

Research and Innovation for Water Security

IWMI Strategy 2024–2030

Summary

Driving Action • Propelling Change



Water Security — A Defining Challenge for Development

The urgency of water security is growing.

Water security is essential for a safe, just and sustainable future and is integral to all of the United Nations Sustainable Development Goals (SDGs). Water insecurity for poor people in the Global South threatens global commitments to ‘leave no one behind.’

Water security means achieving and sustaining access to an acceptable quantity and quality of water for health, livelihoods, ecosystems and production, coupled with an acceptable level of water-related risks to people, environments and economies. This is becoming harder to achieve. Climate change is causing water risks to increase with every increment of warming, with rural communities and smallholder farmers the most exposed. Fears are rising that climate change could outpace adaptation where vulnerability is highest, and future water security therefore

depends on both climate change mitigation and adaptation. Alongside the global energy transition, there must be an urgent transition to water security.

Change is needed across the water system. Water systems are complex, and are shaped by physical, ecological, social, economic and political influences. Transforming water systems entails delivering and scaling sustainable solutions for water across food, land, energy and ecosystems, to reduce future water risks and strengthen social and gender equality. Progress is contingent on lifting barriers caused by lack of data and information, weak water governance, social exclusion, gaps in knowledge and skills, and lack of finance. Now is the time to accelerate this agenda.

Water’s Impact Across Sustainable Development Goals



Our Response

IWMI’s mission is research and innovation in partnerships for collective action that advance the transformation of water systems for sustainable, just and climate-resilient development. Our vision is a water-secure world.

IWMI develops, tests and scales science-based solutions for water management in the Global South and uses knowledge and evidence to strengthen policy and investment for water security. We aim to deliver excellence in research and apply our research-for-development model through diverse, collective action partnerships to achieve social, economic and environmental outcomes.

The IWMI Strategy 2024–2030 is an ambitious agenda for research and innovation on water security. It reflects the

complexity and severity of current and future challenges in water management. It aims to use research for development to accelerate progress on Sustainable Development Goal 6 (SDG 6) – Ensure availability and sustainable management of water and sanitation for all – as well as national and regional development priorities. As we respond to calls from our host governments and partners to increase the contributions we make and the impacts we achieve, we are backing this Strategy with an action plan to drive partnerships, growth and higher organizational performance.

Our Values

Excellence

We use our skills and expertise to generate rigorous, relevant and high-quality evidence and aspire to the highest standards in everything we do.

Collaboration

We work with our colleagues and partners to develop multidisciplinary, contextually relevant solutions to complex problems.

Inclusivity

We believe in human dignity regardless of gender, identity, background, or circumstance.

Integrity

We are accountable and build trust and respect with each other and our partners, maintaining strong ethics, with zero tolerance for harassment, intimidation, or discrimination.

IWMI in the CGIAR System

IWMI is a CGIAR Research Center. CGIAR is a global research partnership dedicated to transforming food, land and water systems for a safe, healthy and sustainable future that is resilient to climate change and in which biodiversity is conserved. It combines the complementary mandates of CGIAR Research Centers.

The IWMI Strategy 2024–2030 contributes to the CGIAR 2030 Research and Innovation Strategy, and along with the companion CGIAR Water Systems Integration Roadmap 2024–2030, elaborates how water systems science contributes to the CGIAR mission to deliver science and innovation that advance the transformation of food, land and water systems in a climate crisis.

IWMI leads water systems science in the CGIAR integrated partnership and its contributions to CGIAR's mission and SDG 2 (end hunger, achieve food security and improved nutrition and promote sustainable agriculture). Partnership within CGIAR, in turn, enhances the scale and impact of IWMI's contributions to future water security.

Demand for Water Research and Innovation

The world's transformative agenda is off-track, and research and innovation must respond.

