The Science for a Water-Secure World Initiative


Water security is key to our collective future, yet many parts of the world today are deeply water-insecure. Progress on United Nations Sustainable Development Goal (SDG) 6 must accelerate, and simultaneously contend with climate change. As the Intergovernmental Panel on Climate Change recently reported, water risks are intensifying around the world as climate change tightens its grip and shocks the planet’s hydrological systems. What is coming are more droughts, floods, and extreme rainfall, more variable and less reliable tropical monsoons, melting glaciers, and sea-level rise.

We are in a new era of water risks, but governments, businesses, and water users across sectors — as well as the global water science community — are not doing nearly enough to adapt and build water security for the 21st century.

Without immediate and bold action, water security is set to worsen.

Water’s importance to achieving sustainable development, building climate resilience, and strengthening livelihoods compels the international community to urgently prioritize the sustainable management of water. However, poor water governance, underfunded water services and infrastructure, a fragmented evidence base, and the slow pace of change and innovation in water management combine to make achieving water security an elusive goal in many countries.
Science for a Water-Secure World: Partnership Bridging the Science-Policy Gap

To strengthen the response to these pressing challenges, the International Water Management Institute (IWMI) is promoting a year-long Science for a Water-Secure World (SWSW) initiative.

The SWSW initiative will build partnerships among the policy, business, development, practitioner, and science communities, balancing voices from the Global South and Global North, in order to focus and strengthen the science base for action on water security. The initiative aims to ensure that political progress towards a more urgent and coherent agenda for water policies, investments, strategies, and accelerated action is better supported by scientific progress.

The centerpiece of the SWSW initiative will be a series of regional multi-stakeholder dialogues that culminate in a ‘Science for a Water-Secure World’ conference in early 2023. The aim is to ensure that water science better serves global ambition to accelerate progress on SDG 6 and build water security that will be robust in the face of deepening water risks this century.

The SWSW initiative will be backed by stakeholder engagements and consultations, targeted surveys that gauge where the science-action and science-policy gap is most acute, and multi-partner policy-oriented publications.

The SWSW initiative will elevate the contribution of water science and innovation to accelerate the transition to a water-secure world. The initiative will aim to make water-related science and evidence more relevant, accurate, and accessible, while supporting policymakers and stakeholders across sectors with more water data and additional research and knowledge to help overcome gender inequalities, social exclusion, and weak governance and institutions that hold back progress on water security.

Dialogue on Water Systems Science for the 21st Century

Water policies and strategies for accelerated action on SDG 6 and the 2030 Agenda for Sustainable Development must address multiple drivers of change — including soaring water demand for food production, energy generation, and economic development, among other uses — while prioritizing marginalized communities, vulnerable people, and equality of women and men. In a rapidly changing climate for which the past is no longer a reliable guide for planning for future water risks, new data and tools for risk management, as well as rapidly-scalable and inclusive innovation, are critical. New knowledge is needed to underpin inclusive water management as uncertainties and climate shocks expand over the 21st century.

The SWSW initiative will convene dialogues on water systems science to help bridge the science-policy gap; break down silos and better communicate actionable data on water risks to decision-makers in government and business; provide guidance on how to make research for policy, investment, and development more effective and impactful; and catalyze more inclusive dialogue across the biophysical, social science, and public health domains. The initiative will identify clear priorities and action through a set of sequenced activities that will run on three parallel tracks (Figure 1).

Figure 1. Science for a water-secure world: Activities on three parallel tracks.
While voluminous, the science underpinning water management is fragmented, and not always focused on the key strategic issues that governments, businesses, cities, or farming communities must face to build water security. The three tracks of the SWSW initiative will aim to identify critical gaps in the science; outline steps for ensuring water science addresses the priorities of diverse users; and illuminate pathways to scale-up sustainable water management solutions.

At the core of the SWSW initiative’s mission lie these questions: What barriers are currently stopping us from designing and implementing water processes and policies firmly grounded in the best-available science? How can we strengthen the role of science in shaping policymaking on water? And how can we make water science more accessible to very diverse groups of knowledge users? (Figure 2)

The SWSW initiative will mobilize governments, water stakeholders, science users, and private sector actors — along with public and private finance — to tackle these questions. In doing so, the initiative will lower or eliminate barriers, such as miscommunication and poor coordination, to create a stronger, more unified voice for the water science community, enhance its capabilities for collective action, and deepen the connectivity between scientific research and policymaking on water security (Figure 3).

### Barriers
- Lack of data about water and water services in many parts of the world
- Localization and customization of science from global data/knowledge
- Communication of the science is poor
- Lack of ability to scale up solutions
- Underperforming systems do not match the priorities/needs
- Not enough emphasis in science on what is needed for action
- Fragmentation of voices in water science

### Dialogue and Conference Tracks

### Outputs
- Science base for the 21st century water security agenda
- Regional priorities for water systems science
- Landmark publications

### Outcomes
- Improve the science to action interface
- Bridge the science-policy gap

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**Figure 2.** Science for a water-secure world: Roadmap.

**Figure 3.** Science for a water-secure world: Conference timeline.
Harnessing the Power of Partnership

Across all planned activities, the SWSW initiative will prioritize engagement with a diverse set of water stakeholders — including government policymakers, members of civil society, and the private sector, alongside the scientific community — to reflect water’s diverse constituencies. The initiative’s three “tracks” will convene a broad and inclusive consortium of partners grounded in relationships within and between the Global South and Global North, catalyzing more inclusive dialogue across the biophysical, social science, and public health domains.

The partnership and dialogues will aim to combine science, policy, and business with bottom-up engagement and organizations driving change. The convening partners themselves will be made up of a core group of Global South-North organizations that will mobilize a wider network of actors, including at the regional and national levels. Together, we will reduce fragmentation among water actors, more effectively wield the power of science to support and influence water-related processes and policies, and ensure these steps are co-owned by sectors able to enact urgently needed changes.

We Invite You to Join Us

With your partnership, the SWSW initiative will stand well-positioned to not only create a more durable bridge between the scientific, policy, development, and business communities, but also strengthen these communities’ collective voice. In doing so, we will advance more robust science-based processes and policies to strengthen water security, make relevant science more easily available, and enhance how science shapes policy, investment, and action on water security at the local to global levels.

Let’s meet this moment together. We invite you to learn more about the SWSW initiative, envision your potential role within it, and bring your perspectives and expertise to our consultations, regional dialogues, and global conference. Together, we can mobilize science to lay the foundation for a more water-secure, climate-resilient 21st century.

For more information on the Science for a Water-Secure World initiative, contact Mark Smith (mark.smith@cgiar.org).