



Policy Brief

**Improving water governance for
sustainable infrastructure development in
Central Asia**

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June 2024

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The policy brief is written by Georg Petersen, ADB International Consultant, based on the research reports "[Water sector financial governance gap analysis in Central Asia](#)" and "[Water Sector Financing Improvement Action Plan for Efficient Water Sector Financing](#)." The research is funded through the technical and financial assistance from the ADB under "TA-6694 REG: Water sector financial governance gap analysis in Central Asia: from planning to practice."

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Introduction

Economic development, population growth and climate change are placing significant pressure on the available water resources in Central Asia. The pressure on the water resources leads to water scarcity, environmental degradation and potential regional conflicts. These stressors can be managed by strong water governance on a national and regional level. Although water governance is an overarching concept, due to the current deterioration of the water infrastructure, development of sustainable water supply systems needs to be one of the priorities of future investments.

This policy brief integrates a review of academic literature, the analysis of current policy frameworks and the empirical evaluation of the current situation in Central Asia related to current governance of the water sector.

Literature review

Encouraging coordination and capacity-building is a critical step toward bridging multi-level governance gaps in water policy. Meeting water governance challenges calls for a mix of well-integrated policy measures. This can be difficult to achieve in a context of fragmented responsibilities among various public actors as decisions are made at different territorial levels (international, national, regional, municipal, basin, etc.). Greater policy coherence is called for, both horizontally and vertically, among different institutions. This does not mean uniformity, but an attempt to create synergies between customized approaches, and it requires mutually reinforcing actions across government, departments and agencies for achieving the agreed-upon policy objectives, defining long-term strategies and adapting them to different contexts. Transparency, flexibility, rapid adaptation to a changing environment, early warning of any incoherence and mechanisms for dialogue and solving disputes among different communities are all crucial ways of achieving an integrated policy.¹

Following World War II, Soviet authorities intensively built on its territories water and energy infrastructure based on the topographic features of the areas, crossing administrative boundaries between the constituent Soviet republics. This was not a problem until the collapse of the Soviet Union in 1991, which left separate independent states sharing a complex network of critical infrastructure.² On February 18, 1992, the five ministers of water management in Central Asia signed the agreement on Cooperation in the Field of Joint Water Resources Management and Conservation of Interstate Sources, which recognized "the community and unity of the region's water resources."³

The current water infrastructure of Central Asia consists of hundreds of reservoirs, dams, pumping stations, irrigation and drainage networks. Some of this infrastructure is unique, such as the world's highest rockfill dam (Nurek dam - 300 meters) on the Vakhsh river in Tajikistan; the Karakum canal (1100 km) supplying water from the Amudarya to Turkmenistan is among the world's longest canals; the Karshi canal and cascade of pumping stations with the world's highest water lifting height located

¹ OECD (2011), Water Governance in OECD Countries: A Multi-level Approach, OECD Studies on Water, OECD Publishing, Paris, <https://doi.org/10.1787/9789264119284-en>

² Murzakulova, A (2021) The Soviet Water Legacy in Central Asia <https://thediplomat.com/2021/08/the-soviet-water-legacy-in-central-asia/>

³ Agreement on Cooperation in the Field of Joint Water Resources Management and Conservation of Interstate Sources, signed 18 February 1992 at Almaty (also known as the Almaty Agreement), Article 1. Unofficial English translation at www.ce.utexas.edu/prof/mckinney/papers/aral/agreements/ICWC-Feb18-1992.pdf

in Turkmenistan and Uzbekistan; as well as the extensive irrigation and drainage network for one of the largest irrigation projects in the Hunger Steppe in Kazakhstan, Tajikistan and Uzbekistan.⁴

Since the existing water infrastructure was mostly constructed in the Soviet time, it is now updated and it requires extensive rehabilitation to improve water accessibility, particularly in remote areas. To improve the water infrastructure in the region, regional collaboration is needed. After gaining their independence, Central Asia countries started to collaborate on a number of transboundary projects. Examples include:

- Turkmenistan and Uzbekistan agreed on the ownership rights for water management facilities of interstate use and for the land areas under these facilities as well as specified the conditions of their joint operation and cost sharing;
- Kazakhstan and the Kyrgyz Republic are cooperating in the operation of water management facilities on the Chu and Talas rivers;
- Kyrgyz Republic and Uzbekistan agreed on the interstate use of the Orto-Tokoy/Kasansai reservoir in Ala-Buka district, Dzhalsal-Abad province in the Kyrgyz Republic.⁵

The cooperation between countries is not limited only to the existing infrastructure, but it is extended to developing of new infrastructure. For example:

- Tajikistan and Uzbekistan are planning to construct two hydropower plants on the Zarafshan river;⁶
- Kyrgyz Republic, Uzbekistan and Kazakhstan are planning to build the Kambarata hydropower plant on Naryn river.⁷

Policy context

Due to the outdated infrastructure, lack of regional common goals and limited finances, Central Asia countries are vulnerable to change in water demand and water availability as well as other factors that can affect water use. Water governance needs to be improved to build resilience in the region.