Achieving the SDGs depends on solutions for water, and the United Nations Framework Convention on Climate Change (UNFCCC) has recognized the need to integrate water management into climate action. In the Global Biodiversity Framework, governments have agreed that solutions for the biodiversity crisis must incorporate water. Still, the available solutions to meet these commitments fall short.

The UN 2023 Water Conference, the first intergovernmental conference on water since 1977, was convened to galvanize

action on SDG 6 and accelerate inclusive, sustainable and climate-resilient development through water. The conference concluded that water is an indispensable catalyst for health and well-being, and for securing food and nutrition security and energy for all. Participants called for policies and investment to enable the scaling and acceleration of progress towards water security. The conference also launched the Water Action Agenda, which documents over 800 commitments to action and investment. **IWMI's commitment to the Water Action Agenda was our Transformative Futures for Water Security initiative.**

TRANSFORMATIVE FUTURES FOR WATER SECURITY

Prior to the UN 2023 Water Conference, IWMI co-convened the Transformative Futures for Water Security dialogue and heard from more than 1,000 contributors from more than 440 organizations in policy, business, development and science communities of the Global South. They came together to generate eight high-ambition missions for science-based, collective action on water security. The missions establish shared priorities for collective action by all stakeholders, and they give IWMI a framework for demand-led research and innovation.



Strategic Challenges for Water Security

Water risks. Communities are exposed to drought and flood risks because of inadequate infrastructure, ineffective institutions, and disjointed planning, management and policies across sectors. Water pollution threatens public health, biodiversity and food security, while climate change generates deep uncertainty about future water risks.

Inequalities. Over 2 billion people still lack safe access to clean drinking water. Marginalized groups face the highest levels of water insecurity, and disparities leave women, youth and marginalized communities more vulnerable to water risks and climate change. Failure to recognize the multiple ecological, cultural and spiritual values of water further reinforces exclusion and inequality.

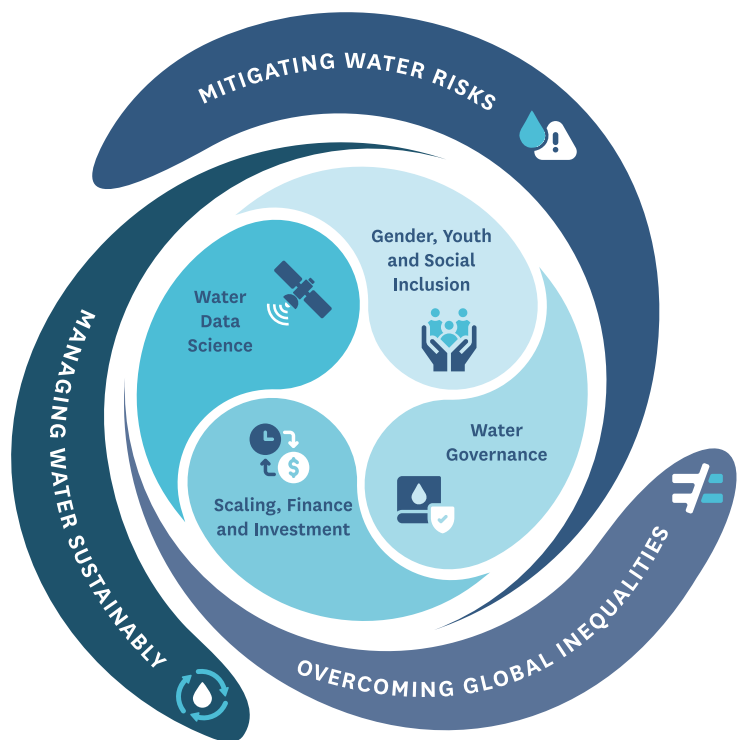
Sustainability. Global demand for water for all uses is expected to rise by 20–30% by 2050, with agricultural demand for water continuing to increase with the growing demand for food. The number of food-insecure people is also rising, and water productivity in agri-food systems must therefore increase, to produce more food using less water while concurrently meeting water needs for health, energy, cities and ecosystems.

