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Report No: PAD4095

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT AND
INTERNATIONAL DEVELOPMENT ASSOCIATION

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED CREDIT

IN THE AMOUNT OF EUR 44.1 MILLION
(US$50 MILLION EQUIVALENT)

AND A

PROPOSED GRANT

IN THE AMOUNT OF EUR 1.55 (US$1.80 MILLION EQUIVALENT)

TO THE

REPUBLIC OF MOLDOVA

FOR A

MOLDOVA WATER SECURITY AND SANITATION PROJECT

{RVP/CD CLEARANCE DATE}

Water Global Practice
Europe and Central Asia Region

CURRENCY EQUIVALENTS

Exchange Rate Effective November 30, 2021

Currency Unit =	Moldova Leu (MDL)
MDL 17.700 =	US$1
EUR 0.8813 =	US$1

FISCAL YEAR
January 1 – December 31

Regional Vice President:	Anna M. Bjerde
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Task Team Leader(s):	Susanna Smets, Amelia Midgley

ABBREVIATIONS AND ACRONYMS

ADA	Austrian Development Agency – the Operational Unit of the Austrian Development Cooperation
AF	Additional Financing
AMAC	National Water Utility Association (*Asociatia Moldova Apa-Canal*)
ANRE	National Energy Regulatory Agency
ASA	Advisory Services and Analytics
ATU	Autonomous Territorial Unit
BOD	Biological Oxygen Demand
BoQ	Bill of Quantities
CAPEX	Capital Expenditure
CBA	Cost-Benefit Analysis
CERC	Contingent Emergency Response Component
COD	Chemical Oxygen Demand
CPF	Country Partnership Framework
CWSC	Citizen Water and Sanitation Committee
DA	Designated Account
DED	Detailed Engineering Design
DFIL	Disbursement and Financial Information Letter
DRDP	Directorate of Regional Development Policy under MIRD
DWTP	Drinking Water Treatment Plant
EAP	Emergency Action Plan
EBRD	European Bank of Reconstruction and Development
ECAPDEV	Europe and Central Asia Capacity Development Trust Fund
EIB	European Investment Bank
EIRR	Economic Internal Rate of Return
EPIU	Public Institution "Environmental Projects Implementation Unit"
ESCP	Environmental and Social Commitment Plan
ESF	Environmental and Social Framework
ESIA	Environmental and Social Impact Assessment
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESS	Environmental and Social Standards
EU	European Union
EUWI+	EU Water Initiative Plus
FM	Financial Management
GBV	Gender-Based Violence
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GIES	General Inspectorate for Emergency Situations
GIZ	German Agency for International Cooperation (*Deutsche Gesellschaft für Internationale Zusammenarbeit*)
GoM	Government of Moldova
HBS	Household Budget Survey
HCF	Health Care Facility

HR	Human Resource
IAS	Individual Appropriate System(s)
IBNET	International Benchmarking Network for Water and Sanitation Utilities
IFR	Interim Financial Report
IFSP	Institutional Framework Strengthening Project
IMF	International Monetary Fund
IPF	Investment Project Financing
JMP	Joint Monitoring Program
JSC	Joint Stock Company
KfW	German Development Bank (*Kreditanstalt für Wiederaufbau*)
KPI	Key Performance Indicator
LMP	Labor Management Procedures
LPA	Local Public Authority
M&E	Monitoring and Evaluation
MARDE	previous Ministry of Agriculture, Regional Development and Environment
MIRD	Ministry of Infrastructure and Regional Development
MHM	Menstrual Hygiene Management
MIA	Ministry of Internal Affairs
MIS	Management Information System
MoAFI	Ministry of Agriculture and Food Industry
MoER	Ministry of Education and Research
MoEnv	Ministry of Environment
MoF	Ministry of Finance
MoH	Ministry of Health
MTR	Midterm Review
NEF	National Environment Fund
NGO	Non Government Organization
NPP	National Procurement Procedures
NPV	Net Present Value
NRDF	National Regional Development Fund
NRW	Nonrevenue Water
NSO	National Statistics Office
NWSSDP	National Water Supply and Sanitation Sector Development Plan
NWSSP	National Water Supply and Sanitation Project
O&M	Operation and Maintenance
OHS	Occupational Health and Safety
p.e.	Population Equivalent
PDO	Project Development Objective
PIE	Project Implementing Entity
PIP	Performance Improvement Plan
PIU	Project Implementation Unit
POM	Project Operations Manual
PP	Procurement Plan
PPL	Public Procurement Law
PPP	Purchasing Power Parity
PPSD	Project Procurement Strategy for Development

PRAMS	Procurement Risk Assessment Management System
PCG	Project Coordination Group
RDA	Regional Development Agency
RETF	Recipient-Executed Trust Fund
RPF	Resettlement Policy Framework
SCADA	Supervisory Control and Data Acquisition
SDGs	Sustainable Development Goals
SEP	Stakeholder Engagement Plan
SOE	Statement of Expenditure
STEM	Science, Technology, Engineering, and Mathematics
STEP	Systematic Tracking of Exchanges in Procurement
TA	Technical Assistance
ToR	Terms of Reference
TSS	Total Suspended Solids
UNICEF	United Nations Children's Fund
UTM	Technical University of Moldova (*Universitatea Tehnica a Moldovei*)
UWWTD	Urban Wastewater Treatment Directive
WASH	Water, Sanitation, and Hygiene
WBG	World Bank Group
WHO	World Health Organization
WSS	Water Supply and Sanitation
WWTP	Wastewater Treatment Plant

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DATASHEET

BASIC INFORMATION

Country(ies)	Project Name	
Moldova	Moldova Water Security and Sanitation Project	
Project ID	**Financing Instrument**	**Environmental and Social Risk Classification**
P173076	Investment Project Financing	Substantial

Financing & Implementation Modalities

[ ] Multiphase Programmatic Approach (MPA)	[✓] Contingent Emergency Response Component (CERC)
[ ] Series of Projects (SOP)	[ ] Fragile State(s)
[ ] Performance-Based Conditions (PBCs)	[ ] Small State(s)
[ ] Financial Intermediaries (FI)	[ ] Fragile within a non-fragile Country
[ ] Project-Based Guarantee	[ ] Conflict
[ ] Deferred Drawdown	[ ] Responding to Natural or Man-made Disaster
[ ] Alternate Procurement Arrangements (APA)	[ ] Hands-on Enhanced Implementation Support (HEIS)

Expected Approval Date	Expected Closing Date
31-Jan-2022	31-Jan-2027

Bank/IFC Collaboration

No

Proposed Development Objective(s)

The PDO is i) to increase access to safely managed water supply and sanitation services in selected rural areas and towns, and to strengthen national and local institutional capacity for water supply and sanitation service delivery; and (ii) in case of an Eligible Crisis or Emergency, respond promptly and effectively to it.

Components

Component Name	Cost (US$, millions)

Increasing access to safely managed WSS services in selected rural areas and towns	46.50
Strengthening institutional capacity at national and local levels for WSS service delivery	3.90
Project management and coordination	2.40
Contingent Emergency Response Component (CERC)	0.00

Organizations

Borrower:	Ministry of Finance
Implementing Agency:	Ministry of Infrastructure and Regional Development

PROJECT FINANCING DATA (US$, Millions)

SUMMARY

Total Project Cost	52.80
Total Financing	52.80
of which IBRD/IDA	50.00
Financing Gap	0.00

DETAILS

World Bank Group Financing

International Development Association (IDA)	50.00
IDA Credit	50.00

Non-World Bank Group Financing

Counterpart Funding	1.00
Local Govts. (Prov., District, City) of Borrowing Country	1.00
Trust Funds	1.80
Trust Funds	1.80

IDA Resources (in US$, Millions)

	Credit Amount	Grant Amount	Guarantee Amount	Total Amount
Moldova	50.00	0.00	0.00	50.00
Crisis Response Window (CRW)	50.00	0.00	0.00	50.00
Total	**50.00**	**0.00**	**0.00**	**50.00**

Expected Disbursements (in US$, Millions)

WB Fiscal Year	2022	2023	2024	2025	2026	2027
Annual	1.00	4.00	12.00	14.00	14.00	5.00
Cumulative	1.00	5.00	17.00	31.00	45.00	50.00

INSTITUTIONAL DATA

Practice Area (Lead)

Water

Contributing Practice Areas

Climate Change and Disaster Screening

This operation has been screened for short and long-term climate change and disaster risks

SYSTEMATIC OPERATIONS RISK-RATING TOOL (SORT)

Risk Category	Rating
1. Political and Governance	Moderate
2. Macroeconomic	Moderate
3. Sector Strategies and Policies	Substantial
4. Technical Design of Project or Program	Moderate
5. Institutional Capacity for Implementation and Sustainability	Substantial
6. Fiduciary	Substantial
7. Environment and Social	Substantial

8. Stakeholders	Moderate
9. Other	Moderate
10. Overall	Substantial

COMPLIANCE

Policy

Does the project depart from the CPF in content or in other significant respects?

[ ] Yes [✓] No

Does the project require any waivers of Bank policies?

[ ] Yes [✓] No

Environmental and Social Standards Relevance Given its Context at the Time of Appraisal

E & S Standards	Relevance
Assessment and Management of Environmental and Social Risks and Impacts	Relevant
Stakeholder Engagement and Information Disclosure	Relevant
Labor and Working Conditions	Relevant
Resource Efficiency and Pollution Prevention and Management	Relevant
Community Health and Safety	Relevant
Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	Relevant
Biodiversity Conservation and Sustainable Management of Living Natural Resources	Relevant
Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities	Not Currently Relevant
Cultural Heritage	Not Currently Relevant
Financial Intermediaries	Not Currently Relevant

NOTE: For further information regarding the World Bank's due diligence assessment of the Project's potential environmental and social risks and impacts, please refer to the Project's Appraisal Environmental and Social Review Summary (ESRS).

Legal Covenants

Sections and Description
The Republic of Moldova, no later than six (6) months after the Effective Date, and for purposes of implementing Part 2.1.a. of the Project, shall provide evidence satisfactory to the Association that DRDP under MIRD's structure, has been trained and has the capacity to lead the development and implementation of the NWSSDP.

Sections and Description
The Republic of Moldova shall ensure that no commissioning and transfer of infrastructure to LPAs under Part 1.1 (a) and 1.1 (b) of the Project is carried out prior to: (i) the relevant LPAs entering into a Delegation Agreement with a WSS Operator, and (ii) a WSS Tariff application has been submitted by said WSS Operator to ANRE, as per the existing WSS Tariff regulations.

Sections and Description
The Republic of Moldova, through MIRD, shall no later than (3) months after the Effective Date, establish the Project Coordination Group, referred to in Section I.A.2 in a manner satisfactory to the World Bank.

Sections and Description
No later than three (3) months after the Effective Date, to facilitate the carrying out of Part 1.1 of the Project, the Republic of Moldova, through MIRD, shall enter into RDA Implementation Support Agreements jointly with the PIU and each RDA, with terms and conditions acceptable to the World Bank, and thereafter maintain said RDA Implementation Support Agreement throughout Project implementation.

Conditions

Type	Financing source	Description
Effectiveness	Trust Funds, IBRD/IDA	The Republic of Moldova through MIRD, has prepared and adopted the Project Operational Manual in a manner satisfactory to the World Bank.
Type	Financing source	Description
Effectiveness	Trust Funds, IBRD/IDA	The Project Implementation Agreement between MIRD and the PIU has been entered into in a manner acceptable to the Word Bank.
Type	Financing source	Description
Effectiveness	Trust Funds, IBRD/IDA	The PIU has been strengthened with adequate staff as described in the Project Operations Manual with qualification and responsibilities acceptable to the Bank.

Type	Financing source	Description
Disbursement	Trust Funds, IBRD/IDA	No disbursements shall be made for Emergency Expenditures, unless and until the World Bank is satisfied, and has notified the Republic of Moldova of its satisfaction, that all of the conditions outlined in the Legal Agreements have been met.
Type	Financing source	Description
Effectiveness	Trust Funds, IBRD/IDA	The Grant Agreement has been executed and delivered and all conditions precedent to its effectiveness (other than the effectiveness of the Financing Agreement) have been fulfilled
Type	Financing source	Description
Effectiveness	Trust Funds, IBRD/IDA	The Financing Agreement has been executed and delivered and all conditions precedent to its effectiveness (other than the effectiveness of the Grant Agreement) have been fulfilled

I. STRATEGIC CONTEXT

A. Country Context

1. **Despite many years of solid economic growth and impressive poverty reduction gains, Moldova has witnessed frequent political changes and remains vulnerable to economic and financial shocks, specifically due to the pandemic[1].** Moldova, one of the poorest countries in Europe, is a landlocked country between Romania to the west and Ukraine to the north, east, and south. The country is home to 2.62 million[2] people with a gross national income per capita of US$4,570[3] (current US$2020, Atlas method), placing it at the upper end of lower-middle-income economies. In the context of overall growth, Moldova has made significant progress in reducing poverty and boosting shared prosperity. With average annual growth of 4.5 percent since 2000,[4] poverty has decreased dramatically and benefitted more citizens. The poverty headcount ratio at US$5.50 a day (purchasing power parity [PPP]) dropped from 90.1 to 13.4 percent between 2000 and 2018.[5] However, the Moldovan economy moved into recession in 2015 due to weaker external flows, large-scale bank fraud, and a drought. Affected by the COVID-19 pandemic and another severe drought in 2020, economic activity plummeted in 2020.

2. **The social and economic impacts of the COVID-19 pandemic are large and not yet over.** With a drop in GDP of 7 percent in 2020, the impact of COVID-19 combined with the drought has been one of the most severe in Europe. Employment dropped by 4.3 percentage points in 2020, with an estimated 62,000 jobs lost. Poverty - based on the upper middle income poverty line of US$5.50 per capita per day - is has increased by 2.7 percentage points in 2020 (from 12.9 percent to 15.5 percent), as households faced the impact of the crisis, including loss of employment and earnings, a reduction in remittances receipts, and the return of vulnerable migrants from abroad. Based on the national poverty line, poverty increased from 25.2 percent in 2019 to 26.8 percent in 2020.[5] In 2021 the economy has started to rebound gradually, on the back of the easing of the COVID-19 restrictions, but significant uncertainty remains.[6] The Government of Moldova (GoM) has responded to COVID-19 with an array of measures to protect citizens, businesses, affected economic sectors and strengthen health sector resilience. While Moldova entered the COVID-19 crisis with relatively strong fiscal, financial, and external buffers, financing needs are mounting. The International Monetary Fund (IMF) has launched a US$235 million package of macro-financial assistance[7], while the European Union (EU) has provided EUR 127 million in emergency budgetary support and announced an Economic Recovery Plan up to EUR 600 million for sustainable and inclusive recovery from the COVID-19 crisis in the country[8].

[1] This resulted in a pro-European government, backed with a parliamentary majority, established on August 6, 2021. At the same time the government was restructured with increasing the number of ministries from nine to thirteen.
[2] https://data.worldbank.org/indicator. This 2019 estimate is exclusive of the population in Transnistria.
[3] Current US$ for 20, Atlas method. https://data.worldbank.org/indicator.
[4] World Bank Group. 2019. *Moldova: Rekindling Economic Dynamism.* Country Economic Memorandum. World Bank, Washington, DC.
[5] Based on PPP 2018 prices: equivalent to MDL 1,343 per person per month (Household Budget Survey [HBS] 2018).
[6] World Bank Group, 2020. Moldova Economic Update Brief, December 23, 2020
[7] *https://www.imf.org/en/News/Articles/2020/04/18/pr20173-moldova-imf-executive-board-approves-emergency-assistance-to-address-covid-19*
[8] *https://ec.europa.eu/commission/presscorner/detail/en/IP_21_2712*

3. **Moldova's demographic trends exert additional stress on its development, and inequalities in basic services persist.** Moldova remains among the poorest countries in Europe, while citizens' aspirations are rising in line with living conditions and income levels of middle- and higher-income European neighbors. Emigration of the working-age population and an annual population decline of around 1.5 percent add to the country's economic, fiscal, and social fragility, although somewhat mitigated by the reversal due to the COVID-19 pandemic. Based on existing trends, Moldova may lose one-fifth of its current population by 2050. Population decline is particularly marked in rural areas and many towns, adding to the challenge of finding sustainable service delivery models.

4. **Poverty remains a largely rural phenomenon, with absolute poverty rates three times higher in rural areas compared to urban areas**[9] (table 1). Moldova is characterized by a largely rural population, with roughly 55 percent of the population residing in rural areas. Recent national poverty estimates show a challenging picture for rural areas, with 34.5 percent of the rural population below the absolute poverty line compared to 11.2 percent in urban areas such as Chisinau and Balti. Outmigration and ageing of the rural population leave older, single-headed households in a vulnerable position to sustain their livelihoods. Vulnerabilities are also felt by families with three or more children, which make up more than 40 percent of those living below the national poverty line. Public service delivery in rural areas lags urban areas on all fronts, including education, health, water, and sanitation.

Table 1. Poverty Profile and Trend in Moldova during 2014–2019 Based on National Poverty Line Estimates

	Share of people below national poverty line		
	Urban	**Rural**	**Total**
2014	15.6	39.5	29.5
2019	11.2	34.5	25.2

Source: NSO 2020.

5. **Moldova's labor participation is one of the lowest in Europe, and the development of human capital is needed to spur productivity.**[10] Despite efforts to improve Moldova's human capital, overall labor participation is low at 47.6 percent in 2020. An inadequately educated workforce constitutes the main business obstacle according to 20 percent of firms.[11] There are also considerable gender gaps related to access to economic opportunities. Despite educational parity, women's participation in the labor force is around 4 percentage points below that of men, and wages rates are lower for women due to their overrepresentation in low-paying economic sector and social norms which support gender-based job segregation. In particular, underrepresentation of women in science, technology, engineering, and mathematics (STEM) jobs is cause for concern. In 2017, for every female graduate in STEM, four men graduated. For engineering education, women represent 27 percent at technical college level, 20 percent at bachelor's level, and 26 percent at master's level (2019).

[9] Urban population share is estimated at around 45 percent of the population and rural around 55 percent of the population in 2018; The National Statistics Office (NSO) is currently adjusting population estimates and weights to account for internal migration and demographic developments.
[10] Based on the International Labour Organization's modeled estimate of the 15–64-year-old population for 2020. It should be noted that population migrating abroad is counted as inactive. https://data.worldbank.org/indicator.
[11] World Bank, European Bank for Reconstruction and Development, and European Investment Bank. 2019. *Moldova Enterprise Survey*. https://microdata.worldbank.org/index.php/catalog/3720.

6. **Moldova ranks as the most climate vulnerable country in Europe, according to the widely used Notre Dame Global Adaptation Initiative (ND-GAIN) vulnerability assessment methodology.**[12] Climate change is a risk to Moldova's economic recovery, threatens sustainability of future growth, and disproportionately affects rural populations as households rely on shallow wells for drinking water and rain-fed agriculture vulnerable to drought. In rural areas, livelihoods depend on agriculture, which employs 70 percent of the bottom 40 percent of the population. Rural areas felt the impact of the 2007, 2015, and 2020 droughts much more than urban areas. The socioeconomic costs of climate change associated with natural disasters such as droughts and floods are significant: during 1984–2006, they amounted to about US$61 million. The 2007 and 2012 droughts caused an estimated economic loss of about US$1.0 billion and US$0.4 billion, respectively.[13] The 2020 drought is estimated to have caused a drop of over 26 percent in agricultural value added and significant job losses[14].

7. **Droughts and floods are expected to occur more frequently and to be more severe in the future.** Most climate models predict a warming effect with longer dry spells. Moldova's climate is moderately continental, characterized by relatively mild winters (January average of −4°C) with little snow, long warm summers (average 20°C), and low humidity. The current climate shows annual precipitation of 460 mm varying from 370 to 560 mm with a declining gradient toward the south,[15] Climate change is projected to increase mean annual temperatures by approximately 2–3°C by 2050 and an increase of 32 hot days annually. Predictions for mean annual precipitation are uncertain, with most models showing either no significant change or a decrease of 10–15 percent by 2050. However, winters are projected to be drier and summers wetter, which could result in both increased floods and droughts.[16] While overall precipitation is expected to remain constant, the variability over the year is expected to increase dramatically; average runoff of the surface water is expected to decrease by 13 to 20 percent, while peak flows will increase. A future drier and warmer climate, under an expanded water demand scenario from irrigation, will see the appearance of more water-scarce hot spot areas, along the Prut and Dniester Rivers, and higher vulnerability to drought covering large parts of the country.[17]

8. **Moldova has limited adaptive capacity and low levels of resilience.** With the collapse of large-scale irrigation after independence, Moldova's agriculture sector has become increasingly vulnerable to weather shocks. Drinking water sources are also vulnerable to climate change: about 30 percent of the population relies on shallow wells, which run dry when water tables are low, as seen during droughts in 2007, 2012, and 2020, threatening the security of water supply in affected villages. National policies are geared toward replacing individual self-supply from climate-vulnerable and polluted wells with centralized systems and, where centralized systems already exist, replacing the use of deep groundwater with surface water due to the high levels of geogenic pollution which render it unsuitable or too costly to treat across

[12] World Bank. 2016. *Moldova Climate Adaptation Investment Planning.* Washington, DC.
[13] UNFCCC (United Nations Framework Convention on Climate Change). 2020. *Updated Nationally Determined Contribution of the Republic of Moldova.*
[14] World Bank. Forthcoming in 2022. *Moldova Systematic Country Diagnostic Update: Building Resilience and Enhancing Competitiveness.* Washington, DC.
[15] https://climateknowledgeportal.worldbank.org/country/moldova/climate-data-historical.
[16] https://climateknowledgeportal.worldbank.org/country/moldova/climate-data-projections.
[17] Smets, Susanna; Midgley, Amelia; Mao, Zhimin; Vladicescu, Veaceslav; Neumann, James E.; Strzepek, Ken; Pricop, Felicia. 2020. Moldova: Water Security Diagnostic and Future Outlook. World Bank, Washington, DC. World Bank.

most of the country.[18] Decreasing annual surface water runoff and reduced groundwater recharge, combined with national economic development targets, will likely lead to increased water security challenges and growing vulnerability of households to droughts and floods, highlighting the need for climate-resilient national planning and investment.[19]

B. Sectoral and Institutional Context

Overview of Water Resources and Access to Water Supply and Sanitation Services

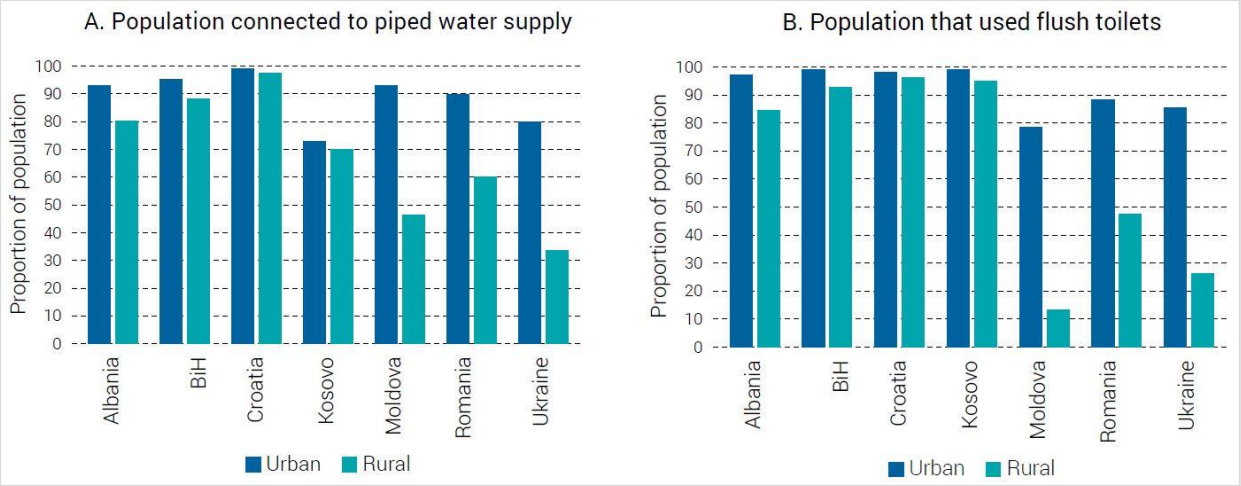
9. **Water security underpins much of Moldova's ability to rekindle dynamism in its economy, realize health and well-being outcomes for its people, and achieve environmental goals.** The World Bank's Water Security Diagnostic and Future Outlook[20] showed that water security, rather than being constrained by water endowments,[21] is limited by a lack of infrastructure, investments, financing, management capabilities, and enabling policies. The country requires significant investments across a range of water-dependent sectors if its growth and development ambitions are to be realized and resilience to economic and climate-related shocks increased. Moldova is committed to the Paris climate accord and has developed a National Climate Change Strategy. It underwrites the Paris Agreement's objectives of (a) holding the increase in the global average temperature to below 2°C above preindustrial levels and pursuing efforts to limit the increase to 1.5°C and (b) increasing the ability to adapt to the adverse impacts of climate change. Key objectives of the strategy are (a) improving the management and dissemination of disaster and climate risk information, (b) prioritizing climate change adaptation as a national and local priority with a strong institutional basis, and (c) building climate resilience through reducing risk and facilitating adaptation in priority sectors such as the water sector. The National Water Supply and Sanitation (WSS) Strategy 2014–2030[22] references the National Climate Change Strategy and emphasizes the need to integrate climate considerations into planning and project design.

10. **Access to WSS is lowest among European countries and constrained by large coverage gaps in rural areas, compounded by income status.** Stark disparities continue to exist in access and quality of water and sanitation services between urban and rural areas. Reliable services are vital for industry and businesses and for people to live productive lives. However, almost a million Moldovans rely on shallow, often polluted, and drought-prone wells for drinking, while pollution from untreated wastewater and the large-scale alteration of natural ecosystems threaten system resilience. Based on Joint Monitoring Program (JMP) data,[23] gains were made in rural water supply access from piped networks from 33 percent in 2000 to 57 percent in 2020, while urban access to piped services increased from 81 to 93 percent. However, compared to other countries in the Danube region, the share of population with access to basic

[18] *Ibid.*
[19] OECD (Organisation for Economic Co-operation and Development). 2013. *Adapting Water Supply and Sanitation to Climate Change in Moldova.*
[20] Smets, S. et al. 2020. *Moldova Water Security Diagnostic and Future Outlook.* Washington, DC.
[21] Moldova receives large surface water inflows from the Dniester and the Prut: total water resources endowments are estimated at 4,952 m^3/cap/year, above the level of water stress at 1,700 m^3/cap/year, and current water withdrawals form only 5 percent of total endowments.
[22] Republic of Moldova (2020). Government Resolution No. 442 of 1 July 2020 regarding Amendments to Government Resolution No. 199/2014 on Approval of the Water Supply and Sanitation Strategy (2014–2030).
[23] JMP data are derived based on linear extrapolations using national survey data and JMP population estimates; discrepancies between nationally reported data are due to differences in methods and definitions. See also: https://washdata.org/data.

water and sanitation services in Moldova is low, and the gap between urban and rural remains one of the largest in Europe and is one of the key water security issues facing the country (see figure 1 and table 2). Income levels also play a role in access to public water supply. Based on HBS 2019 data, within the rural population, households in the richest quintile[24] are 11 percentage points more likely to be connected than rural households in the poorest quintile. The poorest quintile of the rural population faces the largest obstacles to connect to public systems with 10.6 percent using private wells with indoor piping and 40.7 percent collecting water with buckets or carts from wells in the street. In 2018, out of a total of 1,220 centralized water systems in Moldova, 1,168 were functional, although performance data are not systematically available for these systems.

Figure 1. Access to Piped Water Supply in the Home and Flush Toilets for Moldova and Regional Comparators



Source: World Bank. 2018. *A Review of Rural Water and Sanitation Services in Seven Countries of the Danube Region.*

11. **HBS 2019 data provide the most recent picture on access to public water supply systems, being 70 percent, with urban access at 93 percent and rural access at 54 percent** (table 2). The water quality of the rural piped system is often below quality standards due to lack of treatment and poor quality of groundwater. Those not served by public centralized systems rely on so-called self-supply through private shallow wells, specifically vulnerable to climate risks as was seen in the droughts of 2012, 2015, and 2020 when water tables became critically low, and 80 percent of wells became uncompliant with drinking water norms (for example, nitrates and e-coli).[25] Despite water quality risks, households have invested in wells, piping, and indoor plumbing; almost one in every three people relies on self-supply by wells, and in rural areas this is almost one in every two.

12. **The rural-urban discrepancy in access to safely managed sanitation is large and the poorest segment of the rural population has the lowest level of service.** Over the past decade, access to sewer services has not seen much improvement. As per HBS 2019 data, sewer systems serve only 3 percent of the rural population, while reaching 78 percent of urban residents. Reliance on various types of on-site facilities in rural areas is near universal (table 2). Such on-site sanitation facilities would typically include

[24] The poorest quintile (Q1) is defined as the poorest 20 percent of the population, or households with a monthly household consumption per adult equivalent below MDL 1,962 (or US$112 per adult per month in 2019 prices). The richest quintile (Q5) has an average monthly consumption per adult equivalent of MDL 5,244 (or US$300 per adult per month in 2019 prices).
[25] Smets, S. et al. 2020. *Moldova Water Security Diagnostic and Future Outlook.* Washington, DC.

soak-away pits and/or some type of septic tank. In the absence of legislation, norms, and reference guidelines for on-site sanitation facilities, the quality of these facilities is unknown and construction unregulated. This leaves most rural households (63 percent) using outdoor dry pit latrines of poor hygienic status with limited comfort, often lacking handwashing facilities. The poorest quintile of the rural population mostly uses dry pit latrines (87 percent) compared to 34 percent among the richest quintile of the rural population. Also, the richest rural population quintile is much more likely to invest in a water-based indoor flush toilet (60 percent), than the poorest rural population quintile (12.6 percent). Adequate maintenance and operation and better hand hygiene are more likely to occur with indoor flush toilets.[26]

Table 2. Access to Drinking Water and Sanitation Services for Urban Rural and Income Groups

	Total	Urban	Rural	Poorest 20% Total	Richest 20% Total	Poorest 20% Rural	Richest 20% Rural
Water supply service categories[27]							
Public piped water system	69.7	93.3	54.1	55.4	85.3	48.7	59.2
Self-supply total: • Well with pipe in yard/house • Non-piped wells (or spring)	30.3 13.4 16.9	6.7 4.0 2.7	45.9 19.6 26.2	44.6 9.5 35.1	14.7 11.6 3.1	51.3 10.6 40.7	40.8 30.8 10.0
Sanitation service categories[28]							
Flush toilet to public sewer connection: • Indoor toilet • Outdoor toilet	32.5 31.8 0.7	77.9 76.2 1.7	2.7 2.6 0.1	10.7 10.2 0.5	62.3 60.1 2.2	0.5 0.5 0.0	5.6 4.9 0.7
Flush toilet to on-site system[a] • Indoor toilet • Outdoor toilet	25.5 25.2 0.3	12.3 12.1 0.2	34.2 33.8 0.4	12.6 12.3 0.3	26.3 25.9 0.4	12.6 12.6 0.0	60.0 59.0 1.0
Dry toilet (non-flush) [b]	42.0	9.8	63.1	76.6	11.5	86.8	34.3

Source: HBS 2019.

Note: a. No specific information is available; these could be septic tanks or soak-away pits (both would be at least a basic service).

b. No specific information is available on the type and quality of sanitation facility except that these are toilets without water flush.

13. **The discharge of untreated wastewater is widespread, polluting water sources and increasing the cost of treatment of surface water.** Although recent investments in wastewater treatment plants

[26] Due to winter conditions and the cost of heating, outdoor toilets are often not heated and may freeze; handwashing sinks are more likely to be included in indoor bathrooms.

[27] If wells and springs are protected (improved sources) and within 30-minute round trip, they qualify as basic water services. If water is free of contamination, accessible, and on premises, it is defined as safely managed. Moldova (2020) JMP national estimate for safely managed drinking is 74 percent and 16.5 percent for basic drinking water; estimates are based on additional assumptions. See also *https://washdata.org/data/household#!/dashboard/new*

[28] If sanitation facilities are improved (separating excrete from human contact) and not shared, they are deemed a basic service and deemed safely managed if collection and treatment and disposal/reuse is safely carried out. Moldova (2020) JMP estimate for basic sanitation is 79 percent; no estimate for safely managed can be made due to lack of data. There is no open defection in Moldova.

(WWTPs) for major towns have been initiated,[29] many existing plants are out of use or obsolete. Out of 1,168 centralized water systems, only 110 have a functional sewer collection system, and 73 have some form of functional treatment plant. Uncollected wastewater and septage forms a public health risk, exacerbated by climate change, when floodwaters combine with uncollected wastewater and cause overflowing septic tanks, exposing people to pathogens.

14. **The water, sanitation, and hygiene (WASH) situation in many rural schools and health care facilities (HCFs) is poor, and the issue has gained visibility due to the COVID-19 pandemic.** No comprehensive data on WASH in HCFs are available,[30] but preliminary data from the Ministry of Health (MoH) indicate that at least half of rural HCFs do not have safely managed sanitation and/or drinking water services and lack adequate hygiene.[31] A 2016 United Nations Children's Fund (UNICEF) situation analysis[32] highlights that 45 percent of rural schools rely on outdoor dry pit toilet facilities, most of those without handwashing basins, and 69 percent have no running water. A water quality audit by UNICEF in 2010 highlighted that one in four students is exposed to major risks and one in three to moderate risks due to noncompliance of water quality for nitrates, microbiological contamination, fluoride, and, to a lesser extent, boron.[33] A 2016 water quality survey in kindergartens showed similar pattern of noncompliance.[34] The Ministry of Education and Research (MoER) has improved the sanitation situation in kindergartens with 96 percent now reported to have functional indoor toilets, although water quality and presence of handwashing facilities are not known. In primary and secondary schools, only 69 percent of all 1,136 schools are reported to have functional indoor toilets[35] and 351 have outdoor pit latrines. The Government has set targets for WASH access in educational institutions under the WHO-led 'Protocol on Water and Health' and anticipates targets for WASH in HCFs in the plan for 2021.[36]

Institutional and Legislative Overview, Financing, and Performance of WSS Services

15. **Institutional weaknesses underpin many of the infrastructure, service delivery, and finance gaps in the WSS sector.** Several reforms and legislative documents have been enacted in recent years,

[29] Including in Chisinau, as well as in other towns mostly with support of the EU/European Bank for Reconstruction and Development (EBRD)/European Investment Bank (EIB) and the German Development Bank (*Kreditanstalt für Wiederaufbau,* KfW).

