Organisation for Economic Co-operation and Development

Unclassified **English - Or. English**

Romania

Country report

This report captures the main messages of a review of the state of play in Romania with regard to compliance with the EU Directives on Drinking Water, Urban Wastewater Treatment and Floods, and to a lesser extent the Water Framework Directive. It reflects OECD analyses, and official and expert opinions expressed at a national workshop held in Bucharest, 9-10 October 2018.

The workshop focused on financing compliance towards the EU water *acquis*. It was co-convened by the Romanian Ministry of Water and Forests, the OECD and the European Commission (DG Environment).

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1. Financing compliance with the EU water *acquis* - Recommendations

Romania has a nexus of urgent water management challenges that must be addressed in the near term. Two stand-out that can facilitate the solution of others. First, Romania remains far behind in terms of compliance with the Urban Waste Water Treatment Directive (UWWTD), and needs to improve access to water and sanitation in rural areas. Second, regional operators face barriers when it comes to absorbing investments and implementing projects. Closely linked to these primary challenges are issues around the WSS reform process in the country, and ongoing challenges of affordability and efficiency. Finally, the impacts of climate change, as well as the ageing of infrastructure that is already facing a maintenance backlog, will compound difficulties facing the water sector.

Complying with the EU water *acquis* delivers multiple benefits for society, the economy and the environment. While some measures can be costly, this report considers options to comply in cost-effective ways, taking account of distinctive capacities and challenges in Romania.

This report identifies a number of recommendations to assist Romania with closing the finance gap and managing the transition towards sustainable water management. In that context, one overarching message is to focus on projects and reforms that deliver actual progress towards compliance and benefit to communities on the ground. They may not be grandiose or operate at very large scale, but they would demonstrate the capacity to make valuable use of available finance, and garner support for further action. Key recommendations for Romania include:

- Develop a mid- and long-term sustainable financing strategy to comply with existing Directives, developed in cooperation with national and local authorities. The strategy should clearly set priorities and drive investment decisions. Prioritisation of investment should be considered in terms of policy objectives (achieving compliance with the EU acquis) as well as geographic areas and environmental protection. Invest first in projects that trigger tangible benefits for communities on the ground now and deliver on compliance with EU regulations. Investment planning should factor in demographic trends, including depopulation of rural areas and smaller towns (the rural population is projected to contract by 40% in Romania in the coming decades) to avoid over-investment in out-sized infrastructure that will be costly to operate and maintain in the future. It also must consider the future impacts of climate change, both on flooding and water scarcity. The strategy should include provisions for improved operation and maintenance of water infrastructure, accounting for the backlog of under-investment in maintenance over the past decades.
- On the basis of a long-term strategy, Romania could consider alternative ways for mobilizing sources of commercial capital, for example through blended finance approaches[1]. There were strong signals from International Financial Institutions (IFIs) that Romania could attract different kinds of support and funding if it were clearer in its strategy. This would also incentivize the private sector to invest in the Romanian water sector. This may include exploring how public and

[1] Note that this recommendation should not be understood as supporting a transition towards private operation of utilities. Commercial finance can contribute to financing publicly operated services.

development finance and risk-mitigation instruments (e.g. guarantees, credit enhancement instruments) can be used strategically to improve the risk-return profile of investments that can attract commercial finance.

- Strengthen the capacity of the national regulator, ANRSC. Regional utilities will progressively need to finance larger portions of their investment through revenue collection. ANRSC will need to enhance monitoring of utility performance and introduce proper incentives to ensure efficiency in this process. Benchmarking of relevant performance criteria could serve to increase accountability and inspire improvement. An important consideration will be how to include depreciation of existing assets in the calculation of allowable tariff levels.
- Establish targeted social measures to address affordability constraints and solidarity mechanisms to help cover investment costs in communities where financing capacities are especially limited. Romania could examine models used in other countries such as Spain, Portugal, France, or Greece. Options could include rebates or targeted subsidies for connection to public networks, or baseline needs. Especially in rural areas, affordability issues are likely larger than those captured in official statistics, as a large portion of the most vulnerable people do not have access to piped potable water, and even less have access to waste water services. Affordability issues discourage many households from connecting to newly installed water or waste water networks, which may affect compliance with the UWWTD. In such a context, decentralised technology - eventually publicly operated – may be appropriate, if performance and compliance are duly monitored and enforced.