Enabling change. IWMI's research and innovation are also guided by strategic challenges that impede change on pathways to transforming future water security. These challenges include the lack of reliable water data; weak governance caused by inadequate frameworks, compliance, capacity and participation; poor understanding of how to change gender norms or how gender and social differences shape inequalities; and shortcomings in scaling of innovations and in financing.

IWMI's Research and Innovation

In 2024–2030, IWMI will apply agile, interdisciplinary and systems-oriented research for development to address complex water problems.

By harnessing the power of collective action, we aim to ensure that adaptive, robust solutions have lasting impacts. We focus on IWMI's comparative advantages and research excellence to leverage the complementary capacities of our partners to achieve joint social, economic and environmental outcomes. **Our three Strategic Focus Areas are interdependent, and are further enabled by four Transformational Levers.**



Strategic Focus Area: Mitigating Water Risks

Farmers, communities, policymakers, the private sector, planners and investors seek new data, knowledge, capabilities and strategies for managing future water risks. They need answers to the question: **How can we manage future water risks?**

MITIGATING WATER RISKS

- ➔ Risks from droughts and floods are reduced
- ➔ Future water risks are integrated into climate resilience
- ➔ Low-emission, climate-adaptive development contributes to decarbonizing water systems
- ➔ Water pollution is reduced and lowers risks to human health and ecosystems
- ➔ Communities affected by fragility, conflict and migration are made more resilient

OUTCOME

Water risks are reduced, and climate action integrates strategies to anticipate and respond with agility to current and future changes in water risks



Strategic Focus Area: Overcoming Global Inequalities

Policy makers, financial institutions, and development and humanitarian agencies want to integrate evidence-based recommendations for social transformation into policy, planning, program design and implementation. They need answers to the question: **How do we make sure there is water security for all, and no one is left behind?**

OVERCOMING GLOBAL INEQUALITIES

- ➔ Water is managed in ways that ensure equal access for all
- ➔ Women, youth and marginalized groups have equal access to the knowledge, skills and tools to mitigate water risks
- ➔ Incomes, livelihoods and water and food security are improved for women, youth and people in poor communities
- ➔ Diverse knowledge and values are considered in decision-making on infrastructure, ecosystems, landscapes and water management
- ➔ Youth leadership on water security is strengthened through inclusion.

OUTCOME

Gender equality and youth and social inclusion are improved to make the benefits of water security more equal, reduce poverty and ensure that water management leaves no one behind



Strategic Focus Area: Managing Water Sustainably

National and local governments, multilateral financial institutions, development partners, farmers and the private sector need answers to the question: **Will there be water to meet our development goals?**

MANAGING WATER SUSTAINABLY

- ➔ Food security and farmers' livelihoods are improved in irrigated and rainfed agriculture
- ➔ Water is moved out of agriculture where future demand is unsustainable
- ➔ Water scarcity is reduced by scaling circular management and non-conventional water innovations
- ➔ Nature-based solutions for water and environmental flows improve biodiversity conservation and ecosystem restoration
- ➔ Water infrastructure and allocation decisions are made using information on trade-offs and options for built, natural and groundwater storage

OUTCOME

Sustainable solutions to meet growing and competing demands for freshwater are applied with increasing scale and speed



