



2026 United Nations Water Conference

United Nations University contributions to the Interactive Dialogue Concept Papers

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(a) Water for people: the human rights to water and sanitation, including for those in vulnerable situations, for healthy societies and economies;

Introduction

Lack of safe household water, sanitation and hygiene (WASH) services impacts both health and equity developmental outcomes. Lack of access to safe water and sanitation is not only a violation of human rights but also a driver of psychological distress. The daily struggle to secure clean water erodes dignity and contributes to chronic stress, particularly among women and children in vulnerable communities.

Water, sanitation and hygiene (WASH) insecurity outcomes are gendered and shaped by socio-cultural, political, and institutional structures across scales. It is necessary to redress faults and gaps in current WASH policies, infrastructure design, and management. Despite calls for change, the WASH sector continues to be technologically driven and engineering oriented, which often results in interventions that overlook the human dimension that significantly factors into every successful WASH service.

Realizing the human rights to water and sanitation demands more than infrastructure coverage: it requires services that are safe, reliable, affordable, and trusted by users, especially those in vulnerable situations. The lived experience of WASH insecurity is gendered and place-specific, and it carries a measurable mental-health burden that undermines dignity, learning, livelihoods, and safety. Rooting policies in rights, equity, and user agency turns access into assurance and restores psychosocial resilience alongside physical health.

Additionally, threats to human safety resulting from too much or insufficient water at the wrong time and place are closely related to climate change in the present context. These threats include extreme hydrological, meteorological, and climatological events, such as floods and droughts, severe storms and storm surges, mud and landslides, water infrastructure failure, and wildfires. The impact of disasters on communities is a function of the severity of the event (hazard); physical exposure to the hazard; vulnerability, determined by social, economic, and environmental conditions; and capacity to prepare for, manage and adapt to disaster impacts. These factors can be considered at the individual scale, household, community, and regional level, and at multiple levels of complexity. Changes to global and local climate also pose new challenges and risks, specifically at the extremes of climate norms. All these risks can cause water disasters that impact human safety with localized and globalized short and long-term impacts and widespread, long-



lasting implications for mental and physical health, compounded by pre-existing and disaster-driven vulnerabilities.

Status and trends

Across 186 countries, water insecurity is the norm: about 72% (5.52 billion) of people live in water-insecure settings and 8% (0.61 billion) are critically insecure; only 12% live in water-secure countries. Regional disparities are stark—Africa, South Asia, and SIDS are most affected—with sub-regional gaps even within Europe and the Americas. Access remains the binding constraint: roughly 70% lack safely managed drinking water and 53% lack safely managed sanitation, with Africa registering both the lowest coverage and the highest WASH-attributed mortality.

Alarming, most of the world's population live in water-insecure countries today. Out of 7.78 billion people living in 186 countries, over 0.61 billion people (8%) are critically water-insecure and 5.52 billion (72%) are water-insecure, including 4.31 billion people in the Asia-Pacific region, 1.34 billion in Africa, 415 million in the Americas, and almost 66 million in Europe. 0.65 billion people (8%) live in moderately water-secure countries and over 1 billion (12%) live in water-secure countries, primarily in Europe (0.7 billion) and the Americas (0.6 billion).

Mapped globally, there is a sharp disparity in water security across global regions and sub-regions. The least water-secure regions are Africa, including the Sahel, the Horn of Africa and parts of West Africa, in addition to South Asia, and Small Island Developing States (SIDS) across the world. Europe and the Americas are significantly more water-secure than other global regions. At the sub-region level, Eastern Europe are markedly less secure than Northern Europe, and South and Central America less secure than North America.

Least Developed Countries and SIDS face critical levels of water security. The 23 countries assessed as critically insecure include 16 Least Developed Countries (LDCs) and 7 SIDS: the Solomon Islands, Eritrea, Sudan, Ethiopia, Vanuatu, Afghanistan, Djibouti, Haiti, Papua New Guinea, Somalia, Liberia, St Kitts & Nevis, Libya, Madagascar, Pakistan, South Sudan, Micronesia, Niger, Sierra Leone, Yemen, Chad, Comoros and Sri Lanka. These countries are severely impeded from achieving water security in seven of the ten components: low levels of access to safely managed drinking water and sanitation services (Components 1 and 2), health, measured by high WASH-attributed mortality (Component 3), water quality (Component 4), water value (Component 6), water governance (Component 7) and water resource stability with high interannual variability and low storage capacity (Component 10).



Globally, all regions face a trajectory of low levels of water security due to a range of compounding factors. However, these levels vary in each global region. In Africa, water security scores range from 29 (critically insecure) to 58 (insecure), followed by Asia ranging from 32 (critically insecure) to 81 (secure), the Americas from 52 (insecure) to 80 (secure), Europe from 51 (insecure) to 90 (secure), and SIDS from 23 (critically insecure) to 67 (moderately secure).

Access to safely managed drinking water and sanitation are still a dream for more than half the global population. More than 10% of people (close to 800 million) do not have access to even basic drinking water, and more than 70% (close to 5.5 billion) do not have access to a safely managed drinking water service (the SDG 6.1 target). More than 22% (1.71 billion) do not have access to even basic sanitation, and more than 53% (over 4.12 billion) do not have access to safely managed sanitation.