2. Context

Romania has limited water resources. The country lies almost entirely in the Danube River basin, of which it comprises around 30% of Danube catchment (Danube Water Program, 2015). The river network at the level of the country is radial, as 98% of the rivers spring in the Carpathians and discharge directly or indirectly through other rivers, into the Danube. The Danube supplies 44% of Romania's total freshwater resources, while 46% come from other inland rivers, and 10% from aquifers. In the country's mountainous regions, river quality remains high. However, the Danube and lower reaches of inland rivers suffer from contamination (Danube Water Program, 2015). The Danube flows into the Black Sea in Romania through 3 arms (Chilia, Sulina, Sfantu Gheorghe), carrying wastewater discharges and diffuse pollution from upstream countries and domestic sources (agricultural production, industrial use, and contamination from households) through the country and into the river's delta (WWF, 2018).

Romania has the following categories of water systems:

- permanent rivers – 55,535 km, representing 70% of rivers;
- nonpermanent ephemeral rivers – 23,370 km, representing 30% of rivers;
- natural lakes - 117 lakes with a surface exceeding 0.5 km^2, out of which 52% are located in the Danube Delta;
- artificial lakes - reservoirs - 225 lakes with a surface exceeding 0.5 km^2

Romania has a relatively low intensity of freshwater abstraction as a proportion of available resources and per-capita abstraction below the European average. However, water quality issues mean that the amount of effectively usable water is about two-thirds of freshwater resources.

Surface waters requiring treatment meet approximately 62% of Romania's drinking water needs, with the remainder drawn from groundwater (Danube Water Program, 2015). Industry is the largest user of freshwater resources, accounting for around 67% of total use, with agriculture (mostly irrigation) and domestic users accounting for the rest. The total amount used in industry has reduced significantly since the 1990s, through a combination of falling economic output and adoption of water-saving technologies and measures.

Romania's land area is about 58% dedicated to agricultural production (4th highest in the EU), with forestry (33%) the next largest land-use type (Eurostat, 2017). Services and residential areas cover just 1.7% of the country, the lowest rate amongst all member states. This allocation of land use is highly stable, with Romania's annual land cover change rate of 0.05% amongst the very lowest in Europe (EEA, 2017a).

Romania's level of per-capita GDP is comparatively low in the EU, although economic growth projections sit near the top. Table 1 presents a number of further key indicators characterising the country context and features relevant to future expenditures for WSS and flood protection.

Table 1. Key features relevant to future expenditures for WSS and flood protection

	Indicator	Value (rank if applicable)	Data Source	Year
Economy and Demographics	GDP per capita	EUR 8 600 (27/28)	Eurostat	2016
	Projected GDP growth	13.3% (3/28)	IMF	2016-2022
	Projected urban population variation by 2050	1.01x (24/28)	UN	2017-2050
Water Supply and Sanitation	Estimated annual average expenditure per capita	EUR 56	Authors based on Eurostat	2011-2015
	Population not connected to water supply	43%	EC	2015
	Annual domestic sector consumption per capita	28.7 m3	Eurostat	
	Leakage rate for public water supply	17%	EC	2017
	Non-revenue water	c.40%	EurEau	2017
	Compliance with UWWTD Art.3, 4 and 5 (Index)	51% (24/28)	EC	2014
Flood Protection	Estimated annual average expenditure per capita	EUR 8 (8/27)	EC survey	2013-15
	Pop. potentially affected in flood risk areas	39%	EC report	2015
	Value of assets at risk (rise 2015-30):	1.75x (17/28)	WRI	2015-2030

Note: Rank 1 implies best in class among the EU member countries for which data is available for each indicator.