Regional Strategic Focus

STRATEGIC FOCUS AREAS	WEST AFRICA	EAST AFRICA	SOUTHERN AFRICA	MIDDLE EAST AND NORTH AFRICA	CENTRAL ASIA	SOUTH ASIA	SOUTHEAST ASIA
 MITIGATING WATER RISKS	- Food system resilience - Early warnings - Pollution and waste	- Drought risks - Flood forecasting - Fragile and conflict-affected areas	- Climate-resilient agriculture - Scarcity, pollution and climate - Disaster risk	- Droughts, floods and future risks - Climate information systems - Fragile and conflict-affected areas	- Water for agriculture - Early warnings - Pollution and wastewater	- Integrated adaptation - Renewable-energy irrigation - Water quality and health	- Agricultural climate resilience - Emissions mitigation in rice - Transboundary cooperation
 OVERCOMING GLOBAL INEQUALITIES	- Inclusive governance - Women and youth in scaling - Private investment	- Inclusive conservation agriculture - Access to land, water and solutions - Gender-responsive data	- Equitable access - Adoption barriers - Transcending colonial legacies	- Governance participation - Gender norms - Water service business models	- Empowerment in adaptation - Differentiation in solutions - Knowledge sharing and co-creation	- Differential vulnerabilities - Voice of marginalized groups - Capacities for inclusive solutions	- Governance enabling access - Inclusive hydropower planning - Livelihoods impacted by large dams
 MANAGING WATER SUSTAINABLY	- Irrigation and multiple-use water - Optimizing infrastructure planning - Water storage solutions	- Soil and water conservation - Watershed planning and financing - Transboundary management	- Accelerators for scaling - Groundwater management - Integrated catchment management	- Water-saving irrigation - Wastewater reuse - Multisector solutions	- Precision irrigation - Multisector solutions - Wetland and watershed restoration	- Irrigation modernization - Groundwater depletion - Wetlands and mountain springs	- Sustainable food systems - Groundwater governance - Basin futures



Transformational Lever: Water Data Science

IWMI will leverage water data science to close data and information gaps and develop and apply data analytics that leverage the power of artificial intelligence (AI).

CLOSING DATA AND INFORMATION GAPS

- ➔ Increasing data availability using the latest advances in remote sensing, geographic information systems (GIS) and the Internet of Things
- ➔ Harmonizing fragmented public and private data sources using AI
- ➔ Using AI to disaggregate data for gender, age and other social differences
- ➔ Decision support systems that integrate modelling, socioeconomic data analytics and Earth observation
- ➔ Digital dashboards for equal access to data

DATA ANALYTICS LEVERAGING ARTIFICIAL INTELLIGENCE

- ➔ AI tools for near real-time optimization of decisions at farm-to-basin levels
- ➔ Water accounting for current and future climate scenarios and demand forecasting for food, energy and ecosystems
- ➔ Social inclusion analytics to target water innovations
- ➔ Scenario assessments for risk mitigation
- ➔ Digital twins at farm-to-basin levels to support water governance, investment and integrated planning



Transformational Lever: Water Governance

We will strengthen IWMI's role in enhancing water governance at local, national and transboundary levels and in improving the coherence of water policies and strategies across sectors and uses.

WATER GOVERNANCE AT LOCAL, NATIONAL AND TRANSBOUNDARY LEVELS

- ➔ Facilitating participation in multistakeholder platforms
- ➔ Facilitating data transparency and accessibility
- ➔ Promoting cooperative governance models with equality for women, youth and vulnerable groups
- ➔ Assisting with governance for water quality, irrigation and groundwater sustainability
- ➔ Supporting regional and basin organizations to implement transboundary water management

COHERENCE OF WATER POLICIES AND STRATEGIES ACROSS SECTORS AND USES

- ➔ Aligning agricultural water use and sector policies for water, food and energy security
- ➔ Climate action integrating adaptive water management, investment and water resilience
- ➔ Policies for upscaling anticipatory action in fragile and conflict-affected areas
- ➔ Demand-driven technical support for Nationally Determined Contribution and National Action Plan implementation



Transformational Lever: Gender, Youth and Social Inclusion

IWMI will leverage research on the root causes of inequality and youth and social exclusion and on how to open more space in water management for the voices of women, youth and people in poor communities.

