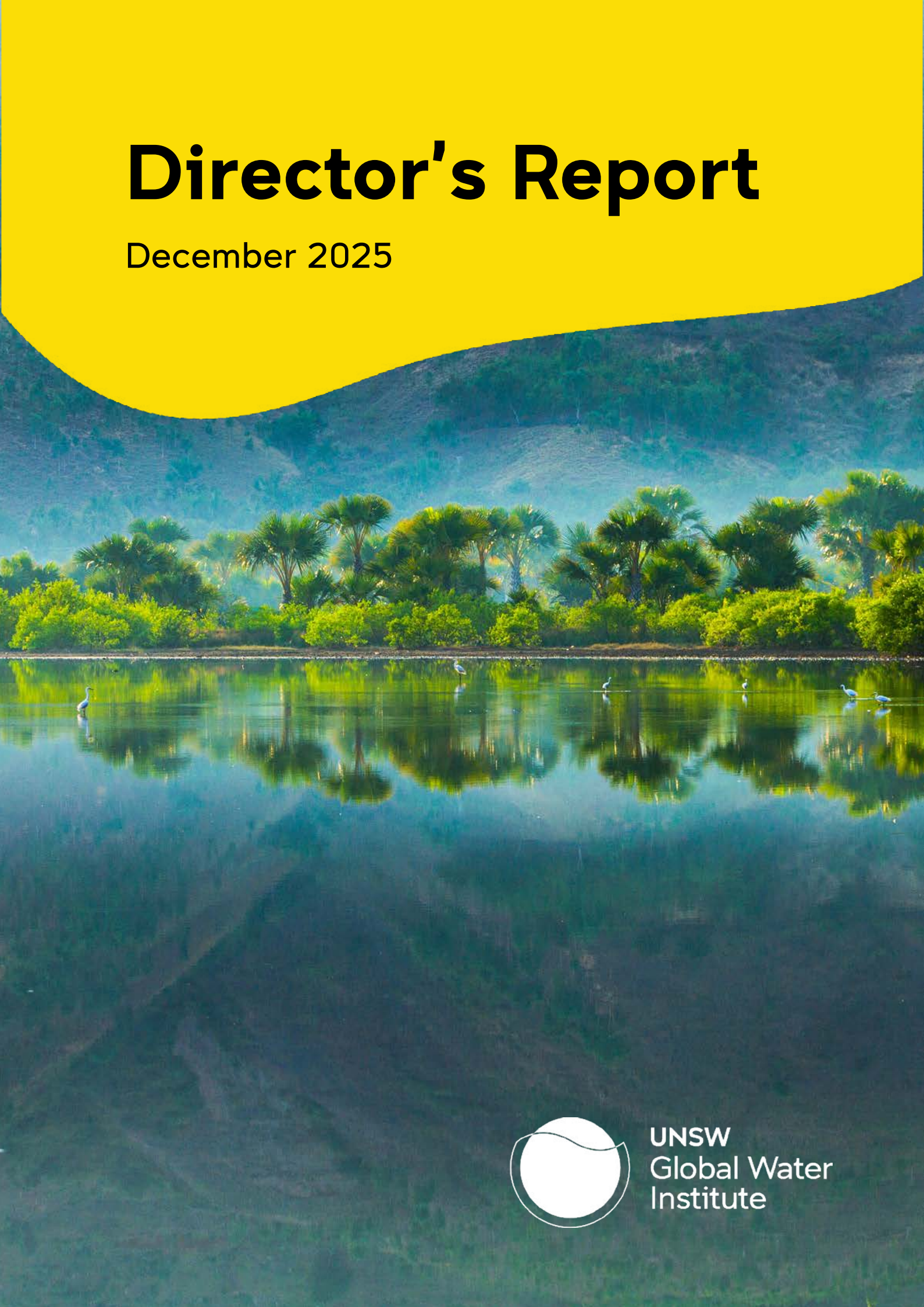
Director's Report

December 2025



UNSW Global Water Institute

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Executive summary

UNSW's Global Water Institute (GWI) unites experts from the Faculties of Science, Engineering, Law, Arts, Design & Architecture, Business, and the School of Population Health to tackle critical water-related challenges in climate, health, and sustainability, both nationally and globally.