The "Romanian Waters[2]" National Administration is the national public body in charge of water management, and is under the direct authority of the Ministry of Water and Forests. The National Regulation Agency for Public Services (ANRSC) is the formal national regulator for water and sanitation, in charge of tariff setting and reviewing for the water sector.

In 2017, the new Ministry of Water and Forests was set up in accordance with GO no. 1/2017 and GD no. 20/2017. It is responsible for the field of forestry and hunting management, water management, hydrology and hydrogeology, and nature conservation (GOV.RO, 2019[1]).

Over the past 10 years, reforms in the WSS (Water and Wastewater Services) sector have focused on commercialization and regionalization. Poorly performing and highly fragmented municipal operators have been replaced by 43 regional public operators and two large private operators which provide piped water service to 11,5 million people (equivalent to 87,5% of the connected population). This has been achieved through a new institutional framework in which municipalities delegated WSS services to new public Regional Operating Companies (ROCs). The municipalities then supervise their performance through Intercommunity Development Associations (IDAs).

[2] Please refer to www.rowater.ro/sites/en/default.aspx for further information

3. Characterising the financing challenge

There have been huge achievements in reforming the water sector in Romania over the past decade. However, major efforts and actions from the government are still required. Investment needs remain significant and should be speeded up.

An overview of the challenges, current financing strategies and factors driving future investment needs are examined in the following subsections on water supply and sanitation services, flood protection and the WFD (water quantity and quality).

3.1. Water supply and sanitation

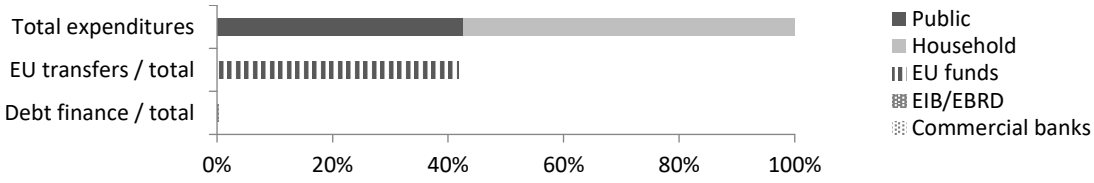
Romania faces major challenges in implementing the Urban Waste Water Treatment Directive and is lagging far behind other Member States. According to 2017 reporting to the Commission, only 2.5 % of Romania's wastewater load was collected in full accordance with the Directive (EC, 2019[1]) for reference year 2014. The final deadline for Romania to reach compliance with the Directive was 31 December 2018, and the Commission launched an infringement procedure against Romania on the basis of 2015 intermediate deadlines set in the Accession Treaty, which was compliance in agglomerations with more than 10,000 PE (EC, 2019[1]). By the end of 2016, while a large portion of the pollution load in agglomerations with more than 10,000 PE was collected and treated—84.5 percent and 78.5 percent respectively—less than 15 percent of the pollution load in rural agglomerations was collected and treated (EC, 2019[1]).

In terms of drinking water, a significant part of the population (57 %) is not connected to public water supply systems (EC, 2019[1]).It is clear that UWWTD compliance will take many years to be achieved and will require major efforts and actions from the Romanian Authorities. There is consensus that the investment needs in Romania for both water supply and sanitation are significant. Estimates of the size of the gap vary:

- Based on reporting to the Commission, estimated investment needs to ensure appropriate collection and treatment of waste water from the remaining agglomerations is estimated at EUR 12 billion (EC, 2019[1]).
- Based on a 2015 World Bank stocktaking report, the total figure would be EUR 24 billion for all measures in the first RBMP (World Bank, 2018[2])

The main source of funding for water and sanitation infrastructure in Romania in the past decade has been grant funding from the EU. The national support programme (National Programme for Local Development, PNDL) finances individual municipalities while EU funds support ROCs. In more recent years, as depicted in Figure 1, available data indicates that Romania has relied slightly more on household than public expenditures to finance its Water and Wastewater Services (WSS) -expenditures. General government tax revenue provides a small (9%) share, allocated to regions on a first-come-first-served basis. (Danube Water Program, 2015). Public expenditures have almost fully relied on EU transfers. Given low levels of water pricing in the country, the high share (60%) represented by households in total expenditures is a symptom of public underspending.