IDENTIFYING THE ROOT CAUSES OF GENDER, YOUTH AND SOCIAL EXCLUSION

- ➔ Generating data and evidence on the root causes of inequalities and exclusion and how to address them
- ➔ Applying an intersectional lens to build our knowledge of power relations shaping water management
- ➔ Using evidence to challenge and eliminate hierarchies that prevent women's participation in decision-making
- ➔ Assessing how intergenerational differences influence the adoption of water solutions and change

VOICE AND REPRESENTATION OF WOMEN, YOUTH AND POOR COMMUNITIES

- ➔ Engaging communities in water research to ensure it reflects local realities, values, needs and preferences
- ➔ Empowering communities to use citizen science
- ➔ Empowering disadvantaged groups to strengthen their agency in water governance
- ➔ Open and inclusive communication channels for research results, data and policies



Transformational Lever: Scaling, Finance and Investment

IWMI will strengthen scaling of innovation for water security and enhance the application of evidence from our research in data-driven support tools for investment, strengthening financing for water and repurposing of subsidies.

SCALING WATER INNOVATIONS FOR WATER SECURITY

- ➔ Create innovation pipelines that balance reduced risk, sustainability and inclusion
- ➔ Foster multistakeholder engagement to overcome barriers to adoption
- ➔ Create adaptive scaling pathways to integrate future water risks and ensure equal opportunities along value chains
- ➔ Support evidence-based policies to facilitate financing, private sector engagement and scaling water innovations

FINANCING FOR WATER, REPURPOSING SUBSIDIES AND DATA-DRIVEN TOOLS FOR INVESTMENT DECISIONS

- ➔ New partnerships with the multilateral, public and private sectors to apply evidence for investment
- ➔ Impact evaluations to target innovation financing
- ➔ Data-driven tools to address future water risks, sustainability and inclusion in financing decisions
- ➔ Analytics to support repurposing subsidies
- ➔ Data to support investments for water resilience and decarbonizing water systems through climate finance

Advancing Change — A Stronger IWMI Enabling Impact

The urgency of water security demands changes at scale and with speed.

To respond to this challenge, IWMI will ramp up the contributions we make, but we too must change. Our 2024–2030 Strategy combines research and innovation with ambitious plans to transform IWMI. **We will use our comparative advantages to strengthen the role of knowledge, research and innovation in partnerships for collective action.** We will deliver projects and programs to catalyze and implement change in water systems, building on CGIAR research initiatives and programs, and all

our other partnerships. By 2030, IWMI will be recognized as an indispensable global voice helping shape the water agenda, based on the support we provide to partner governments in combination with our influence in key global platforms, including the UNFCCC, the Global Biodiversity Framework and Ramsar Convention, future Food System Summits and the UN Water Conferences in 2026 and 2028.

Organizing for Delivery

Country offices. IWMI has long maintained a network of country offices as a platform for co-development and implementation of research. Our diverse and multicultural research staff are based in offices in Africa and Asia, with many from the countries and regions in which they are working. We deliver by building on the grounded expertise of our staff, their networks and long-term, mutually accountable strategic partnerships.

Strategic Programs. IWMI-wide Strategic Programs bring together thematic expertise on:

- Water, Food and Ecosystems
- Water, Climate Change and Resilience
- Water, Growth and Inclusion
- Water Data Science

The Strategic Focus Areas and Transformational Levers will use contributions from across these Strategic Programs to transcend programmatic silos.

Leveraging CGIAR Science Groups. IWMI's capabilities are seamlessly integrated with CGIAR as the Water Systems Department within the Systems Transformation Science Group. We collaborate across CGIAR to leverage water-related research and innovation – from genetics and agronomy to health and nutrition, landscape restoration and food systems policy – to advance outcomes for water security, as documented in the accompanying CGIAR Water Systems Integration Roadmap 2024–2030.

Agile Platforms. IWMI Agile Platforms will convene interdisciplinary teams to respond to emerging issues and opportunities. Responsive, flexible and time bound, Agile Platforms will align project design, partnerships and policy engagement to enhance outcomes from the Strategic Focus Areas and Transformational Levers. Co-led by at least two Strategic Programs, each Agile Platform brings together multiple disciplines within IWMI, from CGIAR as well as other partners, to strengthen the development of integrated solutions for complex water problems. Outputs include design of strategic initiatives, policy innovation, knowledge products and communications campaigns.