Over the last five years, GWI has contributed to global water policy through the UN-endorsed Global Water Leaders Surveys and through participation in key events including COP26, COP28, UN Ocean Conference, and Stockholm International Water Week. It also supported international policy development through the publication of the UN-Water Report on Freshwater Requirements for Climate Mitigation. It continues to play an active role in key international water platforms including the Internationl Association for Hydro-Environment Engineering and Research (IAHR) and the Organisation for Economic Co-operation and Development (OECD) Water Governance Initiative.

Regionally, GWI strengthened partnerships with neighbours in the Pacific and Timor-Leste, including through collaborative initiatives such as spring restoration and capacity-building programs, supported by the Australian Centre for International Agricultural Research (ACIAR). It continues to influence and support regional water agendas through its active role in the Asia Pacific Water Forum (APWF) and strategic partnerships with Permatil, the National University of Timor-Leste (UNTL), and Dili Institute of Technology (DIT).

In Australia, GWI co-led nationally significant work on food and water security with Aboriginal communities through a five-year Cat-1 NHMRC Ideas Grant with The George Institute. It also contributed the Macarthur River Mine evaluation, Walgett River Rangers Program, and secured $1.5 million through the NSW Flood Recovery Program. GWI maintains active memberships in the Australian Water Association (AWA) and Water Research Australia (WaterRA), creating valuable pathways for early career researchers and students to engage in industry-led research and professional development.

This report contains highlights of the UNSW water community's work with partners to do collectively that which cannot be done individually.

Professor Greg Leslie
Director, UNSW Global Water Institute

Program of work

Who we are

The Global Water Institute (GWI) leads multidisciplinary water research and engagement to tackle urgent and complex water challenges that affect society locally, regionally, and globally. Water intersects with climate change, food security, health, urbanisation, Indigenous knowledge, and environmental resilience, creating interconnected issues that require collaboration across disciplines, sectors, and regions.

As UNSW drives progress through education, research, and partnerships, GWI serves as a central hub enabling the water research community to deliver real-world impact. Our work advances UNSW's Progress for All strategy and supports communities in achieving SDGs related to sustainable water management, climate action, health, and inclusive governance.

What we do

1. Help solve global water problems and shape future innovation for the water sector through world-class, multi-disciplinary research and its application
2. Provide excellence in water education, capacity building and sharing of water knowledge, technologies and expertise
3. Collaborate with government, industry, NGOs, communities and other re search organisations in achieving an enduring global impact
4. Improve the lives of disadvantaged and marginalised communities, including Indigenous peoples, through exchanging water knowledge and promoting equality, diversity, open debate and economic progress
5. Connect research to water policy development and on-ground management
6. Respond to major public issues, industry requirements and community needs
7. Educate, mentor and give voice to young and early career water professionals
8. Develop new ideas, innovations and technologies and stimulate positive change through thought leadership
9. Bring together UNSW's water-related research and education strengths into a unified, world-class offering for national and global water communities

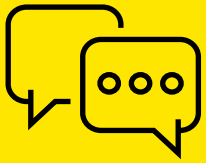
UNSW-GWI is formally involved with the Faculties of:

- Engineering
- Science
- Law & Justice
- Arts, Design & Architecture
- Business

Highlights

$4.2m in research funding

42 educatonal activities



50 significant meetings & engagements

Environmental, economic, societal & cultural impact

A new visual identity

After opening in 2017, GWI has built a reputation for excellence in research, impact and educational opportunities.

The new GWI logo is reflective of the reputation and following the institute has built, with the unique, professional visual identity set to create deeper brand recognition and understanding, particularly with external partners and internationally.

The shape of the logo represents our global reach, and the colours reflect the way water connects us all and supports every living being on earth.

The new visual identity is being rolled out from September 2025.

UNSW Global Water Institute

Research projects

Towards integrated water management solutions for water and food security in Timor-Leste.

With funding from the Australian Centre for International Agricultural Research (ACIAR), the overarching aim of this research project is to support nature-based solutions to improve local water supplies to enhance water and food security in Timor-Leste. This will be achieved by building local capacity in both social science and hydrological research methods. This will be achieved through a dual-stream approach that concurrently addresses social and hydrological dimensions over a 18-month period across six municipalities representing three distinct climate zones.

