea	VL1550	2.074	2.169	**2036**	**2036**	**IAS**	ROC Valcea
993	OLANESTI BAI	Valcea	VL1577	1.459	2.864	**2037**	**2037**	**2035**	ROC Valcea
994	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	
995	BARLAD	Vaslui	VS203	56.670	55.123	**2023**	**2023**	**2023**	ROC Vaslui
996	VASLUI	Vaslui	VS206	51.901	49.250	**2023**	**2023**	**2023**	ROC Vaslui
997	HUSI	Vaslui	VS204	26.391	21.644	**2024**	**2024**	**2024**	ROC Vaslui
998	NEGRESTI	Vaslui	VS205	5.567	6.124	**2030**	**2030**	**2030**	ROC Vaslui
999	MURGENI	Vaslui	VS1619	3.365	3.533	**2030**	**2030**	**2030**	ROC Vaslui
1000	IVESTI	Vaslui	VS1615	2.153	2.261	**2030**	**2030**	**2032**	ROC Vaslui
1001	FALCIU	Vaslui	VS1611	1.991	2.091	**2031**	**2031**	**2032**	ROC Vaslui
1002	ZORLENI	Vaslui	VS1631	4.225	4.225	**2032**	**2032**	**IAS**	ROC Vaslui
1003	PERIENI	Vaslui	VS1621	3.189	3.189	**2033**	**2033**	**IAS**	ROC Vaslui
1004	BEREZENI	Vaslui	VS1607	3.161	3.161	**2035**	**2035**	**IAS**	ROC Vaslui
1005	VALENI	Vaslui	VSN01	3.081	3.081	**2036**	**2036**	**IAS**	ROC Vaslui
1006	VETRISOARA	Vaslui	VS1629	2.449	2.449	**2037**	**2037**	**IAS**	ROC Vaslui
1007	POPENI	Vaslui	VS1622	2.278	2.278	**2037**	**2037**	**IAS**	ROC Vaslui
1008	STANILESTI	Vaslui	VS1626	2.270	2.270	**2038**	**2038**	**IAS**	ROC Vaslui
1009	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	
1010	FOCSANI	Vrancea	VN199	82.712	84.378	**2024**	**2024**	**2024**	ROC Vrancea
1011	ADJUD	Vrancea	VN198	12.739	12.030	**2024**	**2024**	**2024**	ROC Vrancea
1012	ODOBESTI	Vrancea	VN201	8.891	9.555	**2025**	**2025**	**2025**	ROC Vrancea
1013	PANCIU	Vrancea	VN202	5.897	8.518	**2025**	**2025**	**Prior 2020**	ROC Vrancea
1014	MARASESTI	Vrancea	VN200	8.441	8.453	**2025**	**2025**	**2025**	ROC Vrancea
1015	HOMOCEA	Vrancea	VN1642	5.876	6.123	**2026**	**2026**	**2025**	ROC Vrancea
1016	GUGESTI	Vrancea	VN1641	5.132	5.645	**2026**	**2026**	**2026**	ROC Vrancea

1017	SLOBOZIA BRADULUI	Vrancea	VNN003	8.092	8.092	**2030**	**2030**	**2030**	ROC Vrancea
1018	GOLOGANU	Vrancea	VN1640	2.893	3.038	**2030**	**2030**	**Prior 2020**	ROC Vrancea
1019	TULNICI	Vrancea	VN1658	2.620	2.724	**2030**	**2030**	**2031**	ROC Vrancea
1020	PAUNESTI	Vrancea	VN1648	4.735	4.735	**2031**	**2031**	**IAS**	ROC Vrancea
1021	MILCOVUL	Vrancea	VN1645	2.819	2.819	**2032**	**2032**	**IAS**	ROC Vrancea
1022	PLOSCUTENI	Vrancea	VN1649	2.462	2.462	**2032**	**2032**	**IAS**	ROC Vrancea
1023	URECHESTI	Vrancea	VN1659	4.514	4.514	**2033**	**2033**	**IAS**	ROC Vrancea
1024	SURAIA	Vrancea	VN1656	4.369	4.369	**2034**	**2034**	**IAS**	ROC Vrancea
1025	JARISTEA	Vrancea	VN1643	3.633	3.633	**2035**	**2035**	**IAS**	ROC Vrancea
1026	GAGESTI	Vrancea	VNN002	3.361	3.361	**2037**	**2035**	**IAS**	ROC Vrancea
1027	VULTURU	Vrancea	VN1663	3.145	3.145	**2038**	**2036**	**IAS**	ROC Vrancea
1028	STRAOANE	Vrancea	VN1655	2.717	2.717	**NO**	**2036**	**IAS**	ROC Vrancea
1029	DUMBRAVENI	Vrancea	VN001	2.619	2.619	**NO**	**2037**	**IAS**	ROC Vrancea
1030	TIFESTI	Vrancea	VNN004	2.555	2.555	**NO**	**2038**	**IAS**	ROC Vrancea
1031	SIHLEA	Vrancea	VN1653	2.170	2.170	**NO**	**2038**	**IAS**	ROC Vrancea
1032	MAICANESTI	Vrancea	VN1644	2.129	2.129	**NO**	**2039**	**IAS**	ROC Vrancea
1033	VANATORI	Vrancea	VN1660	2.041	2.041	**NO**	**2039**	**IAS**	ROC Vrancea
1034	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, 44 models plus national one
2. FMs – compliance achievement, 44 models plus national one
3. FMs – further optimization (IASs) of compliance achievement, 44 models plus national one

(electronic files and electronic spreadsheets provided in Microsoft Excel)