[30] The World Health Organization (WHO) intends to support the MoH with a national assessment on water supply, sanitation, hygiene, waste management, as per WHO/UNICEF (2018) core indicators for monitoring WASH in health care facilities in Sustainable Development Goals (SDGs).

[31] Different categories of health care facilities exist in rural areas, including health offices, health centers, family doctor office, and family doctor centers; all are supervised by a health district medical institution (often multiple supervisory institutions exist within one administrative district).

[32] UNICEF. 2016. *Children in the Republic of Moldova. Situation Analysis 2016*.

[33] UNICEF. 2010. *Study on the Quality of Drinking Water, Sanitation and Hygiene Practices in the Schools of the Republic of Moldova.*

[34] Survey by the MoH supported by UNICEF found noncompliance for nitrate (22.6 percent), fluoride (13.6 percent), boron (24.4 percent), and microbiological indicators (22.2 percent). See: Institute for Public Health. 2016. *Study on the Quality of Drinking Water, Sanitation and Hygiene Practices in the Preschool Institutions of the Republic of Moldova.*

[35] Evidence from a World Bank-supported analysis in Romania's schools supports a correlation between indoor WASH facilities and learning outcomes.

[36] National Programme for Implementation of the Protocol on Water and Health for the years 2016–2025.

focused on harmonization and alignment with the EU's Water Framework Directive.[37] At the national level, in August 2021, a reorganization of the previous Ministry of Agriculture, Regional Development and Environment (MARDE) led to the establishment of three ministries, the Ministry of Infrastructure and Regional Development (MIRD), the Ministry of Environment (MoEnv), and the Ministry of Agriculture and Food Industry[38]. The Ministry of Infrastructure and Regional Development (MIRD) that has been assigned the policy and investment mandate for drinking water supply and sanitation services, and the Regional Development Agencies (RDAs), responsible for territorial planning and execution of regional investment funds, remain under MIRD's subordination. The Ministry of Environment (MoEnv) has retained the policy mandate for Integrated Water Resources Management (IWRM), flood & drought management, and environmental policies and legislation. Apele Moldovei, subordinate to MoEnv, has been responsible for implementing policies in water resource management, irrigation, and drainage, as well as water supply and sanitation (WSS). *De facto* Apele Moldovei has played a limited role in WSS policy implementation and sector development and its reform is still to be completed, consolidating proposed basin-level water management and allocation planning and transferring the management of irrigation systems.[39]

16. **WSS sector performance is hindered by missing functions, lack of clarity on institutional roles, and poor coordination on infrastructure planning and implementation.** The lack of a capacitated and resourced WSS lead entity/unit has resulted in critical functions being insufficiently executed, or not executed at all, such as (a) monitoring and operationalizing of policies and reforms; (b) investment planning, prioritization, and ensuring of coherent and efficient implementation of investment funds and quality assurance; (c) monitoring of sector performance and development of incentive programs for better service provider performance; (d) provision of technical assistance (TA) to WSS operators and the local government (for example, in support of regionalization of service providers); and (e) human resources (HR) development and innovation. With the reorganization of the Government structure in August 2021, the Directorate for Regional Development and Policy (DRDP) under MIRD is assumed to be taken on these key WSS sectoral functions and will require adequate staffing, training and capacity development to do so effectively.

17. **Moldova's recently revised National WSS Strategy 2014–2030[40] endorses SDG target 6.1 and 6.2, sets national interim targets for 2024, and articulates strategic reform directions**. The strategy's targets are to achieve coverage with WSS[41] infrastructure of 80 percent in urban areas and 75 percent in rural areas by 2024. The strategy stipulates improvement of the management and professionalization of services through regional WSS companies, leaving space for public-private models in geographies where regionalization is not delivering immediate advantages. It articulates the need to improve the regulatory environment, with a focus on inclusion, quality, and sustainability of services. At the same time, the WSS sector is a key priority area in the regional development policy, as reflected in the draft National Strategy

[37] Moldova signed the Association Agreement with the EU in 2014 and has made good progress in harmonization legislation and development of instruments required under EU Water Framework Directive.
[38] The Ministry of Agriculture and Food Industry (MoAFI) focusses on agriculture and food industry policies, legislation, and the implementation of agribusiness subsidy schemes through its subordinate entities. Mandates for irrigation strategy, policy and investment planning requires further clarification and will require close coordination between MoAFI and MoEnv.
[39] The envisioned reform for Apele Moldovei is meant to set up basin-level administrative units and reorganize its subordinate state-owned enterprises that operate irrigation systems and large water transfer schemes and other hydraulic structures.
[40] Updated and approved by Government Decision 440 of July 1, 2020.
[41] Sanitation refers to both access to wastewater networks and treatment systems and on-site facilities such as septic tanks.

for Regional Development 2022-2028[42] and the proposed regional infrastructure program financed from the National Regional Development Fund (NRDF).

18. **However, expenditures in the past have been inadequate to reach national targets, biased toward urban areas, and reliant on external transfers.** Domestic funds in the sector are fragmented, with implementation not well coordinated. Current levels of investments in the sector are just 1.4 percent of government expenditure or 0.5 percent of GDP in 2017. Expenditure for WSS—estimated at around US$30–35 million annually—is less than half of the estimated requirements to reach the SDG basic service targets, is biased toward urban areas,[43] and relies heavily on external donor transfers. The National Regional Development Fund (NRDF) and the National Environment Fund (NEF) are the most important sources of government financing for WSS. The NEF and NRDF have different institutional implementation mechanisms, with NEF funds, under MoEnv, transferred to and executed by LPAs and the NRDF, under MIRD, executed through its Regional Development Agencies (RDAs).[44] The performance record of the NEF is poor, characterized by weak results orientation, lack of quality assurance, delays in execution of approved projects, and transparency issues. The NRDF has a strong track record, as RDAs are well staffed, having benefited from capacity building and donor support and could ensure a more efficient mechanism for all WSS projects. As of October 2021, a reform of all national funds has been launched to ensure a more efficient, integrated, and transparent allocation of funds, and DRDP under MIRD is expected to take on a coordination, planning, quality assurance and monitoring role for financing of WSS infrastructure.

19. **While Moldova has embarked on regionalization of services, regulatory reform, and a licensing system in the WSS sector, work remains to be done to improve this framework and its implementation.** Moldova made important steps to develop the economic management framework for the sector, having passed Law No. 303/2013 on Public WSS Services and having established a regulator, the National Energy Regulatory Agency (ANRE) in 2014. Law 303, with recent amendments in 2019, provides LPAs the option to deliver services under direct management or under a delegation contract to a licensed operator. While Law 303 introduces licensing requirements for certain WSS operators,[45] 44 licensed operators have been registered by ANRE, mostly as municipal enterprises and nine as joint stock companies (JSCs). [46] Services provided in rural areas are delivered directly by municipalities or by unlicensed communal enterprises and are not regulated by ANRE. There are over 900 of such unlicensed operators, with LPAs setting the tariffs and without much accountability for service quality or performance. Moldova's regionalization approach initially strived to set up three large WSS operators across the country, but a more gradual approach has evolved that fosters voluntary intercommunal cooperation initially at the district level.[47] To support

[42] The National Regional Development Strategy is scheduled to be approved by end of 2021
[43] Moldova BOOST data illustrate that locally executed expenditures on WSS by rural Local Public Authorities (LPAs) have been around US$5 per capita or less annually (2011–2017), while urban areas have higher expenditure levels, as they tend to receive more external funds.
[44] These include RDA North, RDA Centre, RDA South, and RDA Autonomous Territorial Unit (ATU) Gagauzia.
[45] Law 303 stipulates that for WSS operators providing service at the level of a commune (a rural LPA), a requirement for licensing is that water supply, wastewater collection, and wastewater treatment services all must be provided. Since wastewater treatment is virtually absent in rural areas, only five licensed companies serve below 5,000 people. For operators at the level of towns and cities, there is no such requirement to deliver wastewater collection and treatment.
[46] The joint stock company is the preferred organizational form for professional WSS operators. Out of the six JSCs, only one JSC, Nisporeni, thus far has several LPAs as founding members.
[47] The Law of Self Governances assigns WSS competencies to LPAs and consolidation of service providers is hence not mandatory by law.

universal access, a so-called 'portfolio approach' is needed, accelerating the regionalization of licensed operators, while providing interim assistance to communal operators[48] and introducing support to self-supply in sparsely populated areas. There are now eight regional operators[49] that—in addition to the district town—are delivering services to nearby rural LPAs under delegation contracts. Further changes in Law 303 are needed to accelerate regionalization and reduce the fragmentation of WSS operators. An upgrade of the tariff framework, inventorying of WSS assets,[50] performance benchmarking of operators, and incentives and subsidies aligned with performance improvements and regionalization are recommended while mainstreaming climate considerations (for example, nonrevenue water [NRW] and energy efficiency).

20. **The current tariff framework and its slow implementation shows weaknesses that hinder sustainability and inclusivity of service delivery.** A uniform methodology to set WSS tariffs was introduced in 2014[51] through several regulations issued by ANRE. Thus far 17 operators have their tariffs approved according to ANRE methodology, while others struggle to collect all necessary data and fulfill the requirements. In 2019, in line with Law 303, amendments were introduced that stipulate a royalty component[52] in the tariff for the use of public assets delegated in management by LPAs to WSS operators. However, currently none of the licensed operators has an approved tariff based on the new tariff methodology, requiring this royalty is to be deposited in a development fund to finance capital expenditures (CAPEX) maintenance and (re-)investment. Operators and LPAs face issues in developing the correct tariff submission, delegation contracts and related asset transfers, essential for the sustainability of the service delivery. Tariff regulations could be enhanced, for example, guidance on domestic and non-domestic tariffs,[53] fixed charges and block tariffs, and through a social support mechanism to protect the poor and vulnerable. Currently, average tariffs for water supply are estimated to be around 2 percent of average household income,[54] and poor households are already approaching affordability constraints.

21. **Moldova's WSS systems, often built in Soviet times, are in poor condition due to lack of maintenance, undermining service quality and efficiency.** Overall, the quality of water supply service has improved, although technical and financial performance across service providers varies, with many utilities struggling to meet total cost recovery, unable to invest in expansion, rehabilitation, and reinvestment measures to improve efficiency. Despite rising tariffs and operational cost recovery, Moldova's WSS services remain unsustainable and depend on transfers and capital subsidies from

[48] Including those licensed by ANRE and developing basic information and guidance for the local rural operators (until the time they will be absorbed/aggregated).
[49] These are Servicii Comunale Floresti JSC, Apa-Canal Leova JSC, Apa-Termo Ceadar-Lunga JSC, Regia Apa-Canal Orhei JSC, Regia Apa-Canal Soroca JSC, Hincesti JSC, Apa Canal Nisporeni JSC, and Apa-Canal Cahul JSC. Thus far only Nisporeni JSC has multiple LPAs as the founding members. This means that the rural LPAs are represented in the governance structure of the JSC.
[50] All WSS assets by law (since 2019) are required to be public assets, transferred on the balance sheet of district (for intercommunal assets) and local administrative councils.
[51] Before 2014, the competency to approve tariffs was with the local councils.
[52] The royalty component can be the maximum of the depreciation charge for the assets given under economic management to the operator. The royalty should be included in the delegation contract as well as the list of assets that is transferred for management by the operator.
[53] In line with the 'polluter pays' principle.
[54] Expenditure of MDL 130 and 90 per household per month for water and wastewater, respectively, and average monthly household income of MDL 6,000 (assumed consumption 100 liters per capita per day (lpcpd) and 2.5 people as average household size).

government. Weak management capacities and outdated infrastructure translates into high NRW losses, inefficient operations, and low staff productivity. When comparing Moldova's WSS sector performance with other countries in the Danube region, weaknesses remain in access, quality of wastewater services, low levels of total cost recovery and investment.[55] Table 3 illustrates several key performance indicators (KPIs) at the sector level.

Table 3. Overview of Performance Indicators for Moldova WSS Utilities

Key Performance Indicator	2008	2018
NRW (%)	41.2	40.2
NRW (m^3/km network/day)	34.2	22.4
Operational cost recovery (total) (%)	103	110
Unit costs per m^3 produced (water and wastewater) (US$/$m^3$)	0.89	0.84
Unit revenues for m^3 sold (water and wastewater) (US$/$m^3$)	0.91	0.93
Average tariff for water (based on 15 m^3/connection/month) (US$/$m^3$)	n.a.	0.97 (0.3–1.4)
Average tariff for wastewater services (based on 15 m^3/connection/month) (US$/$m^3$)	n.a.	0.68 (0.1–1.3)
Water consumption (total - residential) (lpcpd)	156–114	129–100
Number of staff per 1,000 water connections	17.3	8.7
Metering level (%)	79	96
Continuity of service (hours/day)	20.8	23.5

Source: International Benchmarking Network for Water and Sanitation Utilities (IBNET) database, https://database.ib-net.org; data collected by the national water utility association (*Asociatia Moldova Apa-Canal,* AMAC) based on 41 utilities in 2018 and 39 utilities in 2008.

22. **The legal framework for sanitation is mostly aligned with the EU Urban Wastewater Treatment Directive (UWWTD), but normative documents and enabling measures for improving on-site sanitation do not yet exist.** Moldovan discharge standards for municipal wastewater treatment are similar, although not identical, to those in the EU UWWTD.[56] Agglomerations[57] below 2,000 p.e. require 'adequate' treatment for effluent of individual systems to be discharged into sewer systems. Construction and design norms for sewer and wastewater treatment are reportedly outdated, and for settlements below 2,000 p.e., there are no normative documents for small-group systems or individual on-site solutions. Given the

[55] World Bank. 2019. *Update 2018: A State of the Sector - Review of Water Supply and Wastewater Services in the Danube region.* Washington, DC.

[56] For agglomerations above 10,000 p.e., collection and tertiary treatment is required with limits identified for biological oxygen demand (BOD_5), chemical oxygen demand (COD), and total suspended solids (TSS) limits as well as for nutrients Total-N (nitrate) and Total-P (phosphor). For agglomerations between 2,000 and 10,000 p.e. collection and secondary treatment with only BOD_5, COD, and TSS limits are set. Agglomerations below 2,000 have no discharge limits and appropriate individual systems are required to have a similar level of 'adequate' secondary treatment. Moldova has issued Government Decision 950 of 2013 for the approval of the regulation on the requirements for collection, treatment, and discharge of wastewater in the sewerage system and/or in emission for urban and rural localities; it includes rules to establish agglomerations. Also, the delineation of areas that are considered nitrate sensitive, in line with EU Nitrates Directive (91/676/EEC) has not yet been executed.

[57] It should be noted that Moldova has not yet carried out the exercise to determine boundaries of the agglomerations, which do not have to follow administrative boundaries. This is envisioned as part of a national WSS sector development plan.

highly dispersed rural population[58]. Moldova must develop a systematic approach toward so-called Individual Appropriate System(s) (IAS).

23. **Overall, the water sector in Moldova suffers from a lack of specialized staff with experience in water infrastructure operation and management and implementation of investment projects.** Critical bottlenecks for HR development are (a) difficulties in attracting young, qualified staff, specifically women, at the master's, bachelor's, and technical college levels and (b) limited qualifications of existing—predominantly male—WSS operator staff. Currently, around 29 percent of the staff in WSS operators are female, and among engineers the share of female engineers is 15 percent.[59] Asociatia Moldova Apa-Canal, AMAC, created in 2000, supports the promotion of professional development programs, in collaboration with development partners and the Technical University of Moldova (*Universitatea Tehnica a Moldovei*, UTM).[60] The bachelor's program at UTM for WSS management historically delivered around 15–20 graduates annually,[61] but the course has been discontinued for the past three years despite the acute need to attract new talent to the sector.

C. Relevance to Higher Level Objectives

24. **The project will contribute to a more resilient, inclusive, and sustainable recovery in Moldova as outlined in the World Bank Group (WBG) COVID-19 Response Approach Paper.** Inadequate WSS directly affects human capital accumulation, cognition, educational outcomes, and welfare. Access to improved WASH services positively affects handwashing practices that can curb the spread of COVID-19 and reduce the incidence of waterborne and infectious diseases. Improving WSS access supports wide economic benefits with disproportionate benefits to the poor. Women and children are among those who benefit most from access to improved services, specifically in schools and health centers. Better WSS services enable productivity, economic growth, and creation of jobs and can contribute to slowing outmigration from rural areas. With its rural focus, the project responds to the second pillar 'Protecting the Poor and Vulnerable'. Equally, the project supports the fourth pillar, 'Strengthening Policies, Institutions and Investments for Rebuilding Better', as it contributes to (a) enabling policies for sustainable and inclusive services (for example, on tariff regulation, sanitation); (b) strengthened institutions at the national, regional, and service provider levels; and (c) investments that increase the resilience of the population through reduced health risks, arising from reliable water access, better water quality, and reduced exposure to pathogens associated with unhygienic sanitation, poor and overflowing sewer systems, and lack of wastewater treatment.

25. **The project is fully aligned with the FY18–FY21 Country Partnership Framework (CPF) and is expected to directly support the forthcoming CPF (FY22–FY27) including action on climate change.** As outlined in the Performance and Learning Review of the CPF for Moldova (Report No. 144635-MD), the

[58] Census 2014 shows that there are only 31 LPAs with a population above 10,000, while 594 LPAs have a population below 2,500 (median is 1,830).
[59] IBNET database.
[60] The UTM, a public university, through its Institute for Continuous Learning, is the only education institution in Moldova with a Ministry of Education accredited WSS professional development program for WSS staff/employees at the bachelor's and technical college level.
[61] For 2011–2016 for both part-time (5 years) and full-time (4 years) bachelor's studies.

project forms part of the restructuring stage of the WBG's response to the COVID-19 crisis[62]. Through improving WSS access in towns and rural areas, the project contributes to the second pillar of the CPF 'improving inclusive access to, efficiency and quality of public services'. The project also supports the first pillar of the CPF on economic governance, through strengthened management of public sector assets and activities on economic regulation. The project promotes resilient services and delivers adaptation and mitigation benefits, aligned the forthcoming CPF FY22-FY27. Moldova's total cost of climate change adaptation inaction is estimated at around US$600 million, equivalent to 6.5 percent of the country's GDP[63] with one-third of this experienced in the water sector, further highlighting the need for climate resilience in the project. This is done through building resilience in infrastructure design and solutions, increasing resilience of communities through better WSS services, and introducing climate resilience in planning and management capacities of institutions, at the WSS operators and national levels. Finally, the project is consistent with the Gender Action Plan[64] goals to increase economic opportunities for women and to reduce occupational segregation.

26. **The project is fully aligned with the WBG Climate Change Action Plan (CCAP)[65] and the Green, Resilient, and Inclusive Development framework for sustainable development.** Specifically, the project improves resilience of communities through climate-resilient designs of water supply and wastewater infrastructure, addressing the risk of floods and droughts. The water supply investments will protect vulnerable villages and households, now dependent on shallow wells, from drought through reliably provided centralized water supply. For households facing repeated flooding, sewer connections will incorporate measures to protect households and ensure resilience of their services. At the utility level, the project incorporates climate adaptation and mitigation measures through water use efficiency (NRW), metering, energy efficiency measures, and business continuity plans for operators, while support for regulatory changes is expected to result in tariffs that are climate smart. Sector planning, monitoring, and financing will integrate climate risks, and finally, through the incorporation of the Contingent Emergency Response Component (CERC), the project enables additional adaptive capacity at the national level to respond to climate emergencies. On the mitigation side, impacts are associated with greenhouse gas (GHG) emissions reductions, flowing from wastewater investments and energy-efficient technologies for WSS. Investments integrate specific measures for the poorest and measures to increase sustainability and efficiency of WSS operations.

27. **The project supports Moldova's national policy ambitions and development strategies.** It supports universal access under SDG 6 with priorities of inclusive service delivery in the National Development Strategy 'Moldova 2030' and the National WSS Strategy 2014–2030. It is aligned with Moldova's environmental and climate goals expressed in Moldova's 2nd Nationally Determined Contribution, which incorporates the concept of integrating climate adaptation into medium- and long-term development planning, increasing the resilience of economic sectors, and accelerating the transition toward low carbon development. Delivering reliable and resilient WASH services to households and in

[62] And has been included in the Country Program Adjustment Note Responding to COVID-19, issued in FY21.
[63] World Bank. 2016. *Moldova - Climate Adaptation Investment Planning Technical Assistance (English).* Washington, DC: World Bank Group.
[64] A new Country Gender Assessment is under preparation to help update the Country Gender Strategy dating from 2014.
[65] World Bank Group. 2021. *World Bank Group Climate Change Action Plan 2021–2025: Supporting Green, Resilient, and Inclusive Development.* World Bank, Washington, DC.

social institutions enhances quality of life, reduces health care and coping costs, and promotes growth. The project delivers environmental benefits by contributing to water quality restoration of waterbodies.

II. PROJECT DESCRIPTION

A. Project Development Objective

PDO Statement

28. **The Project Development Objective (PDO) is i) to increase access to safely managed water supply and sanitation services in selected rural areas and towns, and to strengthen national and local institutional capacity for water supply and sanitation service delivery; and (ii) in case of an Eligible Crisis or Emergency, respond promptly and effectively to it.**

29. **The PDO is in line with SDG targets and national goals and objectives.**[66] For water supply, the PDO is realized through the development of climate-resilient and efficient drinking water treatment facilities and expansion and upgrading of water supply systems with household connections. For sanitation, this is realized through developing new WWTPs, expanding wastewater collection systems with household connections, and supporting households to improve on-site sanitation facilities to safely managed levels in rural areas and towns[67]. In social institutions, WASH facilities will be improved to at least basic service levels.[68] The second part of the PDO refers to strengthening capacities at both the national and local levels for more sustainable water supply and sanitation service delivery.

PDO Level Indicators

30. **The PDO achievement will be assessed against the following indicators for the various elements of the PDO:**

PDO 1: Increase access to safely managed water supply and sanitation services in selected rural areas and towns:

(a) People provided with access to safely managed water services in selected rural areas and towns (number/gender disaggregated)

[66] Definitions of safely managed services are provided by the JMP at www.washdata.org. For drinking water supply, this means services are (a) delivered on premises through household connections, (b) reliably available through 24 hour per day service, and (c) free of contamination following national drinking water quality standards. For sanitation, this means that services are (a) delivered through an improved and not shared facility at the household level, (b) safely managed collection, and (c) safe off-site or in situ treatment and disposal.

[67] Definitions of the Moldova National Bureau of Statistics classify all areas including district towns as "rural", except for the capital Chisinau (632,000 population estimate in 2019) and the city of Balti (population estimate of 146,000 in 2019) that are classified as urban.

[68] For institutional WASH in schools and HCFs, the JMP definition refers to the basic service level.

(b) People provided with access to safely managed sanitation services in selected rural areas and towns (number/gender disaggregated)

PDO 2: Strengthen national and local institutional capacity for water supply and sanitation delivery:

(c) National Water Supply and Sanitation Sector Development Plan (NWSSDP) with prioritized investment program and financing strategy developed and under implementation (text)

(d) Number of participating operators demonstrating core institutional capacities[69] for improved water supply and sanitation service delivery (Number).

B. Project Components

31. **The project seeks to transform Moldova's WSS service delivery approach through innovative local governance and investment models and by creating a national platform to subsequently scale up investments and service delivery.** This will be done through a multipronged approach: (a) establishing the institutional foundations for sustainable service delivery at the local level; (b) delivering critical investments, including the piloting of new approaches; and (c) building the institutional foundations for a scaled-up programmatic delivery of a national WSS program, incorporating lessons learned.

32. **The project includes critical water supply and wastewater subprojects, a demonstration pilot for on-site sanitation to inform and accelerate scale-up under a national WSS program, and a learning and capacity-building agenda to implement reforms for regional service delivery models.** Investment will be preceded by support to ensure that WSS operators—in line with Moldova's regionalization and reform agenda—are licensed and have service delegation contracts in place with LPAs ensuring clear roles and functions of parties involved in the operation and management of WSS assets and that tariffs applications are updated to ensure for financial sustainability.[70] While there is one successful example of a regional licensed operator, founded by multiple LPAs and under the regulatory reach of ANRE, there is a need to expand the model and ensure that lessons are captured. Thus far, only 17 operators have their tariffs approved according to the ANRE methodology, while others struggle to fulfill the requirements for delegation and asset transfer. Currently, none of the licensed operators have an approved tariff based on the new tariff methodology that allows for full cost recovery, and efforts need to be scaled up in ensuring that these reforms are put into practice. As such, institutional development efforts under Component 1 will move in parallel with reform efforts under Component 2, putting in place management arrangements at the local level, and developing and implementing an NWSSDP, a critical tool for implementation of reforms. The importance of a well capacitated lead unit, assigned to be DRDP under MIRD, to facilitate and monitor the implementation of reforms under such future sector development plan is critical.[71] Under

[69] Operators should meet the following five core institutional capacities: (a) have reported on KPIs in a timely and transparent manner to shareholders and through citizen engagement channels, (b) have consulted with customers on the Performance Improvement Plan (PIP) and included feedback, (c) have implemented or are in the process of implementing all measures in the PIP, (d) are licensed and have delegation contracts in place with all relevant LPAs where services are provided, and (e) have approved and updated tariffs in place or have submitted a tariff application to the national regulator compliant with the regulatory framework. Delegation contracts refer to those developed between LPAs/district councils and licensed WSS operators that will manage the newly created assets under the project. KPIs will be defined in Year 1 of the project.

[70] The criticality of these reforms is captured by a legal covenant on service delegation to licensed WSS operators with ANRE regulated tariffs (see Datasheet).

[71] The criticality of a clearly assigned entity is captured by a legal covenant (see Datasheet).

Component 2 of the project, capacities of WSS operators as well as ANRE will be enhanced for scaling up the implementation of these critical reforms. Recommendations for further reform were prepared as part of preparation activities through consultations with stakeholders will require further refinement and validation (see Box 1).

33. **Criteria for the selection of WSS investments focused on criticality of investments in terms of both needs of the population and their ability to demonstrate lessons for broader impact**, for example, on establishing regional WSS operator in rural areas, delegation contracts, and the application of the new tariff methodology, as well as the on-site sanitation pilot. All the preliminary selected subprojects are aligned with priorities under the government's National WSS Strategy 2014–2030, and the Regional Development Strategy 2022-2028. The preliminary selected water supply subprojects have been selected in line with the following criteria: (a) strategic projects in the National Action Plan 2020–2024 with no financing source identified, (b) potential for regional phased expansion and increase in beneficiaries, (c) rural areas with high poverty,[72] (d) areas with limitations of the existing water sources in terms of noncompliant water quality and/or risk to seasonal insufficiency, (e) availability of feasibility and design documents to support readiness and (f) demonstrated engagement and interest of LPAs[73], including to co-finance a part of the civil works. Preliminary subprojects for wastewater collection and treatment are selected based on (a) strategic projects in the National Action Plan 2020–2024 with no financing source identified, (b) towns with more than 15,000 people, (c) at least two-thirds of the town to be supplied through water connections (d) high environmental impact due to pollution of surface water resources, (e) availability of conceptual studies, and (f) high engagement and interest of LPAs[74]. The on-site sanitation pilot will have a demonstration purpose to generate lessons on how to accelerate and scale up on-site solution as an alternative to costly wastewater systems in rural and/or peri-urban settlements. Given the project's framework nature, prioritization criteria for subprojects are detailed in the POM.

34. **Investments in WSS services for households and in social institutions are combined with investments and capacity building to elevate the performance of WSS operators and measures at the national level for sector development and reform.** Investments will be underpinned by package of institutional support at the national and local levels to support sector modernization, building on lessons learned from investments and reform at the local level. National-level capacity building will focus on filling the missing functions in the sector that would allow for a programmatic approach to sector development, including the development of an NWSSDP, the streamlining and reform of sector funding, and supporting of policies and regulations. The total envelope of the project is EUR 46.5 million/US$52.8 million consisting of EUR 44.1 million/US$50 million equivalent IDA financing; a EUR 1.55 million/US$1.8 million equivalent co-financing grant from the Austrian Development Agency – the operational unit of the Austrian Development Cooperation (ADA), to be administered by the World Bank; and a EUR 0.86 million/US$1 million equivalent contribution to civil works under Subcomponent 1.1 by beneficiary LPAs. The co-financing Recipient-Executed Trust fund from ADA will contribute to specific activities under Subcomponent 1.1 and Subcomponent 2.1 (see annex 2). The project consists of four components.

[72] Poverty levels were estimated through World Bank poverty mapping initiative at the district level using HBS (2014) and census (2014); (unpublished) poverty incidence below national poverty line is assessed as follows: Riscani 40 percent, Soroca 39 percent, and 36 percent for Cahul and ATU Gagauzia (compared to 13–14 percent poverty incidence in Chisinau and Balti).
[73] This includes a small share of co-financing of the civil works demonstrated through commitment letters.
[74] *idem*

35. **Component 1: Increasing access to safely managed WSS services in selected rural areas and towns (EUR 41.0/US$46.5 million)**. This component will develop new and rehabilitate existing WSS infrastructure and WASH facilities in rural areas and towns, thus expanding access and quality of services for households, businesses, and public institutions and supporting resilience.[75] Component 1 supports climate adaption through (a) providing reliable centralized water supply protecting vulnerable households from drought and poor water quality; (b) improving wastewater systems, sanitation, and WASH facilities, reducing environmental exposure to pathogens exacerbated by flooding, particularly in towns facing frequent flooding; and (c) ensuring climate-resilient design of all infrastructure for robust functioning under extreme weather events. It consists of two subcomponents:

36. **Subcomponent 1.1: Expanding access and quality of WSS services (EUR 37.5 million/US$42.5 million).** This subcomponent will finance climate-resilient investments in towns and rural areas. This includes the following:

(a) **Water supply investments:** Expansion and rehabilitation of the regional water systems for water supply production and distribution, and service connections for LPAs in selected districts, including the preparation of relevant technical studies and management documents; technical supervision; and citizen engagement activities. This refers to water supply infrastructure in two preliminarily identified subprojects, that is, regional water system expansion for LPAs in Cahul District and the ATU of Gagauzia[76] and a regional water supply system with a surface water treatment plant in Riscani District. Many LPAs, particularly in the south (Cahul) as well as in the northern part along the Prut (Riscani), face shortages of water in the summer, with shallow wells/springs posing a challenge such as in the Prut cluster villages, in the Vulcanesti town, and other villages in Cahul District.

(b) **Wastewater investments:** Expansion and rehabilitation of wastewater systems in selected towns, including the construction and rehabilitation of sewer networks and service connections, and the construction of new wastewater treatment plants, including the preparation of relevant technical studies and management documents; technical supervision; and citizen engagement activities. This refers to two preliminarily identified subprojects in Soroca and Comrat towns. There are areas in the Comrat town that face frequent flooding, and the Soroca town is also vulnerable directly on the right bank of the Dniester. The project will support the assessment of flood risk and impact at the household level and, in addition to ensuring resilient design of infrastructure, provide measures to reduce the impact of floods where possible.

(c) **Pilot for on-site household sanitation:** selected rural or peri-urban Villages, will benefit from the improvement of on-site household sanitation following a demand-led approach through the provision of technical assistance, the implementation of information campaigns, and the carrying out of civil works. The pilot will be co-financed through the ADA grant. This pilot will demonstrate the use of climate-resilient low-cost technologies for rural sanitation.

[75] See the WASH Climate Resilience Strategic Framework (UNICEF, Global Water Partnership, 2014) for links between WASH and climate resilience.

[76] Its autonomy is ethnically motivated by the predominance of the Gagauz people. On December 23, 1994, the Parliament of the Republic of Moldova accepted the 'Law on the Special Legal Status of Gagauzia'.

37. Subcomponent 1.1 will finance works, goods, consulting services, and non-consulting services. Support will be for the construction and protection measures for water intake facilities, drinking water treatment facilities, reservoirs, pumping stations, transmission mains, water distribution network and water household connections, construction and rehabilitation of sewer networks, sewer pumping stations, WWTPs including sludge treatment and disposal, sewer service manholes for connections, sewer connection support for poor households, supervisory control and data acquisition (SCADA) systems, and other required activities. It finances civil works for household-level on-site sanitation facilities, consulting services for design, technical supervision, and monitoring of the pilot. It also finances feasibility, design and other required preparation studies, technical supervision services, capacity building for citizen engagement and social mobilization activities with project beneficiaries, and consulting services to LPAs and WSS operators to develop the required tariff submission to ANRE and draft the delegation contracts between local governments and the licensed WSS operators.

