



# Moldova Policy Notes 2019

## Sustaining Stability and Reviving Growth

### Enhancing Water Security and Service Delivery

#### Key Message

Addressing water security is paramount to boost economic and social development by mitigating water-related risks; leveraging resources for economic growth and livelihoods; and delivering water and sanitation services. Moldova has little water endowment and limited storage capacity; it is also highly vulnerable to climate change, and drought and flood risk is rising, impacting growth and productivity. Its renewable water resources are mostly from surface water; reliance on the Prut and Nistru rivers will be a major security problem if transboundary water governance is not addressed.

Rural areas are poorly served by drinking water and sanitation services because of low investment, inadequate service delivery, and lack of assistance to rural municipalities. The performance of urban and regional water utilities needs to improve, and their operations must become more viable financially while ensuring that assistance is targeted to the poorest. Public spending in the sector has declined over the past years and stood at 1.3 percent of government budget expenditures, or just 0.4 percent of GDP in 2017. This trend requires a reversal. Finally, although Moldova has made substantial progress in reforming its water and environment institutions, capacities for integrated water resource management in the river basins need considerable work.

#### Key Actions

- Consolidate institutional reform and develop water management agency and enhance inter-agency and ministerial coordination to optimize benefits from different water uses.
- Analyze Moldova's future scarcity and water security risks under different scenarios to prioritize interventions, policies and investments and better understand trade-offs.
- Develop a national water and sanitation investment plan and financing framework (tariffs, taxes, transfers) with increased efficiency and cost recovery in urban areas to mobilize and increase the efficiency of funding.
- Increase public funding and secure a multiyear investment budget for water and sanitation that targets lagging rural areas, prioritizes high-impact wastewater polluters, while improving coherence and accountability of existing funds.
- Finance priority measures in river-basin flood and drought management plans, restore watersheds and environmental flows, enhance storage capacity, improve dam safety and introduce risk management tools.
- Identify priority areas for irrigation & drainage investment to expand high-value irrigated agriculture with export focus; modernize irrigation institutions and improve financial position of the sector to reduce fiscal burden.
- Strengthen transboundary governance for the Nistru and ensure that negotiations are backed by evidence on potential impacts of upstream hydropower development in Ukraine.
- Expand information on water resources, including accessibility and sharing of data among institutions; and assess groundwater potential for development.

#### Where Moldova Stands Now

**Water security is vital to Moldova's economic development, environmental sustainability, and social inclusion.** Recognizing global and local climate changes, water security is the central goal of water management, leveraging productive aspects of water for human well-being, livelihoods, and economic development

and carefully managing the destructive impacts of floods, droughts, and water pollution to protect societies, the economy, and the environment.

**Moldova's water-related opportunities and risks are shaped by factors both within and outside the water sector.** Moldova's natural water endowment and vulnerability to climate change, emigration of many of its citizens, urbanization, regional relations, and the state of

its institutions, information, and water-related infrastructure—all determine the intensity of water security challenges. While Moldova has made progress in reforming its water and environment-related institutions and harmonized laws and instruments with the EU Water Framework Directive, the country's socioeconomic development is still challenged by suboptimal management of water resources and underperforming water service delivery to its citizens.

**Moldova has a relatively limited water endowment and low storage capacity. The water security risk these pose is exacerbated by degraded water quality and poor resource and watershed management.** Moldova is one of the most water-scarce countries in the region with total renewable water availability of just over 3000 m<sup>3</sup>/capita/year, only 400 m<sup>3</sup>/capita/year of which is from internal resources.<sup>1</sup> Over 90 percent of its surface water stems from the inflow of the transboundary rivers of Nistru and Prut. Compounding the problem is that it only has 738 m<sup>3</sup>/cap of storage capacity to help manage extremes in water flow. Groundwater reservoirs are reportedly limited and often not usable due to high mineralization or pollution, posing a public health risks for a large share of the rural population relying on this source.<sup>2</sup> A critical knowledge gap is lack of a comprehensive assessment of groundwater resources. In addition to a few large reservoirs, used for both hydropower and thermal cooling of heat and power plants, there are over 5,000 small dams used for irrigation and local drinking water supply.<sup>3</sup> These suffer from siltation and degraded water quality. Often, they are not properly operated and maintained; nor is use of their water regulated. Canalization of internal rivers and degradation of watersheds obstructs their flow and lowers water quality. River basin management plans for both the Prut and the Nistru underscore the need to improve the ecological status of water bodies and restore upstream watersheds.