Irrigated Street Trees for Stormwater Management, Urban Cooling, and Wellbeing

With funding from Sydney Water, this project investigates how passively irrigated street trees can help address rising temperatures and increasing stormwater runoff in Western Sydney. It will develop experimental monitoring methods and generate high-quality, long-term performance data on street trees, assessing their effectiveness for stormwater management, urban greening and cooling, as well as the maintenance costs associated with their use.

PARTISIPA: Water Resilience and Climate Research Partnership (Timor-Leste)

With funding from PARTISIPA (Partnership to Strengthen Village Development and Municipal Administration) in Timor-Leste, GWI is undertaking a scoping study with WaterAid and Permatil as a first step in establishing a project that will develop community-level water conservation methods and processes for integration into government water service delivery; and strengthen evidence for climate-resilient rural water service delivery and governance through catchment-scale analysis.

Preparation of Climate Rationale, Feasibility Studies and Recommendations for three Pacific Small Island Developing States

With funding from the Food and Agriculture Organisation of the United Nations (FAO), members of the UNSW water community studied linkages between water and climate within three Pacific Small Island Developing States – Palau, Tonga and Timor-Leste. This project is enabling informed decision-making for investments in climate adaptation.

Establishing Hydrological Information System and Turbidity Forecasting Model on Waimanu and Sigatoka River Catchments

With funding from the Water Authority of Fiji, this project is enabling UNSW to work with the Authority to improve water quality in the nation by increasing capabilities of water treatment plants. Experts are establishing a Hydrologic Information Management System and a forecasting model to predict turbidity levels within the main tributaries to water treatment processing plants.

Indigenous River Rangers Program: With Dharriwaa Elders Group and the Yuwaya Ngarra-Li Partnership

Academics from UNSW's Law, Science and Engineering are working with the Ngarrangarra-li Walaaybaa Rangers, employed at the Dharriwaa Elders Group in Walgett, to provide training on water presence in the landscape, water quality, the ecological value of water and water regulation. The training content is developed from a First Nations perspective and uses traditional knowledge and nomenclature. Funding is provided by the National Indigenous Australians Agency through the Indigenous River Rangers Program for the Ngarrangarra-li Walaaybaa Rangers (Look After Home Country Rangers) / Walgett River Rangers.

Greening hospital balconies for improved wellbeing

Through research, education, cross-faculty collaboration and partnership with hospital executives and stakeholders, we are supporting the restoration and revitalisation of outdoor spaces within the Royal Hospital for Women in Randwick. Using nature-based solutions, the revitalisation will facilitate better connection to nature and to one another.

Water and Food for Life

With funding from the National Health and Medical Research Council (NHMRC), the program has implemented the WISE tool in Walgett to measure food and water security and provide a baseline for community-led initiatives. Trained local researchers conducted a cross-sectional survey to understand local experiences, supporting sustainable projects that aim to improve nutrition, water quality, and overall wellbeing in the community.

Water Sector Study

This report was commissioned by the Consulate-General of the Kingdom of the Netherlands in Sydney and executed by the Netherlands Water Partnership, in cooperation with UNSW. It identifies opportunities for collaboration between the Dutch and Australian water sectors, highlighting challenges and priority areas and mapping out opportunities for knowledge exchange and partnerships.

Supporting students

PermaYouth Camp

UNSW-GWI has supported three of Permatil's PermaYouth camps in Timor Leste. The latest International PermaYouth Camp in October 2025 brought together 15 UNSW students and six staff from Engineering and Arts, Design and Architecture. Earlier, seven students and three staff members participated in the National PermaYouth Camp in Ermera in October 2024, followed by the first regional camp on Atauro Island in January, 2025. The camps provide opportunities for youth in Timor-Leste to learn about permaculture techniques while participating in leadership training and cultural exchanges.

Student Placement in Bourke

For three consecutive years, GWI supported students from the School of Built Environment to spend time on Ngemba-Baakindji Country in the New South Wales town of Bourke as part of a community-led professional placement. In 2022 and 2023 the project explored ways to improve nutritional, educational and social outcomes with and for Aboriginal people in Bourke through the Bourke community garden, and in 2024 the placement centred on the Bourke High School 'Brave Space' garden, which grew from the partnerships formed in the Bourke Community Garden.