38. **Subcomponent 1.2: Improving resilient WASH facilities in public social institutions (EUR 3.5 million/US$4.0 million).** This subcomponent will finance works, goods, consulting services, non-consulting services and training/workshops to realize climate-resilient WASH facilities in HCFs and education institutions and implement hygiene education and behavior change communication program. Following priorities of the MoH and MoER, schools and HCFs in subproject locations under Subcomponent 1.1 and other prioritized districts will be selected. The subcomponent investments will consist of water supply connections to centralized networks or existing point sources, connections to sewer systems or construction of on-site sanitation facilities, and construction of indoor toilet facilities with adequate handwashing and hygiene facilities, using, where appropriate, low carbon emission technologies. The design of WASH facilities will respond to girls'/women's needs (privacy, menstrual hygiene management (MHM) facilities) and be accessible for people with disabilities. It will be implemented in line with the Strategic Framework for WASH Climate Resilience[77] to ensure investments are resilient to current climate vulnerability as well as long-term changes in climate. The subcomponent will finance capacity development for school and health center management and LPAs to ensure adequate operation and maintenance (O&M) of the facilities. The design and siting will reduce the likelihood that the facilities will be affected by climate-related threats such as floods.

39. **Component 2: Strengthening institutional capacity at national and local levels for WSS service delivery (EUR 3.5 million/US$3.9 million).** This component focusses on institutional capacities of national and subnational entities and WSS operators for management, planning, regulation and reform implementation, and performance improvement of service providers for green, resilience, and inclusive service delivery. At the national level, development of plans, policies, and regulatory documents will support climate adaptation through climate-resilient planning, and at the local level, performance improvements will deliver climate benefits through reduction of NRW and improvement of energy efficiency. It consists of two subcomponents:

40. **Subcomponent 2.1: Building national institutional capacity for WSS (EUR 2.1 million/US$2.4 million).** This subcomponent aims to strengthen critical functions of facilitating and implementing WSS sector reform, investment planning and monitoring, and sector modernization and build capacities to this end of the assigned lead unit/entity within MIRD's structure. It finances goods, non-consulting services,

[77] The Strategic Framework for WASH Climate Resilience is a joint UNICEF and Global Water Partnership initiative, prepared in cooperation with HR Wallingford and the Overseas Development Institute (ODI), 2014.

consulting services, and training/workshops for activities that strengthen institutional capacities for planning, financing, economic regulation, performance monitoring, professional development, and the revision and development of new policies and normative documents. Under the leadership of MIRD, and in collaboration with other entities, activities under this subcomponent include, but are not limited to:

(a) **Sector planning and financing for programmatic delivery:** The elaboration and implementation of an NWSSDP, including a national investment program and financing strategy and the capacity development of DRDP under MIRD as lead entity. The NWSSDP outlines a staged process for regionalization (see Box 1) and the consolidation and reform of funding mechanisms.[78] The NWSSDP will be developed in close consultation with stakeholders such as MoEnv, as it will aims to streamline the various funding sources for the WSS sector[79].

(b) **Support to selected operators:** TA on legal, technical, financial aspects to selected LPAs and WSS operators to support aggregation into licensed regional operators following the NWSSDP.

(c) **Legislative and design reform:** The preparation of amendments and/or new legislation (for example, Law 303 and requirements for licensing), policies and normative documents (on regulatory method and social tariffs), and design and construction norms for sanitation (updating outdated norms) and related capacity building, as per the NWSSDP. See Box 1 for the proposed Road Map for Reform.

(d) **Monitoring and benchmarking of operators:** The development and rollout of a national WSS management information system (MIS) for WSS operators including definition of KPIs benchmarking.

(e) **Support for regulatory strengthening:** TA to ANRE, WSS operators, and LPAs to accelerate tariff review and approval in line with updated regulations for licensed operators.

(f) **Human capital development:** The implementation of a professional development program, in collaboration with AMAC and UTM and WSS operators, to increase qualifications and advance careers of existing staff and attract people, specifically women, for employment in the sector.

41. **Subcomponent 2.2: Improving performance of WSS service providers (EUR 1.3 million/US$1.5 million).** Subcomponent 2.2 will finance works, goods, consulting services, non-consulting services, and training to support the implementation of a prioritized rolling multiyear PIP of selected WSS operators involved under Subcomponent 1.1.[80] WSS operators will carry out annual assessments on PIP implementation and KPIs, including publication of results and feedback rounds with customers. The

[78] In support of the investment program pre-feasibility studies may be developed under the NWSSDP.
[79] Including the NEF and the NRFD.
[80] These include five WSS operators: JSC Cahul, JSC Soroca, ME Comrat, ME Vulcanesti, and a proposed establishment of a new JSC, founded by the LPAs of the Costesti town and other LPAs.

financing for selected WSS operators will be allocated based on results.[81] Investments and TA activities identified in the PIPs are based on utility diagnostics[82] and include, but are not limited to, the following: improving technical and commercial operations, improving financial management (FM), HR management, and organization and strategy aspects, including improving asset management systems and inventories, energy efficiency, NRW reduction programs, water metering practices and equipment to improve climate resilience, water safety, and business continuity, and enhancing responsiveness to customers.

42. **Component 3: Project management and coordination (EUR 2.1 million/US$2.4 million equivalent).** This component will finance operational costs, consulting services, non-consulting services, goods, and training to finance the overall project management cost, including the project team at the Project Implementation Unit (PIU), implementation support consultants at the regional level within MIRD's RDAs for environmental and social standards implementation, and, at the national level, MIRD as the project implementing entity (PIE). It will finance training costs, including for capacity building in procurement, environmental, and social standards, specialized short-term implementation support consultants, financial audits, project communication and citizen consultations, and monitoring and evaluation (M&E).

43. **Component 4: Contingent emergency response component (CERC) (EUR 0 million/US$0 million).** A provisional zero-amount component is included, which will allow for rapid reallocation of credit/loan proceeds from other components during an emergency under streamlined procurement and disbursement procedures. This component allows the Government to request the World Bank to recategorize and reallocate financing from other project components to cover emergency response and recovery costs. The CERC will be established and managed in accordance with the provisions of the World Bank Policy and World Bank Directive on Investment Project Financing. The CERC, if activated, will be able to finance eligible activities included in the positive list, stipulated in the Project Operations Manual (POM) (dedicated CERC annex).

C. Project Beneficiaries

44. **The project is expected to directly benefit around 66,500 people through gaining access to safely managed drinking water and/or safely managed sanitation services within their households.** An estimated 30,000 beneficiaries will gain access to a safely managed drinking water service in the dwelling. These beneficiaries are either connected to an unsafe service and will benefit from increased reliability and water quality compliant with norms, or depend on collecting water from drought-vulnerable, shallow, and polluted wells and will gain first time access to a centralized network. An estimated 36,500 beneficiaries will gain access to a safely managed sanitation services, of which 35,000 to centralized wastewater collection and treatment systems and 1,500 through on-site household-level sanitation facilities through the pilot program. Beneficiaries in towns will gain first-time access to a centralized wastewater system with adequate treatment or, if already connected to a sewer system, will gain adequate wastewater treatment. A pilot rural sanitation program will benefit 1,500 people gaining first-time access to a flush toilet with adequate on-site sanitation facility aligned with national norms. In addition, students and staff of around 100 schools (around 25,000 people) will benefit from improved

[81] The allocation of resources under Subcomponent 2.2 to the WSS operators will consider PIP implementation progress as well as the availability of other development partner funds in support of these operators.
[82] Diagnostics were performed using the World Bank's Utility of the Future Diagnostic Framework. Full diagnostic reports and priority action plans are available for each of the identified WSS operators.

WASH facilities during their school/working hours and staff and patients of 25 rural HCFs will benefit from improved WASH facilities.

45. **Institutional beneficiaries include MIRD and its subordinate agencies,[83] MoEnv, MoH, MoER, ANRE, local and district authorities, and participating WSS operators.** Service providers directly, and their customers indirectly,[84] will benefit from operational and efficiency performance improvements realized under Subcomponent 2.2. Under subcomponent 2.1, Moldova's national institutional stakeholders, including MIRD, ANRE and MoEnv, as well as all local governments and WSS operators, will benefit from better WSS sector management; monitoring and more streamlined investment planning; an improved regulatory framework for operational and financial sustainability; and capacity building and training workshops to implement and use sector instruments (such as the MIS), and the development of policies, and normative documents. It is expected that 200 people will benefit from training activities. Under the professional development program, 165 people, including existing, newly hired, and potential future WSS operator staff, one-third of whom are women, will gain accredited diplomas to help advance and/or gain employment in the sector.

D. Results Chain

46. **The project will contribute to the long-term goal of resilient, inclusive, sustainable, and efficient public WSS service delivery, aligned with the National WSS Strategy 2014–2030 the National Regional Development Strategy 2022-2028 and the policy and reform directions therein.** It does so by building institutional capacities at the national and local levels for the programmatic delivery of WSS services and by expanding and improving WSS infrastructure, positively affecting the well-being and climate resilience of people in rural areas and towns through the replacement of drought-vulnerable water sources with reliable centralized water supply sources, the development of climate-resilient WASH facilities in schools and HCFs, and improved on-site sanitation and wastewater collection and treatment, with benefits to the quality of water bodies and for public health (see Figure 2). The transformational impact of the project will be delivered by (a) creating the foundations and enabling environment for a national programmatic approach for WSS; (b) demonstrating the implementation of this approach in subproject locations with utilities shifting to higher performance levels across multiple domains; and (c) generating lessons for scale-up under the national program, such as for on-site sanitation solutions.

47. **At the national level, the project will strengthen the capacity of the entity assigned to lead the development and implementation of the NWSSDP.** The project aims to improve the implementation and financing mechanism of now fragmented national funds for a more effective future deployment under the NWSSDP. It will develop policies and normative documents on economic and service regulation (for example, pro-poor policies and performance standards) and licensing (for example, to support regionalization) and strengthen the enabling environment for on-site sanitation interventions (for example, design and construction norms and policies for investment subsidies). The project will develop an MIS for WSS operators and e-governance interface for economic regulation, introduce benchmarking, and support its implementation and rollout. The project will enhance skills of existing staff and develop

[83] This includes RDA North, RDA South, RDA Center, and RDA for ATU Gagauzia through implementation support. It also includes the Public Institution "Moldova Social Investment Fund" founded by MIRD that will be acting as PIU for the project and may undergo further reform.

[84] This goes beyond the direct beneficiaries in the subprojects where WSS infrastructure investments will take place. The total customer base of the WSS operators involved under Subcomponent 2.2 is estimated at around 95,000 people served.

new talent to advance and attract professionals in the WSS sector, to help narrow the gender gap in technical positions.

48. **At the local level, the project will strengthen institutional capacity of WSS operators to sustainably and efficiently operate the assets given to them in economic management, including those newly created under the project.** The project will support—and create when relevant—licensed regional WSS operators,[85] prepare delegation contracts between operators and LPAs with clear KPIs, and support tariff submissions and associated business plan as well as multiyear rolling PIPs. Priority measures under the PIPs will be financed for better technical, commercial, and financial performance and to increase transparency and responsiveness to citizens. Lessons from these institutional strengthening aspects will be central to the project's learning agenda and inform the NWSSDP.

Box 1. Findings and recommendations from governance and regulatory framework review

As part of project preparation, a review of the legislative and regulatory aspects of the WSS sector was carried out to identify areas for reform - relevant to the sector authorities generally - but also to inform possible activities under Subcomponent 2.1. While Moldova has defined targets for the regionalization of operators, the sector has not yet reached the targets established. Revisions to Law 303 as well as in regulations will be required to support the country's reform trajectory aimed at introducing uniform governance of public services across the country. A summary of key actions identified are presented below:

First step: Gradual cancellation of direct management model

- Cancellation of direct management for entities without a separate legal personality (that is, by departments/units of municipalities)
- Provision of public WSS services without a license phased out and prohibited
- Asset management contracts, including requirements for investment planning and financing and requirement for licensing
- Municipal companies that do not comply with licensing requirements will be required to conclude a service delegation contract with a licensed operator.

Second step: Licensing of all operators and consolidation to enhance professionalism

- Licensing conditions revised and optimized for more efficient regionalization
- Licensing requirements to include approval of delegation contracts by the regulator
- Minimum population served to be introduced as a requirement for licensing to push for consolidation and improvement of capacity:
  - Timeline provided for all municipalities to comply
  - Direct management by a joint-stock municipal-owned company with an asset management contract remains an option, gradually transformed into a delegation model
- ANRE empowered to provide operator of last resort in case of noncompliance within agreed period

Third step: Expand regionalization to village and communes nationwide

[85] A staged approach is considered that would first establish and develop a JSC for the Prut Cluster water system (unbundling the WSS services of Costesti ME and merging informal local operators), followed by the consolidation of the JSC for the Costesti-Prut cluster, with the WSS service functions of the ME in Riscani town. Additional legislative changes and investment incentive may be needed to realize the district-wide consolidation.

- After reform is gradually implemented in district-towns and cities, ANRE capacity is to be further developed to support consolidation in rural areas with time-based schedule in NWSSDP.

The NWSSDP should be used to operationalize reform, including incentives/subsidies for CAPEX conditional on regionalization, and ad interim monitoring of rural WSS operators should be monitored. These efforts should be supported by further changes of the tariff and investment methodologies, including introduction of social tariff policies, MIS, and benchmarking systems.

49. **The project contributes to enhanced climate resilience of WSS services and increased adaptive capacity of households to droughts and increased resilience through better health.** The water supply systems under the project will support a transition to surface water, replacing energy-intensive deep groundwater sources and reducing people's dependence on shallow drought-vulnerable wells. Infrastructure facilities such as water intake from the Prut River,[86] and WWTPs along the Dniester and Ialpug River,[87] will be designed to accommodate extremes of low flow and flooding. The project will support low energy intensity solutions and maximize GHG emission reduction where possible. The NWSSDP will be developed taking climate change and resilience into account, reflecting robustness in the selection and prioritization of infrastructure solutions, supporting decarbonization in line with the Government's climate strategy. Under the PIPs, WSS operators will take measures to increase resilience to climate and other shocks (for example, business continuity plans) and introduce energy efficiency and NRW reduction measures.

E. Rationale for Bank Involvement and Role of Partners

50. **The World Bank has a long-standing partnership with the GoM through previous lending operations[88] in WSS, through an active policy dialogue on water security issues, and brings regional and global expertise in WSS sector reform and modernization.** The World Bank, through its lending and ongoing Danube Water Program,[89] provided policy advice on WSS services and water security issues through various analytical products.[90] In recent years, the World Bank co-convened, together with former MARDE and the participation of development partners, several roundtables, sharing recommendations of the 2020 Water Security Diagnostic for Moldova's inclusive and resilient development. The World Bank has wide international and regional (EU-level) experience in supporting national programs for inclusive service provision, economic regulation, modernization of water utilities, investment planning, and result-based financing, including the mobilization of commercial finance. As such, the project is expected to build the foundation for a potential second stage programmatic operation, in support of Moldova's new NWSSDP. The World Bank will leverage its global expertise in specific thematic areas such as utility turnaround processes, resilient design, rural WSS service delivery, WASH in public institutions, and hygiene behavior change. It will tap into instruments, tools, and World Bank-executed resources under the World Bank's Global Water Security and Sanitation Partnership to optimally support the GoM in all

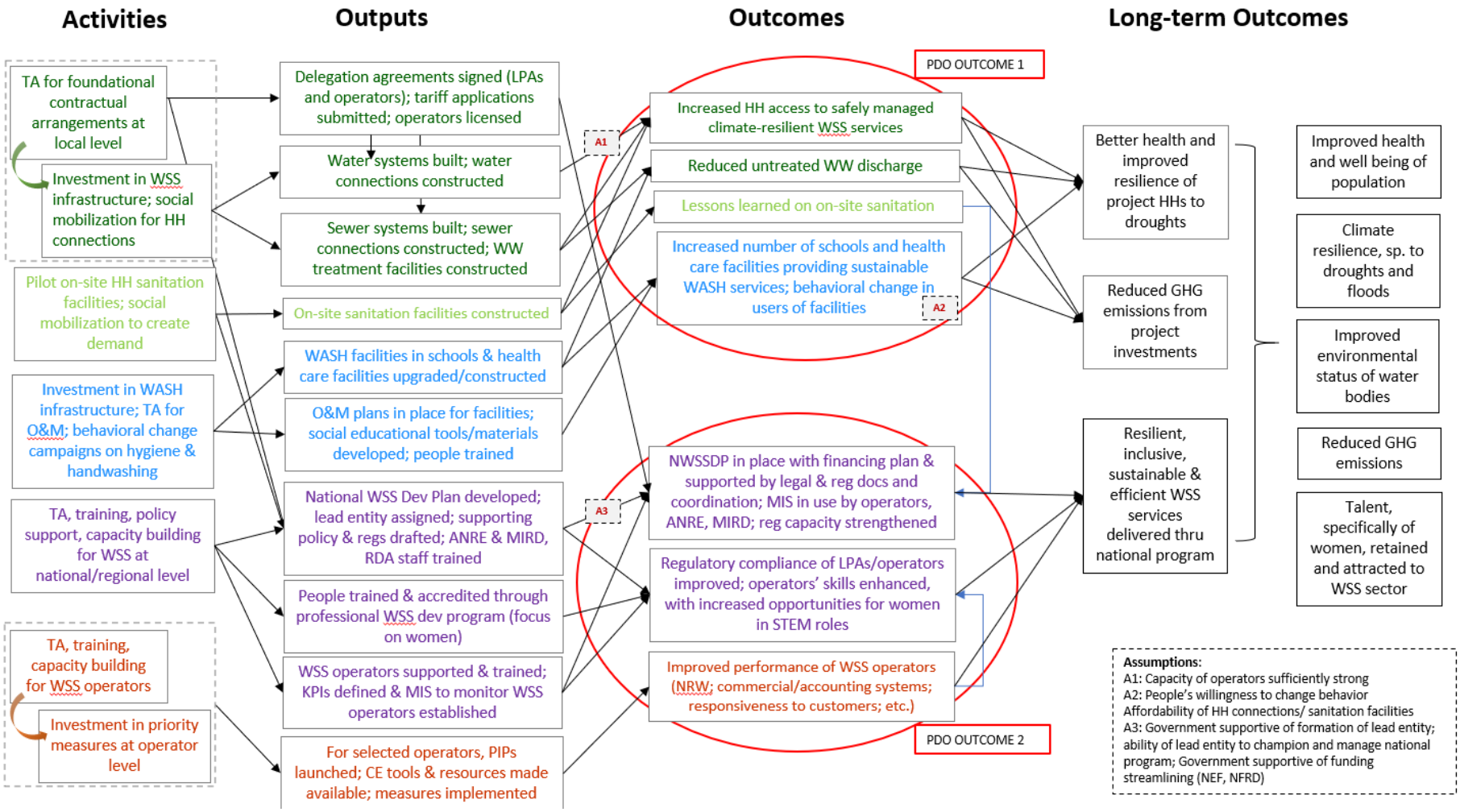
[86] For the subproject in Riscani District.
[87] For the subproject in Comrat and Soroca District.
[88] The World Bank-funded National Water Supply and Sanitation Project (NWSSP) closed in 2013.
[89] The Danube Water Program is a multi-donor trust fund, financed by the Austrian Government and executed by the World Bank and the International Association for Water Utilities in the Danube region; see also https://www.iawd.at/dwp. The World Bank has supported benchmarking of utilities through AMAC and the IBNET database (https://www.danubis.org/).
[90] World Bank. 2018. *Beyond Utility Reach? A Review of Rural Water Supply and Sanitation Services in 7 Countries in the Danube Region.* Washington, DC; World Bank Group. 2019. *Moldova Policy Notes 2019: Sustaining Stability and Reviving Growth.* World Bank, Washington, DC.

aspects of the project, for example, in the application of the 'Utility of the Future Diagnostic and Action Planning' (Subcomponent 2.2).

51. **The project will complement the EU Association Agreement, under which significant WSS investment and TA are delivered through the EU and bilateral development partners.** Key partners in the WSS sector have been the EU, the EBRD, the EIB, KfW, GIZ, the Austrian Government through ADA, and the Swiss Government through the Swiss Development Cooperation. The EU-GIZ Modernization of Local Services Program has been instrumental in building capacities of RDAs for regional planning, procurement, and delivery of WSS infrastructure. The project benefits from and builds on this experience[91] by further strengthening the capacities of RDAs. Development partner disbursement, around US$18 million annually from 2010 to 2017, has mostly benefited Moldova's urban areas and towns.[92]

[91] Including specific feasibility and design studies for subprojects selected under the project.
[92] According to the 2017 Organisation for Economic Co-operation and Development Creditor Reporting System data, about MDL 348 million or 0.2 percent of GDP was disbursed by donors in the WSS sector in Moldova, of which 67 percent to the category large WSS systems (urban), and 22 percent to basic WSS (rural), followed by investments in water resources management and river basin development. Disbursement between 2010 and 2017 fluctuated from around MDL 120 to 440 million annually.

Figure 2. Results Chain



Note: CE = Citizen engagement; HH = Household; WW = Wastewater.

52. **With the support of partners valuable lessons were generated with respect to WSS management models in rural areas and capacity building APASAN project**. Lessons from the *ApaSan* rural WSS project,[93] as well as the *Rehabilitation of the Water Supply System in the Rayon Nisporeni: Municipalities of Nisporeni, Varzaresti and Grozesti project* generated important lessons as to service delegation to WSS operators through intercommunal cooperation models. The project will continue the national accredited professional development program that was developed with GIZ and ADA support. Close coordination is maintained with the Turkish Development Cooperation and Coordination Agency that has previously financed WSS investments in the Vulcanesti town and may do so in the future. Similarly, the project will coordinate closely with KfW financing wastewater investments and corporate development of the Cahul WSS operator. The EUWI+ Eastern Partnership Project has supported the GoM in developing a Practice Code for water system for small settlements[94] and coordination concerning the development of norms and requirements for rural sanitation will be pursued where possible. Through MoH and MoER, coordination with UNICEF and the WHO will be ensured on O&M of WASH facilities and WASH/hygiene education and behavior change campaigns.

53. **The ADA co-financing grant will be directed to institutional strengthening and innovative aspects of WSS service provision.** The Austrian Government has played an important role in the institutional development of the WSS sector through the Project *Strengthening the institutional framework in the water and sanitation sector in the Republic of Moldova* (which closed in 2021), as well as through WSS investment projects in towns in rural areas.[95] In synergy with ADA's ongoing engagement, the grant is directed to the development of the NWSSDP and related institutional strengthening activities and the innovative pilot for on-site sanitation.

F. Lessons Learned and Reflected in the Project Design

54. **The project integrates lessons from the World Bank's previous operational engagement in the WSS sector that suffered from a too narrow focus on infrastructure development.** The NWSSP, which closed in 2013, primarily focused on infrastructure delivery, without adequately addressing institutional and regulatory reforms. Key lessons are the need to develop clear management arrangements for newly created WSS assets in rural areas, accompany investments with capacity building for utilities and community and citizen engagement, and realism in the debt repayment capacities of utilities and/or local governments for rural areas.[96] Under this project, investments will be preceded by support to ensure that WSS operators are licensed and have service delegation contracts in place with LPAs ensuring clear roles and functions of parties involved in the operation and management of WSS assets and that tariffs applications are updated to ensure for financial sustainability. The project will support the formation of these critical reforms at the local level and accompany all investments through community outreach and engagement, with support of LPAs, RDAs, and dedicated capacity building. Investments are on-granted to the LPAs, eliminating debt repayments but requiring royalty elements in the tariff to be accumulated in a

[93] ApaSan focused for over ten years on rural WSS and continues under ApaSan+. See also http://apasan.skat.ch/.
[94] This Practice Code supports cost efficiency of solutions in rural areas as old Soviet-era government norms tend to lead to overdesign.
[95] Investments in wastewater for Cantemir town (leveraging EU funds) and rural WSS projects to demonstrate rural sanitation solutions, including the APASAN+ project launched in May 2021.
[96] Under the NWSSP, utilities were expected to repay the credit which proved impossible, also due to the lack of an adequate tariff regulatory framework at that time.

development fund to finance capital maintenance and reinvestment. All operators supported with infrastructure investments under the project will benefit from performance improvement measures to support sustainability of the operations.

55. **The project also incorporates institutional, policy, and regulatory reform measures that were identified as priorities for Moldova.**[97] A universal lesson is that a well-capacitated and resourced lead entity/unit needs to be assigned/established to support operationalization of policies, monitor implementation of reform, and facilitate investment planning and implementation. A second lesson is that to support universal access, a so-called 'portfolio approach' is needed. For Moldova, this means (a) incentives and legal requirements that accelerate the regionalization of licensed WSS operators; (b) monitoring and guidance to all operators, including non-licensed and ad interim; and (c) supporting self-supply for individual solutions in remote villages. The NWSSDP will need to incorporate such a portfolio approach to strengthen the functions of a lead entity/unit for sector planning and management, now *de jure* assigned to Apele Moldovei. The project will improve the legislative framework to create incentives for regionalization and develop an MIS with KPIs for WSS operators that would be used and managed by ANRE (and other actors) to improve incentives for more efficiency.

56. **In terms of sanitation service delivery, the project focuses on a mix of inclusive solutions for towns and rural areas, including networked wastewater as well as on-site sanitation solutions.** For sewer network solutions, given the reported behavioral and financial barriers to connect, the project will deliver extensive citizen engagement activities, include household connections in the civil works, and deliver targeted support to eligible poor and vulnerable households for plumbing costs to connect and/or transform toilet facilities. Global lessons illustrate that focused efforts are needed to ensure inclusive outcomes and to enhance the viability of the service.[98] Global and regional lessons are incorporated for the on-site rural sanitation pilot, following a demand-led approach, motivating households through financial support, adequate information on solutions, and behavior change campaigns to coinvest in the facilities.

III. IMPLEMENTATION ARRANGEMENTS

A. Implementation Arrangements

57. **MIRD, as the PIE, is responsible for ensuring that the project is implemented efficiently, consistent with the project objectives and agreements signed.** MIRD will be supported in day-to-day project management through the public institution 'Moldova Social Investment Fund (MSIF)', founded under MIRD[99], acting as the PIU. The PIU will have responsibility for project management and reporting,

[97] Smets, S., et al. 2020. *Moldova Water Security Diagnostic and Future Outlook.* Washington, DC: World Bank; World Bank. 2018. *Beyond Utility Reach? A Review of Water Supply and Sanitation Services in Seven Countries in the Danube Region.* Washington, DC: World Bank.
[98] World Bank. 2020. *Connecting the Unconnected.* Washington, DC: World Bank.
[99] MSIF was originally established through Governmental Decision No. 468 of May 19, 1997 and multiple times. Through Government Decision 1188, dated November 28,2018, the Moldova Social Investment Fund was reorganized as a Public Institution. Government Decision No. 142 of August 25, 2021 placed MSIF under MIRD. MSIF has administrative and financial autonomy and is governed by a Board that is nominated by MIRD, its founder.

procurement, FM, and fiduciary compliance, ensuring compliance with the Environmental and Social Standards (ESS) and technical roles as well as managing citizen engagement at the central level. A Project Implementation Agreement between MIRD and the PIU will be entered into before project effectiveness and detail respective roles and responsibilities. Annex 1 includes staffing for the PIU and further details on implementation arrangements and Figure 3 illustrates the implementation arrangements.

58. **At the national level, a Project Coordination Group (PCG) will be established within three months after project effectiveness; the PCG will coordinate the implementation and endorse annual implementation plans.**[100] The PCG will have several members representing among others MIRD, MoER, MoH, MoEnv, Ministry of Internal Affairs (MIA) and other relevant entities. The PGC will convene at least annually to review and endorse the project's annual program or upon request as and when required. The POM includes composition and responsibilities of the PCG.

59. **Project implementation will be supported at the regional level through MIRD's subordinate RDAs for Subcomponent 1.1.** RDAs, which have comparative advantage and experience in the implementation of WSS infrastructure projects, as well as local presence, will act as employer for major civil works in the subprojects under Subcomponent 1.1 (see annex 1) with responsibilities in technical inputs into design and bidding documents, overall technical supervision, and contract administration. Roles and responsibilities of RDAs in relation to MIRD and the PIU will be detailed in so-called RDA Implementation Support Agreements, to be entered into within three months after project effectiveness. RDAs will be strengthened through technical WSS consultants, as well as part time environmental and social consultants to support implementation. LPAs (district, commune, town) are the beneficiaries and newly created assets will be transferred to their ownership[101] and subsequently delegated to licensed WSS operators under delegation contracts. In addition to their role in approval of design documents, issuance of construction authorization, and acceptance of works, LPAs will facilitate community consultation, citizen engagement, and social mobilization activities at the local level. Under Subcomponent 2.2, WSS operators will be responsible for the implementation of the measures, with fiduciary roles by the PIU. A so-called LPA Cooperation Agreement will specify the detailed roles at the subproject level for the PIU, RDAs, LPAs, and WSS operators and a template will be included in the POM.[102]

60. **The MoER and MoH will identify and approve the list of social institutions under Subcomponent 1.2; respective LPAs, as owners of the new/rehabilitated WASH facilities in schools and HCFs, will be closely involved in the design and construction process, managed centrally by the PIU.** LPAs, which are the founding institutions and owners of schools and HCFs, together with school and HCF management, will approve designs, accept works, and develop O&M plans. School staff will be responsible for the hygiene communication activities, supported by a capacity-building nongovernmental organization (NGO). A so-called WASH Facility Cooperation Agreement will be included in the POM, describing the role of all partners, including the responsibility of facility staff to participate in trainings and implement activities to promote hygiene.

[100] Or upon request to solve a specific coordination issue. First annual implementation plan for calendar year 2022.
[101] For inter-municipal infrastructure, such as regional transmission mains or regional drinking water treatment plants, ownership will be transferred to the district level, while networks remain at the commune level.
[102] The agreement will also specify the agreed local government contribution toward the civil works, which will be transferred by LPAs to a project Operating Account.

61. **MIRD will lead the implementation of national-level institutional strengthening activities ensuring the involvement of all relevant stakeholders.** MIRD will set up a coordination mechanism to guide the development of the NWSSDP and associated prioritized investment program to ensure adequate consultation with domestic stakeholders, including but not limited to MoEnv, and development partners on new legislation, policies, and normative documents. MIRD will also closely coordinate with ANRE, which will be the main beneficiary and manager of the WSS MIS platform.[103] MIRD will enter into an inter-institutional cooperation agreement with ANRE to this end.

62. **The CERC—if activated —will be implemented by the MIA through its General Inspectorate for Emergency Situations (GIES), given its mandate to lead emergency response and recovery efforts.** As with the other components, all procurement, fiduciary, ESS compliance, and M&E functions will remain at the central level with the PIU.

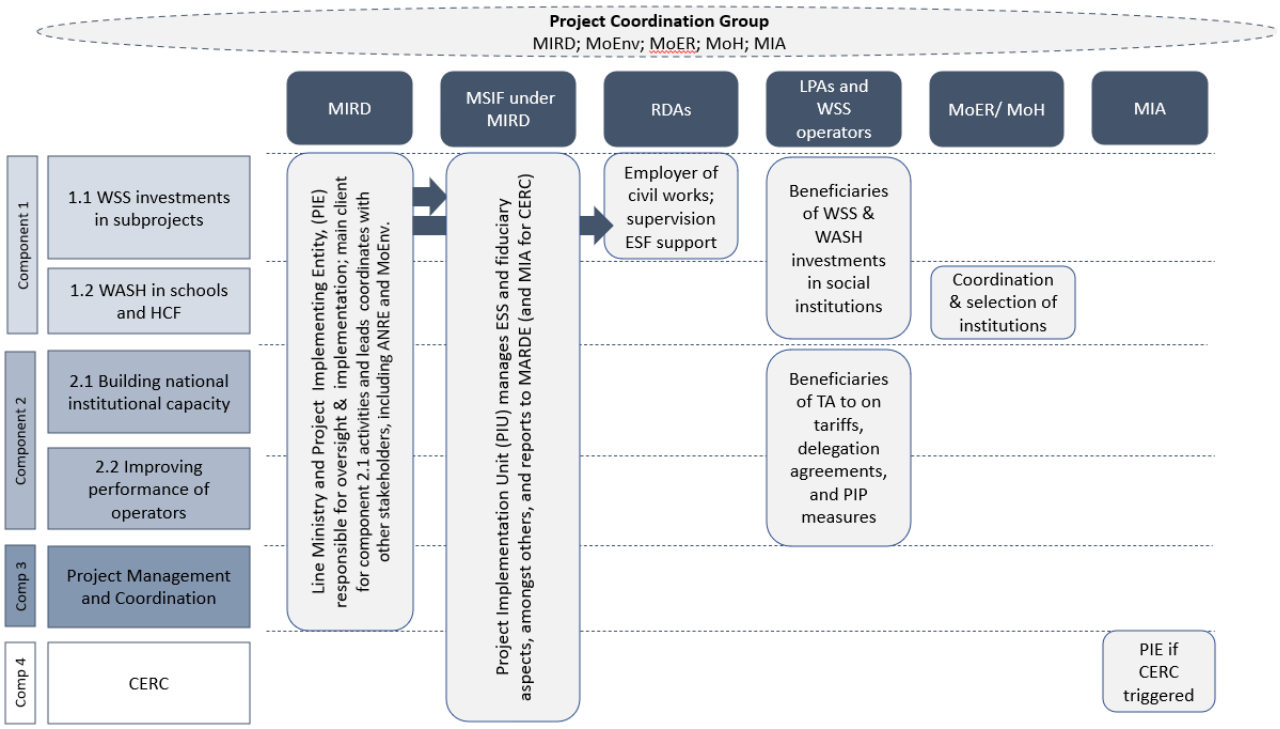
B. Results Monitoring and Evaluation Arrangements

63. **M&E of results will take place against the indicators in the Results Framework and procedures are detailed in the POM.** The PIU is responsible for (a) monitoring of the performance of the project toward achievement of the PDO and result indicators on a semiannual basis and (b) implementation progress against all activities and the timely identification of bottlenecks. The PIU, through its M&E specialist, with the support of MIRD, RDAs, WSS operators, and LPAs, coordinates all data collection, consolidates, and integrates progress and results in semiannual project progress reports. A project-level M&E system will be developed, and baseline assessments for relevant indicators will be conducted in Year 1, with subsequent follow-up assessments, such as for KPIs and PIP implementation of the selected WSS Operators. Citizen engagement surveys using a digital platform will be launched semiannually.