Figure 1. Share of annual average expenditure on WSS, by source (2011-15, %)



Source: Eurostat (for public and household expenditures), European Commission (for EU transfers), European Bank for Reconstruction and Development, European Investment Bank, IJ Global, Thomson Reuters, Dealogic (for debt finance).

Tariffs have risen faster than general inflation since 2008 and, at 5% in 2015, already represent a large share of average household disposable income (Danube Water Program, 2015). Affordability is the lowest in the EU with water supply and sanitation expenditures at the level of an over 6% share in expenditures in households' disposable income of the poorest population group. Affordability issues, particularly in rural areas, are likely larger than those captured in official statistics, as a large portion of the most vulnerable do not have access to piped potable water, and even less have access to waste water services. Affordability issues are likely the key reason many households refuse to connect to newly installed water or sewerage networks which in turn effects compliance with the UWWTD. In addition, political challenges around affordability issues have led rural mayors to resist joining an IDA and ROC.

Romania currently applies a uniform water tariff established at the level of the ROCs. There is a strict methodology on how tariffs should be calculated for regional operators supported by EU funds. However, small operators may have significantly lower tariffs, which often ignore maintenance costs. According to some estimates, roughly 70% of the Romanian population could pay slightly more than they currently do, pointing to the room for higher tariffs for a portion of the population if socially adjusted tariffs were introduced. Romania is in the process of developing a methodology for social tariffs, which should continue to be pursued.

Romania faces some challenges in the absorption of EU funds due to capacity gaps. From the EU allocation of EUR 2.776 billion for investments in the water and wastewater sector, Romania has implemented EUR 2.359 billion, with an absorption rate of 84% (Figures provided by Romanian authorities at the country workshop).

Given the size and complexity of investment projects, capacity gaps have served as bottlenecks preventing the absorption of EU funds. This include gaps in design and building capacity, long judicial procedures, cumbersome procurement procedures of the ROCs. Capacity gaps at the regional level have led to large delays in both the design and delivery of investment projects. Capacity gaps are in part due to gaps in clarity on roles and responsibilities. For example, the sharing of responsibilities between local authorities and water operators is unclear, and has led to conflicts and inefficiencies. To a certain extent the regionalisation process in Romania was meant to address this. However, the process is now showing its limits. These include:

- Regional public utilities lack incentives to incorporate small rural agglomerations;
- Households and local authorities in rural areas often do not want to join established regional utilities[3];
- Tariffs do not yet cover investment and depreciation costs;

[3] The Law of the water supply and sewerage service no. 241/2006, was recently modified to give local public administration authorities the ability to grant monthly aid according to the monthly income of the single person / family, by percentage compensation of the value of the water supply and sewerage service, within the limit of water consumption, respectively of an amount of waste water discharged to the sewerage network of 75 l / person / day.

- Operational performance of utilities could be significantly improved.

One potential way forward would be to encourage regular dialogue among the central and local water authorities and institutions, specifically to improve the flow of bottom-up information. There is potential for the development of locally specific, relatively lower cost interventions that could improve water quality and narrow the gap to environmental compliance. However, the prevailing centralized approach is unlikely to identify such opportunities.

In addition, Romania should focus on strengthening capacity to absorb funds. Along with general capacity building, this could be done through further developing a strong project pipeline, and measures to ensure the sustainability of investments.

The quality of infrastructure remains an issue, with much of the installed technology inefficient and outdated (Danube Water Program, 2015; EC, 2017). Non-revenue water (NRW) accounts for as much as 45% of water supplied. NRW comes from both physical losses (leakages in the distribution network) due to inefficient and aging infrastructure, and commercial losses (e.g. due to illegal connections in rural areas and under-metering of large customers). Although in line with averages in the Danube region, this rate is high compared to the average of most other EU member states (EurEau, 2017).