Africa has the lowest levels of WASH worldwide. Regionally, Africa has the lowest levels of WASH access. Almost 31% (over 411 million) of people in the 54 African countries, including 33 LDCs and 6 SIDS, do not have access to a basic drinking water service. Only 201 million people (15%) have access to safely managed drinking water, which is the SDG 6.1 target. In the case of sanitation services, more than 58% of people (780 million) do not have access to even basic sanitation services, and 82% (1.1 billion) still live without access to a safely managed sanitation service.

Globally, significantly more people die from a lack of safe drinking water, sanitation, and basic hygiene services than as a result of water disaster. 25 countries in Africa are severely impacted by WASH-attributed mortality, with estimated rates of over 40 deaths per 100,000 people annually, while 20 Asian Pacific countries have mortality rates between 10-40 deaths per 100,000. This situation is not improving – in 2019, 164 of the countries assessed have increased rates of WASH-attributed mortality compared to 2016 WHO estimates. Clearly, efforts to improve WASH services and wastewater treatment and reduce associated deaths must be significantly accelerated to achieve good health goals globally.

Comprehensive and accurate water quality assessment at the national level remains a challenge despite a dedicated SDG 6 target. The level of industrial and domestic wastewater treatment could not be assessed in all countries as defined in SDG 6, due to insufficient data. This is a major failing halfway into the SDG era, as only 14 countries have data available on industrial wastewater treatment (2015 values). The level of domestic wastewater treatment, assessed by WHO using household sanitation statistics, remains very poor (below 30%) in Africa and large parts of the Asia-Pacific, and poor (below 50%) in most South American countries, though there are exceptions in all regions.



Abundant natural water availability does not necessarily ensure water security. Many countries in Africa, the Asia-Pacific, and the Americas with abundant freshwater resources (water stress of 10% or less) have low levels of WASH access and water treatment, high rates of WASH related deaths, low economic water value, and potentially high losses due to flood or drought impacts.

High water values ('Water Use Efficiency') do not always translate into water security. Many national economies dominated by petroleum and mining activities have a high economic value per unit of water used (100 USD/m³ or higher), but this does not necessarily result in increased water security in other components such as governance, WASH, or storage infrastructure. This is particularly true in countries with high levels of economic water value in African countries reliant on petroleum and mining industries.

The influence of climate change on water security is not well addressed by the water-related SDGs. Countries with high interannual freshwater variability worldwide experience less stable and reliable water availability, impacting livelihoods and all sectors, but the capacity to mitigate this variability through a range of water storage options is poorly represented in global policy agendas. Likewise, the capacity of some water-stressed countries to utilize intensive water resource management mechanisms, unconventional water supplies, and desalination infrastructure to fulfil their water needs and support water resource stability, in the Middle East for example, is not captured in current water-related SDGs.

Prosperity is not the main driver of water security. National wealth, measured by Gross National Income (GNI) per capita, is clearly related to the capacity to fund critical water infrastructure and governance. However, national wealth is not the only driver of water security, particularly when there are multiple determinants of water security with reinforcing effects on each other. Countries within the same income group can have distinctive water security levels as illustrated in Figure C. Countries categorized as low income, lower-middle income or upper-middle income (per capita GNI below US\$ 12,535 – World Bank 2020 groups) have similar distributions and overlapping ranges in national scores, most of them being considered water insecure or critically insecure. At the extremes of rich and poor, the 29 low-income countries had water security scores ranging from 29 to 59, and the 50 high income countries had water security scores ranging from 36 to 90.

Water security assessment provides at best coarse national-level estimates that mask water security variability at finer scales. Where global data exist to assess water security at a national level, they clearly do not represent the individual or household experience of water insecurity. The national data currently available at a global extent, do not reflect rural-urban disparities, nor gender, age or social inequalities.



Refugee youth disproportionately experience sexual and gender-based violence (SGBV) and water insecurity, yet their SGBV experiences in the context of water insecurity are understudied. In a study conducted, it was found that SGBV is gendered, whereby adolescent girls and young women (AGYW) were targets for violence (symbolic context), and is intertwined with gender norms linked to AGYW's water collection roles (relational context); (2) water scarcity and off-site access to water infrastructure, combined with limited lighting, provide insecure environments that exacerbate AGYW's SGBV risks (material context); (3) participant generated solutions to water insecurity-related SGBV included engaging men and communities in dialogue and water collection (relational context), technology (e.g., solar lighting), improved security, and additional water points (material context). Findings signal the need to integrate water and sanitation hygiene development with SGBV prevention and sexual health (e.g., post-rape care) interventions. Refugee youth and communities should be meaningfully engaged in developing contextually relevant, gender transformative services to mitigate SGBV risks and advance health and rights.

Source: Logie, H. Carmen, Okumu, Moses, Coelho, Madelaine, Loutet, G. Miranda, Narasimhan, Manjulaa, Odong Lukone, Simon, Kisubi, Nelson, Kibuuka Musoke, Daniel, Kyambadde, Peter, Dorea, Caetano and Taing, Lina, (2022). Water insecurity and sexual and gender-based violence among refugee youth: qualitative insights from a humanitarian setting in Uganda. *Journal of Water, Sanitation and Hygiene for Development*, 883-893

Challenges and emerging issues

For people in refugee camps, informal settlements, or drought-affected rural areas, the uncertainty of water access amplifies anxiety and trauma. Mental health impacts often remain hidden, yet they are as real as the physical health consequences of unsafe water.