**Upstream developments for hydropower production on the Nistru in Ukraine need to be monitored to mitigate potential water security risk.** Expansion of hydropower capacity at Novodnestrovsk in Ukraine may negatively affect the flow regime and change water availability for downstream users, especially domestic and industrial use in Chisinau and

irrigation use in the south of the country. With support from the Swedish embassy, the possible environmental and social impact is being assessed. The results will be critical in informing negotiations to formulate a new treaty. Unlike the current agreement, among other provisions, the new treaty should incorporate elements of good governance for transboundary waters, such as protocols for sharing data, management of the river basin, multi-stakeholder involvement, and transparency.

**Agriculture is both the cornerstone of Moldova's rural economy and jobs and a potential driver of poverty reduction; better irrigation services will thus be essential to accelerate its transition to high-value export crops.** Agriculture accounts for 45 percent of exports. However, most exports are still low-value crops such as oil seeds and cereals, although the area cropped, and the harvests of fruits and vegetables have gone up significantly since 2010.<sup>4</sup> Irrigation, along with other instruments to reduce volatility due to weather shocks, especially droughts, is critical to facilitate the transition to higher-value agriculture. Conservation agriculture could also be very effective to increase water infiltration, reduce losses from soil evaporation and minimize erosion by surface run-off. Previous assessments identified investments in the agriculture and water sectors as high impact and priority to adapt to climate change.<sup>5</sup> The current World Bank-supported Water Security Diagnostic and Future Outlook will assess trade-offs and possible synergies in future investments and interventions.

**Poorly organized irrigation services in part explain the lack of their uptake and general underinvestment in modernization.** After the Soviet Union collapsed, irrigation plunged. Currently, less than 130,000 ha are equipped for irrigation under centralized schemes, with less than a quarter of them irrigated due to dysfunctional pumping stations—the majority beyond repair.<sup>6</sup> Of 88 schemes, 11 have been transferred to Water User Associations (WUAs) established under the Water Law. Others remain under management of state-owned enterprises that are reliant on subsidies to cover costs<sup>7</sup> and not all WUAs are performing as expected. Although recent investments in new schemes

<sup>1</sup> FAO Aquastat 2014.

<sup>2</sup> World Bank (2018) Beyond Utility Reach? Rural Water and Sanitation Service Delivery in Seven Countries of the Danube Region.

<sup>3</sup> EIB (2014) Flood Assessment Technical Assistance.

<sup>4</sup> NBS 2017.

<sup>5</sup> World Bank (2016) Moldova Climate Adaptation Investment Planning.

<sup>6</sup> SDA (2018) National Assessment of irrigation Schemes.

<sup>7</sup> Assets being transferred to the Public Property Agency.

have had positive impacts,<sup>8</sup> there is still a lack of uptake of irrigation services, little willingness to pay for them, and lack of investments in on-farm modernization. Along with irrigation investments and management improvements, it will be necessary to address incentives, risk mitigation measures, and access to extension services and to financing. Informal and uncontrolled irrigation from local reservoirs and groundwater remains a challenge for Apele Moldovei, the entity mandated to manage water, although currently it is improving its water cadaster.

**Another unresolved issue concerning the productive potential of water is the use of groundwater as supplemental irrigation.** Because large volumes of groundwater are highly mineralized, using it for irrigation may irreversibly destroy certain types of soil. Regulations are being drawn up to control such usage, but state-of-the-art exploration and field measurements would be necessary to quantify the potential of adapting groundwater for drinking or supplemental irrigation use without negative effects on the environment.

