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GROUNDWATER RESOURCES GOVERNANCE in TRANSBOUNDARY AQUIFERS (GGRETA Project)

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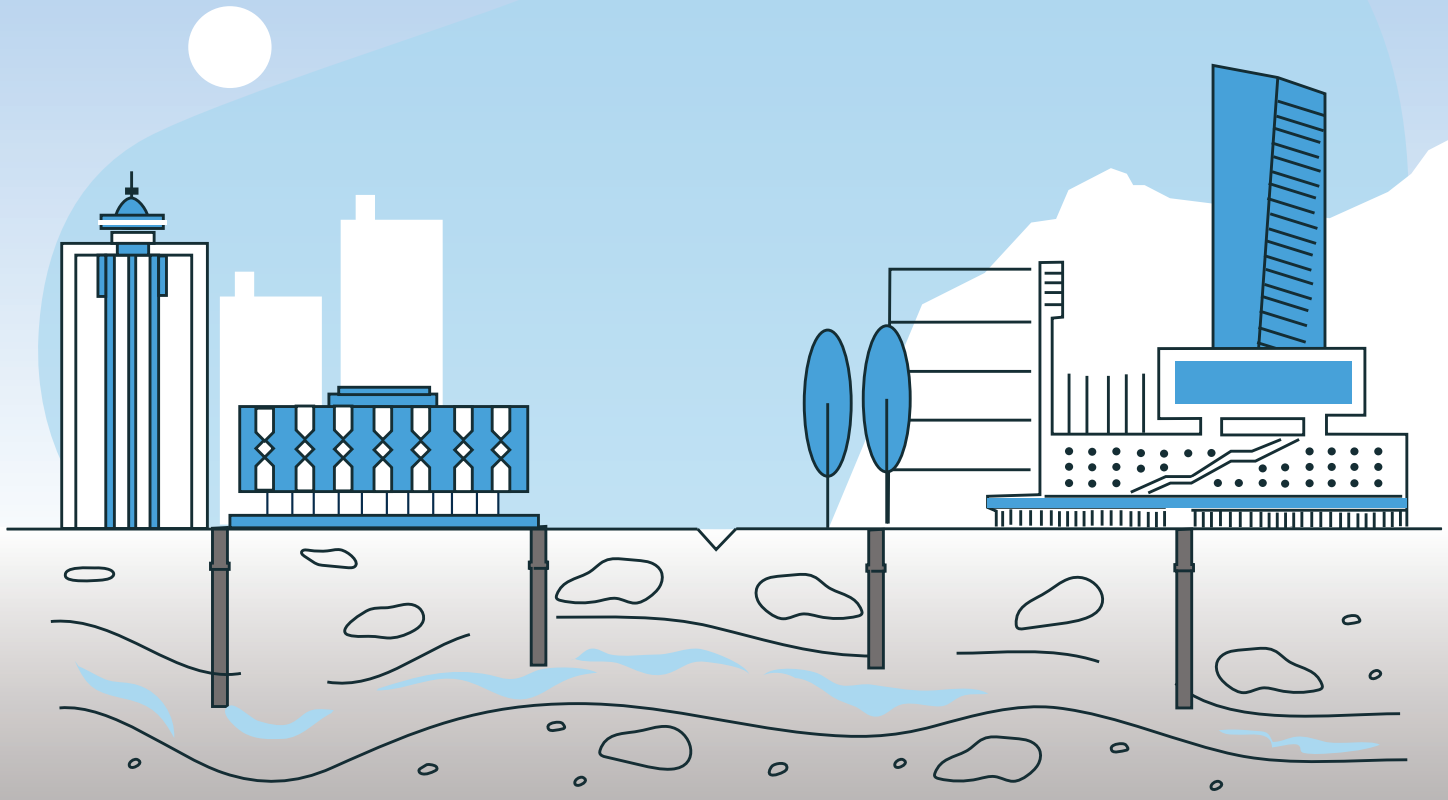
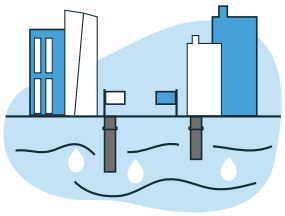
Review of cooperation on transboundary aquifers in Central Asia

Kazakhstan, Kyrgyz Republic, Tajikistan, and Uzbekistan



This policy brief, prepared by UNESCO Almaty under the Governance of Groundwater Resources in Transboundary Aquifers (GGRETA) Project in the Pretashkent Transboundary Aquifer, highlights national and regional institutional and legal provisions in Central Asia on groundwater monitoring, protection, and use. It identifies gaps and inconsistencies and provides policy-relevant recommendations.

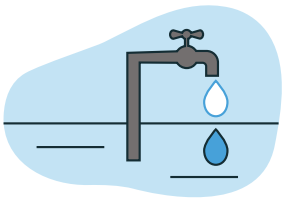


Cooperation in Transboundary Aquifers from Central Asia

Pretashkent Transboundary Aquifer, shared by Kazakhstan and Uzbekistan in the Keles River basin, a tributary of the Syr Darya River, is a locally important source of drinking water supply. Its estimated age is over 6 000 years, and it was discovered in 1947 by drilling deep wells. The Pretashkent aquifer is located at a mean depth of 1 000 meters. An increase in the number of health resorts and enterprises bottling mineral water sourced from the Pretashkent aquifer leads to its over-use and depletion. Competent authorities of Kazakhstan and Uzbekistan should take urgent action on this problem.