Romanian Authorities should focus short-term efforts on reducing non-revenue water due to illegal connections (often associated with irrigation water use) and under-metering. In addition to generating more revenue for operators, addressing commercial losses should improve the official figure for the national piped water access rate, as currently un-registered connections would be taken into account. Addressing leakages in the distribution network will require major rehabilitation investment that are long and complex to implement. In addition, regional utilities will likely continue to encounter challenges in reducing physical losses, as the small rural systems being acquired through the regionalization process are in poor condition.

3.2. Flooding

Flood risks remain a serious risk to humans and property, but Romania has made significant progress in terms of data collection, planning and governance. Romania is amongst the EU countries most subject to large flooding events, and about 13% of the country lies in floodplains. Between 2002 and 2012, Romania had the highest number of fatalities in the EU due to flooding (183) and the largest amount of houses damaged (43,900) (Romanian Waters, 2018[3]). The World Bank estimates that floods cost on average 140 million euros per year to the Romanian economy (World Bank, 2018[2]). However, in terms of proportion of gross domestic product (GDP) affected by floods, Romania does well compared to other EU countries which are less prone to floods (e.g., Croatia, Hungary). This can be seen as the result of considerable investments in both the flood management framework and protective infrastructure (World Bank, 2018[2]).

Romania has fulfilled the requirements of the EU Flood Directive, which focuses on floods risks assessment and mapping (Romanian Waters, 2018[3]). Future floods management investments identified in the Flood Risks Management Plans (FRMPs) are approximately 3.7 billion euros. These investments include: strengthening, raising and/or building new embankments and creation of new temporary storage areas for flood protection, and clearing the backlog for maintenance of existing flood protection infrastructure (World Bank, 2018[2]).

Challenges remain in implementing identified measures. One key challenge is around capacity for project preparation, as existing funding could be used more efficiently. In addition, there is no predictable national funding stream for both O&M and new investments.

Additional factors driving increased investment needs in the future are maintenance needs for ageing infrastructure and climate change. As is the case for WSS infrastructure, current flood protection infrastructure suffers from a maintenance backlog. However, this is in part mediated by the shift in approach from concrete canals to increasing of water retention capacity. Challenges remain in deciding

how to allocate available funding between shoring up ageing infrastructure versus investing in new measures.

Climate change will increase the frequency of flash flooding, which has become more damaging due to deforestation. Areas of formerly afforested land continue to be harvested through aggressive and some cases illegal logging (World Bank, 2018[2]). Deforested slopes are far more vulnerable to heavy rains without vegetation, as they lose their water retention capacity.

There is awareness and interest in the use of nature-based solutions for flood management. However, some significant implementation barriers remain. On the local level, fragmentation of land ownership (or uncertainties about ownership, in the absence of cadaster) and lack of incentives for private property owners to participate in such schemes is an issue. It is acknowledged that coordinating implementation of the Floods and Water Framework Directives generally resulted in synergies. Nevertheless, there are very few examples of this happening in practice (European Court of Auditors, 2019[4]). Opportunities remain to explore flood management options that exploit synergies with the Water Framework Directive by considering the use of natural infrastructure to reinforce and support existing flood defence investments.

3.3. Water framework directive

The quality of surface waters in Romania is good in comparison with other EU countries. Over two-thirds of Romania's rivers have good ecological status, while the chemical status is good for around 98 %. This is largely due to i) a large portion of the country is made up of rural and scarcely populated areas with little anthropogenic pressures and ii) highly polluting industries were closed in the early 1990s (World Bank, 2018[2]).

The most significant pressures on surface waters in Romania are diffuse pressures from discharges not connected to sewer network (25% of surface water bodies), diffuse pollution from agricultural (12%) and urban wastewater (5%) (EC, 2019[1]). The full implementation of the UWWTD should result in considerable reduction in pollution.

More assessment methodologies have been developed between the first and second River Basin Management Plans, and the confidence in assessments of ecological status has improved for rivers (EC, 2019[1]).

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