Water insecurity also creates a feedback loop: poor water access leads to disease, economic hardship, and social tensions, all of which heighten mental health burdens—undermining the foundations of healthy societies and resilient economies. Children growing up in water-scarce environments experience fear, stress, and disruption of education, shaping their long-term well-being and development. Ensuring the human right to water is therefore key to break cycles of vulnerability and psychological harm.

Water insecurity is threat to global security and public health (see reference for further read)



Globally, WASH inequalities are often framed as bounded – limited to a particular location – however, experiences during the COVID-19 pandemic showed that these inequalities are embodied in transnational spaces (see reference for further read)

Gender norms and roles significantly shape access to safe water, sanitation, and hygiene (WASH) services in multiple ways, often reinforcing inequalities and impacting health, dignity, and socio-economic opportunities, especially for women, girls, and marginalized gender groups. A few of the key dimensions worth mentioning include:

Disproportionate, ingrained ascribed gender roles and responsibilities that must be discarded: - Women and girls are often tasked with collecting water for household use, which can take hours daily, especially in rural or underserved areas. This burden affects education (girls may miss school), economic participation, and health (including carrying heavy loads and exposure to unsafe environments). [[Oluwasanya et al., 2024](#); [World Bank blog](#)]

Insensitivity to privacy, safety, and human dignity: - the lack of gender-sensitive sanitation facilities (e.g., separate toilets, locks, lighting) has exposed women and girls to harassment, assault, or social stigma, especially during menstruation or pregnancy. In regions facing water scarcity, inadequate access to safe water has been linked to increased risks of sexual violence and exploitative practices, including sex-for-water exchanges. These challenges have profound impacts on mental health and psychosocial well-being. The situation is further exacerbated in humanitarian and displacement settings, where insufficient WASH infrastructure severely compromises safety, dignity, and health outcomes for women and girls ([BMJ Global Health Review, 2020](#); [Isha Ray, 2022](#); [Tallman et al., 2022](#); [UNICEF-WHO Report, 2023](#); [Scoping Review on MHM in Refugee Camps, 2025](#))

Menstrual Hygiene Management (MHM): Societal framing of menstruation as "impure" rather than a natural and vital aspect of womanhood, without which humanity cannot continue, contributes to widespread stigma and exclusion. Cultural taboos and practices, such as *chhaupadi* in parts of Nepal (where menstruating women and girls are forced to live outside their homes), reinforce shame and isolation. These norms, combined with limited access to sanitary products and private facilities, hinder effective menstrual hygiene management. The consequences include reduced school attendance, lower workplace productivity, and negative impacts on mental well-being. Despite its importance, MHM is often excluded from WASH planning due to gender-blind policies and a lack of prioritization. [[UNICEF Report](#)]



Mainstream Decision-Making and Participation: Women are frequently excluded from WASH governance and decision-making processes, particularly at the institutional and formal levels, despite being the primary users and managers of household water. Gender norms often constrain their participation in community water committees and infrastructure planning. This lack of mainstreaming women's voices in formal water governance represents a missed opportunity to leverage diverse expertise, including perspectives as frontline water managers, for more inclusive and equitable water governance ([Oluwasanya et al., 2024](#); [International Rivers, 2025](#); [IUCN Congress, 2025](#); [UNESCO Event, 2025](#); [IRC Learning Note, 2025](#)).

Lastly, WASH programs that fail to integrate gender analysis risk reinforcing inequalities. Understanding that gender-transformative approaches can promote equity, empowerment, and sustainability by addressing the root causes of exclusion is crucial.

Solutions

Ensuring access to water and sanitation, particularly for vulnerable populations, is essential for healthy societies and thriving economies. Beyond adequate WASH access, a range of pragmatic and innovative solutions is needed to address systemic challenges, showcase impactful global initiatives, and advance partnerships that accelerate progress. These solutions should integrate governance reforms, technological innovation, financing mechanisms, and inclusive approaches to water and climate resilience. This section highlights scalable programs, successful public–private partnerships, and multi-stakeholder initiatives that can be adapted and transferred across contexts.

UN Member States should integrate human rights-based tools into national water strategies. A rights-based approach ensures that water and sanitation services are treated as fundamental entitlements rather than commodities. Policies at both national and local levels should be guided by key principles, including availability, accessibility, affordability, non-discrimination, participation, and accountability. One example is the Sanitation and Water for All (SWA) initiative, whose 'Elevating Equality' framework supports governments in embedding human rights within WASH governance ([Butterworth, J. et al., 2021](#)). Countries like Kenya and Nepal have adopted SWA's accountability mechanisms, enhancing transparency and participation in decision-making. These frameworks can be scaled through regional compacts and peer-learning platforms, where regional organizations can facilitate capacity-building workshops to harmonize legal frameworks.

Technological innovations offer strategic solutions for inclusive access to water and sanitation, playing a transformative role in bridging the gaps for marginalized communities. For example, the Gates Foundation's '[Reinvent the Toilet](#)' challenge has produced modular, off-grid toilets that safely



treat waste without water or sewer connections. Pilots in India and South Africa demonstrate adaptability for urban slums and rural schools. Similarly, portable systems such as LifeSaver Cubes and [SkyHydrant](#) have proven effective in disaster zones and remote communities. These gravity-fed or solar-powered units require minimal maintenance and no electricity. After Cyclone Idai in Mozambique, Oxfam deployed LifeSaver units to restore safe water access for thousands within days. These initiatives are scalable through government incentives for local manufacturing and partnerships with NGOs to integrate solutions into school WASH programs.