64. **A detailed review of the implementation progress will be conducted at the project's midterm review (MTR) to assess course correction where needed.** Subject to a satisfactory implementation of project activities, the MTR will also assess any potential for AF or follow-up engagement in the WSS sector building on the future NWSSDP. All the preliminarily identified subprojects have the potential to connect additional beneficiaries in nearby localities that could help increase the viability of the WSS systems and augment the development impact of the project.

[103] The MIS will have multiple users including MIRD, WSS operators, AMAC, as well as MoEnv. ANRE is proposed as a managing institution.

Figure 3. Implementation Arrangements Diagram



65. **The development and rollout of an MIS for performance monitoring of WSS operators is included under Subcomponent 2.1 of the project.** The WSS MIS,[104] including agreement on mandatory KPIs for licensed operators, will be developed as a critical instrument to (a) introduce benchmarking through KPIs for licensed operators, (b) provide an e-governance interface for regulatory processes administered through ANRE, and (c) inform NWSSDP implementation by ensuring that basic data on rural (unlicensed) operators are included.

C. Sustainability

66. **Social sustainability.** Guided by the Stakeholder Engagement Plan (SEP), RDAs, LPAs, district councils, WSS operators, school and HCF administrations, and local communities will be involved during preparation, implementation, and post construction of subprojects to ensure that solutions and expected contributions are fully acceptable. Based on lessons from other initiatives in Moldova, the project will also set up Citizen Water and Sanitation Committees (CWSCs) for each subproject. The CWSCs will, in coordination with WSS operators and LPAs, implement social mobilization and communication activities to ensure an effective process of connecting customers. This is important given the widespread use of local private wells and the hesitance of households to connect to wastewater services specifically. Metered water connections will be developed for all households and measures to support sewer connections for poor and vulnerable households are included. The pilot for on-site sanitation will provide a differentiated level of financial support toward the civil works for the facilities. Communication campaigns will focus on connecting to services, regular tariff payments, and the correct use of sewer and

[104] This MIS will not include any personal data.

on-site sanitation facilities. Moreover, capacity of WSS operators will be developed to incorporate customer feedback, improve complaint mechanisms, and increase transparency and customer responsiveness.

67. **Technical and operational sustainability.** Technical design and construction norms will be applied to enhance operational sustainability, for example, the Code of Practice[105] for rural water systems. Given that existing wastewater norms date from the Soviet era (the so-called SNiPs), approvals for exceptions will be sought to avoid overdesign. Feasibility studies will support selection of technology solutions that meet local environmental conditions and capacities of WSS operators and minimize life-cycle costs. Licensing, the elaboration of service delegation contracts ensuring clear roles and functions in the operation and management of WSS assets, and updated tariffs applications will be pursued for sustainability under Subcomponent 1.1. WSS operators will implement high-impact measures under the PIPs to enhance technical and operational performance such as improved asset management, energy efficiency, NRW programs with leak detection, and pressure management (Subcomponent 2.2). Under Subcomponent 2.1, the project will also support the modernization of design and construction norms for sanitation and wastewater solutions. Potential for design-build-operate contracts for WWTPs will be explored as an option for professional and efficient operation.

68. **Environmental sustainability.** Building on the measures in the Environmental and Social Commitment Plan (ESCP) and site-specific Environmental and Social Framework (ESF) documents, the project will develop resilient infrastructure assets. Water treatment and wastewater treatment plants, especially water intakes and discharge pipes, will be sited properly to ensure continued operations during floods and low flows. Solutions for wastewater will need to deliver effluent as per Moldovan regulations, and potential for nutrient recovery and sludge reuse will be explored in feasibility studies. The project finances activities with climate co-benefits in support of mitigation (that is, connecting people to wastewater, shifting to lower energy intensity water systems, and increasing energy efficiency) as well as adaptation (that is, connecting drought-vulnerable people to reliable water supply, resilient infrastructure, and operator resilience).

69. **Financial sustainability.** Project financing will be on-granted to the selected LPAs as owners of the WSS assets, not to create an unsustainable debt burden for LPAs. The existing economic regulatory framework will be applied to establish cost recovery tariffs and affordability analysis will inform the gradual introduction of tariff increases, to be approved by ANRE. The PIP measures will aim to improve the financial position of WSS operators, increase revenue generation, and introduce cost savings, supporting trajectory toward financial viability and ultimately creditworthiness.[106] At the national level, the NWSSDP and financing strategy will be developed to help increase the share of sector financing through tariffs. Revisions to Law 303 and the tariff regulatory framework will be developed to that end, including new policies for social tariffs and support mechanisms for the poor. These measures enhance the enabling environment toward crowding in repayable finance (Maximizing Finance for Development).

70. **Institutional sustainability.** The project will improve sector management and planning, as well as the legal and institutional framework and capacities for regulation of licensed WSS operators. Institutional

[105] Code of Practice in Construction. CPG.03.08.2020.
[106] Further aggregation of WSS operators may be required to create enough economies of scale and scope for commercial creditworthiness.

functions at the central level that are currently weakly executed or even missing will be strengthened, such as coordinated investment planning, streamlining funding and increasing transparency and monitoring of national funds, accelerating the regionalization of WSS operators using TA, investment and regulatory incentives, sector performance monitoring, and professional development of HR. These functions could initially be strengthened within a relevant department/unit in MIRD although ideally this would require a dedicated WSS agency.[107]

IV. PROJECT APPRAISAL SUMMARY

A. Technical, Economic, and Financial Analysis

Technical

71. **The GoM has identified high-priority investments in drinking WSS systems for villages and towns, focused on criticality of investments in terms of both the needs of the population and their ability to demonstrate lessons for broader impact**, for example, on establishing regional WSS operators in rural areas, the need for inclusive and resilient wastewater investments for towns that are significantly polluting waterbodies, and the on-site sanitation pilot. In line with these, and the prioritization criteria described in paragraph 33, the following four subprojects are preliminary selected:

(a) **Riscani—Prut cluster—regional water supply:** new regional water system in Riscani District taking water from the Prut for Costesti LPA and villages in additional LPAs. Villages and towns currently have no networks (Pașcauți, Damașcani, and Dumeni, among others), or, where networks exist, such as in Costesti town, these do not ensure full coverage of the population and are mostly old and dilapidated. Currently all villages and towns rely on polluted groundwater or drought-vulnerable shallow wells.

(b) **Cahul and Vulcanesti regional water supply:** expansion of the water supply system in Cahul District (using Prut water) to connect villages in several LPAs in Cahul District as well as Vulcanesti town in ATU Gagauzia. Villages and towns identified face significant water supply access and quality challenges. Water supply in Vulcanesti town and other villages in the south suffers from frequent shortages due to droughts, and deep groundwater is polluted and not compliant with drinking water norms ('technical water').

(c) **Soroca wastewater:** expansion of wastewater network and new WWTPs in Soroca town. Currently untreated wastewater directly pollutes the Dniester River, the main source of water for downstream settlements and is identified as a national priority for prevention of waterway pollution.[108] Soroca is the third town of the country and an important center for tourism and recreation along the Dniester River.

(d) **Comrat wastewater:** expansion of wastewater network and new WWTPs, where untreated wastewater directly pollutes the Ialpug River, Comrat lake, and downstream Congaz lake,

[107] The creation of a dedicated WSS agency—given the fiscal situation—may not be realized in the medium term.
[108] Moldova is a signatory to the Common Maritime Agenda for the protection of the Black Sea. The Dniester, directly polluted through Soroca town wastewater, also contributes to eutrophication of the Black Sea.

affecting the Danube River downstream. Existing wastewater collectors are in dire need of rehabilitation, and expansion of sewer network is required. The old treatment plant is obsolete. Frequent flooding exacerbates the environmental health impact.

72. **Assessment of investments for one subproject is under preparation with support of an ECAPDEV Project Preparation Grant[109] and bidding documents will be completed for all subprojects during the first 18 months of project implementation.** The feasibility study and ESIA for Soroca wastewater subproject[110] has been completed. DEDs and bidding documents will be prepared within 12 months of implementation. The Environmental and Social Impact Assessment (ESIA), site-specific ESF documents, and the update/development of bidding documents for the Riscani, and the Cahul and Vulcanesti water supply subprojects will be completed within 14 months.[111] For Comrat, the feasibility study, ESIA, and DEDs will be prepared during the first 18 months of project implementation.[112]

73. **Water supply investments will support a shift to a reliable service with surface water from the Prut, as groundwater sources are vulnerable to droughts, highly mineralized, and not compliant with national water quality standards.** The Cahul and Vulcanesti subproject, aiming to serve around 19,500 people, will use available capacity of the Cahul Drinking Water Treatment Plant (DWTP), finances a new transmission main, as well as expansion and priority rehabilitation of distribution networks for a preliminarily identified set of villages in the LPAs of Pelinia, Gavanoasa, and Alexandru Ioan Cuza and network improvements in Vulcanesti town.[113] The Riscani subproject, aiming to serve around 10,500 people, will finance a new intake and DWTP, an inter-municipal water transmission that connects the LPAs of Costesti, Duruitoarea Noua, Petruseni, Varatic, Horodiste, Zaicani, and Pirjota and potentially additional LPAs through distribution networks and rehabilitation/expansion needs in selected villages.[114] DEDs will consider infrastructure sustainability, climate risks, and demographic and economic development. To ensure inclusive outcomes and fast connection process, connections and water meters are included.[115]

74. **Investments for sanitation will expand and rehabilitate existing sewer networks within the boundaries of the towns of Soroca and Comrat and include modular designed** WWTPs. Designs will optimize life-cycle costs and prioritize technologies with low operational and energy costs, such as constructed wetlands, and integrate opportunities for nutrient recovery and reuse (for example, sludge reuse). Sewer systems are of a combined nature, including storm water drainage, and DEDs will ensure adequate design of spillovers. In addition, particularly for parts of Comrat town which are frequently flooded, sewer connection investments and support will focus on mitigating the impact of floods, where possible, and resilient infrastructure design. Feasibility studies for Comrat and Soroca will propose a prioritized investment program so that project financing can be allocated to maximize beneficiary impact,

[109] Effectiveness was declared on January 25, 2021, for the RETF TF0B4194. Closing date was August 31, 2021.
[110] Several pre-feasibility studies are available, with some outdated.
[111] The feasibility study (2014 by GIZ and 2018 update by KfW) and parts of DEDs (2019) are available and developed under the GIZ Modernization of Local Public Services Project.
[112] A concept for a regional WSS system in Comrat Municipality (2013) is available from the GIZ Modernization of Local Public Services Project.
[113] In a second phase of the project, or with the use of parallel domestic funds, additional LPAs/villages can be connected to this regional system.
[114] Details of the proposed investments need to be confirmed as part of the site-specific ESF document preparation and DED studies.
[115] With households responsible for bringing the piped water from the water meter chamber indoor to kitchen and bathrooms.

now estimated at 17,000 people for Soroca and 18,000 people for Comrat.[116] Connection rates to the sewer system in both towns are around 40 percent, leaving most households with on-site solutions (soak-pit, septic tank, dry pit latrine). Investments include household/apartment sewer service manholes that allow households to directly connect.

75. **Small civil works contracts will be financed for eligible poor and vulnerable households to construct required on-plot piping and plumbing to connect kitchen and bathrooms to the sewer service manhole.** The pro-poor support will increase the number of customers contributing to operator viability. Eligible poor and vulnerable households (eligible beneficiaries) will sign a 'Sewer Connection Support Agreement', a template of which will be included in the POM, including eligibility criteria and a maximum ceiling per household. It is estimated that around 1,000 poor and vulnerable households will benefit from the sewer connection support program managed by the PIU. Intensive community information meetings will be conducted to ensure that eligible beneficiaries understand the content of the agreement and are able to seek clarification on technical, financial, and legal aspects of the sewer connection support agreement.

76. **The pilot for on-site sanitation will follow an adaptive learning approach, aiming to demonstrate applicability and inform government support to IAS under the NWSSDP.** Pilot LPAs with villages below 2,000 p.e. will be selected[117] to promote IAS as described under the EU UWWTD.[118] IAS is generally considered to be a cost-effective alternative to centralized solutions in small, low-density settlements.[119] The pilot will be implemented in close coordination with the LPAs and under supervision of the PIU. It entails (a) the demand creation and promotion of safely managed low-cost on-site sanitation technologies, (c) information provision and advice on costs, construction, and installation including training of local contractors, (c) the development of service agreement for future emptying, and (d) financial support to households for the civil works. Interested and eligible households, so-called on-site sanitation participants, will sign a 'On-site Sanitation Household Agreement', a template of which will be included in the POM. Intensive community information meetings will be conducted to ensure that participating households understand the content of the agreement and are able to seek clarification on technical, financial, and legal aspects of the on-site sanitation agreement. Small works contracts will be prepared for septic tanks and infiltration facilities, with households contributing to the costs. Technical and market studies will inform reference documentation on technologies and cost estimates to determine a reasonable level of contribution. An estimated 1,500 people (or 545 households) are targeted to participate in this pilot.

77. **Selected WSS operators will benefit from works, goods, equipment, and consulting services to improve efficiency and support corporate development.** Utility diagnostics will be translated in a multiyear PIP, with priority measures financed by the project. TA will be directed at the preparation of delegation agreements, tariff submission, support to business planning as requested by the regulator, and

[116] A second-stage project or domestic funds can help expand the coverage further to amplify the impact.
[117] Selection criteria will be detailed in the POM. LPAs will enter into a cooperation agreement with the PIU that describes their responsibilities during the implementation of the pilot scheme.
[118] Requirements for IAS are defined under the UWWTD, without specific discharge standards for agglomerations below 2,000 p.e. Delineation of agglomerations has not yet happened in Moldova.
[119] Analysis in Romania illustrates that IAS can be a cost-effective solution in most settlements below 5,000 p.e, compared to networked solutions.

integrating of resilience planning and innovation in the PIPs. For the Riscani subproject, corporate support also involves the establishment of a licensed JSC regional WSS operator, covering at the minimum the Costesti town and the LPAs benefiting from the system.

78. **Cost estimates will be based on sound engineering designs, in line with national construction and design norms or otherwise agreed exceptions to existing norms by the GoM.**[120] Special attention will be paid to minimizing the risk of inefficiencies due to overdesign. Contract packaging will be developed, aligned with the Project Procurement Strategy for Development (PPSD), and will consider potential technical and procurement risks and where possible seek to increase efficiency through economies of scale and optimal opportunities for local (un)skilled labor deployment to support job creation to help the recovery from COVID-19 impact. Standard designs for WASH facilities in schools and HCFs will be developed in consultation with the MoER and MoH, ensuring disability access and female-friendly design features.

Economic and Financial Analysis

79. **Cost-benefit analyses (CBAs) were conducted for investments under Subcomponent 1.1**, namely improving water supply services in Cahul District and Vulcanesti town and in Riscani District and expanding and rehabilitating sewer networks and wastewater treatment capacity in Soroca and Comrat towns. In addition, a consolidated analysis was carried out to determine the project's overall economic viability. A financial analysis was conducted for four WSS operators to understand their financial situation and the implication of the project on tariffs and to assess affordability (see annex 3).

80. **The economic net present value (NPV) of the entire project's lifetime is estimated at US$52.7 million based on the present values of costs and benefits produced by the project and at the recommended discount rate of 6 percent per World Bank guidelines.** The project's estimated economic internal rate of return (EIRR) is 15.5 percent, driven by high economic returns across the subprojects, and especially from wastewater projects in Comrat and Soroca (EIRR of 19.7 and 15.8 percent, respectively). Most benefits are related to a reduction in pollution where wastewater was previously discharged untreated, with resultant benefits on public health (see table 4).

Table 4. Overview of NPV and EIRR for Subprojects

	Cahul District and Vulcanesti Town Water Supply	Riscani District (Prut Cluster) Water Supply	Soroca Town Sanitation Investments	Comrat Town Sanitation Investments
NPV (US$, millions)	13.1	5.1	14.6	19.8
EIRR (%)	14.4	11.2	15.8	19.7

81. **Given the uncertainties in the scope of the investments, sensitivity analyses were carried out measuring change in the NPV due to changes in critical parameters.** Number of beneficiaries was found to be the only critical variable, that is, where a 1 percent change in the population would result in more than 1 percent change in the economic return. The results remain robust, and only a decrease of more

[120] Applying the existing 'SNiP 2.04.03-85: Wastewater. External (outdoor) networks and facilities will lead to overdesign and unsustainable costs. MIRD approval will be sought to use more efficient design parameters (e.g. water consumption) or to allow for phasing of investments, such as the level of treatment (e.g., enhanced nutrient removal as a second phase).

than 50 percent of beneficiaries would result in a switch from positive to negative NPV. The economic analysis also incorporates the observed reduction in net GHG emissions resulting from the project, contributing to the positive economic returns through inclusion of the shadow price of carbon. For the water supply investments, the with-project GHG emissions are lower than the without-project emissions because of the electricity savings resulting from switching from deep wells to the new water supply system. Likewise, for the wastewater investments, the with-project GHG emissions are lower than the without-project emissions, due to the expected decrease in the GHG emissions from the latrines/septic tanks, which is slightly higher than the expected increase in the GHG emissions from electricity and sludge of the wastewater treatment system. At the aggregated project level, a small net saving in the GHG emissions is calculated as shown in the table 5.

Table 5. GHG emission results

	Cahul	Riscani	Comrat	Soroca	Aggregated
GHG emissions, t in 30-year project horizon	−4,601	−3,796	−1,154	+576	−8,975
GHG emissions, present value in US$	−152,624	−125,937	−38,368	19,041	−297,888

82. **As the investments will be operated by selected WSS operators, a baseline assessment of their financial position was carried out.** Operators have good performance of commercial operations, with fairly high levels of metering and high collection rates, and are to a large extent able to cover operational costs with their current revenues (Cahul, Soroca, and Comrat operators show operational cost recovery while Costesti operator does not). The assessment also highlights significant challenges; that is, current tariffs are not sufficient to allow for adequate capital maintenance, and, in 2019, none of the operators recorded a positive profit. In addition, large cross-subsidization between regulated services takes place. In the cases of Cahul and Soroca, the two larger operators, profits from water supply services were used to compensate for losses in wastewater services, while in Comrat, funds flowed in the opposite direction. In Costesti, a small unlicensed local operator, profits were neither observed for water supply nor for wastewater services.

83. **For each of the WSS operators, an assessment of the impact of the project on tariffs and potential affordability was conducted.** Even though Moldova's updated regulations require the inclusion of depreciation in WSS tariffs to allow for full cost recovery, these are not yet included by any of the operators assessed. Thus, even in the absence of the project, tariffs will need to increase gradually. As such, the tariff model was prepared for three scenarios: (a) a baseline scenario which included costs and revenues projected to increase in line with past trends; (b) a 'without-project' scenario that includes depreciation costs in accordance with regulated norms, an adequate level of maintenance of existing WSS assets along with optimization of variable costs (primarily NRW and energy usage) associated with reinvestments (scenario 1); and (c) a 'with-project' scenario with similar tariffs components as in scenario 1 plus the consideration of the investments under the project taking effect in 2025 (scenario 2). Annex 4 includes the details of the analysis.

84. **For the various operators, the tariff in the 2019 baseline for domestic water supply and wastewater services is low (MDL 14–15 per m^3 for water supply and MDL 2–15 per m^3 for wastewater) and will need to increase significantly to reach cost recovering levels.** As mentioned earlier, baseline tariffs do not incorporate the royalty component as per article 41 of ANRE's Tariff Methodology. In the tariff models, no capital financing costs are incurred as the Central Government on-grants the investments

to the LPAs, but the depreciation of existing and new assets is included as a royalty component. Analysis was conducted for each scenario to calculate the expected tariff increases. Table 6 shows the projected substantial changes required in tariffs for scenario 2.[121]

Table 6. Tariff Update for Scenario 2, Domestic Use, MDL/m^3

	2019	2021	2024	2025	2030	2040	2050
Cahul water supply services tariff	13.9	14.1	15.6	19.6	23.1	33.3	48.5
Costesti water supply services tariff	15.0	18.1	20.2	39.2	41.5	47.3	54.8
Soroca wastewater services tariff	1.6	5.71	11.2	13.0	15.2	17.9	25.1
Comrat wastewater services tariff	15.0	19.1	21.0	24.7	29.1	34.4	40.8

85. **An assessment was carried out to understand the potential impact of tariff increases on the affordability of services for the population.** Current legislation in Moldova does not provide requirements for social affordability of WSS services. Such requirements should be developed to ensure affordability of a basic minimum consumption for poor households, while allowing the tariffs to rise for better-off segments. Social tariff provisions will be critical if the recently updated tariff regulatory framework—including the royalty component—is to be applied and capital (re)investments are to be financed from tariffs. The affordability for the combined water supply and wastewater tariffs under the baseline scenario for the four operators is reasonable when considering average national income and a consumption of 60 lpcpd. However, projections indicate that this may go beyond 5 percent in 2050. For the poorest 20 percent of the rural population, affordability of WSS tariffs by 2050, especially for the systems in Comrat and the Prut cluster in Riscani, will reach the range of 9 to 11 percent of income.[122] This points to the urgency to include affordability considerations in the legislation and to tolerate a gradual introduction of the depreciation in the royalty component. Once project costs are known in more detail, tariff studies will be updated and submitted to ANRE for endorsement, including public hearings.

Table 7. Tariffs for Combined Water Supply and Wastewater as a Proportion of Household Income (%)

	WSS Expenditure as of Average Household Income of National Population[a]		WSS Expenditure as of Household Income of Poorest 20 Percent Rural Population[b]	
	2019	2050	2019	2050
Cahul WSS services	4.8	5.5	7.8	8.8
Costesti/Prut cluster WSS services	3.8	5.7	6.1	9.2
Soroca WSS services	3.1	5.4	5.1	8.7
Comrat WSS services	6.3	8.0	10.2	11.3

Note: a. Per capita monthly national income at MDL 2492 (HBS 2018; extrapolated).
b. Per capita monthly income of the poorest 20 percent of rural population at MDL 1,549; (HBS 2018; extrapolated).

B. Fiduciary

(i) Financial Management

[121] The tariff analysis is comprehensive for both water supply and wastewater (see annex 3);.
[122] It should be noted that there remain considerable uncertainties and limitations to these projections and hence their value is indicative in nature.

86. **The FM arrangements in place at the PIU have been reviewed in October 2021** in accordance with the Financial Management Manual for World Bank Investment Project Financing Operations to determine if these arrangements (budgeting, accounting, reporting, internal control, staffing, funds flow, and audit) are satisfactory to the World Bank. The MSIF as institution have significant experience in implementing World Bank-financed projects, including managing sub-projects at local level, and adequate FM systems in place. The audits of externally financed projects implemented by the PIU revealed no critical issues. The PIU prepares satisfactory regular financial reports to the donors and to the Government and (as a public institution, the PIU applies national rules for budgeting, funds flow, and internal control that are acceptable to the World Bank. Yet, at the time of the assessment there was no FM staff within the PIU. Hence it is critical that the PIU hires an experienced FM specialist with the qualifications acceptable to the World Bank as project effectiveness condition. Other actions meant to further strengthen the project's FM arrangements include updating the existing accounting software to accommodate new project and developing the required FM sections of the POM. Subject to implementation of the agreed action plan, the FM arrangements at the PIU are considered adequate to implement the project and meet the minimum requirements of the World Bank's operational policies. Following the assessment findings, the FM risk is assessed as Moderate after the mitigation measures.

87. The PIU will report on the project expenditures through regular unaudited interim financial reports (IFRs). These are to be prepared in the agreed format and will be submitted to the World Bank within 45 days after the end of the calendar quarter. The IFRs, to be prepared in compliance with cash basis International Public Sector Accounting Standards, will include (a) project sources and uses of funds, (b) uses of funds by project activity, (c) Designated Account (DA) statements, (d) a statement of the financial position, and (e) statement of expenditure (SOE) withdrawal schedule. The annual audited financial statements together with the auditor's opinion and the management letter will be provided to the World Bank within six months of the end of each fiscal year of the borrower and at the closing of the project. The PIU will be responsible for competitive selection and appointment of the acceptable project auditor in accordance with the terms of reference (ToR) agreed in advance with the World Bank, and the financial audit will be financed from the project funds. Annex 1 includes further details on the FM arrangements for the project, including the fund flow schedule.

88. **Flow of funds and disbursement.** The PIU will oversee planning and managing project disbursements, including preparation and submission of withdrawal applications. For this, the PIU will have access to the World Bank's Client Connection platform. The project would use standard disbursement methods: advance, reimbursement, direct payment, and special commitment. Project funds will be deposited in a DA to be opened by the PIU specifically for the project in the National Bank of Moldova and will be the sole entity handling payments (annex 1). The eligible project expenditures will be documented and reported to the World Bank using SOEs.

89. **An Operating Account in local currency will be established by the PIU to allow the local government contribution toward the civil works for the water supply and sewer systems under Subcomponent 1.1.** The contribution will be used to co-finance the civil works for each subproject. For each of the four subprojects, the local government contribution will be determined in the POM (amounting to a total of EUR 0.86 million or US$1.0 million equivalent) and the individual civil works contracts will indicate an exact amount of local government financing to be paid from the total contract value. The local governments are expected to deploy their own local budget toward this mandatory

contribution and/or—as per local orders—collect contributions. The availability of local government contribution is a requirement before specific civil works tendering will be initiated.

90. **The Operating Account will also be used to collect household contributions toward the civil works under the on-site sanitation pilot in Subcomponent 1.1.** LPAs of the pilot villages will deposit the required contribution amount collected from benefiting households that have signed the on-site sanitation agreement. These contributions will be made against payment of the small works contract for the respective households. The POM will describe the arrangements in detail, including a template form for the on-site sanitation household agreement with (a) roles of the LPA; (b) eligibility criteria for different household participant categories, registration, and selection of participating households; (c) the level of household contribution for the different participant categories; (d) supervision and monitoring of the small works by the PIU; and (e) forms for consent with design, acceptance of works, and completion of household contribution.

91. **The POM will include an annex for the CERC (the CERC Manual), detailing the operational, fiduciary, and disbursement details for activating and implementing the CERC.** The PIU will be responsible for the day-to-day management of the CERC, while the MIA has ultimate responsibility as the implementing agency. To activate the CERC, the Government will (a) determine the eligible crisis or emergency and send a request to the World Bank for support through the CERC and (b) prepare and submit to the World Bank for approval an emergency action plan (EAP) for the use of CERC funds. In turn, the World Bank will ensure that all ESS instruments, adequate staff capacity, and resources are in place. Once the disbursement conditions are fulfilled and World Bank confirms compliance, the reallocation of uncommitted funds from the original project components to the CERC is processed based on the EAP, and disbursements for CERC activities may commence. A separate DA will be opened for the CERC. The CERC will be audited as part of the audit of the original project.

(ii) Procurement

92. **Procurement under the project will be carried out in accordance with the World Bank Procurement Regulations for IPF Borrowers**, Fourth Edition, issued in November 2020 (hereinafter referred to as 'Procurement Regulations') and with the latest Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants.

93. **An assessment of the capacity of MSIF was carried out and duly recorded in the Procurement Risk Assessment Management System (PRAMS).** The team assessed the risks to implement procurement processes and recommended measures to mitigate those risks. MSIF is a mature implementing agency with over 15 years of experience in implementing Bank-funded operations. MSIF staff has good knowledge of World Bank procurement procedures (following Procurement and Consultant Guidelines) and has already established procurement capacities. However, given the nature of projects implemented by MSIF currently and in the past, their experience is limited to small value civil works contracts (mainly procured through National Competitive Bidding), goods (primarily procured through Shopping procedures) and small consulting services contracts related to civil works. The risk for procurement is assessed as Substantial. The major risks for procurement are the following: (a) no knowledge and experience with Procurement Regulations; (b) no experience with the Bank's Standard Procurement Documents and large value contracts especially following the international market approach; (c) potential delays in the development of the procurement cycle (technical specifications and terms of references, evaluation,

implementation of contracts, and approval of deliverables) due to complex implementation arrangements and involvement of multiple parties. Annex 1 includes details on the procurement arrangements, the PPSD, and the proposed mitigation measures to address the identified risks.

C. Legal Operational Policies

	Triggered?
Projects on International Waterways OP 7.50	Yes
Projects in Disputed Areas OP 7.60	No

94. **Given the transboundary nature of Moldova's river basins and the proposed civil works under Component 1, the policy on international waterways is triggered.** The impact of the project on overall quantity of transboundary water flow is expected to be negligible, and the impact on water quality in the Dniester, the Prut, and the Danube basin is anticipated to be positive. Romania and Ukraine were notified on December 17, 2020, with the International Commission for the Protection of the Danube River copied for information. No comments were received by the deadline of January 31, 2021. On February 25, 2021, a response was received from the Romanian Government. The response does not raise objectives or material comments to the project. The ECA Regional Vice President approved the memo summarizing the riparian notification process on March 7, 2021.

D. Environmental and Social

Environmental and Social Assessments

95. **The project is processed under the new ESF and is classified as Substantial for both environmental and social risks.** Seven of the ten ESS are relevant for this project: ESS1 (Assessment and Management of Environmental and Social Risks and Impacts); ESS2 (Labor and Working Conditions); ESS3 (Resource Efficiency and Pollution Prevention and Management); ESS4 (Community Health and Safety); ESS5 (Land Acquisition, Restrictions on Land Use and Involuntary Resettlement); ESS6 (Biodiversity Conservation and Sustainable Management of Living Natural Resources); and ESS10 (Stakeholder Engagement and Information Disclosure). ESS8 (Cultural Heritage), ESS7 (Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities), and ESS9 (Financial Intermediaries) are not currently relevant since no activity will have an impact on any known cultural heritage nor will involve financial intermediaries, and no indigenous people are considered to be present in Moldova. At this stage, several subprojects are proposed by the borrower for the project's financing, although their final location and technicalities are not yet identified. Hence, framework mitigation instruments are developed.

96. **Most of the environmental and social impacts and risks relate to Component 1, which will develop WSS infrastructure and services in towns and rural areas and will improve WASH facilities in schools and HCFs.** Civil works for water supply and wastewater and household-level improvements will likely generate adverse site-specific risks and impacts such as interruption of the functioning of rural and small town water supply systems; disposal of material excavated during construction/rehabilitation activities; occupational health and safety (OHS) of workers during construction and operational phases; increased levels of dust, noise, and vibration; potential

finds of hazardous materials such as asbestos-cement pipes; community health and safety risks from, in particular, the risk of pollution to surface water and groundwater sources during construction.

97. **To manage impacts and risks, MIRD has prepared an ESMF and an ESCP.** The ESMF as prepared by MARDE was disclosed on February 23, 2021 and consulted with stakeholders on March 10, 2021, and redisclosed on November 8, 2021 to reflect the government restructuring. Subprojects and site-specific environmental and social impacts will be presented in detail in the subproject-specific environmental assessment documents (such as ESIA and Environmental and Social Management Plan [ESMP]) to be prepared by MIRD, on behalf of the related LPAs, during the project implementation phase. The ESMF sets out the environmental and social assessment requirements of the project's activities and provides guidance on the preparation of site-specific ESMPs and/or checklists, as well as the contractors' codes of conduct. The ESMF refers to activities that can be addressed with good engineering and construction practices, by preparing and implementing adequate mitigation measures and applying adequate OHS practices during construction for both the construction workers and the communities. On the social side, the ESMF focusses on screening for land acquisition, labor impacts, and specific vulnerable groups (for example, gender and Roma communities). The ESMF includes environmental and social guidelines for the CERC.

98. **The ESMF serves as a screening tool for all subprojects and will screen out high-risk project activities as ineligible for financing under this project.** The requirement for the development of the site-specific ESMPs along with adequate staffing of the PIU as well as RDAs with respect to environmental and social management is reflected in the ESCP prepared for the project and integrated into the legal agreements. One of the key concerns related to environmental sustainability is the management of sludge from the new WWTPs and the ESCP indicates the need for cost-effective technology selection and the development of a sludge management plan.

99. **MIRD prepared an SEP, RPF, and Labor Management Procedures (LMP) annexed to the ESMF.** These documents were disclosed on February 23, 2021 and consulted with stakeholders on March 10, 2021, and redisclosed on November 8, 2021 to reflect the government restructuring. Social risks and impacts relate to the potential exclusion of poor and vulnerable households to project benefits as well as potential issues of land acquisition for rehabilitation and new construction of civil works. Civil works under Component 1 and possibly Subcomponent 2.2 may cause temporary economic displacement, and/or temporary construction induced impacts on private assets and businesses, and disruptions to residents and local businesses or are caused by land acquisition and restrictions on land, damages to utility service lines, and access restrictions to residences and parking lots during construction. Other adverse impacts may arise from labor influx into the areas by contractors, OHS issues, adverse impacts on community health and risk of gender-based violence (GBV). There is a low risk of labor influx as most civil works are expected to be carried out by local workers. GBV risk is rated low based on the scale of activities and existing analysis of the country context and referral mechanisms and support services available. The project is expected to have positive social impacts for the households in selected rural villages and towns. The project has included specific measures to ensure inclusive project outcomes through targeted support measures for poor and vulnerable households (see Social Inclusion section for details).

100. **The SEP will guide implementation, identifying all types of stakeholders and appropriate methods for consultation throughout the project.** A grievance redress mechanism, with submission and resolution mechanisms at the local level (LPAs), and central PIU and MIRD level, will be established by project effectiveness. Complaints received and resolved will be reviewed during the implementation support missions. A project-specific digital citizen engagement platform will be used for consultation (for example, for all ESF documents) and for

online submission of feedback and grievances.[123] An outreach strategy will be implemented to promote its usage, with hyperlinks to web pages of LPAs, RDAs, and WSS operators. Information for submission of inquiries/grievances will be placed on MIRD's and RDAs' websites. The process of addressing grievances and related forms will be included in the POM. LMPs outline the measures and actions to be undertaken to ensure proper management of labor and working conditions. For the land-related impacts including construction-induced economic displacement, the RPF will guide to prepare site-specific mitigation action plans such as Resettlement Action Plans.

