

Central Asia in Search of Water Cooperation

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The freshwater situation is becoming increasingly politicized. We can confidently say that the hydrological and political issues are gradually converging and will soon form complementary categories.

Central Asia is one of the regions where the future of the water supply situation can already be discerned. While there are more challenges in this region than in many others, what is particularly noteworthy is the increasing intensity of the political debate surrounding the freshwater issue. Discussions on climate change, agricultural expansion requiring

irrigation, industrial production, and, ultimately, hydropower are merely the backdrop for broader geopolitical shifts. These shifts are driving the countries of the region towards both conflict and cooperation. Lev Mechnikov, a European scholar of Russian origin and an expert on Asian affairs, as well as one of the “founding fathers of Russian geopolitics,” once envisioned such cooperation. He is the author of the theory of cooperation, which states that both forced and free alliances (two forms of cooperation) arise out of physiological necessity, resulting from the inability of each individual or member to exist independently without communication and cooperation with others. As an advocate for progress, Mechnikov argued that the future belongs to free alliances based on creativity.

In the Central Asian region, the construction of hydroelectric power stations, canals and ditches, as well as new drainage, irrigation and land-reclamation systems require large-scale interstate cooperation. Today there are about a dozen cooperation projects in the field of water resources, but they are at different degrees of implementation. The most comprehensive (and long enacted) is the work of the Central Asian Interstate Commission for Water Coordination. The Commission determines the volume of water withdrawals for the countries of the region during the growing season. This body was created in 1992 under an agreement between Turkmenistan, Uzbekistan, Kazakhstan, Tajikistan, and Kyrgyzstan on cooperation in the field of joint management and protection of water resources. The Commission has contributed significantly to the development of cooperation in the water sector. However, rapid changes in the climate and national economies have created a need for additional forms of cooperation. Water consumption increases as more land is used for agricultural purposes, which results in greater water losses that exacerbate environmental problems. A clear trend towards water cooperation can currently be observed in Central Asia. It is based on political trust between partners, which must be maintained. For example, in 2024, Uzbekistan and Tajikistan decided to jointly upgrade gauging stations on their border that measure and control water discharge.

According to experts from the Eurasian Development Bank (EDB), the average age of irrigation infrastructure in Central Asia exceeds 50 years, and about 40% of water is lost in the drainage system of irrigation canals. Digitalization and the use of space technology in this area make it possible to obtain more complete and timely data on the amount of water losses. However, trust is based on numbers, and cooperation is based on trust.

Russia is also interested in promoting regional cooperation within the framework of the EAEU (Eurasian Economic Union) and in supporting small hydropower projects in Kyrgyzstan. As part of this initiative, a partnership is expected to be established to build several small hydroelectric power plants in various regions of Kyrgyzstan, including Talas, Jalal-Abad, and Batken, among others. These projects will serve as the foundation for the development of an energy system that can generate greater amounts of electricity for both the country and the region as a whole. The project also involves Rosatom's subsidiaries.

The development of cooperation between Kazakhstan, Kyrgyzstan, and Uzbekistan continues at the regional level. Plans to build the Kambarata-1 Hydroelectric Power Plant in Kyrgyzstan on the Naryn River is an example of such cooperation. The three countries have announced their intention to sign the relevant agreement, which envisages the establishment of a joint-stock company, with Kyrgyzstan holding 34% of shares and Kazakhstan and Uzbekistan each owing 33%. Upon completion of the project, all assets will be transferred to Kyrgyzstan. A feasibility study for this project was conducted by a consortium composed of the Canadian company SNC-Lavalin International Inc. and the Russian company Southern Engineering Centre of Energy. The estimated cost of the hydroelectric plant project was estimated at \$2.9 billion in 2014 prices.

Initially, the idea of building the Kambarata hydropower plant originated in the USSR in the 1960s. Subsequently, it was decided to build not one but three plants. Eventually, in 1986, work commenced on Kambrata-1 and Kambrata-2 Dams, which came to a halt in 1993 amidst the dissolution of the USSR and the onset of market reforms. Almost three decades later, in March 2021, it was announced that work would

resume to be completed in ten years' time, although the initial turbine unit is scheduled to be commissioned in 2028. But what is worrying is that the bulk of funding will be obtained through the Asian Development Bank, the World Bank, and a number of other international financial organizations, where Russia's representation or role is either non-existent or insignificant. Since the project was initially undertaken by Russia until Kyrgyzstan's unilateral withdrawal, this may create potential tension in projects designed to integrate Kyrgyzstan's water and energy systems into the EAEU unified energy market.