Access to finance remains a major barrier for vulnerable households. Innovative financial models can unlock resources and empower communities. One notable financing mechanism for sustainable WASH is [Water.org's Water Credit program](#), which provides small loans for household water connections and toilets. In [Bangladesh](#), [WaterCredit](#) has reached over one million people, leveraging \$1 USD of donor funding into \$20 USD of private capital. Another approach is market-based sanitation, such as the USAID's WASHPaS initiative, which combines behaviour change campaigns with support for local entrepreneurs to build sustainable sanitation markets. In Cambodia, this model increased toilet coverage by 30% in targeted districts. Governments can leverage these examples, perhaps by integrating microfinance into rural water schemes, while development banks can co-finance market-based sanitation programs.

Multi-stakeholder collaboration is critical for scaling solutions. Key stakeholders include governments, UN agencies, NGOs, the private sector, and end-users. A notable example is the UNU-INWEH-led SDG 6 Policy Support Systems (SDG-PSS) initiative, which generates evidence on the enabling environment for SDG 6 in data-limited countries. To date, over 70 countries across Asia, Africa, Latin America and the Caribbean are using or considering SDG-PSS, with more expected to adopt the tool in the future. Beyond the tool, UNU-INWEH co-organizes regional workshops to promote the adoption and implementation of this tool. For example, the Africa Regional Workshop held in Dakar, Senegal, in April 2025 fostered cooperation among 17 African countries, including the regional hub (Tunisia), the host country (Senegal), and representatives from 15 others: Chad, Democratic Republic of Congo, Eswatini, Gambia, Guinea-Bissau, Côte d'Ivoire, Lesotho, Madagascar, Mali, Malawi, Mozambique, Sierra Leone, Togo, Zimbabwe, and Zambia. Collaboration partners included Senegal's Ministry of Water and Sanitation, the African Ministers' Council on Water (AMCOW), and UN-Water. Implementing SDG-PSS at the national level is enabling more effective water policies in contexts with limited data and information. Other opportunities worth considering include 1) establishing regional WASH innovation hubs co-funded by member States and the private sector and expanding UN-Water's System-Wide Strategy for water and sanitation to include joint financing mechanisms. [References - UN-Water. *United Nations System-wide Strategy for Water and Sanitation*. UN-Water Publications, 2024. [Link](#);



UNICEF. *Sustainable WASH Innovation Hub: Accelerating Climate-Resilient WASH Solutions*. UNICEF Office of Innovation, 2023. [Link.](#)]

Recommendations and conclusions

In sum, achieving universal access to water and sanitation requires more than infrastructure; it demands systemic change, inclusive governance, innovative financing and technologies, and robust partnerships that combine coordinated interventions with sustained commitment. The solutions outlined here provide practical pathways for Member States and stakeholders to collaborate, scale successful models, and uphold the human rights to water and sanitation for all, particularly for vulnerable populations. Managing water crises requires a holistic approach that recognizes mental health as integral to resilience. Policies must combine water infrastructure investment with community-based psychosocial support to protect both physical and mental well-being.

Key recommendations include:

- **Infrastructure and Systems:** Prioritize climate-resilient water infrastructure, such as advanced wastewater treatment, decentralized supply systems, and nature-based solutions like wetland restoration. Adopt smart technologies for real-time monitoring of water quality and availability.
- **Governance and Institutional Frameworks:** Promote inclusive governance by involving marginalized groups in decision-making and ensuring cross-sectoral coordination between water, health, and social services. Establish multi-stakeholder platforms for dialogue and joint planning.
- **Mental Health Integration:** Embed psychosocial support in water crisis response plans. Train local health workers and community leaders in mental health first aid and launch public awareness campaigns to reduce stigma.
- **Financing and Innovation:** Mobilize resources through blended financing models that combine public funds, private investment, and climate finance. Explore innovative mechanisms, such as social impact bonds, and establish regional WASH innovation hubs to accelerate the development of solutions.
- **Capacity Building and Education:** Strengthen local capacity through training programs and awareness campaigns. For instance, leveraging the UNU-INWEH-led Water and Behavioural Science Program to develop practical knowledge and skills for integrating behavioural science into water, environment, and health initiatives, and importantly, to drive better decisions towards a more water-secure world. Additionally, encourage interdisciplinary research to inform policy and practice.



- **Future Opportunities:** creating regional innovation hubs, leveraging digital platforms for monitoring water and psychosocial indicators, and expanding UN-Water's System-Wide Strategy to include joint financing mechanisms. These steps will foster adaptive governance and continuous learning.

Guiding questions

- How can the human rights to water and sanitation be realized for people in vulnerable and marginalized situations, including refugees, women, older adults, and those in informal settlements?
- What policy and governance mechanisms are most effective in addressing structural inequalities that limit equitable WASH access?
- How can global and national frameworks ensure accountability for upholding the human right to water?
- Gender, Mental Health, and Safety
- In what ways do gender norms and roles shape access to safe water, sanitation, and hygiene services?
- How can WASH initiatives better integrate measures to prevent gender-based and sexual violence, particularly in humanitarian or fragile contexts?
- What strategies can link WASH interventions with mental health and psychosocial well-being to address the hidden psychological impacts of water insecurity?
- Water Security and Global Health
- How does water insecurity contribute to broader public health risks and social instability?
- What lessons from the COVID-19 pandemic can inform more resilient, equitable, and inclusive WASH systems globally?
- How can data gaps in water quality, wastewater treatment, and WASH-related mortality be addressed to improve decision-making and accountability?