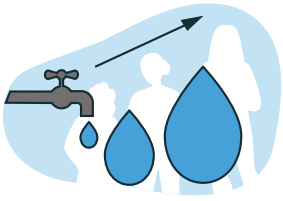
Until now, no operational agreement for tansboundary water cooperation was established between the two countries on the issues of use or concern of the Pretashkent Transboundary Aquifer. Such a situation is common in Central Asia: countries do not collaborate formally on issues of transboundary groundwater resources. GGRETA supported technical cooperation, dialogue and information exchange in the Pretashkent aquifer and both Kazakhstan and Uzbekistan showed interest in formalisation and intensification of collaboration. Experience of the GGRETA project is applicable to other areas in Central Asia.

In the cross-border Chu (Shu) and Talas Rivers between the Kyrgyz Republic and Kazakhstan, where groundwater sources are important for municipal and agricultural water supply, some cooperation and information exchange are maintained as a part of the work of the river basin commission. The potential for collaboration between Uzbekistan and Tajikistan exists in the Ferghana Valley (i. e. Isfara River alluvial deposits) and the Zaravshan River basin.

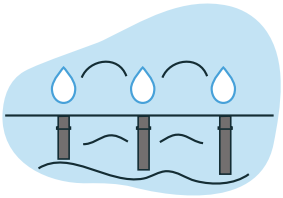


Common issues and challenges in groundwater management

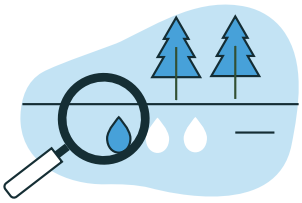
In the legislation of Uzbekistan, Kyrgyzstan, Kazakhstan, and Tajikistan, groundwater is supervised and managed by two or more state authorities. Geology-related agencies and ministries consider groundwater reserves as state subsoil property and are responsible for monitoring, reporting, inventory, mapping, exploration and/or use permitting, and rehabilitation of groundwater wells. At the same time, water-related agencies and ministries are responsible for water resources management, including groundwater. Such a situation often creates ambiguity or unclarity in coordination. Once groundwater is extracted from the subsoil, its protection and use are usually regulated by water legislation. The environment and health-related qualities of groundwater are controlled by the environment and health authorities.



Population growth and increase in groundwater demand from cities and agriculture inevitably add pressure on aquifers. Climate change has already impacted surface water resources, which contributes to an increase in groundwater use. Slow natural replenishment of groundwater reserves, combined with climate change in the long term may affect the stability of aquifers.



Insufficient interagency and inter-sector coordination on groundwater management as well as duplicative or multiple responsibilities between state authorities concerning groundwater lead to difficulties to reach an effective management. Legislations on groundwater are rather general and do not reflect nuances of inter-sector and inter-agency coordination, which add complexity to decision-making.

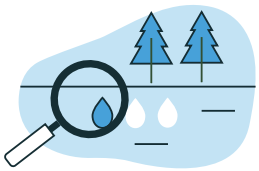


Groundwater monitoring is not linked to the existing national water information systems, monitoring methods and information are outdated and the available data is very fragmented and incomplete. Automated monitoring systems at major groundwater wells and intakes are rare. While state water cadastres (inventories) on surface and groundwater are present and maintained, practical access to hydrogeological and groundwater monitoring data is very difficult, and there is a lack of integration.

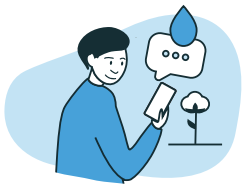
The current systems of training and professional education do not prepare hydrogeologists and engineers with modern skills and sufficient field-and-lab practice on groundwater management. New graduates are not motivated to work in science or governance jobs due to low salaries, while their skills and experience are not enough for well-paid jobs. Irregular and insufficient financing of research and development in groundwater management is one of the limitations for students and young professionals.

Recommendations

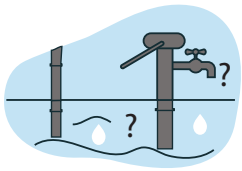
- Identify, map and regularly assess conditions of transboundary groundwater resources.
- Define intensity and limits of groundwater use in transboundary areas.



- Design transboundary groundwater monitoring system.
- Ensure that groundwater issues as duly covered and addressed in integrated water resource management policies and practices.

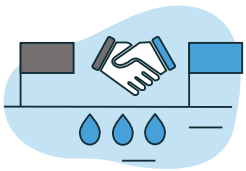


- Regularly update and share information on the state of groundwater resources.
- Make publicly available and easily understandable data on groundwater trends and quality.



- Equip groundwater wells with metering devices, collect and analyse data regularly to support informed decision-making.
- Promote science-based groundwater management and decision-making.

- Design, test and promote incentives for more efficient use of groundwater along with the application of energy- and water-saving technologies.
- Encourage the introduction of market principles and reasonable tariffs in the area of groundwater management.



- Proactively seek and maintain cross-border science and policy cooperation on groundwater resources.
- Organize regional conferences and data exchange platforms on groundwater.