101. **Responsibility and oversight of compliance with national environmental and social policy and the applicable ESSs of the World Bank will be assigned to the environmental and social specialists within the PIU.** The PIU environmental and social specialists oversee the implementation and monitoring of environmental and social aspects. They will be supported by part-time environmental and social consultants hired by the project for the four subprojects under Subcomponent 1.1 that will be integrated within the RDAs to facilitate capacity building and knowledge transfer. In close collaboration with the environmental authorities, the PIU will periodically monitor compliance with proposed mitigation measures.

102. **All bidding documents for civil works will include provisions of ESS2 on Labor and Working Conditions and have embedded environmental and social clauses, to enable contractors to follow up on environmental and social due diligence and to mitigate any negative impacts and risks.** Contractors will adopt a code of conduct for their workforce in the contractor ESMPs. In addition, chance-find procedures will be included in the contractor contracts. Overseeing the implementation of the environmental and social clauses will be tasked to the supervising engineer(s). Contractor/subcontractor ESMPs will include monitoring commitments and regular reporting is required during implementation as per the ESCP. The POM will detail labor management provisions and requirement for contractors to have codes of conduct, including measures to prevent sexual exploitation and abuse and sexual harassment.

Citizen Engagement

103. **The project incorporates a citizen engagement approach aiming for a proactive, regular, and two-way engagement with local citizens and water and sanitation customers throughout the project life cycle.** Participatory approaches in decision-making and implementation monitoring will empower citizens and give voice to vulnerable customers. A digital platform has been set up to ensure accessible online feedback and to complement face-to-face community engagement activities. During project preparation, a citizen engagement analysis was carried out[124] to identify entry points for strengthening citizen engagement and customer orientation in the project. The project will support a range of activities including (a) establishment and capacity building of diverse and inclusive CWSCs tailored to the local context;[125] (b) social mobilization and communication campaign, using a mix of interpersonal, social media, and the digital platform on issues related to construction implementation, monitoring, tariffs, connection plans, and operator performance; (c) beneficiary feedback surveys to gauge satisfaction on the project's engagement using online and face-to-face methods to ensure

[123] A test platform was set up and will be finalized before effectiveness. See *https://yrpri.org/community/1657*.
[124] Including interviews and focus group discussions with a heterogenous group of stakeholders, including WSS operators.
[125] These will be set up at the level of the district for the four subprojects. For Cahul/Vulcanesti, there may be two CSWCs due to the special status of ATU Gagauzia. They will require at least 35 percent female representation. In Soroca, they will require inclusion of Roma representatives.

inclusion; (d) participatory feedback on WSS operators' PIPs, including online feedback options and roundtables between citizens and WSS operators (see annex 2).

104. **Two citizen engagement indicators have been incorporated as part of the project's Results Framework**. At the PDO level, the indicator 'participating operators demonstrating core institutional capacities for improved water supply and sanitation service delivery' includes capacities related to citizen engagement, namely, (a) communicating data on KPIs and PIPs in a timely and transparent manner to shareholders and citizens; and (b) consulting with customers on the PIP and including feedback in updating the PIP. The second indicator is 'Share of beneficiaries who report that the project has established effective engagement' (sex-disaggregated).

Social Inclusion

105. **The project integrates a range of measures to ensure that inclusive WSS outcomes will be achieved.** The poorest segments of the population in rural areas face the strongest barriers to getting connected, often related to the costs of the 'last-mile' connection, leaving vulnerable households, especially women and children, with the biggest burden due to lack of services (poor sanitation and water collection).[126] Given the poor income situation in the rural villages,[127] household connections for water supply[128] and wastewater[129] services will be included for all households. However, to ensure that potential sewer connections turn into functional connections and paying customers, households typically incur substantial costs for on-the-plot and indoor plumbing to connect kitchen and bathroom and, when needed, upgrade toilet fittings. Therefore, eligible poor and vulnerable households can benefit from project support for small works for on-the-plot piping and in-door plumbing, requiring the households to improve their own toilet fitting/facility.[130] The POM will detail eligibility criteria using data available at the Social Welfare Offices at the LPA level, such as: (a) households that benefited from winter heating subsidy support in the past two years,[131] (b) households with three and more children, (c) single-person (age over 60 years)) households of age over 60, (d) single parent households with children, (e) households with disabled family member.[132] The on-site sanitation pilot will require household contributions for the septic tank and infiltration facilities, exempting eligible poor and vulnerable households from this contribution to ensure inclusion.[133]

106. **The project ensures inclusive social mobilization and community consultation throughout the project components.** Social mobilization efforts will be designed to ensure inclusion of vulnerable groups, such as the elderly, women, single parents, and ethnic minorities such as Roma[134] communities residing in the Soroca town and their representation in CWSCs. For ATU Gagauzia, special efforts will be undertaken to ensure multiple

[126] Social Marketing and Investigation Centre CBS-AXA (2013) Study on the Availability and Ability to Pay for Improved Water Supply Services - Results for Riscani District. GIZ Modernization of Local Public Services project.
[127] In 2019, absolute poverty rate was 25.2 percent nationally, and in rural areas 34.5 percent. https://statistica.gov.md.
[128] For water this means a metered connection in an individual service chamber; hence, a minimum functional service is provided in the yard; costs associated with bringing the water indoor are to be covered by the household.
[129] For wastewater this means an individual sewer service chamber in front of the yard or apartment.
[130] A field assessment under poor and vulnerable households in Soroca illustrated that very few of such households have flush toilets.
[131] Data from Ministry of Labor and Social Protection indicate that in the subproject areas, the share of households benefiting from winter heating subsides in 2019/20 is 8–11 percent.
[132] These household categories are overrepresented in the group under the national poverty line in 2019; for example, 42 percent of those under the poverty line were households with more than 3 children. See also https://statistica.gov.md.
[133] The POM will include a template 'On-site Sanitation Household Agreement'.
[134] Roma are estimated to account for around 0.4 percent of the population and are deprived across more dimensions than the non-Roma in the same locality. World Bank. 2016. *Poverty and Shared Prosperity in Moldova: Progress and Prospects.* Moldova Poverty Assessment, World Bank, Washington, DC.

language accessibility of information and feedback mechanism (Romanian and Russian). Specific assessments on the WSS conditions of Roma communities in Soroca were carried out to inform site-specific ESF documents.

107. **The financial analysis concludes that tariffs will need to rise in the future for sustainable operation and affordability may become a constraint for the poorest households.** The affordability analysis concludes that the poorest 20 percent of the rural population will certainly face constraints with increasing tariffs, as the share could go up to 8.7–11.3 percent. Hence, to mitigate these risks, the project will support the preparation of tariff submissions for all WSS operators to ANRE, including a gradual introduction of the royalty component for capital reinvestment, as well as the development of social tariff policies so that affordability issues will be considered.

Gender

108. **Relevant gender gaps for the project are (a) endowments, namely the disproportionate impact of poor WASH on women' and girls' well-being, and (b) economic opportunities, in terms of job segregation and underrepresentation of females in the WSS utility sector.** Inadequate access to water supply in rural areas, especially impacts on women, as they are often tasked with water collection from nearby or private on-plot wells. Around a quarter of non-connected households spend more than 30 minutes daily on water collection.[135] The provision of better sanitation services is typically valued more by females than by men. Similarly, within school settings, indoor, sex-disaggregated WASH facilities contribute to children's learning environment,[136] especially for girls who can better manage their menstrual hygiene needs.[137] Facilities will be private, include lockable door, and address MHM needs. Moreover, staff in schools and health centers are predominantly women, and hygiene education will address specific needs of girls and women.

109. **In terms of economic empowerment, wage disparities, segregation into lower-paying occupations, limited access to childcare, and migration all have a negative effect on women's economic participation in Moldova.** Women are underrepresented in highly paid and more in-demand sectors, thus ending up in lower-paid and mostly 'feminized' sectors of the economy, which include administration, education, health and social assistance, and hospitality. For example, women earn on average 13.5 percent less than men in the health sector, with the highest gender pay gap in the finance and insurance sector (39 percent).[138] Currently, around 29 percent of the staff in WSS operators are female, and among engineers the share of female engineers is 15 percent.[139] These findings are unsurprising and in line with global evidence[140] that confirms women's underrepresentation in technical and managerial positions.

110. **A Gender Assessment carried out in the selected WSS operators found that the share of women varied between 19 and 37 percent.** Women are concentrated in administrative jobs such as billing, accounting and FM, laboratory testing, customer relations, and meter reading, while men are hired in engineering occupations as well as in top management positions (only one in four of the utilities was headed by a female manager) and as pipe fitters, plumbers, operators of heavy specialized machinery, and operators of the water and wastewater treatment plants. There was no convincing evidence of an unexplained gender pay gap. However, the highest

[135] *Moldova Country Note - Review of Rural Water and Sanitation Services*. World Bank. Unpublished. 2018.
[136] In Romania, learning outcomes were correlated with presence of indoor toilet facilities, when controlling for other factors.
[137] No information is available on specific challenges for girls in managing their menstrual health and hygiene in Moldova and rapid assessment is needed.
[138] World Bank. 2014. *Moldova Country Gender Assessment*.
[139] IBNET database; Moldova country data 2018. Please note average data are arithmetic mean for 40 licensed WSS operators.
[140] World Bank. 2019. *Women in Water Utilities. Breaking the Barriers*. Washington, DC: World Bank.

paying jobs are found in top and middle management, including engineering positions, where typically women remain underrepresented.

111. **Numerous barriers were identified along the employee life cycle, the most critical being attraction and recruitment of young professionals, especially women in the WSS sector, as professional advancement in technical roles due to a lack of qualifications.** Attracting more women in WSS utilities is hindered by entrenched social norms and practices, a reputation of WSS sector labeling the work as too dangerous and physically demanding. The bachelor's level WSS course at the University of Moldova stopped operations due to lack of students, illustrating the poor attractiveness of the sector (for example, due to low salaries) and the brain drain of young people going abroad. Female employees reported less access to training and career opportunities, which often require more technical qualifications. Women spend almost twice as many years in the same position, compared to men, indicating lower opportunities for promotion.

112. **The project will implement a comprehensive professional development program contributing to narrowing the gap of women with technical qualifications, to attract, retain, and advance careers of females within the WSS sector.** Under Subcomponent 2.1, a professional development program is foreseen to upgrade technical skills of existing and new employees and prepare more technical WSS engineers for future employment in the sector. It includes two accredited courses for existing or newly recruited staff, either with or without a technical prequalification, to achieve the bachelor's level in WSS management and technical college degree as qualified WSS plant operators. Moreover, a cohort of new students will be supported to reopen the accredited four-year bachelor's degree in WSS that will be embedded with summer internships within sponsoring utilities. Special outreach activities will be carried out to attract female participants in these programs, for example, through networking and mentoring among females facilitated by AMAC, the utility association. Complementary training in coordination with the global Equal Aqua platform will be facilitated to sensitize more WSS utility managers on gender-inclusive HR policies, practices, and organizational and social norms. As part of the organizational measures within PIPs, this could also include a review and revision of HR policies to attract and advance careers, especially for women. The outcomes will be measured through the indicator 'number of participants that have successfully completed accredited professional development program and that advance to and/or gain employment in technical positions in WSS utility sector'. Out of a target of 165, it is expected that at least one-third will be women (the current share of females in technical engineering positions is 15 percent).

Climate Co-benefits

113. **The project includes both mitigation- and adaptation-related climate co-benefits**. Mitigation co-benefits relate to the modest reduction in net emission under Subcomponent 1.1 originating from the lower energy intensity for the water supply subprojects that shift from deep wells to surface water, and from the wastewater subprojects, where connecting people to sewers (reducing methane leaks from on-site facilities) offsets emissions from electricity use of the new WTTPs and sludge treatment facilities. Energy efficiency and NRW improvements under Subcomponent 2.2 will also deliver mitigation benefits. In terms of adaptation, Subcomponent 1.1 will increase resilience of households currently reliant on wells vulnerable to droughts, through safely managed, reliable, and good-quality water supply services, and reduce households' risk of exposure to pathogens exacerbated by flooding resulting from the construction of new wastewater systems, adequate septic tanks, and infiltration systems. Subcomponent 1.2 will increase the resilience and adaptive capacity of students, patients, and staff as the new WASH facilities will reduce the exposure to environmental health risks. All infrastructure assets will be designed with resilience to droughts and floods, allowing robust functioning under increasing climate threats. WASH facilities will be implemented using the Strategic Framework for Climate Resilient Development.

Through institutional strengthening and capacity-building activities under Component 2, climate change and adaptation planning will be integrated into the NWSSDP, and capacity-building activities will include efficiency and green solutions for sanitation design norms and standards as well as resilient asset design. Two climate change indicators have been included in the Results Framework of the project: 'Number of households contributing to reduction in GHG emissions resulting from a functional sewer connection to a safely managed sanitation service' and 'Number of households with increased resilience to droughts resulting from a functional connection to a safely managed water supply service'.

V. GRIEVANCE REDRESS SERVICES

114. Communities and individuals who believe that they are adversely affected by a World Bank (WB) supported project may submit complaints to existing project-level grievance redress mechanisms or the WB's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns. Project affected communities and individuals may submit their complaint to the WB's independent Inspection Panel which determines whether harm occurred, or could occur, as a result of WB non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank's attention, and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the World Bank's corporate Grievance Redress Service (GRS), please visit http://www.worldbank.org/en/projects-operations/products-and-services/grievance-redress-service. For information on how to submit complaints to the World Bank Inspection Panel, please visit www.inspectionpanel.org.

VI. KEY RISKS

115. **The overall risk rating for the project is assessed as Substantial.** This rating reflects inadequate sector strategies and policies and the absence of a sufficiently strong national entity to lead the WSS sector planning, as well as sectoral institutional capacity constraints, and fiduciary, environmental, and social risks, all of which have been rated Substantial. The remaining risks are rated Moderate or Low. The overall local and global context of increased uncertainty with regard to the COVID-19 crisis has also added to the overall substantial rating.

116. **Risks related to sector strategies and policies are Substantial.** In recent years, the government has demonstrated increased political will in tackling the crisis in Moldova's WSS sector and has recently updated its National WSS Strategy. With the assignment of the WSS mandate to MIRD, supported by strong RDAs, Moldova's investments in WSS and regionalization of service provision have the potential to progress. However, coordination mechanisms with other ministers, such as MoEnv, are needed and the mandate of Apele Moldovei needs to be clarified. Moreover, without a well-resourced and capacitated lead entity (or unit) responsible for overseeing a programmatic approach for WSS across urban and rural areas, Moldova's success at furthering its WSS agenda will remain limited. Changes to Law 303 will be needed to address regionalization and rural service delivery and regulation. There is no strategic investment plan and financing strategy, and the economic regulatory framework requires further improvement. This risk to the PDO will be mitigated through Component 2 under the project, through the provision of TA to build up capabilities in critical missing functions for WSS planning and management, financing coordination, and reform implementation at MIRD and local levels. Strengthening these functions within MIRD is a first step toward a medium- to longer-term goal of developing a strong WSS lead agency. The elaboration of an NWSSDP, investment program, and financing strategy should help create clarity and ownership. However,

despite efforts under Subcomponent 2.1, the risk remains substantial due to MIRD's constraints to champion and operationalize the program of reform activities.

117. **The risk associated with institutional capacity for implementation and sustainability is rated Substantial due to capacity constraints.** After the government restructuring and staffing changes, MIRD and its delegated PIU MSIF, have not yet been able to gain in-depth experience during project preparation[141]. Although MSIF has previous experience with World Bank projects, the complexity of this project, specifically on ESF aspects, is much higher as the risks in the ongoing MSIF projects, specifically due to the risks of the WSS infrastructure components. Moreover, both MSIF and MIRD's human resources capacities are limited. Mitigation measures to overcome these risks include clearly defining up front the key roles and responsibilities at the national, regional, and local levels and crowding in existing sector capacities where possible, for example, through RDAs, which have strong implementation capacities and will be supported through local technical WSS consultants. The need for a team of minimum core staff in MSIF presents an effectiveness conditions, and a unit/entity under MIRD to lead the NWSSDP is also reflected in the legal provisions. Despite the institutional strengthening activities, residual risk remains high due to limited capacity of MIRD as an implementing entity. In terms of sustainability, especially financial and institutional sustainability, the project design accounts for tariff reviews and applications to ANRE, makes room to support delegation contracting between LPAs and utilities (and reinforces these through covenants), and does not involve on-lending to utilities/LPAs. Revisions in WSS legislation and the associated development of ANRE regulations and social tariff policies as well as the capacity of ANRE to execute its mandate and the capacity of WSS operators to comply with regulations are real challenges. While addressed under Subcomponent 2.1, residual risks remain substantial given the need for regular tariff reviews and updates.

118. **Combined fiduciary risks are rated Substantial (procurement residual risk is Substantial, and FM residual risk is Moderate).** A key fiduciary risk is the varying capacity and experience with World Bank procedures of staff in MSIF for both FM and procurement. Key FM risks are the need to upgrade the accounting software (1C) to ensure adequate functionality and the management of local contributions. Key procurement risks are the complex contract implementation arrangements which foresee the participation of several parties with different roles (MIRD, MSIF, RDAs, and LPAs) and potential delays in procurement, including contract management. To mitigate these risks, capacity building interventions will be financed, and staff will be hired to fill capacity gaps as per the agreed staffing plan of the PIU. Details of the fiduciary risk assessment and mitigation measures are in annex 1.

119. **The combined environmental and social risk is rated Substantial.** Anticipated environmental risks and impacts are associated with activities in Component 1. This component includes small- to medium-scale civil works such as the construction and rehabilitation of in rural communities and towns, local institutions, and public spaces. Civil works will likely generate adverse site-specific risks and impacts, such as those stemming from the disposal of material excavated during construction/rehabilitation activities; the OHS of workers during construction and operational phases; increased levels of dust, noise, and vibration from the operation of construction vehicles and machinery; and community health and safety risks. Key social risks include (a) potential involuntary resettlement due to land acquisitions for rehabilitation/constructions for civil works, (b) impact of tariffs and connection costs on poor and vulnerable groups to ensure inclusive outcomes, (c) addressing of gender gaps within the WSS sector, (d) need for inclusive citizen engagement and a robust grievance system, and (e) labor and worker safety. MSIF as PIU lacks experience in addressing new ESF requirements such as labor and working conditions, stakeholder

[141] Handover arrangements were put in place to transfer as much knowledge as possible from the public Institution "Environmental Projects Implementation Unit" (EPIU) to MSIF. EPIU consultants could be hired by MSIF to build on the capacities that have been built already during project preparation, using the ECAPDEV project preparation grant.

engagement, and community health. The risks will be mitigated through adequate capacity-building activities and support to set up an environmental and management system within the PIU, including a social and environmental specialist in the PIU. RDAs will be supported by part-time environmental and a social specialist to support community health and safety monitoring and stakeholder engagement and to help institutionalize such capabilities for the future. Residual risk remains, however, high, given limited experience in addressing new ESF requirements.

VII. RESULTS FRAMEWORK AND MONITORING

Results Framework
COUNTRY: Moldova
Moldova Water Security and Sanitation Project

Project Development Objectives(s)

The PDO is i) to increase access to safely managed water supply and sanitation services in selected rural areas and towns, and to strengthen national and local institutional capacity for water supply and sanitation service delivery; and (ii) in case of an Eligible Crisis or Emergency, respond promptly and effectively to it.

Project Development Objective Indicators

Indicator Name	PBC	Baseline	Intermediate Targets				End Target
			1	2	3	4	
Increasing access to safely managed water supply services in selected rural areas and towns							
People provided with access to safely managed water supply services in selected rural areas and towns (Number)		0.00	0.00	0.00	27,000.00	30,000.00	30,000.00
Out of which female (Percentage)		0.00					50.00
People provided with access to safely managed sanitation services in selected rural areas and towns (Number)		0.00	0.00	275.00	8,750.00	32,500.00	36,500.00
Out of which female (Percentage)		0.00					50.00

Indicator Name	PBC	Baseline	Intermediate Targets				End Target
			1	2	3	4	
Strengthening institutional capacity at national and local levels for improved WSS service delivery							
National Water Supply and Sanitation Sector Development Plan (NWSSDP) with prioritized investment program and financing strategy developed and under implementation (Text)		No NWSSDP exists	Working group for NWSSDP created	Draft NWSSDP elaborated	Implementation of NWSDP started.	Funding mechanisms aligned with NWSSDP	NWSSDP with prioritized investment program and financing strategy prepared, implementation started and national funding mechanism aligned.
Number of participating operators demonstrating core institutional capacities for improved water supply and sanitation service delivery (Number)		0.00	0.00	3.00	4.00	4.00	4.00

Intermediate Results Indicators by Components

Indicator Name	PBC	Baseline	Intermediate Targets				End Target
			1	2	3	4	
Subcomponent 1.1: Expanding access and quality of WSS services							
Number of households with a functional connection to a safely managed water supply service (Number)		0.00	0.00	0.00	10,350.00	12,720.00	12,720.00
Number of households with increased resilience to droughts resulting from a		0.00	0.00	0.00	4,900.00	7,270.00	7,270.00

Indicator Name	PBC	Baseline	Intermediate Targets				End Target
			1	2	3	4	
functional connection to a safely managed water supply service (Number)							
Number of households with a functional sewer connection to a safely managed sanitation service (Number)		0.00	0.00	0.00	2,900.00	11,270.00	12,720.00
Number of households contributing to reduction in GHG emissions resulting from a functional sewer connection to a safely managed sanitation service (Number)		0.00	0.00	0.00	545.00	5,145.00	6,600.00
Wastewater and septage treated in selected towns as per national discharge standards (Cubic meters/year)		0.00	0.00	0.00	545.00	2,600.00	2,940.00
Number of households gaining access to safely managed sanitation through the on-site household sanitation pilot (Number)		0.00	100.00	545.00	545.00	545.00	545.00
Number of poor and vulnerable households gaining access to safely managed sanitation services (Number)		0.00	0.00	15.00	160.00	510.00	1,070.00
Subcomponent 1.2: Improving WASH facilities in public institutions							
Number of schools with functional safely managed drinking water supply, and basic sanitation and hygiene		0.00	0.00	0.00	50.00	95.00	100.00

Indicator Name	PBC	Baseline	Intermediate Targets				End Target
			1	2	3	4	
facilities (Number)							
Number of health care facilities with functional safely managed drinking water supply, basic sanitation and hygiene facilities (Number)		0.00	0.00	0.00	4.00	20.00	25.00
Number of people in schools participating in hygiene education and communication programs (Number)		0.00	0.00	0.00	12,250.00	23,750.00	25,000.00
Out of which female (Percentage)		0.00					50.00
Subcomponent 2.1.: Building national institutional capacity for WSS							
Number of legislative and/or normative documents developed in support of sector modernization (Number)		0.00	0.00	0.00	0.00	2.00	3.00
National Management Information System (MIS) for WSS service providers developed and operational (Text)		No national system exists; KPIs are not yet agreed	KPIs defined and approved by ANRE	MIS tested with at least five Operators	MIS operational with 75 percent of licensed operators	MIS operational with 95 percent of licensed operators	Nation-wide usage of MIS for annual benchmarking
Number of participants that have successfully completed accredited professional development program and that advance or gain employment in technical positions in WSS utility sector (Number)		0.00	0.00	70.00	120.00	150.00	165.00
Number of female participants successfully completing the accredited professional		0.00	0.00	25.00	42.00	50.00	55.00

Indicator Name	PBC	Baseline	Intermediate Targets				End Target
			1	2	3	4	
development program and that advance or gain employment in technical positions within the WSS utility sector (Number)							
Number of people benefitting from training and workshops related to regulatory framework, policy implementation and the use sector MIS (Number)		0.00	0.00	40.00	100.00	150.00	200.00
out of which female (Percentage)		0.00					40.00
Subcomponent 2.2: Improving performance of WSS service providers							
Average relative reduction of Non Revenue Water (expressed in m3/km network per year) for participating utilities compared to baseline value (Percentage)		0.00	0.00	0.00	5.00	10.00	15.00
Average relative increase of Total Cost Coverage ratio for participating utilities over the baseline value (Percentage)		0.00	0.00	0.00	5.00	7.50	10.00
Share of beneficiaries who report that the project has established effective engagement processes (Percentage)		0.00	75.00	75.00	75.00	75.00	75.00
Share of female beneficiaries who report that the project has established effective		0.00	75.00	75.00	75.00	75.00	75.00

Indicator Name	PBC	Baseline	Intermediate Targets				End Target
			1	2	3	4	
engagement processes (Percentage)							

Monitoring & Evaluation Plan: PDO Indicators

Indicator Name	Definition/Description	Frequency	Datasource	Methodology for Data Collection	Responsibility for Data Collection
People provided with access to safely managed water supply services in selected rural areas and towns	The indicator for SDG 6.1, safely managed drinking water services is defined as use of an improved drinking water source which is accessible on premises, available when needed and free from contamination (i.e. 24 hr service with compliant drinking water quality as per national norms)	semi-annually	Reports from PIU.	Data to be compiled by RDAs with inputs from LPAs/operators and recorded in PIU progress reports.	RDAs and PIU
Out of which female	The indicator provides supplemental information on the percentage of women benefiting from increased access to safely managed water services.	semi annually	PIU reports	Data to be compiled by RDAs ("employers') with inputs from LPAs/operators and recorded in PIU progress reports.	PIU and RDAs

People provided with access to safely managed sanitation services in selected rural areas and towns	The indicator for SDG 6.2, safely managed sanitation services, is defined as households that use an improved, not shared sanitation facility where excreta are disposed in situ or transported and treated offsite as per national effluent norms.	semi-annually	PIU reports	Data to be compiled by RDAs with inputs from LPAs/operators and recorded in PIU progress reports.	RDAs and PIU
Out of which female	The indicator provides supplemental information on the percentage of women benefiting from increased access to safely managed sanitation services.	semi annually	PIU reports	Data to be compiled by RDAs ("employers') with inputs from LPAs/operators and recorded in PIU progress reports.	RDAs and PIUs
National Water Supply and Sanitation Sector Development Plan (NWSSDP) with prioritized investment program and financing strategy developed and under implementation	The National Water Supply and Sanitation Sector Development Plan includes a prioritized investment program and financing strategy, measures and actions to operationalize the national WSS strategy and implement the reform.	Annually	Reports from PIU	MIRD to advise PIU on status of NWSSDP elaboration, endorsement, implementation and alignment of the national funds.	PIU
Number of participating operators demonstrating core institutional capacities for improved water supply and sanitation service delivery	Utilities should meet the following five core institutional capacities (1) Have reported on Key	Annually	Reports from PIUs	Data to be compiled by PIUs using data from operators/LPAs and recorded in PIU	PIU

	Performance Indicators (KPIs) in a timely and transparent manner to shareholders and through citizen engagement channels; (2) Have consulted with customers on the Performance Improvement Plan (PIP) and included feedback; (3) Have implemented or are in the process of implementing all measures in the PIP; (4) Are licensed and have delegation contracts in place with all relevant Local Public Administrations where services are provided; (5) Have approved and updated tariffs in place or have submitted a tariff application to the National Regulator (ANRE) compliant with the regulatory framework.			progress reports	

Monitoring & Evaluation Plan: Intermediate Results Indicators					
Indicator Name	**Definition/Description**	**Frequency**	**Datasource**	**Methodology for Data Collection**	**Responsibility for Data Collection**
Number of households with a functional connection to a safely managed water supply service	Households that are gaining and sustaining access to safely managed drinking water supply services through service connection in two categories: i) new connections to premises for households that were previously not connected to a centralized drinking water supply network and ii) existing connections that have seen an increase in service level from "improved" to "safely managed" due to improvements in water quality delivered and/or reliability of supply.	Semi-annually	PIU reports	Data to be compiled by RDAs with inputs from LPAs/operators and recorded in PIU progress reports.	PIU.
Number of households with increased resilience to droughts resulting from a functional connection to a safely managed water supply service	Households that at baseline relied on shallow wells prone to impacts of drought, and that gained access to a safely managed water service through the project (climate adaptation indicator)	Semi-annually	Reports from PIU	Reports from PIU	Data to be compiled by RDAs with inputs from LPAs/operators and recorded in PIU progress reports

Number of households with a functional sewer connection to a safely managed sanitation service	These are households that use an improved, not shared, sanitation facility connected to a functional sewer network and with treatment of the wastewater as per national standards. These include: i) households who move from septic tanks or other individual solution to sewerage, and ii) households already with a sewer connection that gained access to adequate wastewater treatment	Semi-annually	PIU Reports	Data to be compiled by RDAs with inputs from LPAs/operators and recorded in PIU progress reports	PIU
Number of households contributing to reduction in GHG emissions resulting from a functional sewer connection to a safely managed sanitation service	These are households gaining access to sewer connections to a system with off-site wastewater treatment that at baseline were not connected and used on-site facilities, such as pit latrines, or septic tanks. This shift result in a decrease of GHG emissions compared to the baseline (climate mitigation indicator)	Semi-annually	Reports from PIU	Data to be compiled by RDAs with inputs from LPAs/operators and recorded in PIU progress reports.	PIU and operators
Wastewater and septage treated in selected towns as per national discharge	This is the volume of wastewater treated at the	Annually	PIU Reports	RDAs and LPA	PIU

standards	newly constructed treatment plants up to the national effluent standards. It may also include septage from septic tanks that is treated within the plant.				
Number of households gaining access to safely managed sanitation through the on-site household sanitation pilot	These include households that participated in the pilot and as a result have gained access to an improved, not shared flush-toilet facility using on-site sanitation technology compliant with national standards (that can be emptied safely in the future); the pilot will include the development of a service chain for regular emptying although first time emptying will likely not occur duration of the project for these new facilities.	Semi-annually	PIU reports.	Data to be compiled by PIU and recorded in PIU progress reports	PIU
Number of poor and vulnerable households gaining access to safely managed sanitation services	These include poor and vulnerable households that have received pro-poor support under the project for sewer connections or for installation of on-site sanitation facilities; the eligibility criteria for poor	Semi-annually	Reports from PIU	Data to be compiled by PIU and RDAs with inputs from LPAs/operators and recorded in PIU progress reports.	PIU

	and vulnerable households are defined in the POM				
Number of schools with functional safely managed drinking water supply, and basic sanitation and hygiene facilities	These are the number of schools with facilities that include safely managed drinking water supply (available, on premises, free of contamination), at least a basic sanitation service (improved, single-sex and usable) and basic hygiene (water and soap available). Functional refers to facilities with O&M maintenance plans being followed. Facilities should be accessible for people with disability and respond to needs of women and girls (privacy, lockable door, menstrual hygiene facility)	Semi-annually	Surveys	Data to be compiled by PIU with inputs from the survey and LPAs/schools and recorded in PIU progress reports	LPAs and PIU
Number of health care facilities with functional safely managed drinking water supply, basic sanitation and hygiene facilities	These are the number of health care centers with safely managed drinking water supply (available, on premises, free of contamination), at least basic sanitation (improved, single-sex and usable) and basic hygiene at the point of patient treatment (water	Semi-annually	Surveys	Data to be compiled by PIU with inputs from LPAs and health centers and recorded in PIU progress reports.	LPAs and PIU

	and soap available). Functional refers to facilities with O&M maintenance plans being followed. Facilities should be accessible for people with disability and respond to needs of women and girls (privacy, menstrual hygiene facilities)				
Number of people in schools participating in hygiene education and communication programs	This includes the number school staff that have been trained in hygiene education and behavior change communication tools and the number of students in all participating schools that were reached with hygiene education and communication messages on WASH behaviors (including hand hygiene, menstrual hygiene for girls).	Semi-annually	PIU supported with surveys	Data to be compiled by PIU with inputs from schools and recorded in PIU progress reports	PIU
Out of which female	The indicator provides supplemental information on the percentage of girls/women participating in hygiene education and communication programs in schools	Semi-annually	PIU supported with surveys	Data to be compiled by PIU with inputs from schools and recorded in PIU progress reports	PIU

Number of legislative and/or normative documents developed in support of sector modernization	These refer to i) updates to sanitation norms for populations >2.000 p.e. and < 10,000 p.e. in coordination with MIRD and MoEnv ii) amendments to Law 303; iii) amendments and revised tariff policies and/or other regulatory norms issued by ANRE	Annually	Reports from PIU	MIRD, MoEnv and ANRE to advise PIU on status of documents	PIU
National Management Information System (MIS) for WSS service providers developed and operational	A MIS benchmarking system to support ANRE's regulatory oversight of licensed operators; the system will allow for comparison and analysis (benchmarking) and will be hosted online serving multiple users (ANRE, MIRD, MoEnv, Operators, public) through various interfaces	Annually	Reports from PIU	PIU to with input from ANRE as managing organization for the MIS	PIU
Number of participants that have successfully completed accredited professional development program and that advance or gain employment in technical positions in WSS utility sector	The professional development program includes i) two cohorts of continuous education for 100 people (existing/newly recruited staff) for accredited operator at technical college level ii) one cohort of 50 people (existing/newly recruited	Annually	Reports from PIU	Data compiled by PIU from program progress report; feedback surveys	PIU

	staff) for accredited WSS operator at BSc level, and iii) one cohort of 15 students receiving a BSc with WSS operator support for internships.				
Number of female participants successfully completing the accredited professional development program and that advance or gain employment in technical positions within the WSS utility sector	Gender indicator. These are the female participants that complete the program and advance and/or gain their employment in technical positions. Existing female representation in technical positions is 20 percent and female participation in BSc programs in engineering fields is 10 percent. The professional development program aims to reach at least 30 percent share of participants to be women.	Annually	Reports from PIU	Compiled by PIU and surveys	PIU
Number of people benefitting from training and workshops related to regulatory framework, policy implementation and the use sector MIS	These include representatives from WSS operators, from LPAs, from ANRE, RDAs, MIRD, MoEnv, design institutes and other sector institutions that have benefited from training and workshops to increase understanding, knowledge and capacities to implement	semi-annually	PIU	Annual training plan	PIU

	existing (or new) tariff regulations, policies and use sector instruments, including the WSS MIS				
out of which female	percentage of females benefiting from training	semi annual	semi annual reports	PIU reports	PIU
Average relative reduction of Non Revenue Water (expressed in m3/km network per year) for participating utilities compared to baseline value	NRW expressed in m3/km network/year calculated annually and compared to value in baseline to establish relative change in percentage; baseline values will be established in Y1; the indicator uses an arithmetic mean for the participating utilities.	Annually	Reports from PIU	Data to be compiled by Operators and recorded in PIU progress reports.	PIU
Average relative increase of Total Cost Coverage ratio for participating utilities over the baseline value	Total Cost Coverage is expressed as ratio between the total revenues and the total costs for water and wastewater services (%); this includes the costs for depreciation and the royalty for the development fund as per ANRE methodology; the ratio is calculated annually and compared with the baseline value to estabslish the relative change; baseline values will be established in	Annually	Reports from PIU	Data to be compiled by Operators and recorded in PIU progress reports	PIU

	year 1; the indicator uses the arithmetic mean for the participating utilities				
Share of beneficiaries who report that the project has established effective engagement processes	Citizen engagement indicator that looks into three core elements: i) satisfaction with access to information, ii) with opportunities/channels for feedback and dialogue, and iii) satisfaction with responses received to feedback. Engagement mechanisms include community consultations, online survey complemented by local snapshots, public hearings, roundtables, accessibility of the GRM, and outreach through Citizen Water and Sanitation Committees.	Annually	Satisfaction surveys	Data compiled by PIU, and support NGO, and recorded in PIU progress reports	PIU
Share of female beneficiaries who report that the project has established effective engagement processes	This indicator monitors if female beneficiaries are satisfied with the projects engagement processes as described in the parent indicator	Annually	Satisfaction surveys	Data compiled by PIU, and support NGO, and recorded in PIU progress reports	PIU

ANNEX 1: Implementation Arrangements and Support Plan

Project Implementation Arrangements

1. **Project implementing agency and PIU.** The overall responsibility rests with MIRD as the PIE to ensure that the project is implemented in an efficient manner, consistent with the project objectives and agreements signed. MIRD will be supported in day-to-day project management through the MSIF, founded by MIRD, acting as the PIU. The PIU will have responsibility for the project management and reporting, procurement, FM, and fiduciary compliance, ensuring compliance with the ESS and technical roles. The PIU has limited staff remunerated through the government budget (Interim Director and Lawyer).