The proposal by the President of Kazakhstan, Kassym-Jomart Tokayev, to establish a water and energy consortium in order to address the challenges of the Aral Sea, as outlined in his remarks in October 2023, further emphasizes the pressing need for increased cooperation on water management issues in Central Asia. This initiative was subsequently endorsed by the EDB, with a study commissioned by the Bank stating: "By 2028, a combination of climate change, low water levels, coupled with the commissioning of the Qosh-Tepa Canal in Afghanistan, will lead to a severe and chronic shortage of water resources in the Central Asian region. The region requires a consolidated approach to addressing this issue. One potential solution is the formation of an International Water and Energy Consortium of Central Asia."

Meanwhile, Kazakhstan has announced its intention to reduce water dependence on neighboring countries by 25%. Currently, 46% of the country's fresh water comes from abroad. The Kazakh authorities announced the construction of nine reservoirs for more efficient water conservation. The construction of such facilities was widespread in the USSR, but today this decision has caused a mixed reaction among experts. The topic of joint management and the fair distribution of water resources has come to the fore.

A water and energy consortium in Central Asia would have the potential to move beyond traditional "one-size-fits-all" solutions and prioritize the achievement of Sustainable Development Goals (SDGs). These goals encompass a wide range of objectives and solutions with

sustainable economic development at their core. Given this, it is essential to consider the interdependence between the development of water-intensive industries and agriculture, as well as the functioning of megacities, and the provision of reliable energy and heat supplies. At the same time, there is the pressing need to synchronize water conservation policies across the region and promote the widespread adoption of effective water-saving technologies. This requires cooperation and collaboration to ensure that all types of water resources are adequately covered, taking into account water cost considerations. The accelerated development of the energy sector in Central Asia is now only possible through an effective combination of various energy sources. This includes the construction of nuclear power plants, which can provide a significant amount of clean energy, as well as an extensive network of thermal power plants that operate on natural gas and coal.

Additionally, hydroelectric, solar, and wind power plants can also be utilized to diversify the energy mix. The diversification of the energy mix is essential in addressing water challenges in the region, as well as ensuring sustainable development. However, the decisive factor in this process is the use of nuclear energy, which necessitates the transfer of large volumes of water over long distances. This requires significant energy capacities for pumping, which can only be provided by nuclear power plants. Rapid industrialization and urbanization in the region require a synchronized approach to integrated resource management. This means integrating various energy sources to ensure a stable and reliable supply of energy for economic growth and social development.

Water conservation has been a longstanding challenge in Central Asia, with the region experiencing an almost unending series of water-related crises since the 19th century. These issues have piled up over time, leading to a lack of systemic understanding of past water shortages.

As a result, these events are not imbedded in historical memory, which creates the impression that each time a new crisis arises. In order to address this challenge, preserving and maintaining the knowledge and

memories of water challenges has become a priority for international cooperation. To this end, it is essential to establish independent, supra-regional research centers for historical and hydraulic studies. These centers will collect information on water crises that have occurred over the past two centuries, providing a comprehensive understanding of the challenges the Central Asian countries face.

All of the above takes us back to the concept of cooperation, which has become vitally important for the territories of riverine civilizations. These, without a doubt, include Central Asia. Although Lev Mechnikov, based on scientific data from the 19th century, questioned the validity of this assertion, Soviet science, as represented by Sergei Tolstov, was able to prove that this region was one of the cradles of ancient riverine civilizations. The continuity between the past and the present, and an understanding of this continuity are valuable for finding solutions to contemporary water challenges. The Soviet legacy is not the only significant experience; earlier periods also made equally important contributions. The past is important because it helps us understand how to deal with acute and intractable challenges in natural resource management.

Cooperation on hydro-political matters in Central Asia requires not only framework agreements but also its own ideology, taking into account the interests of all countries in the region, including Russia, which forms the image of a shared “hydraulic future.” This is necessary because the countries in the region are united by a shared hydraulic destiny, including the problems of the Aral Sea, the uncertain prospects of the Afghan Qosh-Tepa Canal, and annual meetings on freshwater limits.

Recent events related to the Iriklienskoye water reservoir in the Orenburg Region clearly demonstrate that Russia should not only remain an integral part of the hydro-political system in Central Asia but play a pivotal role. In this context, the search for a cooperative framework is a search for survival, or, as Lev Mechnikov would put it, a physiological necessity for cooperation.