**Both drought and floods are major risks in Moldova, impacting economic development and productivity.** Drought is a major risk in the country, with an estimated annual loss in crop production of US\$20 million, assuming drought occurs every 7 years. Since 1995, Moldova has suffered 11 droughts, and with climate change it is assumed that intervals between them will narrow. In 2010, floods on both the Prut and the Nistru recorded damages to property and income equivalent to 0.15 percent of GDP. The drought and flood management plans now being drafted will incorporate both risk maps and mitigation measures. Also, Moldova has more than 1,200 km of flood defenses, and there are concerns about their safety. Flood protection and mitigation measures have been identified for priority investment, but funds have not yet been allocated.

**Moldova is confronted by the challenge of achieving sustainable water and sanitation services for all Moldovans, especially in rural areas where the population is declining.** People experience water security most directly in their ability to access quality water and sanitation

services. Despite recent progress, Moldova has the widest urban-rural gap and the lowest access across the Danube region,<sup>9</sup> with 90, 79, and 70 percent of the population accessing publicly provided piped water, flush toilets and public sewer connections in urban areas, compared to 31 percent, 13 percent and 1 percent in rural areas, respectively.<sup>10</sup> In rural areas, those connected to services are mostly served by local municipal operators. Despite best intentions of local public administration and local water operators, their access to finance and technical assistance is limited. Decentralization without adequate transfer of resources has left the rural population reliant on limited services or self-supply solutions using shallow wells. This poses an unacceptable health risk to rural households: as of 2015, 82 percent of wells did not comply with chemical or microbiological parameters, such as those for nitrates and e-coli<sup>2</sup>. New regulations for water safety planning have been adopted for smaller systems and, in collaboration with the Swiss government, the Association of Local Governments is now offering technical support to local self-governments on compliance with laws and regulations. A more flexible approach in allowing various sources to be used for drinking water systems can help to achieve cost-efficiencies, while maintaining safety standards.

**Poor water, sanitation and hygiene situation in social institutions is negatively impacting Moldova's human capital outcomes.** A UNICEF survey of the water and sanitation conditions in preschools<sup>11</sup> revealed that around 41 percent of preschools have latrines located in the school yard, not connected to water supply and without washbasins.<sup>12</sup> One third of primary and/or secondary schools lacks basic water and sanitation services and almost one in two has no hygienic handwashing facilities.<sup>13</sup>

**While service coverage in towns and rayon centers is better organized through regulated water utilities, there is scope to both improve operations and to expand wastewater services to curb pollution.** In urban areas corporate utilities, owned by local governments, are the main vehicle for service delivery. Government has pursued a policy of

<sup>8</sup> Such as under the MCC Compact.

<sup>9</sup> World Bank (2015) Water and Wastewater Services in the Danube Region: A State of the Sector.

<sup>10</sup> From Household Budget Survey (2015), elaborated in World Bank (2018) Beyond Utility Reach? Rural Water and Sanitation Service Delivery in Seven Countries of the Danube Region.

<sup>11</sup> UNICEF (2016) Assessment of Water Quality, Sanitation and Hygiene Practices in Preschool Institutions of the Republic of Moldova.

<sup>12</sup> One in eight children in preschools is exposed to risk of water-related infections due to consumption of water which does not correspond to the standards on nitrates and fluorides content. One in four children is exposed to increased concentration of boron. One in six children is exposed to the risk of contracting acute diarrheal diseases due to the consumption of microbial contaminated water.