2. **The PIU** will be staffed with long-term consultants as the core team including at least (but not limited to) the following positions, with ToRs in the POM: project manager, procurement specialist, procurement assistant, FM specialist, environmental specialist, social specialist, chief WSS engineer, communications/citizen engagement/gender specialist, M&E specialist, and administrative assistant. In addition, consultants in support of the PIU will be hired including (but not limited to) WASH facility engineer/coordinator, WSS engineer(s), institutional development specialist, legal specialist, and short-term consultants for specific technical input. For each RDA, one technical WSS consultant will be hired and part-time environmental and social consultancy support will be provided to support RDAs in implementation. At national level a WSS sector specialist will be hired to support MIDR in implementation and coordination with other ministries and institutions. A Project Implementation Agreement between MIRD and the PIU will detail respective roles and responsibilities, pertaining to all implementation roles, including roles in procurement and ESS, and forms a condition for effectiveness.

3. **PTCG.** At the national level, a PTCG will be established within three months after project effectiveness to coordinate the implementation of the project and endorse the annual implementation plan. The PCTG will be established by MIRD Ministerial Decree and will be chaired by the State Secretary for Regional Development or otherwise designated focal point for the proposed project. The PCTG will represent among others MIRD, MoEnv, MoF, MoER, MoH, and MIA. The PTGC will convene at least annually to review and endorse the project's annual program or upon request. The POM will detail the composition and responsibilities of the PTCG.

4. **RDAs.** Project implementation will be supported at the regional level through MIRD's subordinate RDAs. Based on the capacity assessment, local presence, and comparative advantage and experience of RDAs in the implementation of WSS Infrastructure projects, RDAs will take on several project implementation roles, while all fiduciary, procurement, and ESS compliance functions are retained at the central level. RDAs will act as the employer for the civil works in the subprojects under Subcomponent 1.1 and will take on the following roles: (a) facilitate and coordinate the involvement of LPAs in subprojects, (b) contribute to and approve the technical aspects of the bidding documents; (c) participate in evaluation committees, (d) administrate and supervise overall works contract implementation, (e) facilitate ESMP consultation and supervise implementation of the ESMP, (f) sign works completion documentation before payment submission, (g) sign acceptance certificate and support transfer of assets to the LPAs, and (h) facilitate delegation agreements between LPAs and WSS operators in close coordination with MIRD and the PIU. As per national legislation, MIRD through the PIU will hire licensed companies to carry out technical supervision for all subprojects in close coordination with the RDAs. RDAs will form project

implementation teams, consisting of assigned WSS engineers employed by the RDAs and supported through locally hired WSS consulting engineers for the subprojects. The team will be complemented by part-time environmental and social consultants funded by the project to support the monitoring of ESMP implementation and stakeholder engagement. The RDAs involved in the project are (a) RDA North, for the Riscani water supply subproject and for the Soroca wastewater subproject, (b) RDA South, for the Cahul/Vulcanesti water supply subproject, and (c) RDA ATU Gagauzia for the Cahul/Vulcanesti water supply subproject and for the Comrat wastewater subproject. Within three months after project effectiveness, all RDAs will be required to enter into an 'RDA Implementation Support Agreement' with MIRD and the PIU to detail the roles and responsibilities.

5. **Cooperation agreement for WSS systems.** Under Subcomponent 1.1, for each subproject an LPA Cooperation Agreement will specify the detailed roles at the subproject level for the PIU, RDAs, LPAs, and WSS operators and a template will be included in the POM. The agreement will also specify the agreed subproject-level local government contribution toward the civil works, which will be deposited by the LPAs (district, towns, and commune administrations) to a project Operating Account. LPAs (district councils at tier 2, and communes and towns at tier 1) are the beneficiaries for the major civil works contracts and assets will be transferred in their ownership and given in operation to licensed WSS operators under delegation contracts.

6. **Local governments.** Local governments will sign delegation contracts with licensed WSS operators in advance of the commencement of civil works that will take effect upon commissioning of the newly constructed systems. Local governments will be responsible for approving design documents, issuing construction authorization, participating, when required, in bid evaluation committees, local monitoring, and facilitating community consultation, citizen engagement, and social mobilization activities. They will be responsible for raising the required local government contribution for the civil works under Subcomponent 1.1.

7. **WSS operators and PIP implementation.** Under Subcomponent 2.2, WSS operators will be responsible for developing, implementing, and annually updating the PIPs including carrying out citizen consultations. WSS operators are the beneficiaries of consulting services, goods, and equipment required for PIP implementation procured by the PIU and will be the employer for works contracts in support of the PIP implementation. WSS operators will develop customer contracts upon connecting new households under Component 1. Licensed WSS operators will sign delegation contracts with LPAs for the newly constructed assets.

8. **Pro-poor sewer connection support implementation roles.** Small works contracts will be financed for eligible poor and vulnerable households for on-plot piping and plumbing. Eligible poor households will—as all other customers—sign customer contracts with the WSS operator and in addition a Sewer Connection Support Agreement with the PIU will be signed, including forms for the consent of designs and completion of the on-plot connection. Small works will be supervised by the PIU (or delegated to RDAs). Poor and vulnerable households will be identified with support of the Social Affairs office at the LPA level. Details of the sewer connection support program will be included in the POM.

9. **On-site sanitation pilot implementation roles.** LPAs with rural villages or peri-urban areas below 2,000 p.e. will be selected based on criteria identified in the POM. Households will sign a 'On-site Sanitation Household Agreement' with the PIU and LPA to consent to the conditions of the support scheme. Participating households will be responsible for contributing to the small works contracts,

covering the on-site treatment and disposal facility, in a differentiated way depending on socioeconomic status, with the LPA facilitating the collection of household contributions and depositing this on the project's Operating Account.

10. **WASH in social institutions**. The MoER and MoH will identify and approve the selected public facilities under Subcomponent 1.2. Respective LPAs, as owners of the new/rehabilitated WASH facilities in schools and HCFs, will enter into a WASH Facility Cooperation Agreement with the PIU, specifying their roles and responsibilities. Focal points within the MoER and MoH will - where necessary - facilitate data collection, monitoring, and coordination with school and HCF management and LPAs. Local administrations, which are the owners of schools and HCFs, as well as school and HCF management, will approve designs, monitor construction, and be involved in the elaboration and implementation of adequate O&M plans. School and HCF staff will be responsible for the hygiene communication activities, supported by a capacity-building NGO that will deliver training and develop age-appropriate hygiene education (including MHM) and behavior change communication materials.

11. **National institutional development activities.** MIRD will lead the implementation of national-level institutional strengthening activities (Subcomponent 2.1) ensuring the involvement of all relevant stakeholders. MIRD will set up a dedicated working group to guide the development of the NWSSDP and associated prioritized investment program. It will, supported by consultants, ensure adequate consultation with domestic stakeholders and development partners on new sector legislation, policies, and normative documents, especially in close coordination with MoEnv and with ANRE when pertaining to environmental policies and legislation, and economic regulation respectively. ANRE will be the client for the development of the MIS, including the benchmarking system and the e-governance portal to support its regulatory functions.

12. **The CERC**—if activated—will be implemented by the MIA through its GIES, given its mandate to lead emergency response and recovery efforts. The MIA and GIES are supported in all the procurement, FM, ESS compliance, and M&E functions related to the CERC by the PIU. In case of an emergency, the National Commission for Emergency Situations will coordinate among the relevant government bodies and will make a recommendation to the MoF to activate the CERC (supplemented with Rapid Needs Assessments and other documentation). The MoF will decide whether to request the World Bank to activate the CERC.

Financial Management, Disbursements, and Procurement

Financial Management

13. **The FM assessment was conducted to determine whether MSIF has adequate financial management arrangements in place to implement new project.** Although the PIU has good track record in the implementation of a range of the World Bank financed projects, its FM capacity significantly weakened after the resignation of the FM specialist who worked for years within the institution. Hence, the main FM risk is associated with the lack of FM staff. To mitigate this risk as well as to strengthen the existing FM systems a few actions are proposed (table 1.1). The FM risk is assessed as substantial with the residual moderate risk after the implementation of the mitigation measures.

Table 1.1. Actions for Improving FM Capacity of the PIU

Action for Capacity Building	Responsibility	Completion Date
Hire an experienced FM specialist based on the qualifications agreed with the World Bank	PIU	Effectiveness condition
Update the 1C accounting software for project accounting, budgeting, and reporting. The accounting system shall have in-built controls to ensure data security, integrity, and reliability as well as the functionality of automatic generation of SOEs and IFRs.	PIU	90 days after effectiveness
Prepare FM parts of the POM, which will reflect the project arrangements on FM with detailed guidance and procedures on project planning and budgeting, internal control mechanisms, accounting, budgeting and reporting procedures, disbursement procedures, funds flow, and audit arrangements.	PIU	By effectiveness

14. **Budgeting and planning.** The PIU has acceptable budgeting and planning capacity. It follows the rules and procedures established by the MoF for budget approval, execution, reporting, and monitoring. The same rules would apply for the project. The budgets of the projects funded from external sources are included in the annual state budget document of the country and this provides the basis for opening budget allocations for the projects. The project budget will be prepared by the PIU based on the Procurement Plan (PP), approved by MIRD and then endorsed by the MoF. The approved annual budget will be entered into the accounting system and used for periodic comparison with actual results as part of the interim reporting.

15. **Accounting and reporting.** The project accounting will be conducted as per Cash Basis International Public Sector Accounting Standards. The PIU will keep project-related records in automated accounting software which has to be adjusted to the project needs. Currently, it satisfies the statutory accounting and reporting requirements established by the MoF for public institutions. New functionalities like arranging the records in project reporting format of IFRs and SOEs as well as converting the records in the currency of the loan are required, and this will be added within 90 days after the project effectiveness. Additionally, the PIU will keep accrual accounting as required by local legislation.

16. **Internal control.** The PIU has in place a good internal control system capable of providing reliable and adequate controls over FM and disbursement processes and procedures. These include controls for safeguard of assets, segregation of duties, authorization of transactions, review and approval of invoices, contract management, and others. Internal control system as well as additional reporting and auditing requirements will be specified in detail in the POM.

17. **Staffing.** Currently, the PIU has no FM staff in place. The Chief Accountant who has significant experience and good knowledge of World Bank requirements left the PIU just before the assessment. Therefore, the PIU has advertised the FM position under ongoing WB project (Education Reform Project). For this project, the PIU shall hire an experienced FM specialist by project effectiveness. Any additional FM staff will be hired in coordination with the World Bank after assessing the needs and estimated workload under the project.

18. **Project IFRs.** Unaudited IFRs will be used for the project monitoring and supervision. The PIU has experience in the preparation of financial reports for various donors and for the Government. The format of the IFRs for the project has been confirmed during assessment and the IFRs include (a) project sources and uses of funds, including LPA contribution (b) uses of funds by project activity, including LPA

contribution, (c) DA statements, (d) a statement of financial position, and (e) SOE withdrawal schedule. These financial reports will be submitted to the World Bank within 45 days of the end of each quarter, with the first reports under the proposed project being submitted after the end of the first quarter of initial disbursement. IFRs will also capture details about LPA contributions allocated toward subprojects under Subcomponent 1.1.

19. **External audit.** As per their mandate, the Court of Accounts (Supreme Audit Institution) carries out annual audits of few other WB projects, however, current capacities to audit this project are limited and hence this will be done by private audit firms. The PIU will be responsible for arranging independent annual audit of project financial statements, conducted by independent private auditors acceptable to the World Bank, on ToRs acceptable to the World Bank, and according to the International Standards on Auditing issued by the International Auditing and Assurance Standards Board of the International Federation of Accountants. The audit scope will include (a) audit of the project financial statements, (b) the review of LPA contribution under subprojects under Subcomponent 1.1, and (c) review of the internal controls of the PIU with special attention to the compliance with the requirements of the Financing Agreement, provisions of the POM and World Bank FM and disbursement handbooks and guidelines.

20. **Annual audits.** The annual audits of the project financial statements will be provided to the World Bank within six months since the end of each fiscal year and at project closing. If the period from the date of effectiveness of the project to the end of the borrower's fiscal year is no more than six months, the first audit report may cover financial statements for the period from effectiveness to the end of the second fiscal year. The borrower has agreed to disclose the audit reports for the project within one month of their receipt from the auditors and acceptance by the World Bank, by posting the reports on its official website. Following the World Bank's formal receipt of these reports from the borrower, the World Bank will make the audit reports publicly available according to the World Bank Policy on Access to Information. The cost of the audit will be financed from the proceeds of the project.

21. The World Bank will exercise oversight of the FM performance under the project by conducting regular FM implementation support missions, by reviewing and providing feedback on the project IFRs and audits as well as by consulting the PIU on FM and disbursement matters. Comprehensive reviews of project FM arrangements covering all aspects of planning and budgeting, internal control procedures, flow of funds, FM systems and FM capacity will be performed at least on annual basis. The reviews will also cover the walkthrough over a sample of transactions.

Disbursement

22. The PIU will establish a DA in the loan currency specifically for this project, in the National Bank of Moldova, which is acceptable to the World Bank. The project's DA and associated Operating Accounts will be managed by the PIU. The Operating Accounts (opened in the Treasury of the MoF) will be used for payments in local currency obtained through conversion of the DA currency and for collection of LPA contribution. The expenditures paid from the DA will be documented to the World Bank through SOEs. Withdrawal applications documenting funds utilized from the DA will be sent to the World Bank at least every three months. DA ceiling will be provided in the Disbursement and Financial Information Letter (DFIL). In addition to the DA, the project funds will flow from the World Bank through the direct payment method, reimbursement method, and/or special commitments. Detailed instructions on withdrawal of loan proceeds with respect to these methods will be provided in the DFIL. The MoF will give authorization to designated officials to withdraw funds from the project financing account. The DA will be audited

annually in conjunction with the audit of the project financial statements. Figure 1.1 illustrates the overall fund flow diagram for the project.

Table 1.2. Actions for Improving FM Capacity of the PIU

Action for Capacity Building	Responsibility	Completion Date
Update the 1C accounting software for project accounting, budgeting, and reporting. Contract for updating of the 1C accounting software has been signed. The accounting system shall have in-built controls to ensure data security, integrity, and reliability as well as the functionality of automatic generation of SOEs and IFRs.	PIU	90 days after effectiveness
Prepare FM parts of the POM, which will reflect the project arrangements on FM with detailed guidance and procedures on project planning and budgeting, internal control mechanisms, accounting, budgeting and reporting procedures, disbursement procedures, funds flow, and audit arrangements.	PIU	By effectiveness

23. **Budgeting and planning.** The PIU has acceptable budgeting and planning capacity. It follows the rules and procedures established by the MoF for budget approval, execution, reporting, and monitoring. The same rules would apply for the project. The budgets of the projects funded from external sources are included in the annual state budget document of the country and this provides the basis for opening budget allocations for the projects. The project budget will be prepared by the PIU based on the Procurement Plan (PP), approved by MIRD and then endorsed by the MoF. The approved annual budget will be entered into the accounting system and used for periodic comparison with actual results as part of the interim reporting.

24. **Accounting and reporting.** The project accounting will be conducted as per Cash Basis International Public Sector Accounting Standards. The PIU will keep project-related records in automated accounting software which has to be adjusted to the project needs. Currently, it satisfies the statutory accounting and reporting requirements established by the MoF for public institutions. New functionalities like arranging the records in project reporting format of IFRs and SOEs as well as converting the records in the currency of the loan are required, and this will be added within 90 days after the project effectiveness. Additionally, the PIU will keep accrual accounting as required by local legislation.

25. **Internal control.** The PIU has in place a good internal control system capable of providing reliable and adequate controls over FM and disbursement processes and procedures. These include controls for safeguard of assets, segregation of duties, authorization of transactions, review and approval of invoices, contract management, and others. Internal control system as well as additional reporting and auditing requirements will be specified in detail in the FM chapter of the POM.

26. **Staffing.** Currently, the PIU employs a Chief Accountant who has significant experience and good knowledge of World Bank requirements. Given that the workload is expected to increase significantly during the implementation phase, the PIU will increase its FM capacity by hiring additional staff in coordination with the World Bank (at least one FM specialist)

27. **Project IFRs.** Unaudited IFRs will be used for the project monitoring and supervision. The PIU has experience in the preparation of financial reports for various donors and for the Government. The format of the IFRs for the project has been confirmed during assessment and the IFRs include (a) project sources and uses of funds, (b) uses of funds by project activity, (c) DA statements, (d) a statement of financial

position, and (e) SOE withdrawal schedule. These financial reports will be submitted to the World Bank within 45 days of the end of each quarter, with the first reports under the proposed project being submitted after the end of the first quarter of initial disbursement. IFRs will also capture LPA contributions allocated toward subprojects under Subcomponent 1.1.

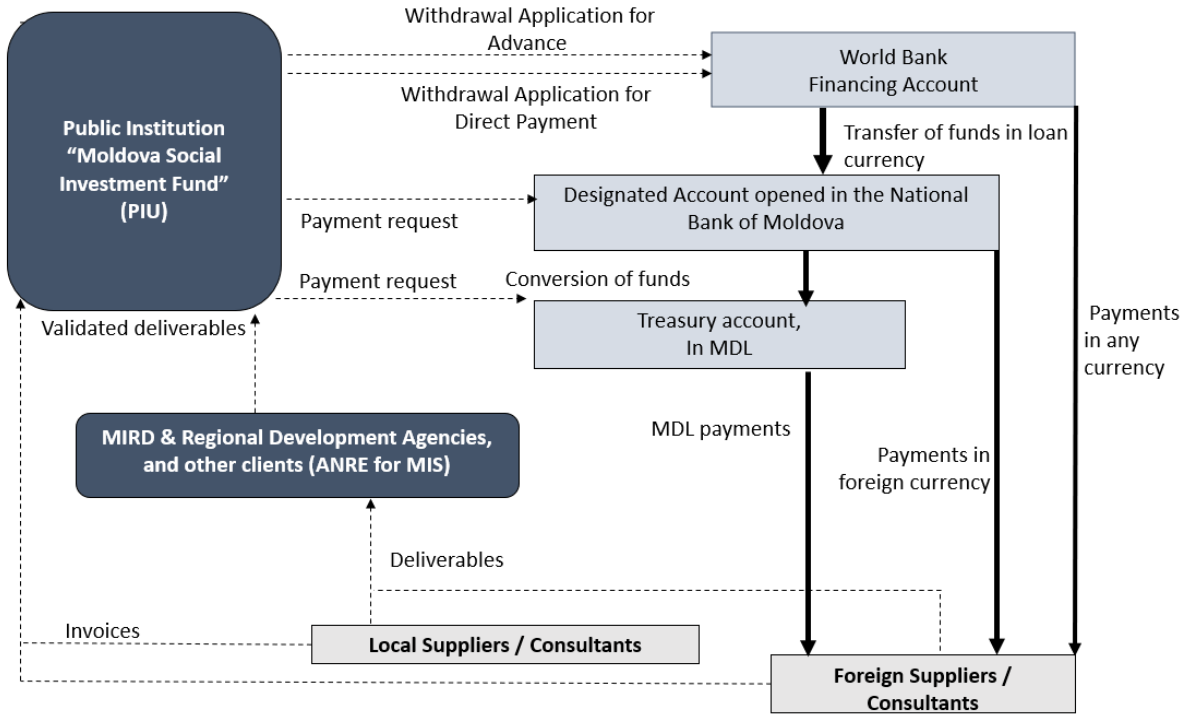
28. **External audit.** The PIU will be responsible for arranging independent annual audit of project financial statements. The audit of the project will be conducted by independent private auditors acceptable to the World Bank, on ToRs acceptable to the World Bank, and according to the International Standards on Auditing issued by the International Auditing and Assurance Standards Board of the International Federation of Accountants. The audit scope will include (a) audit of the project financial statements, (b) the review of LPA contribution under subprojects under Subcomponent 1.1, and (c) review of the internal controls of the PIU with special attention to the compliance with the requirements of the Financing Agreement and World Bank FM and disbursement handbooks and guidelines.

29. **Annual audits.** The annual audits of the project financial statements will be provided to the World Bank within six months since the end of each fiscal year and at project closing. If the period from the date of effectiveness of the project to the end of the borrower's fiscal year is no more than six months, the first audit report may cover financial statements for the period from effectiveness to the end of the second fiscal year. The borrower has agreed to disclose the audit reports for the project within one month of their receipt from the auditors and acceptance by the World Bank, by posting the reports on its official website. Following the World Bank's formal receipt of these reports from the borrower, the World Bank will make the audit reports publicly available according to the World Bank Policy on Access to Information. The cost of the audit will be financed from the proceeds of the project.

Disbursement

30. The FM/accounting staff of the PIU have adequate knowledge of the World Bank disbursement policies and procedures. The PIU will establish a DA in the loan currency specifically for this project, in the National Bank of Moldova, which is acceptable to the World Bank. The project's DA and associated Operating Accounts will be managed by the PIU. The Operating Accounts (opened in the Treasury of the MoF) will be used for payments in local currency obtained through conversion of the DA currency and for collection of LPA contribution. The expenditures paid from the DA will be documented to the World Bank through SOEs. Withdrawal applications documenting funds utilized from the DA will be sent to the World Bank at least every three months. DA ceiling will be provided in the Disbursement and Financial Information Letter (DFIL). In addition to the DA, the project funds will flow from the World Bank through the direct payment method, reimbursement method, and/or special commitments. Detailed instructions on withdrawal of loan proceeds with respect to these methods will be provided in the DFIL. The MoF will give authorization to designated officials to withdraw funds from the project financing account. The DA will be audited annually in conjunction with the audit of the project financial statements. Figure 1.1 illustrates the overall fund flow diagram for the project.

Figure 1.1. Fund Flow Diagram



Procurement

31. **Procurement under the project will be carried out in accordance with the Procurement Regulations** and the latest Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants.

32. **Procurement implementation will be managed by MSIF.** MSIF has more than fifteen years of experience in implementing Bank-funded operations. It has a procurement division which currently employs four staff: head of the division, one procurement specialist with experience in national procurement procedures and two junior staff with limited knowledge in procurement. While procurement capacities seem to be well-established, following the recent restructuring of the institution, internal changes which might impact the composition and staffing of the procurement division are to be expected. Given the nature of projects implemented by MSIF in the past and currently, most of the procurement activities are of a relatively small value and not of a complex nature. MSIF is mainly specialized in school infrastructure rehabilitation with participation of communities. Major contracts implemented by MSIF are for civil works following the national competitive bidding. MSIF has developed a set of bidding documents based on the sample bidding document developed by the Bank for national competitive bidding. This document was agreed with the Bank and has been used under all projects implemented by MSIF. Goods and consulting services were generally of small values with consulting services primarily related to civil works (development of feasibility studies, design, supervision of works). All projects implemented by MSIF followed the Procurement and Consultant Guidelines.

33. **An assessment of the capacity of MSIF was carried out and duly recorded in PRAMS.** The team assessed the risks to implement procurement processes and identified measures to mitigate those risks. While MSIF has experience with the Bank procurement procedures, it has limited experience in the field of infrastructure works planned under the proposed project and complex procurement following national and international market approach. Procurement capacities need to be enhanced especially given that MSIF is currently implementing several projects, including a project financed by the Bank. Distribution of roles/functions within the procurement division needs to be made clear. Table 1.2 illustrates the key procurement risks and proposed mitigation measures. The overall procurement risk is Substantial.

Table 1.2. Key Procurement Risks and Mitigation Actions

Identified Risk	Proposed Mitigation Measure	Responsible Entity	Time Frame
No knowledge and experience with World Bank procurement procedures based on the Procurement Regulations	• The World Bank procurement team will provide the procurement teams and parties responsible for procurement (including RDAs) with procurement training that covers the approach to procurement, Procurement Regulations, and the Systematic Tracking of Exchanges in Procurement (STEP).	World Bank team	Shortly after project approval
	• The World Bank team will make available any information on relevant training courses offered by the World Bank in the region and will encourage the MIRD/MSIF staff to attend. • MSIF to look for external training courses relevant for the parties involved in procurement and consider participating.	World Bank team MSIF	Throughout the project implementation
No experience with Bank's Standard Procurement Documents (SPDs) and large value contracts especially following the international market approach	• Apart from the regular guidance and support provided by the Bank, the World Bank team will conduct a procurement training on SPDs and specifics of large value contracts and their management	World Bank team	Shortly after project approval
Potential delays in entire procurement cycle (development of technical aspects to the procurement documents, ToR, evaluation and contract implementation)	• Develop a POM that includes a detailed chapter on steps in the procurement cycle and on roles and responsibilities of implementing agency staff in the procurement process • Employ additional procurement and technical experts to enhance capacities where expertise is lacking. • Employ technical experts to enhance the expertise of MSIF/RDAs. • Offer continuous support and guidance to RDAs throughout the procurement cycle. • Closely follow up and monitor the performance of contractors/consultants/suppliers to avoid delays in contract implementation, through a proper contract administration mechanism (regular inspections/meetings).	MIRD/MSIF MIRD/MSIF/ RDAs	After project effectiveness

34. **A PPSD has been developed by MSIF.** The PPSD identifies the following major types of activities: (a) civil works contracts; (b) consulting services for detailed design of works, construction supervision, energy audits, communication and awareness campaigns, MIS for utility benchmarking/KPIs (ANRE, MIRD) with e-regulation interface, and capacity-building activities; and (c) goods contracts (IT equipment, leak

reduction equipment, pressure meters, and others); and (d) non-consulting services for the delivery of the accredited professional courses. The PPSD has been reviewed and was agreed by the Bank.

35. **For the procurement of civil works, the estimated cost per package ranges from US$2 million to US$8 million.** The PPSD shows that there are many potential contractors in Moldova for works of this type, nature, and size; thus, approaching the national market and inviting open competition is considered the most suitable choice for contracts below US$5 million. For contracts above this threshold, the international market approach will be adopted. For national market approach activities, foreign contractors can participate if they wish to do so. For procurement of civil works, mainly the Request for Bids method will be used and for works estimated at less than US$200,000 the Request for Quotations method will be used (for example, for works for pro-poor sewer connection, on-site sanitation pilot, WASH facilities in social institutions, and minor works for PIP implementation). Procurement for households will include multiple small contracts. To the extent possible, these will be packaged into larger procurement and depending on the cost estimate, either Request for Bids (in lots) or Request for Quotations (in lots) will be applied. This procurement will be organized in close coordination with the LPAs and under supervision of the MSIF. For WWTPs, potential for design-build-operate contracts will be explored as an option for professional and efficient operation.

36. **Major consulting services contracts relate to works, and these are DEDs, construction supervision, feasibility studies, capacity-building activities for citizens engagement, public awareness campaigns, and development of the national territory development plan.** The estimated costs of consulting contracts range from small value to US$1.5 million. While the national market approach will be adopted for most of the contracts (especially those related to civil works given the strong local market for such assignments), the international market approach will be applied for the development of the feasibility studies and the national territory development plan. For construction supervision, the PPSD suggests hiring qualified consulting firms. It has been agreed that the civil works contracts, energy efficiency audits, and construction supervision contracts will be procured in batches, primarily based on the geographical proximity of the sites. Works will not be undertaken unless technical studies are carried out pursuant to national legal requirements and procedures described in the POM. The selection methods for consulting services provided by firms will be Quality and Cost-Based Selection (mainly for international market approach tenders), Consultant's Qualification-Based Selections for small-value assignments following the national market approach and Least-Cost Selection for the project audit.

37. **Procurement of goods is of small value and it is expected that most of the contracts will be procured following the Request for Quotations procedures if the cost estimate does not exceed US$100,000.** For contracts above this threshold, the Request for Bids method will be adopted. Procurement of goods will include procurement of the necessary electromechanical and leak reduction equipment, pressure meters, bulk water, meters for DMAs, SCADA, pump replacement, tools, and equipment for excavation as well as goods for the WASH facilities in social institution and communication campaign materials, IT equipment and other goods, and equipment for the functioning of the MSIF.

38. **Although market research finds a significant number of potential consultants within Moldova for the types of services needed, the participation of reputable and qualified international consultants will be beneficial to project implementation.** Therefore, the World Bank recommends that the project approaches international markets for larger-value contracts and for those critical for the project. It has however been agreed that—irrespective of the market approach—the World Bank's Standard Procurement Documents will be used for all contracts, including those for which a national approach is

foreseen. If this is not feasible, other procurement documents agreed by the World Bank will be used. For procurement in the international market, the World Bank's Standard Procurement Documents should be used.

39. **Public Procurement regulations in Moldova were assessed and it is concluded that the national procurement procedures (NPP) can be used with certain exceptions.** The new Public Procurement Law (PPL) No. 131 which entered into effect on May 1, 2016, is better adjusted to the EU Directives. While the PPL provides a good basis for the public procurement system and properly draws the legal framework for a sound public procurement system, the law has not been fully implemented/applied. An assessment of NPP has been carried out by the World Bank. The assessment concluded that given the ongoing and planned reforms in the public procurement sector, various technical issues with the current electronic procurement system, the PPSD suggests that MSIF adopts the international market approach procedures for procurement following the national approach with some specific arrangements which will be specified in the textual part of the PP.

40. **As part of the PPSD preparation, the PIU developed a PP for the entire project scope that is consistent with the project implementation plan.** The PP provides information on procurement packages, selection methods, procurement approach, and evaluation methods to be adopted for each contract to be financed under the project.

41. **Systematic Tracking of Exchanges in Procurement (STEP) will be used under the project.** All procurement transactions for post and prior contract review under the project must be recorded in/processed through the Bank's planning and tracking system, STEP. This ensures that comprehensive information on procurement and on the implementation of all contracts for goods, works, non-consulting services, and consulting services awarded under the whole project are automatically available. This tool will be used to manage the exchange of information (such as bidding documents, bid evaluation reports, no-objections, and other procurement documents) between the implementing agency and the Bank. The Bank team will provide training to MSIF on how to establish its account and use STEP. The PP will be prepared in STEP and will be submitted to the World Bank for review and approval. The approved PP will be published on the World Bank's external website. Any updates to the PP will be subject to Bank's review and approval.

42. **The CERC will help the borrower respond quickly in case of a crisis or emergency.** It was agreed that the PPSD developed by the PIU will include a section applicable to the CERC. The CERC-PPSD will focus mainly on complex contracts and new or innovative procurement, rather than on smaller, routine contracts. The strategy will describe, among other things, how procurement opportunities and risks will be managed in emergency circumstances and how suppliers and contractors will be motivated to bid and incentivized to perform. Procurement arrangements under the CERC will be streamlined. The World Bank's oversight and due diligence for procurement will be done through augmented implementation support with close monitoring, increased procurement-related post review, and/or third-party procurement reviews. All these arrangements will be described in detail in the CERC-PPSD and POM's CERC annex, which will be developed by MSIF. Given that the CERC is contingent and event driven, no PP for the CERC is prepared ex-ante. This PP will be formulated once the CERC is triggered. While the implementing agency of the CERC will be the MIA through its GIES, procurement under this component (if activated) will be carried out by MSIF with technical input/support from the MIA and GIES. Both the MIA and GIES are familiar with World Bank procedures given that they have benefitted in the past from World Bank financing.