Analysis of findings

Although after their independence important steps were taken by the Central Asia countries towards improving water governance, their progress is not sufficient for reaching the region's potential. Improving water governance is a multi-faceted challenge that should tackle the following issues:

- a) *Lack of budget allocation for the water sector.* The lack of necessary funding is affecting the water supply maintenance, operation and development.
- b) *Inefficiencies in revenue collection.* The lack of billing and metering systems to accurately measure and charge for water consumption is negatively affecting the revenue collection.

⁴ Dukhovny, V. A., and de Schutter, J. (2011). *Water in Central Asia: Past, Present, Future*. London: Taylor & Francis Group

⁵ Ziganshina, D. (2023) Water infrastructure in Central Asia: legal and institutional frameworks. *Front. Clim.* 5:1284400. doi: 10.3389/fclim.2023.1284400

⁶ <https://www.uzdaily.com/en/post/81522>

⁷ Caravanserai (2023) 3 countries to build Kyrgyzstan's Kambarata-1 hydropower plant https://central.asia-news.com/en_GB/articles/cnmi_ca/features/2023/01/13/feature-02#:~:text=On%20January%206%20in%20Bishkek,is%20on%20the%20Naryn%20river

- c) *Inadequate cost recovery of the investments.* In the last years, Central Asia countries transitioned from a no cost recovery to a partial cost recovery of the water sector investments. Since the cost recovery needs to take into consideration the purchase power of the population (higher fees for the services), this can be a long-term process.
- d) *Limited investments in water supply infrastructure.* Due to the lack of sufficient investments, there has been a state of stagnation or deterioration in the quality of water services, particularly impacting rural regions and district towns where most of the population resides.
- e) *Limited public participation in water decision-making.* Central Asia's water management systems were largely established during the Soviet governance period, where decisions were centralized and often made without significant input from local communities. This legacy persists, with centralized governments still maintaining significant control over water resources.

Since all the Central Asian countries currently have existing Soviet water infrastructure i.e. degraded/no longer efficient, a comprehensive plan needs to be developed by the countries to:

1. Assess the status of the current infrastructure.
2. Decide where it makes sense, to upgrade the current water infrastructure.
3. Where possible, to render efficient the current infrastructure (especially decreasing the water losses).

After each country has a good overview of their next steps related to the investments in the available infrastructure, a joint plan needs to be developed where the new investments should be considered at a regional level.

Of course, for the national and regional projects, funding will be necessary. Respectively, it will be important to transform the challenges (see above a-e) into potential revenue streams.

Recommendations

Central Asia is facing water governance challenges with legal conditions that are currently not sufficiently able deal with outdated infrastructure, increasing demands, and climate change impacts. Overcoming these obstacles requires a concerted effort across multiple fronts: reformed legislation, increased budget allocations, improved revenue collection, realistic cost-recovery tariffs, greater transparency, public engagement, and strategic regional collaboration on infrastructure modernization and development. By addressing these interconnected challenges, Central Asia can secure sustainable water infrastructure, safeguard its water resources, and build a resilient future for the region.

- Increase the budget allocation for the water sector to ensure adequate funding for maintenance, operation, and development of water infrastructure;
- Advocate for increased international aid and donor support to supplement domestic funding;
- Strengthen billing and metering systems to accurately measure and charge for water consumption;
- Conduct a comprehensive cost assessment to determine realistic tariffs that reflect the true cost of water supply and sanitation services;
- Gradually increase tariffs to ensure cost recovery while considering affordability for low-income households;
- Develop a long-term investment plan for the water sector, considering the rehabilitation of existing infrastructure and the construction of new facilities;

- Promote public-private partnerships (PPPs) and attract private sector investment to finance infrastructure projects;
- Seek international financing, loans, and grants to support infrastructure development in the water sector;
- Strengthen financial management practices, including budgeting, auditing, and reporting, to improve transparency and accountability;
- Enhance governance mechanisms, such as establishing an independent regulatory body to oversee tariff setting and monitor service delivery;
- Implement anti-corruption measures and promote integrity in financial management processes.

Way Forward / consulting mechanisms

Preliminary steps

- Establish a high-level intergovernmental working group on water infrastructure and governance. The group will work on joint regional assessments, development, and implementation of regional development plans, and implementation strategies. In formulating strategies for regional water cooperation in Central Asia, it's crucial to acknowledge the roles of external actors, such as the Russian Federation, Afghanistan and China.
- The working group should conduct a comprehensive, regional assessment of existing infrastructure (condition, efficiency, transboundary connections). Prioritize areas with the highest risks and urgency for upgrades or new development. This data becomes the foundation for informed decision-making.
- Launch campaigns to educate populations about water scarcity, the importance of conservation, the need for tariff changes, and the link between individual behavior and regional water security.

Financial reforms

- The working group should advocate for significant increases in national budget allocations for the water sector based on the assessment of the existing infrastructure and the needs of different regions.
- Develop a phase-by-phase plan for improving the metering and billing systems in each country.
- Increase the water tariffs. This should be done gradually and should offer affordable protection to the vulnerable groups.
- Increase the transparency of the water sector. This will help build confidence of the population and private investors by creating traceable financial management processes within the water sector.

Investments in the water sector

- If the above steps will be applied, the revenue for the water services offered to the population will increase. The additional fees and the new public-private investments and funding from international agencies will consolidate the region's budget for new investments in the water sector.