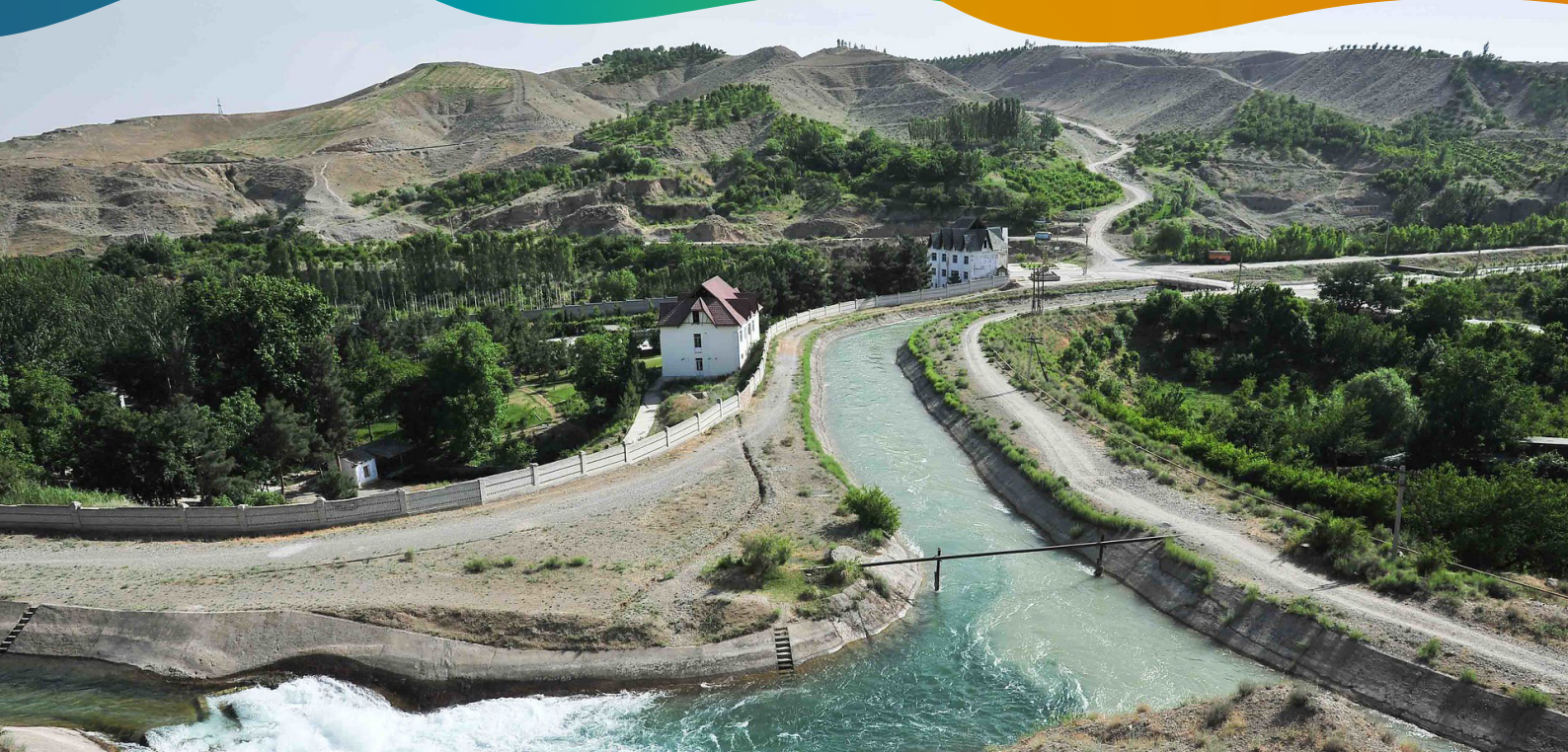




OUR WORK IN CENTRAL ASIA

IWMI is committed to addressing critical water challenges that affect livelihoods, food security, and ecosystem health across Central Asia. Our work focuses on reducing risks to water availability, addressing inequalities in access and use, and supporting sustainable and resilient water resources management in the region.

To advance water security in Central Asia, IWMI works closely with governments, local water management authorities, farmers, research and academic institutions, civil society organizations, and development partners to promote integrated nexus approaches (water–energy–food–ecosystems), improve irrigation efficiency, strengthen inclusive water institutions and policies, and foster transboundary water cooperation.

IWMI's work in Central Asia builds on applied research, long-term partnerships, and regional expertise. Since 2001, we have implemented more than 30 research-for-development projects, collaborating with regional and international partners to support policy processes, strengthen capacities, and contribute to sustainable development priorities across the region.

WATER MANAGEMENT IN CENTRAL ASIA

Central Asia faces an arid climate, high temperature variability, and growing pressure on its water resources. It relies on a shared system of transboundary glaciers, rivers, lakes, and aquifers that underpin water availability across national borders and sectors.

The two main rivers, the Syr Darya and the Amu Darya, support agriculture, energy production, and socio-economic development. Extensive water withdrawals have altered river flows, shrinking the Aral Sea by 90% by 2007.

After the dissolution of the Soviet Union in 1991, transboundary water management fragmented, causing ecosystem degradation, reduced data access, and declining investment, leaving aging infrastructure, water losses, and institutional challenges that continue to strain the region.



90%

of **water withdrawals** in Central Asia are **used for agriculture**.



60

million+ people depend on the **Syr Darya** and **Amu Darya** basins.

AREAS OF WORK

Transboundary cooperation and hydro-diplomacy

IWMI advances transboundary water cooperation in Central Asia by linking science with policy dialogue and regional collaboration. Through hydro-diplomacy, it supports trust-building, evidence-based decision-making, and coordinated management of shared water resources across borders.