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Older women face compounded WASH-related vulnerabilities, yet global research on these challenges remains limited. Their voices are often not heard (see reference for further read)

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(b) Water for prosperity: valuing water, water-energy-food nexus, advancing integrated and sustainable water resource management, wastewater and water-use efficiency across sectors, and economic and social development;

Introduction

Water is a shared foundation for physical health, mental well-being, ecological balance, and social cohesion. Yet global water governance often neglects these broader dimensions. The integrated management of water resources, framed through the water-energy-food (WEF) nexus, provides a pathway to capture these interconnections and align resource use with inclusive prosperity. Through this lens, water serves as both a driver and a mirror of development progress: its abundance or scarcity, cleanliness or contamination, reliability or volatility all reveal the underlying health of societies and ecosystems.

In communities where access to clean, reliable water is uncertain, research increasingly links water insecurity to stress, anxiety, and diminished psychological resilience. These burdens fall disproportionately on marginalized groups who bear the daily task of securing water for their families. Such experiences of insecurity have tangible social and economic costs, limiting educational attainment, productivity, and social cohesion. Addressing water-related challenges requires recognizing both the physical and emotional dimensions of security.

At the same time, water systems are under growing strain from multiple directions: rising demand driven by population and economic growth, declining quality due to pollution, and increased variability from climate change. Agriculture, energy, and urban sectors each exert heavy pressures on water resources, often in ways that are poorly coordinated. Meanwhile, fragmented governance and short-term planning continue to undermine the integrated, long-term management needed to ensure sustainable supply and equitable access.

To achieve true “water for prosperity,” countries must advance integrated and sustainable water resource management that balances competing demands while ensuring ecosystems remain healthy and resilient. This involves valuing water in its multiple dimensions, improving water-use efficiency, reusing wastewater, reducing pollution, and building institutions capable of managing complex interdependencies across sectors. Most



importantly, it means restoring trust: in the safety of the water people drink, in the systems that deliver it, and in the governance that protects it for generations to come.

Challenges and emerging issues

Prosperity grows where people can trust water: its quality, timing, and price. When that trust erodes—through polluted sources, cost shocks, or unreliable service—households and firms lose time, income, and peace of mind. Recognizing water’s full value (productivity, health, time saved, psychological security) shifts policy from narrow cost recovery to outcomes people actually feel.

Water is foundational not only to physical health and economic prosperity but also has profound implications for well-being—an aspect often overlooked in water policy discourse. The integrated management of water resources, as encapsulated by the water-energy-food (WEF) nexus, can enable communities to move beyond viewing water as merely a commodity, instead of fostering a sense of security, agency, and social cohesion. In areas where access to clean water is unreliable, or water insecurity is recurrent, research increasingly demonstrates heightened levels of stress, anxiety, and associated mental health challenges. Marginalized groups, such as women, children, and those in water-scarce regions, are especially vulnerable, as the daily burden of sourcing water exacerbates psychological strain.

Water pollution has intensified worldwide, posing growing threats to human health, ecosystems, and sustainable development, with major pollution hotspots identified in Europe, India, China, South America, and parts of Africa. While cities and industries remain well-known polluters, agriculture has emerged as one of the leading global sources of water contamination, releasing large volumes of agrochemicals, nutrients, organic matter, drug residues, sediments, saline drainage, microplastics, and pathogens. Reduced water flows—often driven by irrigation demands—further exacerbate pollution levels. In many high-income countries, agricultural runoff has surpassed industrial and urban discharges as the main cause of eutrophication and groundwater contamination, while similar trends are increasingly observed in low-income regions.

The growing contribution of agriculture to water pollution is closely linked to population growth, rising food and energy demand, and climate change, which have accelerated agricultural intensification, land expansion, irrigation, and input use. Irrigated areas have more than doubled since the 1960s; livestock numbers have tripled, and aquaculture has expanded more than twentyfold, making agriculture the largest global producer of



wastewater. Addressing agricultural pollution requires deeper understanding of pollutant sources and pathways, emerging contaminants such as microplastics, global and climatic drivers, and their impacts on people and ecosystems, as well as the effectiveness of mitigation measures. This review highlights key areas of rapid research development and identifies priority needs for reducing the agricultural contribution to inland surface water pollution globally.

Solutions

This section will offer action-oriented, innovative, and pragmatic solutions to challenges. It will shine a spotlight on impactful initiatives, programs and projects from around the world that can be scaled up and/or transferred to other contexts. Potential partnerships among Member States and with other stakeholders will feature prominently.

Assessing key gaps and needs to improve global Water Security requires a clear understanding of the drivers, trends and patterns of collective action, and of the newer dimensions of the Water Security Nexus. These include human migration/displacement issues, nature-based solutions (NbS), green infrastructure, and other factors. The Water Security (WS) agenda addresses a wide range of aspects of the water nexus: drinking water, ecosystems, climate change, water supply for food and energy production, governance, transboundary cooperation, political stability and financing. The agenda also presents innovative aspects of water as a vehicle for peace in conflict resolution, and how this helps address trans-boundary water-related challenges.