Research-for-Development Excellence

Our research-for-development approach seeks to deliver scientific excellence tightly coupled to social, economic and environmental outcomes with a clear line of sight to development impacts. Our objective is research-for-development excellence. We are guided by CGIAR's criteria for Quality of Research for Development: relevance, scientific

credibility, legitimacy and effectiveness. We embed these criteria in our quality review processes for project design, partnerships, outputs and communications, and in our performance management to differentiate the roles and contributions of staff along the research-to-development continuum.

Strong Partnerships for Collective Action

We will leverage the power of partnerships to implement and scale change in water systems. IWMI's role as a partner is determined by our comparative advantages in knowledge, research and innovation that complement the contributions of other partners to collective action. We focus on three strategic priorities in our partnerships:

- **Position to partner.** We will be clear on the unique value we bring and will leverage this to deliver greater impact.

Critical to our success will be working with partners to ensure effective and mutually beneficial two-way relationships.

- **Empower and align people.** We will invest in and empower IWMI's staff to develop and deepen partnerships.
- **Strengthen systems and processes.** We will align tools and practices to ease and enable individual and institutional relationship building.

Knowledge Sharing and Communications

Knowledge sharing is embedded across our strategic framework and in our collective action partnerships. Our commitment to sharing knowledge is based on fairness, inclusion and recognition that there are diverse values and knowledge systems used in managing water. We learn from our partners, and they learn from us. We strive to achieve this balance through:

- **Knowledge creation and generation.**
- **Knowledge sharing spaces and platforms.**
- **Knowledge management.**
- **Adhering to FAIR (Findability, Accessibility, Interoperability and Reusability) principles.**

Organizational Growth and Performance

To deliver the ambition of the IWMI Strategy 2024–2030, our impact must grow. Underpinning our ambition is an Organizational Growth Strategy and Action Plan that defines the following priorities for organizational development:

- **Growth in funding**, doubling IWMI's funding by 2030.
- **Integration** within CGIAR and using the CGIAR Water Systems Integration Roadmap 2024–2030.
- **Strengthening our organizational culture** to foster research excellence and innovation, a growth mindset and a client focus.
- **Developing IWMI's global workforce** to deliver our strategic priorities and larger integrated portfolio, applying CGIAR policies and targets for gender, diversity and inclusion.
- **Building IWMI's brand, communications and outreach.**
- **Using our data and knowledge effectively.**
- **Reinforcing our policies, processes and infrastructure.**
- **Refining our structure in line with a growing organization.**

We will update our strategy for Gender Equality and Social Inclusion (GESI) in 2024, which will guide the integration of GESI into the design, implementation and management of IWMI's programs. We will ensure GESI research is aligned to and integrated with CGIAR research and reporting frameworks.

As a member of the UN Global Compact, IWMI has also committed to reducing organization-wide greenhouse gas emissions in line with a net-zero and 1.5°C future. Beginning in 2024, guided by a new IWMI Sustainability Policy, we will implement an action plan to reduce our carbon footprint and report on progress in our Annual Reports.

Finally, to track progress as we implement the 2024–2030 Strategy, IWMI will launch an Organizational Performance Framework in 2024. This will enable managers and staff to analyze performance for research delivery, partnerships, knowledge sharing and communications, alongside progress in implementation of our action plans for growth. The framework will complement the CGIAR results framework and performance tracking, and will reflect our commitment to strengthening the contributions we make to transforming future water security.



Global Headquarters

127 Sunil Mawatha, Pelawatte, Battaramulla, Sri Lanka

Mailing address:

P. O. Box 2075, Colombo, Sri Lanka

+94 11 2880000, +94 11 2784080

iwmi@cgiar.org | www.iwmi.org

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