The **Blue Peace Central Asia** initiative is advancing hydro-diplomacy and transboundary water cooperation across the region. The project focuses on strengthening regional dialogue and cooperation on shared water resources, supporting joint initiatives in transboundary river basins, and promoting coordinated approaches to equitable and sustainable management of shared waters among five countries in Central Asia.



Drought management

IWMI is playing a pivotal role in strengthening drought risk management and resilience across Central Asia by developing and implementing evidence-based analytical tools, policy dialogue platforms, and national knowledge products.

Together with the World Bank and national partners, IWMI implemented a **Rapid Drought Risk and Resilience Assessment** in Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan. We produced five national drought profiles, a regional transboundary assessment, and policy-oriented synthesis products based on integrated analysis of drought hazards, impacts, and institutional response capacity. An analytical review of irrigation norms and standards identified inefficiencies and informed drought-resilient water management.

Water governance

IWMI works to strengthen water supply and sanitation (WSS) governance through evidence-based tools that enhance accountability, transparency, and inclusiveness. We address institutional gaps in service delivery by promoting citizen engagement, gender-responsive planning, and the use of data and geospatial tools aligned with national reform priorities.

Through the **Water Supply and Sanitation Institutional Strengthening** project, the national WSS utility in Uzbekistan enhanced its institutional capacity and is now able to provide more responsive and inclusive water and sanitation services. Citizen feedback and gender considerations were incorporated into decision-making, and the use of data for planning and management was improved.



Renewable energy for climate resilience

As water scarcity and climate pressures grow, integrating renewable energy into water systems is becoming essential for the region's sustainable development. IWMI works to advance low-impact, climate resilient energy solutions that work in harmony with water and food systems, strengthening the water-food-energy nexus while reducing environmental footprints.

Small-scale hydropower offers a significant yet underutilized opportunity to support sustainable energy transitions in Central Asia. Under the **Hydro4U** project, European small-scale hydropower technologies were adapted for use in Uzbekistan and Kyrgyzstan combining modular, environmentally friendly designs with hydrological and climate modeling. These scalable solutions support the integration of renewable energy into regional water and energy systems.



Data and digital tools

In Central Asia, transboundary water allocation is challenged by fragmented data, limited decision-support tools, and increasing climate variability. To address these gaps, IWMI develops digital platforms, hydrological models, and integrated data systems that support evidence-based planning and more efficient, transparent and cooperative water allocation among riparian countries.

As part of the **WE-ACT** project, IWMI and partners designed a decision support system and developed policy recommendations to optimize transboundary water allocation under current and future climate conditions in Central Asia. The system integrates hydrometeorological monitoring networks, decentralized databases, climate and hydrological modeling, and water footprint assessment to simulate allocation scenarios and quantify trade-offs among sectors and countries.

Capacity building and inclusion

IWMI works to strengthen regional knowledge, skills, and networks to support sustainable transboundary water cooperation in Central Asia. It empowers youth, media, women, and the next generation of water professionals through education and leadership initiatives, contributing to more inclusive and effective water governance across the region.

The **Blue Peace Central Asia** initiative supports the development of regional expertise and leadership in water cooperation. Dialogue platforms and communities of practice enable exchange of expertise within the region and with international partners. Through joint learning, education programs, and regional networks, IWMI and partners strengthen skills, trust and long-term cooperation among Central Asian countries.



IMPACT STORIES



Central Asia addresses data gaps and moves towards digital cooperation

Small transboundary tributaries of the Syr Darya River Basin support water security, agriculture and ecosystems across Uzbekistan, Tajikistan, Kyrgyzstan, and Kazakhstan, yet they have long been under-monitored due to fragmented data systems and limited coordination.

Through the **assessment of Water and Land Resources in Small Transboundary Tributaries of Amu Darya River Basin**, IWMI and partners integrated satellite Earth Observation data with field measurements at nine strategic sites, generating continuous assessments of water temperature, turbidity, chlorophyll, and water dynamics. IWMI developed two operational digital platforms, an open-source water quality dashboard, and a data-sharing system, which national institutions are using for routine analysis and data exchange.

By transforming complex satellite data into decision-ready information, IWMI strengthened transparency, improved cross-border data sharing, and enhanced evidence-based water management, creating a scalable digital foundation for transboundary cooperation in the Syr Darya Basin and beyond.

Co-design strengthens data-driven water management

In Uzbekistan, IWMI brought together scientists, water authorities, and local stakeholders in the Kashkadarya region to jointly **develop a next-generation water monitoring system**. The country's agriculture accounts for around 90% of national water use and more than 80% of water resources originate from transboundary rivers. However, outdated infrastructure and fragmented data systems have limited the ability of water authorities to monitor water flows and respond to growing pressures on scarce resources.

To address these challenges, IWMI integrated hydrological data, geospatial technologies, and stakeholder knowledge, laying the foundation for more transparent, data-driven, and collaborative water governance in Uzbekistan.



ABOUT IWMI

The International Water Management Institute (IWMI) is an international, research-for-development organization that works with governments, civil society and the private sector to solve water problems in developing countries and scale up solutions. Through partnership, IWMI combines research on the sustainable use of water and land resources, knowledge services and products with capacity strengthening, dialogue and policy analysis to support implementation of water management solutions for agriculture, ecosystems, climate change and inclusive economic growth. Headquartered in Colombo, Sri Lanka, IWMI is a CGIAR Research Center with offices in 17 countries and a global network of scientists operating in more than 55 countries.

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