Recommendations and conclusions

Advancing integrated and sustainable water management, alongside strategies such as improving water-use efficiency, promoting wastewater reuse, supporting cross-sectoral planning, and supporting services for health impacts, and supporting and instilling confidence in local infrastructure and governance, empowering them with greater predictability and opportunity for socio-economic development for example investments in water infrastructure and policies that value the multivalent benefits (health) of water thus must also explicitly recognize and support community wellbeing. Programmatic interventions could include participatory planning, community-based monitoring, and training to reduce water insecurity-related anxiety, increase public trust, and foster resilience.



It can be anticipated that valuing water for prosperity is incomplete if it does not account for collective psychological security and well-being aspects. Policies grounded in the WEF nexus, designed with mental health in mind, can help forge more resilient, equitable, and healthier communities as part of comprehensive sustainable development agendas.

Guiding questions

- How can societies better recognize and value water's multiple dimensions—economic, social, environmental, and psychological—in driving inclusive prosperity?
- What policy and governance approaches can strengthen integration across the water-energy-food (WEF) nexus to enhance resilience and sustainable development?
- How can countries improve water-use efficiency and promote wastewater reuse across agriculture, industry, and urban sectors?
- What strategies can mitigate water pollution while balancing agricultural productivity, ecosystem protection, and public health?
- How can integrated and sustainable water resource management (IWRM) be advanced to address competing demands and climate-related risks?
- What types of partnerships and financing models are needed to scale up cross-sectoral water innovations and infrastructure investments?
- How can water policies incorporate mental health, community well-being, and social cohesion as integral elements of sustainable prosperity?

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(c) Water for planet: climate, biodiversity, desertification, environment, source to sea, resilience and disaster risk reduction;

Introduction

Water is the lifeblood of our planet, intricately connected to climate, biodiversity, and the health of ecosystems from source to sea. As climate change intensifies, shifts in rainfall patterns, melting glaciers, and rising sea levels threaten water availability, impacting both human societies and natural habitats. Freshwater ecosystems are essential for biodiversity, supporting countless species while maintaining ecological balance, yet they are increasingly stressed by pollution, over-extraction, and habitat loss. Desertification and land degradation further exacerbate water scarcity, reducing soil fertility and undermining livelihoods. Sustainable water management is therefore critical not only for environmental conservation but also for resilience and disaster risk reduction, helping communities adapt to floods, droughts, and other extreme events. Approaches that integrate watershed protection, ecosystem restoration, and smart infrastructure can ensure water flows from source to sea remain healthy and resilient, safeguarding ecosystems and human well-being alike. By understanding and valuing the interconnectedness of water with climate, biodiversity, and socio-ecological systems, we can promote solutions that strengthen resilience, reduce disaster risks, and secure this vital resource for future generations.

Challenges and emerging issues

Water sustains not only human life but also the planet's ecosystems, making it a critical bridge between climate, biodiversity, desertification, and disaster risk reduction. Healthy ecosystems—rivers, wetlands, forests, and oceans—provide natural buffers against extreme events, regulate temperatures, and ensure the flow of safe water from source to sea. When these systems degrade, the impacts are felt across multiple dimensions of health: rising waterborne diseases, loss of nutrition from declining fisheries, increased vulnerability to floods and droughts, and heightened exposure to mental stress.

The nexus between water and health extends beyond the physical. Water insecurity and degraded ecosystems erode social well-being by fueling competition and conflict over scarce resources, while also amplifying mental health burdens. Communities facing recurring droughts, floods, or polluted water supplies live under constant uncertainty and stress, undermining their resilience and dignity.



Water scarcity is projected to affect half of the world's population, gradually exacerbated by climate change. Understanding and addressing water scarcity goes beyond hydrological water balances to also include societal and economic measures. We consider five categories of health impacts resulting from deteriorating water qualities and quantities: (1) water-related diseases and water for hygiene, (2) malnutrition and water for food, (3) livelihoods, income, development, and water for energy, (4) adverse air quality from drought-induced dust and wildfire smoke, and (5) mental health effects from water scarcity-related factors. A discussion on the barriers and opportunities for resilient water systems begins by reframing water scarcity as a “pathway to water bankruptcy” and introducing Water Partnerships to empower local water leaders with the awareness, education, and resources to devise and implement locally appropriate water management strategies. Other barriers include the (1) lack of tools to consider the socioeconomic implications of water scarcity, (2) lack of water information being in actionable formats for decision-makers, (3) lack of clarity in the application of water scarcity modeling to gain policy-relevant findings, and (4) inadequate drought adaptation planning.

Recommendations and conclusions

Recognizing water as both a planetary and human health determinant means placing ecosystem restoration, biodiversity conservation, and climate adaptation at the center of water governance. A nature-positive approach—restoring wetlands, recharging aquifers, rehabilitating degraded lands—provides co-benefits for planetary resilience and human well-being. In doing so, water policy becomes not just about resource management but about safeguarding a triple nexus of ecosystem health, physical health, and psychosocial resilience.

Guiding questions

- Can inclusive water governance frameworks better integrate ecosystem health with human physical, social, and mental well-being to strengthen resilience from source to sea?
- What role can nature-positive (based) solutions play in addressing the water–health nexus while tackling climate change, biodiversity loss, and disaster risks?

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Integrating Water-Related Disaster Risk Reduction (DRR)

Introduction

Water is a thread of life, connecting ecosystems, economies, and societies. However, it is also the primary medium through which climate change impacts are felt. Floods, droughts, severe storms, landslides, and glacial lake outbursts account for over 90% of all major natural disasters, inflicting devastating human, economic, and environmental losses. The 2023 UN Water Conference and the resulting Water Action Agenda recognized this urgent reality: we cannot achieve water security, or any of the Sustainable Development Goals, without fundamentally addressing water-related disaster risks.