<sup>13</sup> WHO/UNICEF (2018) [www.washdata.org](http://www.washdata.org).

regionalizing service providers, though results so far have been mixed. Although service access, reliability, and quality are satisfactory, operational cost recovery and non-revenue water still do not meet acceptable benchmarks and there is space for efficiency improvements for a large share of Moldova's utilities.<sup>14</sup> Realizing efficiency gains in urban areas will be necessary to create fiscal space to mobilize public funds and concessional loans to expand services in lagging rural areas and to invest in wastewater, starting with priority polluters of surface water such as Soroca city.

**The water sector spending amounted to 0.4 percent of GDP in 2017.** Since 2014, there is a decline in spending, and expenditures are grossly inadequate to meet sector needs. Around 80 percent are capital investments, the majority executed at the local level through the National Environmental Fund. In 2017, around two thirds of public spending went to the water and sanitation sector, with remaining funds for irrigation and drainage, water management, and other communal investments. A large share of official development assistance is not recorded in the central government budget. If accounted for, this would augment water sector investments by about 40 percent in 2017.<sup>15</sup> The lack of a comprehensive overview and coherence in the sector investment program is a major bottleneck.

**The “Moldova 2030” National Development Strategy calls for more investment in all aspects of water security. It underscores the importance of focusing on inclusive outcomes, strengthening of human capital, and ensuring that environmental concerns and climate change are addressed.** The new country strategy emphasizes Moldova's development challenges in the water sector and proposes measures linked to the Sustainable Development Goals that promote water security. Among them are universal delivery of services such as water and sanitation by 2030; ensuring the right to a healthy and safe environment, protected from flood and droughts; curbing pollution; and offering opportunities for productivity growth through a resilient and adaptive agriculture sector.

## How Moldova Can Enhance Water Security

Moldova needs to embark on a more holistic and multisectoral programmatic approach for managing the country's water resources, risks, and services, both rural and urban. Actions going forward need to emphasize:

- i) Strengthening of national planning and prioritization for infrastructure and addressing financial viability;
- ii) Consolidation and further reform of sector institutions and governance arrangements;
- iii) Coordinated implementation of measures at the basin level.

### Priority actions to enhance water security need to evolve with the following priorities:

#### *Institutional strengthening and strategic planning*

- Strengthen coordination mechanisms and consolidate institutional reform and capacity development of the water management agency, including for information management, enforcement of regulations, and planning functions.
- Analyze Moldova's future water security to better understand the opportunities and risks of different scenarios and identify priority interventions (as in the ongoing Water Security Diagnostic).
- Modernize irrigation institutions and improve sector financial position by reforming state-owned enterprises and implementation of the water law and WUA development; and increase investments in hydraulic and on-farm measures.
- Increase efficiency of urban utility sector and expand assistance to service providers in rural areas and local governments.
- Introduce risk management tools for floods and droughts.
- Strengthen transboundary governance arrangements; ensure that negotiations for the Nistru are backed by evidence on potential impacts of upstream hydropower development in Ukraine.
- Expand information on water resources, including accessibility and sharing of data among institutions; and the results of assessments of the potential of groundwater for development.

#### *Investment and budget management*

- Develop a national water and sanitation investment plan and financing framework (tariffs, taxes, transfers).
- Increase public funding and secure a multiyear investment budget that is inclusive of rural areas, improves coherence of existing funds and supports accountability.
- Invest in wastewater treatment in priority locations to stop pollution of strategic surface water sources.

<sup>14</sup> www.danubis.org

<sup>15</sup> Analysis based on BOOST data, and OECD database.

- Identify priority areas for investment to expand irrigation of high-value agriculture.
- Informed by river-basin flood and drought management plans, increase funding of priority measures; restore watersheds and environmental flows; enhance storage capacity; and improve dam safety.

*Incentivize private sector investments and climate-conscious behavior*

- Ensure complementary measures in agriculture to encourage farmers to invest in modernization and adoption of climate resilient agricultural practices;
- Explore eco-based tourism in lower arms of the Prut and the Nistru linked with river restoration;
- Promote citizen engagement in the water sector through various mechanism, including campaigns on water conservation measures, through various educational and media actions.

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