43. **Complaint handling mechanism.** To address procurement complaints received by the proposed Project, the Borrower will implement a complaint handling mechanism. The project is required to ensure recording of procurement-related complaints in the STEP system. Both the World Bank and Borrower will use STEP to track complaints. The Borrower will be responsible for performing the following actions in STEP: (a) promptly record all complaints relating to procurement process; (b) for procurement process complaints received on contracts subject to the World Bank's prior review, submit the Borrower's proposed response to each complaint before issuing it to the complainant(s); (c) record the Borrower's response to the procurement process complaints upon issuance to the complainant(s); and (d) promptly register requests for debriefings and update STEP with the record of the debriefings to interested parties.

44. **All documentation with respect to each procurement will be retained by MSIF according to the requirements of the Legal Agreements.** MSIF will furnish such documentation to the World Bank upon request for examination by the World Bank or by its consultants/auditors. Documents with respect to procurement subject to post review will be furnished to the World Bank upon request.

45. **Procurement prior review thresholds will be set by the World Bank based on the project procurement risk level.** All contracts at or above the set thresholds are subject to international advertising and the use of the World Bank's Standard Procurement Documents. The applicable thresholds are defined in the table below will be specified in the textual part of the PP. While currently Best and Final Offer procurement processes involving contract negotiations, competitive dialogue, and sustainable procurement are not foreseen under the project, these will be subject to the World Bank's procurement prior review irrespective of the contract value if the decision is taken to apply them during project implementation.

Table 1.3 Procurement Types, Method and Prior Review Threshold

Type of Procurement	Method Threshold (US$, millions)	Prior Review Threshold
Works (including Turnkey, Supply & Installation of Plant and equipment, and PPP)	Open International > 5 Open National < 5 National Request for Quotation < 0.2	All contracts more than US$10 million equivalent
Goods, Information technology and Non-Consulting Services	Open International > 1 Open National < 1 National Request for Quotation < 0.1	All contracts more than US$2 million equivalent
Consulting firms	Selection Based on Consultants' Qualifications < 0.3 Least Cost Selection and Fixed Budget Selection - in justified cases Quality- and Cost-based Selection and Quality-based Selection - in all other packages National market approach (As per paragraph 7.25 of the Procurement Regulations) < 0.3	All contracts more than US$1 million equivalent
Consulting - individuals	No threshold	All contracts more than US$300,000 equivalent
Direct selection	No threshold	With prior agreement based on justification:

		• For goods/works/non-consulting services: As per paragraphs 6.8–6.10 of the Procurement Regulations. • For consultants: As per paragraphs 7.13–7.15 of the Procurement Regulations.

Note: The above thresholds are for the initial 18-month implementation period. Based on the procurement performance of the Project, these thresholds may be subsequently modified.

46. **The World Bank will exercise its procurement oversight through a risk-based approach comprising prior and post review and independent procurement reviews, as appropriate.** Procurement supervision visits will be carried out at least twice a year. These will include special procurement supervision for post review on procurement processes undertaken by MSIF, with the goal of determining whether they comply with the requirements of the Legal Agreements. The post review will be conducted with an initial sampling rate of 10 percent, though this could be adjusted periodically during project implementation based on the project's performance.

Monitoring and Evaluation

47. **The M&E system aims to measure and report on PDO and intermediate indicators as detailed in the Results Framework (section VII), as well as additional M&E arrangements described in the POM.** This will facilitate ready access to the information required for monitoring project progress helping to address any problems in project implementation. An M&E specialist will be hired by the PIU who, with the support of MIRD, RDAs, WSS Operators, and LPAs, coordinates all data collection, consolidates, and integrates progress and results in semiannual project progress reports. At the subproject level, RDA implementation teams submit to the PIU monthly reports to track progress of civil works and quarterly reports to highlight key issues in implementation and report on ESMP implementation and mitigation measures. For Subcomponent 1.2 project results, the PIU coordinates with LPAs, MoER and MoH to receive quarterly progress updates. A project-level M&E system will be developed, and baseline assessments for relevant indicators will be conducted in Year 1, with subsequent follow-up assessments, such as for performance and PIP implementation of the selected WSS operators. Citizen engagement surveys, using digital platform, will be launched at least semiannually for subprojects under implementation to keep the pulse on the quality of engagement.

Strategy and Approach for Implementation Support

The strategy for implementation support has been developed based on the nature and the design of the project and its risk profile. It aims to provide technical support to MIRD and the PIU and other stakeholders with a role in implementation (for example, RDAs, LPAs, and WSS operators). The plan will ensure fiduciary and ESF compliance with all relevant World Bank regulations and guidelines and aims to carry out all risk mitigation measures. Specifically, the strategic approach for implementation support considers the following: (a) limited experience of the PIU with implementation of complex and infrastructure-heavy projects, (b) MIRD central-level limited HR capacities and the need for high-level political facilitation, coordination and decisions on Subcomponent 2.1 activities; (c) need to increase capacities of RDAs for World Bank-funded projects (although good experience with international financial

institutions); (d) importance of strong facilitation of LPAs on sensitive issues such as tariffs, the setup of delegation arrangements, and MIRD's regionalization policy; (e) limited capacities at the LPA level and experience with World Bank-funded projects that may delay implementation; (f) complex institutional implementation arrangements; and (g) limited readiness of several subprojects.

48. **The POM will be prepared by the PIU and adopted by MIRD before the project becomes effective.** It will provide overall guidance on project implementation by describing the roles and responsibilities of the various agencies involved in project execution, including the implementation arrangements; the fiduciary, social, environmental, and M&E requirements; and key actions to meet project objectives.

49. **Implementation support will be provided by the World Bank team consisting of staff with relevant competencies in operations, procurement, finance, environmental and social safeguards, WSS engineering, institutional and regulatory/financial fields, and specific technical areas for innovation.** The skill mix and resource requirements are estimated in table 1.3 and 1.4. The team will undertake periodic (virtual and field) missions as required with intense supervision support during the first 18 months of project implementation, with a focus on the following:

(a) **Support to timely implementation and technical aspects.** The World Bank team will provide support and conduct required training on the World Bank's Procurement Regulations, FM, ESS. The World Bank will provide support to the PIU in the review of bidding documents for the water supply subproject works (based on applicable thresholds); for the development of DED and ESMPs; and for ToR development and launch of remaining feasibility studies, ESIAs, and DED services. The World Bank will advise on technical aspects with respect to where feasible, the application of low-cost, low-emission, and circular economy principles in the project.

(b) **Service delegation, institutional arrangements, and tariff assessments.** The World Bank will continue to provide support to help with financial assessments required for the ANRE tariff submissions (tariff models that were build require further refinement based on cost estimates) and advice on the delegation contracts.

(c) **Innovations on WASH hygiene, social inclusion, citizen engagement, and rural sanitation.** The World Bank will leverage additional funds and expertise to assist the PIU in the development of the on-site rural sanitation pilot, design WASH and hygiene campaign, and share good practices on inclusion of vulnerable groups.

(d) **Sector development and reform.** The World Bank will continue high-level sector reform dialogue, including update of national policies and strategies, as well as dialogue on revisions to Law 303, regionalization, and improvement to tariff setting framework. The World Bank will mobilize experience from other EU and/or accession countries, as part of its knowledge spillover initiative, to help develop the NWSSDP and advice on the financing strategy.

Table 1.4. Implementation Support Plan

Time	Focus	Skills Needed
First 18 months	• Support to detailed design processes of subprojects • Support to site-specific ESF documentation • Support to feasibility studies wastewater subprojects and designs • Procurement of works and contracts award • Establishment of implementation planning, M&E, and reporting systems • FM, procurement, and ESF training where needed • Launch and review of critical ToRs across all subcomponents • Support to institutional delegation aspects and tariff assessments • Support to introducing innovations in the project	A variety of skills such as engineering, utility management, wastewater, tariff regulation, environment, project management, fiduciary, M&E, WASH and hygiene behavior change, institutional expertise and strategic planning, rural sanitation
18–60 months	• Support to construction works and supervision • Support to social mobilization and inclusion interventions • Support to FM, procurement, and ESS compliance • Support to contract administration and management • Support to institutional and stakeholder processes for national planning and sector financing • Support to implementation of training programs • Support to innovations in the project	A variety of skills such as engineering, utility management, wastewater, tariff regulation, environment, project management, fiduciary, M&E, WASH and hygiene behavior change, institutional expertise and strategic planning, rural sanitation

Table 1.5. Skills Mix Required for Project Implementation (60 months): Staff and Consultants

Skills Needed	Number of Weeks	Comment
Task team leader(s)	60	Region-based staff/headquarter
Water supply/civil engineer(s)	60	Consultant(s) (country and region based)
Wastewater engineer	10	Consultant (international/region based)
Environmental specialist	20	Region-based staff
Social specialist	20	Region-based staff
FM specialist	15	Country-based staff
Procurement specialist	15	Country-based staff
Financial and regulatory specialist	15	Consultant (international/region based)
Institutional and policy specialist	15	Consultant (international/region based)
WASH and behavior change specialist	12	Consultant (international/region based)
Utility specialist(s)	15	Consultant (international/region based)

ANNEX 2: Detailed Project Description

1. **Background.** The 2020 World Bank Water Security Diagnostic highlights several pressing challenges to Moldova's WSS sector, such as (a) inequalities in access and inadequate quality of WSS in towns and rural areas; (b) weak performance of service providers; (c) poor environmental health and environmental pollution due to lack of sanitation and wastewater treatment; (d) weak institutions and unresolved reform areas that hinder a programmatic, efficient, and inclusive approach in service delivery; and (e) limited effectiveness of the economic regulatory framework to drive performance and financial sustainability.

2. **The project aims to respond to urgent challenges facing the sector.** The project will finance priority WSS investments in rural areas and towns to expand access and quality and improve WASH facilities in social institutions. These investments will be underpinned by a package of institutional support at the national and local levels to support sector modernization. The transformational impact of the project will be delivered by (a) creating the foundations and enabling environment for a national programmatic approach for WSS; (b) demonstrating the implementation of this approach in subproject locations with utilities shifting to higher performance; and (c) generating lessons for scale-up under the national program, such as for on-site sanitation solutions.

3. **Target group and beneficiaries.** The project is expected to directly benefit around 66,500 people residing in project areas through gaining access to safely managed drinking water and/or safely managed sanitation services within their households. An estimated 30,000 beneficiaries will gain access to a safely managed drinking service at home and an estimated 36,500 beneficiaries will gain access to safely managed sanitation services, of whom 35,000 to centralized wastewater collection and treatment systems and 1,500 people gaining access to a flush toilet with adequate on-site sanitation facilities through the pilot. In addition, students and staff of around 100 schools (around 25,000) and staff and patients of 25 rural HCFs will benefit from improved WASH facilities during their school/work hours.

4. **Institutional beneficiaries include MIRD, MSIF, RDAs, MoH, MoER, MoEnv, ANRE, participating WSS operators, and respective local and district authorities.** Service providers directly, and all their customers indirectly,[142] will benefit from operational and efficiency performance improvements planned under Subcomponent 2.2. Under Subcomponent 2.1, it is expected that at least 200 people will benefit from training and capacity building workshops in topics such as MIS and benchmarking, tariff regulations, and other sector policies, and so on. For the professional development program, it is envisaged that 165 people, of whom 55 women, from WSS operators and sector WSS agencies, will benefit from increased qualification and employment opportunities.

5. **Project components and estimated costs.** The project comprises four components and its key activities are summarized in table 2.1 with a tentative breakdown. Given the uncertainty about investments costs and the need for feasibility studies and updates of detailed designs for several subprojects, prioritization of investments will be made with the aim to ensure achievement of result indicators.

[142] This goes beyond the direct beneficiaries in the subprojects where WSS infrastructure investments will take place. The total customer base of the WSS operators involved under Subcomponent 2.2 is estimated at 95,000 people served (JSC Cahul, JSC Soroca, ME Comrat, ME Vulcanesti, and a proposed consolidation of ME Costesti and ME Riscani).

Table 2.1. Tentative Cost of Project Components (EUR 46.5 million/US$52.8 million equivalent)

Type	Item	Total Cost (US$)	Total Cost (EUR)	IDA (EUR)	ADA Grant (EUR)	Local Govt (EUR)
Works	Riscani: Water intake, purification plant and inter-municipal water main, reservoirs, chlorination stations, pumping stations, village/town networks, household connections, water meters (packaging tbd)	8,400,000	7,402,920	7,216,917	0	186,003
Consulting services	Detailed Engineering Design and ESIA/ESMP	225,000	198,293	198,293	0	0
TOTAL SUBPROJECT RISCANI		**8,625,000**	**7,601,213**	**7,415,209**	**0**	**186,003**
Works	Cahul rayon & ATU Gagauzia: water main Lebedenco-Vulcanesti-Alexandru Ioan Cuza, reservoirs, chlorination stations, pumping stations, selected village/town networks, hh connections, water meters (packaging tbd)	11,100,000	9,782,430	9,536,640	0	245,790
Consulting services	Detailed Engineering Design and ESIA/ESMP	420,000	370,146	370,146	0	
TOTAL SUBPROJECT CAHUL-VULCANESTI		**11,520,000**	**10,152,576**	**9,906,786**	**0**	**245,790**
Works	Soroca: wastewater network rehabilitation, expansion and Wastewater Treatment Plant and sludge treatment; pumping stations, household connections, pro-poor sewer support (packaging tbd)	10,850,000	9,562,105	9,321,851	0	240,254
Consulting services	Detailed Engineering Designs and ESIA/ESMP	400,000	352,520	352,520	0	0
TOTAL SUBPROJECT SOROCA		**11,250,000**	**9,914,625**	**9,674,371**	**0**	**240,254**

Works	Comrat: wastewater network rehabilitation and expansion and Wastewater Treatment Plant and sludge treatment; pumping stations, household connections, pro poor sewer support (packaging tbd)	9,450,000	8,328,285	8,119,032	0	209,253
Consulting services	Feasibility Study, Engineering Designs, ESIA/ESMP	400,000	352,520	352,520	0	0
TOTAL SUBPROJECT COMRAT		**9,850,000**	**8,680,805**	**8,471,552**	**0**	**209,253**
Consultancy services	Technical supervision companies (licensed)	700,000	616,910	616,910	0	0
Consultancy services	Capacity building for citizen engagement and support for public awareness campaign	100,000	88,130	88,130	0	0
Consultancy services	Technical Consultant to provide support to MIRD	75,000	66,098	66,098	0	0
Consultancy services	Legal Specialist for support to delegation contracts	30,000	26,439	26,439	0	0
Goods	Production of promotion materials, brochures, billboards and other information materials	25,000	22,033	22,033	0	0
TOTAL COSTS SHARED ACROSS SUBPROJECTS		**930,000**	**819,609**	**819,609**	**0**	**0**
Works	Pilot scheme for on-site household sanitation	250,000	220,325	28,526	191,799	0
Consultancy services	Technical design and supervision support	50,000	44,065	7,814	36,251	0
Consultancy services	Rural sanitation engineer for implementation coordination and capacity building	50,000	44,065	44,065	0	0
Consultancy services	Technology and market study, development of promotion materials, legislative documents	30,000	26,439	26,439	0	0
TOTAL COSTS ON-SITE SANITATION PILOT		**380,000**	**334,894**	**106,844**	**228,050**	**0**
TOTAL SUBCOMPONENT 1.1		**42,555,000**	**37,503,722**	**36,394,372**	**228,050**	**881,300**
Works	WASH facility rehabilitation and/or new construction in schools	3,167,500	2,791,518	2,791,518	0	0

Works	WASH facility rehabilitation and new construction Health Care facilities	567,500	500,138	500,138	0	0
Consulting services	Detailed Design and author supervision	125,000	110,163	110,163	0	0
Consulting services	WASH engineer/coordination	50,000	44,065	44,065	0	0
Consulting services	Social institutions screening and monitoring	25,000	22,033	22,033	0	0
Consulting services	Development of handwashing/hygiene education materials and capacity development	25,000	22,033	22,033	0	0
TOTAL SUBCOMPONENT 1.2		**3,960,000**	**3,489,948**	**3,489,948**	**0**	**0**
TOTAL COMPONENT 1		**46,515,000**	**40,993,670**	**39,884,320**	**228,050**	**881,300**
Consulting services	National Water Supply and Sanitation Sector Development Plan; prioritized investment program, financing framework; strengthening lead agency; preparatory studies for priority investments	1,500,000	1,321,950	0	1,321,950	0
Consulting services	Development/revision of standards/norms for sanitation for towns below 10,000 and above 10,000	75,000	66,098	66,098	0	0
Consulting services	Revisions on Law 303 to accelerate regionalization; revision on tariff/regulatory normative documents	50,000	44,065	44,065	0	0
Consulting services	Technical assistance for LPAs, districts and service providers for regionalization and tariff compliance (several experts)	75,000	66,098	66,098	0	0
Training/Workshops	Training and workshops on new WSS law, asset management plan, business planning, tariff regulation, MIS system, etc.	50,000	44,065	44,065	0	0

Non-consulting services	Software applications, licenses, cloud server for MIS systems ANRE/MIRD	40,000	35,252	35,252	0	0
Consulting services	Develop and implement MIS systems for KPIs and e-governance interface	150,000	132,195	132,195	0	0
Consulting services	Institutional Development Specialist	75,000	66,098	66,098	0	0
Consulting services	Consultant for MIRD for subcomponent 2.1	75,000	66,098	66,098	0	0
Goods	IT equipment for WSS MIS systems MIRD and ANRE	15,000	13,220	13,220	0	0
Non consulting services	Professional development program: delivery of BSc and Technical Colleges degrees and BSc WSS cohort	320,000	282,016	282,016	0	0
TOTAL SUBCOMPONENT 2.1		**2,425,000**	**2,137,153**	**815,203**	**1,321,950**	**0**
Non consulting services	Accounting/billing/asset management software	25,000	22,033	22,033	0	0
Consulting services	Energy audits, NRW plan development; pressure assessments, five-year business plan and asset management plan development	175,000	154,228	154,228	0	0
Goods	Leak reduction equipment, pressure meters, bulk water, meters for DMAs, SCADA, pump replacement, tools and equipment for excavation	500,000	440,650	440,650	0	0
Civil Works	Civil works for creation of DMAs, rehabilitation/replacement of pipes to reduce leakage, minor expansion	700,000	616,910	616,910	0	0
Consulting services	Specialized engineers (energy efficiency, NRW reduction)	50,000	44,065	44,065	0	0
Training/Workshops	Training for LPAs, utility staff; workshops for citizen engagement and roundtables	50,000	44,065	44,065	0	0
TOTAL SUBCOMPONENT 2.2		**1,500,000**	**1,321,950**	**1,321,950**	**0**	**0**
TOTAL COMPONENT 2		**3,925,000**	**3,459,103**	**2,137,153**	**1,321,950**	**0**
Consulting services	Financial Audits	75,000	66,098	66,098	0	0

Consulting services	PIU core team (Manager, FM Specialist, Proc Specialist, Proc. Assistant, Chief WSS Eng., WSS Eng, Env Specialists, Social Specialist, Communication/CE, Gender, M&E specialist, Administrative Assistant	1,415,000	1,247,040	1,247,040	0	0
Consulting services	RDA consultants on environment and social (part time)	60,000	52,878	52,878	0	0
Consulting services	RDA WSS technical consultants to support implementation	240,000	211,512	211,512	0	0
Operating costs	Incremental operating costs RDAs	60,000	52,878	52,878	0	0
Operating costs	Incremental operating costs PIU	300,000	264,390	264,390	0	0
Consulting services	Baseline and endline survey; other project M&E	60,000	52,878	52,878	0	0
Goods	Office/IT equipment for PIU, MIRD, RDAs	50,000	44,065	44,065	0	0
Non-consulting services	Software licenses etc.	10,000	8,813	8,813	0	0
Consulting Services	Short-term specialized consultants	30,000	26,439	26,439	0	0
Workshop/training	Training on Procurement, FM, ESF, contract management (PIU, MIRD, RDA, tender committees)	60,000	52,878	52,878	0	0
TOTAL COMPONENT 3		**2,360,000**	**2,079,868**	**2,079,868**	**0**	**0**
TOTAL PROJECT COST		**52,800,000**	**46,532,640**	**44,101,340**	**1,550,000**	**881,300**

6. **Gender.** A Gender Assessment covering the four selected WSS operators identified that the share of women employed in these entities varied between 19 and 37 percent. This is similar to the national average, where 29 percent of the staff in WSS operators are female, and among engineers the share of female engineers is 15 percent. The WSS sector has a high occupational sex segregation with women concentrated in administrative jobs such as billing, accounting and FM, laboratory testing, customer relations, and meter reading, while men are hired in engineering occupations as well as in top management positions and as pipe fitters, plumbers, operators of heavy specialized machinery, and operators of the water and wastewater treatment plants. Numerous barriers were identified along the employee life cycle, the most critical being attraction and recruitment of young professional, specifically females in the WSS sector, as professional advancement in technical roles due to a lack of qualifications. Attracting more women in WSS utilities is hindered by entrenched social norms and practices, a reputation of WSS sector labeling the work as too dangerous and physically demanding. The bachelor's level WSS courses at UTM stopped operations due to lack of students, illustrating the poor attractiveness of the sector (for example, due to low salaries) and the brain drain of young people going abroad. Female

employees reported limited access to training and career advancing opportunities that may hinder women's progression in the sector which often require technical skills.

7. **Ongoing professional development programs.** In recognition of the need to increase the qualifications of local employees in the WSS sector, several accredited training programs have been developed and their implementation cycle has been completed. The IFSP-supported accredited training program, delivered by UTM, intends to provide bachelor's degrees in WSS to existing employees through an 18-month program for those without a technical prequalification and a 12-month program for those with a technical prequalification. The program was completed in March 2021 and delivered 52 accredited bachelor's level degrees, of which 27 percent to females. Especially the 18-month program allows women to make horizontal career shifts and included 35 percent women (compared to 20 percent women in the 12-month program). The attrition rate was fairly at 25 percent (the program started with 70 students), but gender disaggregated data are not available. Supported by GIZ, a similar approach is followed for technician qualifications (technical college level), with 9 months for employees with a technical background and 12 months for those without technical prequalification. The program has started at end-2020 with a first cohort of 50 utility staff, of whom 20 percent are female. Bachelor's level WSS studies for new students were closed in 2017 and data suggest that around 20 percent of students were female. The professional development program of UTM is the only accredited program for continuous education in the WSS sector.

8. **Narrowing gender gap in technical fields in the WSS sector.** The project will implement a comprehensive professional development program contributing to narrowing the gap of women with technical qualifications, to attract and advance females within the WSS sector. It includes two accredited courses for existing or newly recruited staff, either with or without technical prequalification, to achieve the level of bachelor's in WSS management and technical college as qualified plant operators. Moreover, a cohort of new students will be supported to reopen the accredited four-year bachelor's degree in WSS that will be embedded with summer internships within sponsoring utilities. Special outreach activities will be carried out to attract and retain female participants in these programs, for example, through networking and mentoring among females facilitated by AMAC, the utility association. With support of MIRD and AMAC, complementary training in coordination with the global Equal Aqua platform will be facilitated to sensitize more WSS utility managers on gender-inclusive HR policies, practices, and organizational and social norms. As part of the PIP, measures to introduce inclusive HR measures can be addressed.

9. **Citizen engagement and communication activities.** The project incorporates a citizen engagement approach aiming for a proactive, regular, and two-way engagement with local citizens and water and sanitation customers throughout the project life cycle. Participatory approaches in decision-making and monitoring will empower citizens and give voice to vulnerable customers. An online platform will be developed to ensure accessible online feedback and to support several citizen engagement activities, complemented by face-to-face methods to ensure inclusion of those less able to use information and communication technology means. The platform will provide a resilient approach for the implementation of citizen engagement activities. Informed by consultations, the project will support several citizen engagement key activities:

(a) **Participatory decision-making and monitoring through the establishment of CWSCs** for subprojects tailored to the local context. The CWCSs will be initiated by LPAs, represent and support water and sanitation customers, and ensure that customer feedback and

suggestions can be addressed by the utilities. The CWSCs will also support the PIU, RDAs, LPAs, and utilities in conducting several other citizen engagement activities and will enable participatory monitoring of construction/connection progress and pro-poor support. Committee composition will ensure representation of vulnerable groups and at least 35 percent women.

(b) **Capacity building for citizen engagement and local facilitation through recruiting of an NGO**, which will continuously build the capacity of the CWSCs and support the PIU, RDAs, and LPAs in facilitation of diverse citizen engagement activities, particularly related to construction work and connections at the local level with CWSCs.

(c) **A social mobilization and communication campaign**, which will be designed based on feedback from customers and will be supported by the online platform. The campaign will use a mix of traditional and digital communication products; advertise and utilize the online platform; and disseminate information on water supply access, implementation schedules, connection plans, customer contracts and tariffs, and availability of pro-poor subsidies for sewer connections.

(d) **A water and sanitation beneficiary survey complemented by 'local snapshots'**, which will be advertised and conducted every six months through the online platform and SMS. The local snapshots will accompany the survey, aim to reach those who are not able to provide online feedback, and consist of phone conversations, focus groups, and door-to-door visits conducted by the NGO.

(e) **Regular (biannual) subproject public meetings,** supported by the online platform, will disseminate and discuss survey results and clarify which customer suggestions have been addressed (closing the feedback loop).

(f) **Participatory feedback for utility PIPs**—utilizing survey results and customer feedback to lead to customer suggestions for the PIPs. Customer orientation will be promoted for WSS operators and integrated in PIPs. This will include the strengthening of customer complaint mechanisms, as well as the public disclosure, regular consultation processes on the implementation and performance of the WSS operators, and integration of customer feedback in the annual updating of the PIPs.

(g) **Check My Water/Sanitation Roundtables** in collaboration with utilities, CWSCs, and interested citizens to collect their feedback for utilities' PIPs.

Subproject Investments at Appraisal Stage

10. **Subcomponent 1.1: Expanding access and quality of WSS services.** This includes the subprojects detailed in table 2.2.

Table 2.2. Summary of Proposed Subprojects

Expansion and improvement water supply services in Cahul and Vulcanesti Districts	Cahul is a city and district in southern Moldova. The subproject is aimed at improving access and quality of water supply services to a number of rural settlements and the town of Vulcanesti through transmission and distribution of water supply to households utilizing water from the Prut River, making use of bulk infrastructure already constructed. The existing water treatment plant has enough capacity to meet the future demand of water from all localities along the main line, including Vulcanesti town (which is part ATU Gagauzia), currently using deep ground water. The existing water supply infrastructure in the district of Cahul covers the city of Cahul and recently has expanded to nine neighbor localities using water from the Prut River. Localities out of the city of Cahul either have no centralized water supply system, with households utilizing mostly shallow wells, or, where centralized networks exist, utilize deep ground water, which in the Cahul area is highly mineralized. Shallow wells are prone to drought, high concentration of nitrates and microbiological contamination, and limited capacity. Deep wells in Cahul District have relatively low output and suffer from high levels of sodium, fluoride, iron, and ammonium. The scheme will require strong cooperation between local governments and operators, and between Cahul Municipality and the Gagauzian authorities. The proposed approach is that Vulcanesti municipal operator purchases bulk water from the Cahul operator, supplying existing and new customers through network expansion. The Cahul operator would operate the transmission main as well as the villages that will be connected in the Cahul District. While for Cahul subproject, several design drawings and bill of quantities (BoQ) are available, they require review, optimization where possible, and expansion (such as for the networks in Vulcanesti town). ESIAs and ESMPs need to be developed. The subproject aims to reach around 19,500 beneficiaries, of whom at least 12,000 live in Vulcanesti town.
Expansion and improvement water supply services in the Prut cluster, Riscani District	Rișcani is a district in the northwest of Moldova. The subproject is aimed at improving access and quality of water supply services to several priority settlements in the Prut cluster. The project will include a water intake from the Prut River, water treatment plant (modular to allow for capacity increase), transmission, reservoirs, and distribution of water supply to households. There are 21 villages with a population of around 25,000 who could potentially be connected to the Prut cluster, some without any service, and others with a partial service not compliant with water quality standards Currently, Costesti town, which is the largest settlement in the Prut cluster with around 3,500 people, utilizes water from deep wells. The project area is rural with low population density. There are designs that were completed in 2014 and updated with DEDs and BoQs in 2019. These now require expansion, to include where necessary distribution networks, optimization, and update, along with the preparation of ESIA and ESMPs. The determination of the first-phase priority settlements will be driven by ensuring highest beneficiary numbers, targeted at 10,500 people, for the available investment allocation amount. Local governments in the Prut cluster, including the district council, will become founding members of a new regional JSC to operate the system, under delegation contracts by the LPAs.
Expansion and improvements of wastewater services in Soroca	Soroca, on the border with Ukraine, is located on the right bank of the Dniester River in north Moldova. The city and surrounding villages have the population of about 40,000 at present, and the town proper has around 25,000 people. Over 85 percent of the city is covered with water supply services. The sewerage system in Soroca is old and received little or no maintenance for many years, covering around 35 percent of the town. All wastewater collected in Soroca flows to a central pumping station, from where the untreated wastewater is discharged in the Dniester River. Several sections of the sewer system are near collapse. Consequently, there is substantial groundwater infiltration into

	the sewers at present, wastewater concentrations are found to be low, and the cost for wastewater pumping is unnecessarily high. There has been a repeated and clear need to address the wastewater situation, and although numerous concept notes and pre-feasibility studies have been undertaken, these are either outdated or of poor quality. Under the ECAPDEV Project Preparation Grant, a feasibility study and ESIA document has been prepared. DEDs and bidding documents will be prepared under the project. The target beneficiaries for Soroca are 17,000 people. There is a significant Roma community in Soroca (population data not known). Industry plays a relevant role in Soroca and is an important source of wastewater pollution discharges. A field assessment among vulnerable and poor households illustrated the need for targeted support to connect to sewers as household soften do not have flush toilets.
Expansion and improvements of wastewater services in Comrat municipalities	Comrat town is the capital of the autonomous region of Gagauzia. It is located in the south of the country, on the Ialpug River. The city has a total of around 20,000 population at present. Over 85 percent of the town is accessing water supply services, although water quality is suboptimal. Around 35 percent of the town's population is connected to sewer networks. There is no functional WWTP (previous WWTP is obsolete) and untreated sewerage discharges into the Ialpug River. With support of national funds, critical rehabilitation on part of the main sewer collectors took place. A conceptual study for Comrat drinking water and wastewater investments was developed under the GIZ Modernization of Public Services project, highlighting the large investment needs of Comrat. A full feasibility study and detailed designs will be carried out, and investments for priority measures will be financed by the project (WWTP, networks, and support to the operator). The target beneficiary population is 18,000.
Improvements in on-site sanitation services for rural villages	The pilot aims to demonstrate that on-site sanitation can serve as cost-effective and appropriate solutions to help achieve sanitation targets in rural Moldova where networked solutions may not be feasible. The pilot entails (a) demand creation and promotion of safely managed low-cost on-site sanitation technologies, (b) information provision and advice on costs and correct construction and installation to households including training of local contractors, (c) the development of service agreement for future emptying, and (d) a co-financing arrangement with households for the civil works. Interested and eligible households will sign an 'On-site Sanitation Support Agreement' with the PIU to consent to the conditions of the support scheme (a template is included in the POM). All households will be responsible for constructing/improving their in-door flush toilet. An estimated 1,500 people (or 545 households) are expected to benefit from this pilot and as a result will gain access to safely managed on-site sanitation.

11. **Connection support program for sewers.** Ensuring household connections to WSS services, particularly sewer systems, is a significant challenge facing the sector (with no mandatory connection requirement yet in the law). In addition to negative public health and environmental impact, low sewer connection rates mean that WWTPs are underutilized and the financial performance of the WSS operator suffers. To reduce the risks of low connection, under the project household water supply and sewer connections up to private property will be included in all the civil work contract (including water meters and service manholes). Small civil works contracts will be financed for eligible poor and vulnerable households to construct required on-plot piping and plumbing to connect kitchen and bathrooms to the sewer service manhole. Eligible poor households will need to sign customer contracts with the WSS operator and a 'Sewer Connection Support Agreement' with the PIU, including consent form to the design of works and consent form for the completion of the on-plot plumbing/piping works. Small works will be supervised by the PIU. Eligible households are responsible that a basic pour-flush toilet is installed, and existing tanks and/or pits are decommissioned. It is estimated that around 1,000 poor and vulnerable

households will benefit from the sewer connection support program. Poor and vulnerable households will be identified with support of the Social Affairs office at the LPA level and listed as beneficiaries. Extensive awareness raising efforts should address willingness-to-connect and willingness-to-pay challenges, focusing on communicating benefits from connecting to centrally managed schemes. The project will support the development of mandatory connection policies, combined with social support mechanisms.

12. **Subcomponent 1.2: Improving WASH facilities in public institutions.** Subcomponent 1.2. will finance WASH in (a) health care centers as prioritized by the MoH in subproject location and other priority districts (target of 25 facilities) and (b) priority schools in subproject locations and other priority schools (target of 100 schools), following a framework approach allowing flexibility as to the selection of schools or HCFs based on needs, impact (pupil numbers, patients served), and readiness. Works will include the rehabilitation/construction of water supply connections to centralized networks or existing point sources, connection to sewer systems or construction of on-site sanitation facilities, and the rehabilitation or new construction of indoor toilet facilities with adequate handwashing and hygiene facilities. The subcomponent will finance capacity development to ensure adequate O&M of the facilities, as well as education and behavior change campaigns for school staff, students, and health workers on hygiene.