The challenge is accelerating. Climate change is supercharging the water cycle, increasing the frequency, intensity, and unpredictability of extreme events. Simultaneously, urbanization in exposed areas, ecosystem degradation, and inequitable development are creating new vulnerabilities. The impacts are not isolated; they create cascading crises that undermine food and energy security, destabilize public health systems, and displace millions, disproportionately affecting the poorest and most marginalized.

This interactive dialogue aims to forge a path toward proactive, systemic resilience. It will focus on integrating water-related Disaster Risk Reduction (DRR) into the core of water governance, climate action (Paris Agreement), sustainable development (SDGs), and disaster reduction (Sendai Framework). The objective is to catalyze commitments and partnerships that build a secure, just, and resilient water future for all, turning vulnerability into resilience.

Status and Trends

The global landscape of water-related risk is defined by four key trends:

- **Accelerating Hazards:** Climate change is demonstrably increasing the intensity of rainfall, the severity of droughts, and the strength of coastal storms. What were



once "1-in-100-year" events are becoming commonplace, rendering historical risk models obsolete.

- **Concentrated Vulnerability:** Rapid, often unplanned, urbanization has concentrated populations and critical economic assets in high-risk areas, such as coastal zones, river deltas, and floodplains. This dramatically increases exposure to water-related hazards.
- **Compounding and Cascading Risks:** Disasters no longer follow a linear path. A drought can devastate agriculture, leading to food insecurity, straining energy production (hydropower), and triggering social unrest or migration. A flood can overwhelm sanitation systems, causing disease outbreaks long after the waters recede.
- **The Data and Technology Divide:** While technology for early warning systems (EWS), remote sensing, and risk modeling has improved, a significant gap remains. Many nations in the Global South lack the capacity, data, and resources to translate global forecasts into localized, actionable warnings, failing to reach the "last mile" community.

Challenges and Emerging Issues

Despite growing awareness, systemic barriers prevent effective water-related DRR:

- **Governance Fragmentation:** The most significant challenge is institutional. Water resource management (IWRM), DRR agencies, climate adaptation planners, and urban/land-use ministries traditionally operate in silos. This fragmentation leads to conflicting policies, inefficient investment, and a failure to manage risks holistically.
- **The Proactive Financing Gap:** Global finance for DRR is chronically insufficient and overwhelmingly reactive. It is estimated that for every \$1 spent on proactive risk reduction, \$7 is saved in response and recovery. Yet, funding remains stubbornly skewed toward post-disaster relief, not pre-disaster resilience.
- **Deep-Rooted Inequity:** Disaster impacts are not uniform. Women, children, Indigenous communities, people with disabilities, and the extreme poor are consistently the most affected. DRR planning often fails to address these specific vulnerabilities, reinforcing existing inequalities.
- **Ecosystem Degradation as a "Risk Multiplier":** The destruction of wetlands, mangroves, forests, and healthy riverine ecosystems has removed critical natural

buffers. This ecosystem degradation acts as a "threat multiplier," increasing the physical impact of hazards on communities.

- **Emerging Issue: "Grey vs. Green" Infrastructure Imbalance:** There is a historical over-reliance on "grey" infrastructure (dams, levees, seawalls). While necessary, these can be rigid, expensive, and prone to catastrophic failure. The challenge is to find the right balance with "green" Nature-based Solutions (NbS), which offer adaptive, cost-effective, and co-beneficial alternatives (e.g., restoring wetlands to absorb floodwaters).

Solutions

Transformative progress requires a multi-pronged approach focused on integration, innovation, and inclusion.

1. **Integrated Governance Models:** The solution to fragmentation is integration. This involves creating high-level coordinating bodies, joint budgeting, and shared data platforms that unite water, climate, and DRR agendas. Spotlight: Models like the Netherlands' "Room for the River" program demonstrate a successful shift from "fighting the water" to "living with water" through integrated land-use planning and ecosystem restoration.
2. **Innovative Financing for Resilience:** We must unlock and redirect finance. This includes mainstreaming DRR into all public and private investment (e.g., "resilience-proofing" new infrastructure). Spotlight: Innovative mechanisms like blue and green bonds for resilient infrastructure, blended finance models to de-risk private investment in NbS, and regional risk-pooling (e.g., the Caribbean's CCRIF) are proven, scalable solutions.
3. **Technology and Early Warning Systems (EWS) for All:** Technology must bridge the equity gap. This means investing in the UN's "Early Warnings for All" initiative, using AI and remote sensing for better risk mapping, and leveraging mobile technology to ensure warnings are not just sent but also received, understood, and acted upon by vulnerable communities.
4. **Scaling Nature-based Solutions (NbS):** NbS must be moved from "pilot project" to default policy. Spotlight: Initiatives like "Sponge Cities" in China use permeable surfaces, green roofs, and urban wetlands to absorb stormwater. Restoring coastal mangroves in Vietnam and Thailand has proven more effective and cheaper for storm surge protection than engineered structures.



5. **Inclusive, Community-Led Resilience:** Top-down plans are destined to fail. Resilience is built from the ground up. Spotlight: Community-led initiatives that empower local groups, particularly women, to design and manage local water and DRR strategies are more sustainable, effective, and equitable. This includes integrating Indigenous and local knowledge of water systems.