SDG Research Grants

Each year, UNSW Business School awards five SDGs Research Grants, empowering HDR candidates to tackle pressing global challenges. The grants support innovative research that drives progress toward the UN SDGs 2030 through transformative industry or government interventions at local, national, or international levels. GWI supported six of these grants from 2022-25.

Australian Water Association

GWI is a member of the AWA and supports the membership of many individuals within the UNSW water community. In 2025, GWI became a Founding Partner of the AWA's 'Careers in Water' initiative, which positions water as a 'sector of choice' to attract and retain future talent. UNSW-GWI has input and influence into program direction and decision-making discussions, and is widely recognised as a primary contributor to the careers program.

Water Research Australia

Water RA's 'Next Water' conference unites industry professionals and academics to explore groundbreaking research and game-changing solutions. GWI is sponsoring two students to attend NextWater 2025 in Melbourne. Water RA is an important partner for GWI, as they are a leader in identifying prioritising, funding, managing, and communicating water research and innovation.

Water@UNSW

UNSW-GWI supported the reactivation of the Water@UNSW Symposium in 2024. The Symposium enables UNSW researchers to present their work to the UNSW water community and aims to promote cross-disciplinary water research. The full-day event in October 2025, featured 25 oral presentations on a wide range of topics including water policy and management frameworks, contaminant and water quality studies, ecological restoration and aquatic systems, hydrology, modelling and climate interactions, and emerging technologies for sustainable water use.

Feature: Project Halophyte

With funding from Swire Shipping, and endorsement from the Fiji Office of the Prime Minister for a pilot project, Project Halophyte seeks to 1) reinstate natural tidal flows in degraded coastal lands and 2) integrate mangroves within existing and new marine infrastructure.

These two nature-based solutions aim to revitalise the local mangrove ecosystems in both degraded and urban landscapes in Fiji in partnership with local communities, for the benefit of people and the environment. Over five years, researchers will track the environmental, social, and economic outcomes of Project Halo in Fiji, and researchers have plans to scale across the Pacific with further regional and national collaborations.

The project is co-led by Associate Professor Andrew Dansie and Professor William Glamore from UNSW Sydney, and Dr Isoa Korovulavula from The University of the South Pacific. GWI is a member of the Steering Committee and provides communication, engagement, and project support.

Global partnerships

International Association for Hydro-Environment Engineering and Research (IAHR)

GWI is a member of the IAHR and represented on committees through Stefan Felder of the UNSW Water Research Laboratory. In 2025, two UNSW programs were awarded the IAHR Label for Water Training and Education, jointly granted by IAHR and UNESCO for excellence in training and education programs. UNSW-GWI also collaborated on the 2025 Global Water Innovation Report, sharing the main priorities for water innovation as identified by national water associations.

UN Ocean Decade

Members of the UNSW water community attended the UN Oceans Conference in 2022, 2023 and 2024. Two UNSW-led projects (The Kelp Forest Alliance and Coastsnap) were also officially endorsed as UN Ocean Decade Actions, recognising that they are playing a key role in meeting the Ocean Decade Challenges.

UN-Water

In 2023, GWI partnered with the International Universities Climate Alliance, the UN-Water Expert Group on Water and Climate Change, World Meteorological Organization, United Nations Economic Commission for Europe and United Nations Educational, Scientific and Cultural Organization to produce a report on the Global Freshwater Requirements of Climate Mitigation Measures. The report was shared and discussed at COP28, the Bonn Climate Change Conference and COP29.

Times Higher Education

Times Higher Education (THE) is responsible for the World University Rankings and Global Impact Rankings, and GWI plays a key role in ensuring UNSW's impact and progress towards SDGs is communicated and incorporated into these assessments, UNSW-GWI Director Greg Leslie attended the THE Global Sustainable Development Congress Roundtable in Bangkok in 2024, exploring 'Water, Energy, and Food Goals post 2030: Can Carbon be the Currency to a Just World?"

Collaborating for Water, Food and Health in Timor-Leste

GWI is collaborating with Permatil, the Government of Timor Leste and Dili Institute of Technology to explore and advance a range of initiatives related to water, food and health.