13. **Subcomponent 2.1: Building national institutional capacity for WSS.** This subcomponent will finance activities to strengthen institutional capacities at the national level for resilient, inclusive, sustainable, and efficient sector development and modernization. The subcomponent will focus on capacities for planning, financing, economic regulation, performance monitoring, professional development, and the revision and development of new policies and normative documents. Under leadership of MIRD, and in collaboration with other entities, specifically MoEnv and ANRE, this subcomponent will finance goods, consulting services, non-consulting services, and training for the following: (a) the preparation of an NWSSDP, investment program, and financing strategy and capacity development of its lead entity/unit; (b) the aggregation process of WSS operators into regional licensed service providers under this plan; (c) the development and rollout of a national WSS MIS for performance benchmarking; (d) the preparation of revisions and/or new legislation, policies, and normative documents and new design and construction norms for sanitation, in coordination with MoEnv; (e) the capacity development of ANRE, the WSS regulator, operators, and LPAs to comply with tariff procedures; and (f) the implementation of a professional development program.

14. **Subcomponent 2.2: Improving performance of WSS service providers.** Subcomponent 2.2 will finance investments (goods, works) and TA (consulting services, training) to support a prioritized multiyear PIP to enhance the performance of five WSS operators involved under Subcomponent 1.1 (see table 2.3 for a summary operator indicators). It will introduce annual performance assessments against agreed targets, based on an initial PIP and—depending on the achievement—the financing of priority measures under a second multiyear PIP. A comprehensive Utility Assessment was carried out for selected utilities through the use and implementation of the Utility of the Future Diagnostic and Action Planning tool, including the development of priorities for the strategic improvement program. Investments and measures include, but are not limited to, the following: increasing connection rates, improving commercial practices and accounting systems, asset management, water metering programs, NRW reduction programs, energy efficiency, improved customer orientation, water safety, and resilience/continuity plans. Customer feedback and engagement will be a part of the annual performance assessments.

Table 2.3. Key Indicators Selected WSS Operators

No.	Indicators	Cahul	Soroca	Comrat	Costesti
1.	Population in service area	55,800	46,140	26,400	3,755
2.	Households	20,327	18,750	11,000	2,004
3.	Population served	35,672	36,052	22,886	3,755
4.	Water coverage (%)	75	60	71	63
5.	Sewerage coverage (%)	42	33	29	51
6.	Wastewater treatment coverage (%)	-	0	0	-
7.	Intake water (m^3 ^000/year)	2,528.4	1,340*	1,459	52.1**
8.	Sales volume (m^3 ^000/year)	1,198.3	813	549	47.5
9.	Per capita consumption	50.1	50.9	59.9	50.0
10.	Continuity of service (hours/day)	24	24	18	24
11.	Sewerage blockage (number/km/year)	28	5.9	7.7	3.7
12.	Metering level (%)	97	96	98	99.9
13.	NRW (m^3 ^000/year)	1,330	527	910	4.6**
14.	NRW (%)	53	39	62	11**
15.	NRW (liter/connection/hour)	8.5	3.9	11.3	0.6**
16.	Staffing level (number/1,000 population served)	4.0	3.2	4.2	11.2
17.	Collection ratio (%)	108.4	101.6	106.52	110.8
18.	Operating cost coverage (%)	100.8	116.8	100.5	97.3

Note: Utility Diagnostic for Vulcanesti WSS operator is planned for May 2021.

*Purchased water volume from Acva Nord

** Artesian wells do not have water meters to measure the volume of intake water. The volume of intake water is calculated indirectly (depending on electricity consumption, capacity of pumping units and their operating time, etc.) and is thus very inaccurate.

ANNEX 3: Economic and Financial Analysis

1. **Economic analyses were carried out separately for the four subprojects and the results are analyzed per subproject as well as at an aggregate level**, in terms of costs and benefits and financial analysis. The subprojects include (a) the water supply investments in Cahul District and Vulcanesti town, (b) water supply investments in Riscani District (Prut cluster), (c) wastewater investments in Comrat, and (d) wastewater investments in Soroca town.

Economic Assessment

2. **For the water supply investments,** the analyses incorporated (a) capital investment and estimated changes in project-related operating costs; (b) benefits to the households in the project area with access to improved quality of the water supply service, that is, all the benefits related to both new access to improved drinking water and improved service levels, including those related to improved human health, resulting from ensuring 24-hour availability of drinking water with improved quality; (c) cost savings for beneficiary households due to 24-hour access to centralized piped water. This benefit is linked to the benefits accruing to households switching from self-supply to centralized piped supply due to no longer needing to rely on private reservoirs, private wells, private pumps, or bottled water as coping mechanism.

3. **With respect to the wastewater investments**, the analyses incorporated (a) capital investment and estimated changes in project-related operating costs and (b) cost savings of the newly connected households from switching to the wastewater connection network. This is linked to the benefits accruing to households switching to centralized wastewater collection from individual solutions due to no longer requiring CAPEX and OPEX[143] costs of maintaining individual sanitation systems; and (c) estimated economic benefits resulting from the reduced pollution (of the pre-project wastewater untreated discharge)—for both the population (use value) and the ecosystem (nonuse value).

4. **EIRRs have been calculated based on the incremental benefit and cost flows between the 'with-project' and 'without-project' situations**, to catch the 'pure project' impacts over 30 years as well as the investments' NPVs, based on a discount rate of 6 percent.

Table 4.1. Core Assumptions in the Analysis

	Cahul District and Vulcanesti Water Supply	Riscani District Water Supply	Comrat Town Sewer and WWTP	Soroca Town Sewer and WWTP
Population in the project area	70,063[a]	10,366[b]	22,699	20,000
Beneficiary (direct)	19,632	10,366	18,000	17,000
Average household size	3.52	2.48	2.41	2.50
Average household size	3.52	2.48	2.41	2.50
Capital investment costs (US$, millions)	11.6	8.3	10.0	11.0
Connection rate - without project (%)	61.4	79.4	39.6 (sewer), 0	43.3 (sewer), 0
Connection rate - with	74.0	100.0	82.6	85.0

[143] Operating expenses.

	Cahul District and Vulcanesti Water Supply	Riscani District Water Supply	Comrat Town Sewer and WWTP	Soroca Town Sewer and WWTP
project (%)			(sewer, WWTP)	(sewer, WWTP)
Shadow price of GHG emission, US$/t/year	60 in 2020, annually adjusted with the real GDP growth from 2021 onward			
Grid emission factor - Moldova, gCO_2/kWh	436			
US$ exchange rate to EUR	1.2246			
MDL exchange rate to US$	17.1984			
Project horizon	30 years (including 5 years for implementation)			
Discount rate (%)	6			

Note: a. Includes the entire Cahul operator service area and Vulcanesti town.
b. Includes Costesti operator service area and several villages in Riscani District targeted under Phase 1.

Table 4.2. Key Water Assumptions in the Analysis

Benefits from access to drinking water with improved quality[a], unit value, US$/benefiting household/year	78.7 in 2008 value, annually adjusted with the real GDP growth
Benefits from savings from switching from individual water supply solution[a], unit value, US$/benefiting household/year	167.5 in 2008 value, annually adjusted with the real GDP growth

Note: a. As per JASPERS' CBA Methodology for Water and Wastewater, 2008 transferred from Romania to Moldova based on annual household income per capita.

Table 4.3. Key Wastewater Assumptions in the Analysis

	Comrat Town Sewer and Wastewater	Soroca Town Sewer and Wastewater
Population in the project impact area	67,268 (20 km downstream)	58,492 (40 km downstream)
Benefits from the improved quality of the water bodies (use value)[a], unit value, US$/person in the project impact area/year	10.85 in 2008 value, annually adjusted with the real GDP growth	
Benefits from the improved quality of the water bodies (nonuse value)[a], unit value, US$/household in the project impact area/year	0.01 in 2008 value, annually adjusted with the real GDP growth	
Savings from switching from individual wastewater solutions[a], unit value, US$/benefiting household/year	185.02 in 2008 value, annually adjusted with the real GDP growth	
Share of households with inappropriate individual solutions (without-project)	49.8%[b]	

Note: a. As per JASPERS' CBA Methodology for Water and Wastewater, 2008 transferred from Romania to Moldova based on annual household income per capita.
b. About 55 percent of pit latrines are in bad technical state and in unhygienic conditions, 90.5 percent of the population in rural areas in Moldova uses pit latrines—data from 'Water and Sanitation (ApaSan) in Republic of Moldova' (Third Phase).

5. The economic analysis is based on the estimated capital costs, expensed over a five-year implementation period, annual operating costs associated with the investments, and assumptions included in table 4.1, table 4.2, and table 4.3.

CBA Results

6. **Water supply investments.** Applying the above assumptions, the analysis for the proposed investments in Cahul (mainly water supply extension-related infrastructure) indicates an EIRR of 14.4 percent. The NPV, calculated using a discount rate of 6 percent, is estimated to be US$13.1 million. The majority (51 percent) of benefits are related to reductions in environmental impact on humans. The EIRR for the Riscani water supply extension-related investments is estimated to be 11.2 percent, with an NPV of US$5.1 million. About 70 percent of the benefits derive from reduction in environmental impact on humans. The lower returns generated by the investments in Riscani are due to the relatively low number of beneficiaries.

7. **Wastewater investments.** The EIRR for the Comrat wastewater-related investments is estimated to be 19.7 percent, with an NPV of US$19.8 million. About 67 percent of benefits are derived from reduction in pollution as a result of the collection and treatment of previously untreated discharges. The EIRR for the Soroca wastewater-related investments is estimated to be 15.8 percent, with an NPV of US$14.6 million. About 68 percent of benefits are derived from reduction in pollution as a result of the collection and treatment of previously untreated discharges.

8. **In aggregate, the project is estimated to generate an EIRR of 15.5 percent**, with an NPV, calculated using a discount rate of 6 percent. The majority (63.5 percent) of project benefits are related to reductions in pollution-related impacts on humans and ecosystems as a result of the investments in centralized water supply and sewage collection and treatment. About 36.5 percent of benefits are due to savings for the customers, 40 percent of all benefits are from water supply-related measures, and 60 percent are due to measures related to wastewater services. The most sensitive variables are the benefiting population and, second, the investment costs, with only the affected population as a so-called critical variable—that is, a 1 percent change in the population would result in more than a 1 percent change in the economic return. Nevertheless, the CBA results are robust and would switch (negative economic NPV) only if more than a 59 percent decrease is observed in the benefiting population, as indicated in table 4.4.

Table 4.4. Sensitivity Analysis of CBA Results

	Cahul	Riscani	Comrat	Soroca	Aggregated
Switching value in the NPV	No critical variables	Decrease of 57% in benefiting population	Decrease of 101% in the population benefiting from improved water bodies	Decrease by 86% of population benefiting from improved water bodies	Decrease by 59% in benefiting population

9. **Impacts from GHG emissions.** The economic analysis also incorporates net GHG emissions resulting from the project. For the water supply investments, the with-project GHG emissions are lower than the without-project emissions because of the electricity savings resulting from switching of the project beneficiaries from deep wells to the new water supply system. Likewise, for the wastewater investments, the with-project GHG emissions are lower than the without-project emissions, which is due to the expected decrease in the GHG emissions from the latrines/septic tanks, which is slightly higher than the expected increase in the GHG emissions from electricity and sludge. At the aggregated project level, a net savings in emissions is expected.

10. **The project results in net savings in the GHG emissions.** Estimated reductions have been monetized using the shadow price of carbon as per the World Bank's guidelines with a baseline value of US$60 per tCO_2eq in baseline year 2020 (the average between the minimum of US$40 and the maximum of US$80), with an annual rate of increase equal to the real GDP growth.

Table 4.5. GHG Emission Results

	Cahul	Riscani	Comrat	Soroca	Aggregated
GHG emissions, t in 30-year project horizon	−4,601	−3,796	−1,154	+576	−8,975
GHG emissions, present value in US$	−152,624	−125,937	−38,368	19,041	−297,888

Financial Analysis and Tariff Model

11. **As the investments will be operated by affiliated WSS operators, a baseline assessment of their existing financial position was carried out.** The respective WSS operators have good performance of commercial operations, with fairly high levels of metering, and collection rates, however, show some financial challenges. Cahul, Soroca, and Comrat operators show operational cost recovery while the Costesti municipal operator does not.[144] Information was received from the operators for water supply and wastewater assets, including on population and customers, sales volumes, costs for 2017–2019 for regulated and nonregulated services, personnel, asset depreciation, and electricity consumption, among others. The data were validated with the operators' financial reports. As the scope of the WSS investments is not yet known in detail, the analysis applies assumptions about the project impact on the operator's operational and capital costs and its operational performance and therefore general assumption of the tariff impact.[145]

12. **Current tariffs are not sufficient to allow for adequate maintenance, and, in 2019, none of the operators recorded a positive profit.** In addition, large cross-subsidization was carried out. In the cases of Cahul and Soroca, the two larger operators, profits from water supply services were used to compensate for losses in wastewater services, while in Comrat, funds flowed in the opposite direction. In Costesti, a small unlicensed local operator, profits were not observed for either water supply or sanitation services. The financial standing of the operators is shown in table 4.6.

Table 4.6. Snapshot of Financial Standing of WSS Operators in 2019 (MDL, thousands)

	Cahul Operator	Costesti Operator	Soroca Operator	Comrat Operator
Total WSS for the operator	2019	2019	2019	2019
Total revenues	28,304	1,571	21,716	16,178
Total costs	28,416	2,244	23,893	19,515
Net result for the operator	−112	−672	−2,176	−3,337
Water supply service				
Total revenues	18,502	776	16 326	10,049
Total costs	17,552	855	20,352	15,255
Net result from water supply	950	−793	−4,027	−5,206

[144] It is proposed that a new JSC will be established by Costesti LPA, District Council, and other LPAs for the Riscani Prut cluster, unbundling the WSS of the Costesti ME. Financial analysis for the Vulcanesti operator is ongoing.
[145] The developed financial models follow the regulatory framework by ANRE and will be updated in the future and used to support LPAs and WSS operators with future tariff submissions.

	Cahul Operator	Costesti Operator	Soroca Operator	Comrat Operator
Wastewater service				
Total revenues	7,700	246	2,871	5,302
Total costs	8,509	770	3,540	3,116
Net result from wastewater	−808	−524	−669	2,186

13. **A financial analysis was carried out for each of the operators to assess the impact of the project on tariffs and potential affordability implications.** Moldova's updated regulations (article 41 of ANRE Tariff Methodology 489/2019) require the inclusion of depreciation of public assets in WSS tariffs—as a royalty component—to allow for better cost recovery. As none of the operators have included the component in their current tariffs, even without the project, tariffs will need to increase to allow for the reinvestments in existing assets. The tariff model, similar and fully aligned with the CBA, was prepared on the basis of three scenarios: (a) a baseline scenario which included costs and revenues projected in line with past trends; (b) a 'without-project' (WoP) scenario 1 which includes depreciation costs in accordance with regulated norms and thus an adequate level of maintenance of WSS assets, along with optimization of variable costs (primarily NRW and energy usage); and (c) a 'with-project' (WP) scenario 2 with reinvestments as in scenario 1 while including the estimated project investment costs.

Box 4.1. Description of Key Assumptions in the Financial Analysis Scenarios

Baseline scenario. Customers served and billed volumes are not changed from the level of 2019. Costs for materials are forecast according to 2019 level per m^3 water volumes at system entry with annual inflation increase. Costs for personnel are forecast based on the 2019 level with an annual increase as per GDP forecast. Costs for electricity are forecast based on 2019 in accordance with water volumes at system entry and tariffs are adjusted with planned inflation. Depreciation costs for 2020 are assumed equal to 2019 and starting from 2021 are forecast with application of depreciation norms for the respective types of assets. Operational profit of 3 percent is added on the total regulated cost. CAPEX costs are financed from the depreciation costs and half of the operational profit (in accordance with ANRE requirements).

Scenario 1 (WoP) - Reinvestments. It represents the situation without the investment project but with the adequate level of CAPEX to maintain the existing assets (both water supply and wastewater). The difference between the CAPEX calculated in the baseline scenario and scenario 1 is included as a 'royalty' component on top of the costs calculated in the baseline scenario. Optimization of NRW and electricity consumption is assumed, leading to optimization of variable costs (compared to the baseline scenario).

Scenario 2 (WP) - Reinvestments plus project investments. Assumptions are the same as those of scenario 1 plus additional customers and sales, operational costs for maintenance, and reinvestments in equipment which are forecast in accordance with project investments in the CBA. Reinvestments are spread on an even annual basis. The difference between the CAPEX calculated in the baseline scenario and scenario 2 is included as a 'royalty' component.

14. **New assets are projected to be constructed during 2021–2024 and will be put into operation from 2025.** The investments under the project are provided by the central government as a grant to the local administrations and thus no capital financing costs are incurred. Depreciations of the equipment constructed under the project are assumed to be fully included in the costs as a 'royalty' component starting from 2025 (assuming annual 10 percent norm of the reinvestment costs). The rest of the new asset value constructed under the project is projected with annual 2 percent of depreciation norm. Tariffs are calculated by dividing total required revenues (including operational costs, depreciation, and royalty) plus operational profit (3 percent of the costs according to article 47 of ANRE Tariff Methodology

489/2019) to the water sales. Tariffs are calculated separately for domestic (population) and non-domestic users (budget and economic agents) based on their consumption shares. Due to the existing heavy cross-subsidization between these customer groups at the current tariffs, tariff coefficients are used to calculate domestic and non-domestic tariffs such that the water supply tariff will gradually be the same in 2050 (starting with domestic tariff from 50 to 60 percent in the first year and 100 percent or the same by 2050). For wastewater tariffs for domestic customers, the tariff coefficient starts with 35 percent and will reach 75 percent of the non-domestic customers in 2050, considering the 'polluter pays' principle requiring non-domestic customers to pay a higher tariff. It should be noted that currently there are neither guidelines on customer categories, level of cross-subsidization, and block tariffs nor do provisions for fixed and variable tariff charges exist. The results discussed in the following paragraphs focus on the water supply tariffs for Cahul and Riscani and on wastewater tariff for Comrat and Soroca (while for all operators, predictions for both were made).

Results

15. **Cahul WSS operator.** The current water tariff does not cover the operational and needed capital costs since 2020; in all three scenarios a tariff update is required in 2021 to achieve full cost recovery status. Required revenues in scenario 1 (WoP) are similar to those in the baseline scenario due to reduction of variable costs, even though higher capital costs are foreseen in scenario 1. In scenario 2 (WP), the required revenues are significantly increased from 2025 onward and will not be covered through increased domestic consumption with current tariff in Cahul area; a bulk water tariff for the Cahul operator is calculated to sell water to the Vulcanesti operator to (partly) supply Vulcanesti town. Table 3.7 illustrates how tariffs[146] would develop under the scenarios to meet the revenue requirement.

16. **Under scenario 2,** the current tariffs of MDL 13.87 per m^3 (domestic) and MDL 22.45 per m^3 (non-domestic) will need to rise to MDL 19.55 per m^3 (domestic) and MDL 29.85 per m^3 (non-domestic) in 2025 when the new assets are put in operation, reaching MDL 48.5 per m^3 by 2050. The incremental difference between scenario 1 and scenario 2 or the impact of the 'pure project' on the tariff is most noticeable in the first decade after the new assets are taken into operation. From 2025 onward, the Cahul operator will supply bulk water to the Vulcanesti area (served by other operator), and a new tariff for production and/or transport of water for redistribution will have to be approved by ANRE (allowed in Tariff Methodology 489/2019). Estimations show that the bulk tariff for 2025 would be MDL 7.4 per m^3, needing to rise to MDL 21.7 per m^3 in 2050.[147]

Table 4.7. Development of the Domestic and Non-domestic Water Supply Tariff for the Cahul WSS Operator

Water Supply Tariff (MDL/m^3)	Baseline		Scenario 1 - WoP		Scenario 2 - WP	
	Domestic	Non-domestic	Domestic	Non-domestic	Domestic	Non-domestic
2019	13.87	22.45	13.87	22.45	13.87	22.45
2025	16.21	24.74	16.18	24.70	19.55	29.85
2035	24.84	31.32	24.23	30.55	27.67	34.89
2050	48.57		46.06		48.53	

[146] Each option is forecast starting with 60 percent tariff coefficient for domestic tariffs in 2021 and reaching 100 percent or uniform tariff for all customers in 2050.
[147] Costs are allocated by considering the ratio of the water supplied to Vulcanesti as of the total (for basic costs and other cost tables) and in accordance with the supplied volumes (for electricity costs and water tax).

17. **Riscani—Prut cluster—Costesti operator.** The current water tariff does not cover the operational and needed capital costs since 2020; in all three scenarios, a tariff update is required in 2021 to achieve full cost recovery status. Required revenues in scenario 1 (WoP) are similar to those in the baseline scenario due to reduction of variable costs, even though higher capital costs are foreseen in scenario 1. In scenario 2 (WP), the required revenues are significantly increased from 2025 onward and will not be covered through increased domestic consumption with the current tariff in Costesti. Table 4.8 illustrates how the domestic and non-domestic tariff[148] would need to develop under the three scenarios to meet the revenue requirement.

18. **Under Scenario 2,** the current tariffs of MDL 15 per m^3 (domestic) and MDL 35 per m^3 (non-domestic) will need to rise to MDL 39.17 per m^3 (domestic) and MDL 68.84 per m^3 (non-domestic) in 2025 when the new assets are put in operation, reaching MDL 54.84 per m^3 by 2050, the same for both categories. The incremental difference between scenario 1 and scenario 2 or the impact of the 'pure project' on the tariff is most noticeable in the first decade after the new assets are taken into operation. As a gradual alignment of the tariffs is assumed, the non-domestic tariff is modelled as a decreasing rate after the initial 'jump' in the increase in 2025. To better manage the substantial required increase in 2025 for the Prut cluster, further modelling is needed to simulate a delayed and/or partial introduction of the royalty component to manage affordability.

Table 4.8. Development of the Domestic and Non-domestic Water Supply Tariff for the Costesti WSS Operator

Water Supply Tariff (MDL/m^3)	Baseline		Scenario 1 - WoP		Scenario 2 - WP	
	Domestic	Non-domestic	Domestic	Non-domestic	Domestic	Non-domestic
2019	15.00	35.00	15.00	35.00	15.00	35.00
2025	21.02	36.94	28.40	49.92	39.17	68.84
2035	32.01	43.16	38.93	52.51	44.22	59.64
2050	62.78		69.03		54.84	

19. **Soroca operator.** The current wastewater tariff does not cover the operational and needed capital costs since 2020; in all three scenarios, including the baseline scenario and scenario 1, a tariff update is required to achieve full cost recovery status; the incremental impact of the project leads to a substantial increase in tariff in 2025, with this effect decreasing over time. Scenario 1 requires that the operator should include the reinvestments in the tariff from 2021 onward, leading to an immediate substantial increase in the wastewater tariff compared to the baseline scenario. In scenario 2, the new wastewater assets are assumed to be taken into operation in 2025, leading to a substantial increase in the tariff, namely for domestic customers MDL 11.2 per m^3 in 2025, compared to MDL 6.6 per m^3 in the without-project scenario. Given the big difference between domestic and non-domestic tariffs in Soroca, namely MDL 1.6 per m^3 for domestic and MDL 14.3 per m^3 on average for industrial clients in 2019, the operator should take measures to bring these closer to another. By 2050, tariffs are not expected to be fully aligned ('polluter pays' principle), although the huge disparity is modelled to be greatly reduced. For scenario 2, this means by 2050, a tariff of MDL 25.07 per m^3 for domestic and MDL 33.95 per m^3 for non-domestic wastewater. Table 4.9 illustrates how the domestic and non-domestic wastewater tariff[149] would need to

[148] Each option is forecast starting with 60 percent tariff coefficient for domestic tariffs in 2021 and reaching 100 percent or uniform tariff for all customers in 2050.
[149] Each option is forecast starting with 60 percent tariff coefficient for domestic tariffs in 2021 and reaching 100 percent or uniform tariff for all customers in 2050.

develop under the three scenarios to meet the revenue requirement. Given that these modelled projections for domestic customers are huge increases compared to the current mostly symbolic rate of MDL 1.6 per m^3, proposed tariff increases should be introduced gradually, with a much more gradual increase of the royalty component. Also, social mobilization and tariff awareness campaigns will be critical.

Table 4.9. Development of the Domestic and Non-domestic Wastewater Tariff for the Soroca WSS Operator

Wastewater Tariff (MDL/m^3)	Baseline		Scenario 1 - WoP		Scenario 2 - WP	
	Domestic	Non-domestic	Domestic	Non-domestic	Domestic	Non-domestic
2019	1.60	14.28	1.60	14.28	1.60	14.28
2025	4.90	10.97	6.63	14.85	11.20	25.07
2035	7.77	13.80	9.67	17.16	15.24	27.06
2050	16.41	22.23	18.41	24.94	25.07	33.95

20. **Comrat.** The existing tariffs for wastewater are rather high in Comrat and are in effect subsidizing the costs of highly inefficient water operations. For the baseline scenario and scenario 1, tariff increases are only required in 2037 and 2027, respectively,[150] as the model assumes that the operator will continue to apply current tariffs until the required revenues exceed the revenues generated with current tariffs. In scenario 2, the new wastewater assets are assumed to be taken into operation in 2025, requiring a tariff update in 2027 to MDL 19.10 per m^3 (domestic) MDL 42.44 per m^3 (non-domestic) in 2027 and reaching MDL 40.80 per m^3 (domestic) and MDL 54.41 per m^3 (non-domestic) by 2050. These are moderately higher as in scenario 1 (WoP), although the effect decreases over time.

Table 4.10. Development of the Domestic and Non-domestic Wastewater Tariff for the Comrat WSS Operator

Wastewater Tariff (MDL/m^3)	Baseline		Scenario 1 - WoP		Scenario 2 - WP	
	Domestic	Non-domestic	Domestic	Non-domestic	Domestic	Non-domestic
2019	15.00	33.75	15.00	33.75	15.00	33.75
2025	15.00	33.75	15.00	33.75	15.00	33.75
2035	15.00	33.75	20.93	37.75	24.72	44.59
2050	35.30	47.06	40.28	53.70	40.80	54.41

21. **Affordability analysis.** Table 4.11 summarizes the results of the affordability analysis, separated for water supply and wastewater tariffs that have been modelled for the four WSS operators for scenario 2 (WP and adequate reinvestment costs). To sharpen the poverty focus, this is not just done for the income segment representing the average national household income (MDL 2,492 per cap per month) but also for the household income representing the poorest 20 percent of the rural population (MDL 1,549 per cap per month).[151] Since the modeled tariff increases see the highest rises in the first decade of operations (if full cost recovery is modelled), in addition to 2019, both 2030- and 2050-time horizons are included.

22. **The results clearly illustrate that for all subprojects special measures will be required to accommodate affordability concerns for the poorest under the assumption that full cost recovering tariffs are charged (especially for the Prut cluster scheme).** These may include, among others, (a)

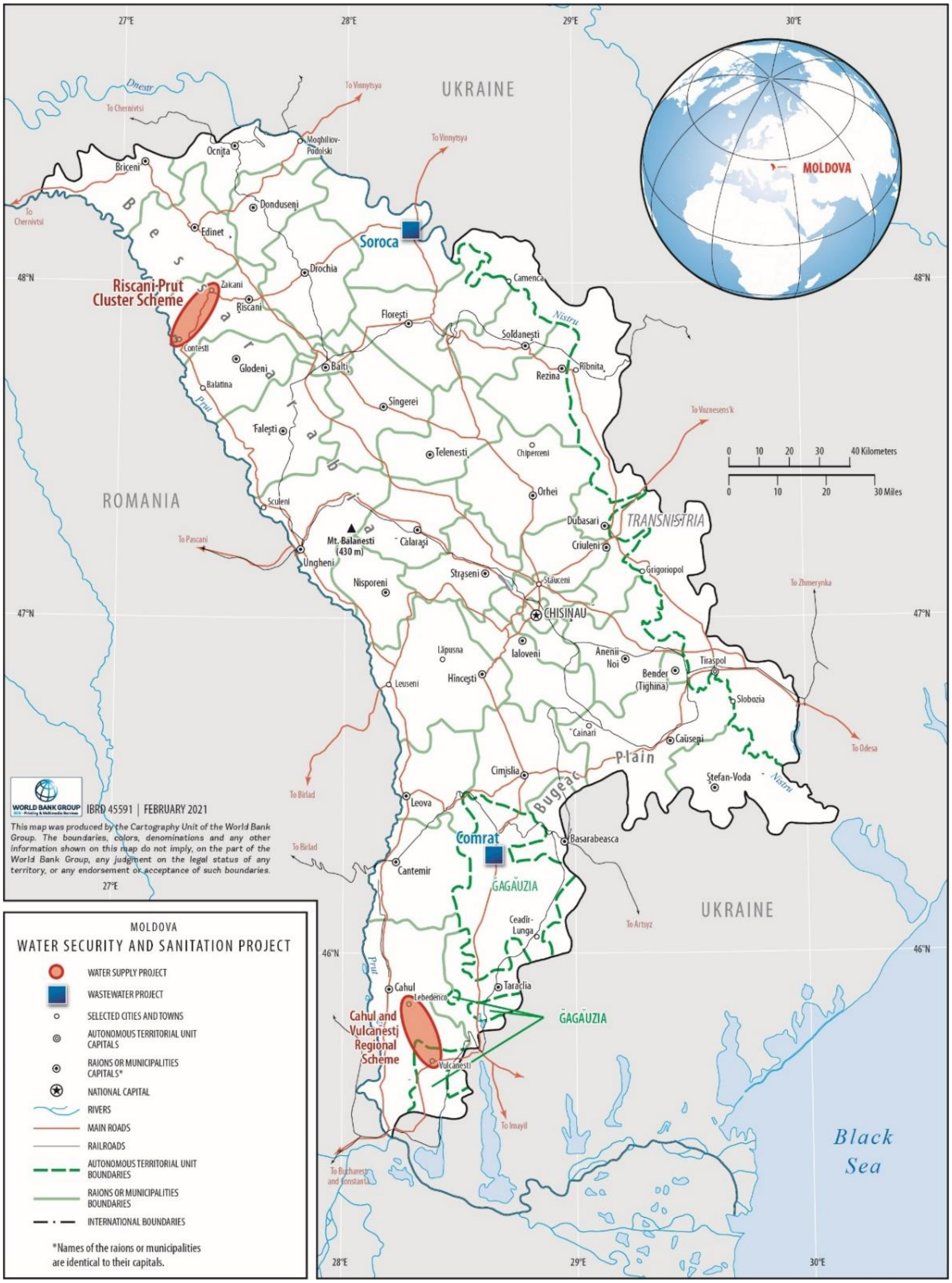
[150] The tariff model only takes into account regulated costs for wastewater and does not allow such cross-subsidization with water supply.
[151] Based on HBS (2018) and extrapolation.

accepting less than cost recovering tariffs by reducing the capital reinvestment cost element in the royalty component (and relaying on state subsidies for this matter), (b) further leveraging investments to increase efficiency of operations (for example, high NRW in Comrat), and (c) developing policies and specific measures to subsidize tariffs for the poorest income groups, such as through centrally allocated subsidies (rather than cross-subsidization of the already fragile WSS operators). Under Subcomponent 2.1, TA to devising such social tariff policies will be provided and the NWSSDP should include provisions to implement those as part of its overall financing strategy. Further affordability analysis will be part of the ANRE tariff submissions, once detailed investment costs are known more accurately.

Table 4.11. Affordability Analysis for Projected Tariffs for Water Supply and Wastewater, Expressed as Share (%) of Household Income for 'Average National Household' and for 'Poorest 20 Percent of the Rural Population' under Scenario 2 - With Project

	Cahul			Costesti/Prut			Soroca			Comrat		
	2019	**2030**	**2050**	**2019**	**2030**	**2050**	**2019**	**2030**	**2050**	**2019**	**2030**	**2050**
Average national income												
Water supply share	3.4	3.7	3.4	2.6	4.8	2.8	2.8	4.2	4.1	3.2	5.0	5.5
Wastewater share	1.4	1.7	2.0	1.2	3.8	2.9	0.3	1.6	1.4	3.2	2.9	2.5
Combined WSS share	**4.8**	**5.4**	**5.5**	**3.8**	**8.6**	**5.7**	**3.1**	**5.8**	**5.4**	**6.3**	**8.0**	**8.0**
Poorest 20 percent rural												
Water supply share	5.4	6.0	5.5	4.2	7.7	4.5	4.6	6.7	6.5	5.1	8.4	7.3
Wastewater share	2.3	2.7	3.3	2.0	6.1	4.7	0.5	2.6	2.2	5.1	4.7	4.0
Combined WSS share	**7.8**	**8.8**	**8.8**	**6.1**	**13.8**	**9.2**	**5.1**	**9.3**	**8.7**	**10.2**	**13.2**	**11.3**

ANNEX 4: Map


MOLDOVA
WATER SECURITY AND SANITATION PROJECT
WATER SUPPLY PROJECT
WASTEWATER PROJECT
SELECTED CITIES AND TOWNS
AUTONOMOUS TERRITORIAL UNIT CAPITALS
RAIONS OR MUNICIPALITIES CAPITALS*
NATIONAL CAPITAL
RIVERS
MAIN ROADS
RAILROADS
AUTONOMOUS TERRITORIAL UNIT BOUNDARIES
RAIONS OR MUNICIPALITIES BOUNDARIES
INTERNATIONAL BOUNDARIES
*Names of the raions or municipalities are identical to their capitals.
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UKRAINE
ROMANIA
MOLDOVA
Riscani-Prut Cluster Scheme
Cahul and Vulcanesti Regional Scheme
Soroca
Comrat
CHISINAU
TRANSNISTRIA
GAGAUZIA
Black Sea
0 10 20 30 40 Kilometers
0 10 20 30 Miles