In 2024, meetings were held with President Jose Ramos-Horta and Permatil CEO Ego Lemos to expore a scoping study for a new aquaculture program and community spring restoration project. In May 2024, UNSW's Greg Leslie and Alice Harrison traveleld to Dili to install instrumentation to track water availability and monitor slope stabilisation as part of this scoping

Members of the UNSW water community have also travelled to Timor-Leste to participate in PermaYouth camps.

Designed by Permatil in collaboration with local groups these camps equip and empower young people to improve rural livelihoods through environmental rehabilitation, water and food resilience, and climate strategies.

With fnding from ACIAR, UNSW is supporting the work of Permatil to improve local water supplies and enhance water and food security in Timor-Leste. This will be achieved by building local capacity in both social science and hydrological research methods.

PERMATIL | Permatil GLOBAL Permaculture. Everyone. Everywhere.

Listening to National Water Leaders

The 2025 National Water Leaders survey is currently underway in preparation for the 2026 UN Water Conference Since 2021, GWI has been collaborating with the Water Policy Group to revealthe key issues to improving water outcomes globally, as perceived by people with national water leadership responsibility. Water ministers, national water agency heads and others share their experience and perspectives on water policy issues and the findings in the Global and Regional Water Policy Reports.

The latest Global Water Policy Report was released and discussed at the UN 2023 Water Conference in New York.

WATER POLICY GROUP

Platforms for engagement

World Water Week

Members of the UNSW water community participate in World Water Week in Stockholm annually, both in-person and online. In 2025, the theme is 'Water for Climate Action' and GWI is collaborating with the Asia Pacific Water Forum on a session titled, 'Decarbonizing Asia's Water Infrastructure: Roadmap for a Low-Carbon, Climate-Resilient Future'. World Water Week attracts thousands of attendees across all sectors, playing a key role in raising the profile of GWI and facilitating new global connections.

FoodWISE Asia-Pacific

In September 2025, GWI partnered with the University of Technology Sydney and Northwestern University to host a landmark regional meeting addressing food and water insecurity in the Asia-Pacific. The event brought together representatives from 15 countries and highlighted the value of experiential measurement tools such as the Water Insecurity Experiences (WISE) scale, which captures lived realities and informs action in communities like Walgett (Australia), Timor-Leste, and the Philippines. These tools are being used to support gender-transformative approaches and generate policy-relevant data.

World Water Day

UN-Water celebrates World Water Day annually and GWI utilises this platform to promote the work of the UNSW water community. In 2025, GWI collaborated with UNSW Environmental Sustainability to run a free panel discussion on Glaciers, Water & Climate, aligning with the 2025 World Water Day theme of 'Save our Glaciers'. UNSW's Professor Tim Barrows and Suraj Shah were the main speakers, discussing the alarming rate of glacier retreat, its impact on Australia's water security, sea levels, and climate, and how UNSW is taking climate action.

Living Water

In celebration of UNSW's 75th anniversary, the Living Water exhibition was a collaboration between UNSW Library and GWI, highlighting contributions made by UNSW toward water governance and security, healthy oceans coastlines and safe and equitable access to water.

Feature: Symposium on the role of nature-based solutions for healthy communities

UNSW Sydney and the Dili Institute of Technology (DIT) co-hosted a two-day forum for researchers, policy-makers, practitioners and community leaders to chart future pathways using Nature-based Solutions (NbS) in local communities.

The event, held in Dili, was officially opened by His Excellency José Ramos-Horta, President of Timor-Leste. It was the first international symposium that the DIT has hosted.

The conference addressed Timor-Leste's environmental challenges, including deforestation, unsustainable land use, river sedimentation and loss of biodiversity.

Across the two-day event, 18 panellists from Timor-Leste, Australia, Germany and Indonesia examined how NbS could provide solutions to policy and resourcing gaps, health and nutrition limitations and investment shortfalls.

Key outcomes included:

- Increased awareness and knowledge of NbS for improving water access, erosion control and biodiversity at the catchment level.
- Identified pathways to integrate NbS into national water and climate adaptation strategies.
- Understanding of how NbS practices – such as permaculture, agroforestry and regenerative agriculture – can enhance food and nutrition security.
- Shared practical lessons from other countries that are relevant to Timor-Leste.
- Strengthened cross-sector collaboration through dialogue among experts in hydrology, planning, nutrition, ecology and development.