Conclusions and Recommendations

The 2026 UN Water Conference cannot be business as usual. We are in a race against time. We have the solutions—integrated governance, innovative finance, Nature-based Solutions, and inclusive action. What we need is the political will to implement them at scale. The goal is not just to survive water-related disasters but to build a water-secure future where all communities can thrive.

This dialogue must catalyze a fundamental shift from managing disasters to managing risk. We call for a new paradigm of "water resilience" built on the following pillars:

1. Policy (Integrate): All Member States must embed specific, time-bound water-related DRR targets into their National Adaptation Plans (NAPs), Nationally Determined Contributions (NDCs) under the Paris Agreement, and national water management policies.
2. Finance (Invest): International donors, MDBs, and national governments must commit to reversing the finance gap, shifting from the current 80/20 (response/prevention) split to at least 50/50. All public-private infrastructure partnerships must have DRR integrated from the design phase.
3. Partnership (Scale): We call for a new global partnership, "Resilient Basins," to scale up technical and financial support for transboundary water-DRR governance and the implementation of Nature-based Solutions in the world's most high-risk river basins and coastal zones.

Guiding Questions

- How can we effectively break down the institutional silos between water management, climate adaptation, and disaster risk reduction at the national and transboundary levels?



- What innovative financing mechanisms can unlock the trillions needed to shift from reactive disaster spending to proactive investment in water resilience, particularly for Nature-based Solutions?
- How can we ensure that new technologies (AI, remote sensing, EWS) are co-designed and deployed equitably to reach the most vulnerable "last-mile" communities?
- What successful models exist for balancing "green" (Nature-based Solutions) and "grey" (engineered) infrastructure to build long-term, adaptive resilience to floods and droughts?
- How do we move beyond token participation and genuinely empower women, youth, and Indigenous communities to lead in the design, governance, and implementation of water-related DRR?
- What specific, high-impact commitments can we forge at this 2026 conference to accelerate the water-centric implementation of the Sendai Framework for Disaster Risk Reduction?
- How can we shift from traditional hazard-based risk assessments to dynamic, multi-hazard assessments that integrate socio-economic vulnerabilities and climate projections?
- What partnerships are needed to fully leverage Earth Observation data and AI-driven models to improve risk mapping and monitoring, especially in data-scarce regions?
- Beyond technical improvements, what are the primary barriers to effective early warning dissemination, and how can we design "last-mile" communication strategies that are inclusive, understood, and trusted?
- How can we accelerate the transition from standard weather forecasts to impact-based forecasting, providing communities with actionable information on what the water will do and not just what the weather will be?

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(d)Water for cooperation: transboundary and international water cooperation, including scientific cooperation, and inclusive governance;

Introduction

Persistent climate risks, resource pressures, and conflict-driven displacement underscore the need to strengthen capacities for institutions and individuals, enabling practitioners to respond effectively to environmental and security challenges. Water as the foundation of human security, environmental stability, and sustainable development has emerged as a unifying and strategic entry point for dialogue and collaboration, particularly as it sits at the core of the water–food–energy–ecosystem nexus. As growing concerns around food security, self-sufficiency, and sustainable development are rising to the top of national and international agendas, water governance and issues offer a pathway for constructive engagement that transcends political divides, builds on scientific evidence, and advances both national development priorities and multilateral commitments.

Status and trends

Water governance can be considered the most important of the 10 components of water security assessed. Our planet has sufficient water for society and nature's needs, but it is not always available to meet community needs, livelihoods, and economic demands in a sustainable way. Historically, the location of human settlements and industrial development was governed by the availability of abundant water resources, typically fertile river basins. However, as populations and economic demands have grown, so has the pressure on water resources. This pressure can result from competing demands and often leaves insufficient environmental flows to maintain ecosystems and the services they provide, leading to the degradation of freshwater ecosystems. Besides ever-increasing complexity and demand, climate change and the shift in timing and intensity of precipitation means that balancing development trajectories and environmental requirements with available renewable water resources has never been more urgent. Thus, meeting the needs of the environment, society, and the economy requires an Integrated Water Resource Management (IWRM) approach that balances competing demands without compromising ecosystem sustainability. IWRM is defined by GWP (2000) as the process that promotes the coordinated development and



management of water, land, and related resources to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems. This requires coordinated evidence and data-based management, policy, regulation, and financing.

- **Challenges and emerging issues** (2000 words): This section will highlight challenges and opportunities relating to the topics addressed in the interactive dialogue, particularly those that have emerged or become more urgent since the 2023 Water Conference. This section will also identify interlinkages and synergies between the relevant SDG 6 targets and other SDGs.
- **Solutions** (2000 words): This section will offer action-oriented, innovative, and pragmatic solutions to challenges. It will shine a spotlight on impactful initiatives, programs and projects from around the world that can be scaled up and/or transferred to other contexts. Potential partnerships among Member States and with other stakeholders will feature prominently.

The evolving peace process between Türkiye and the PKK offers a unique opportunity to move beyond the cessation of hostilities toward a “green peace”—one that simultaneously addresses ecological repair, community well-being, and social justice. Decades of armed conflict have left profound environmental scars: deforestation, soil erosion, water contamination, and biodiversity loss have eroded both ecosystems and livelihoods. Integrating environmental dimensions into the peace process is therefore essential not only for ecological recovery but also for rebuilding trust, strengthening resilience, and securing a durable peace.

1. Integrating Environmental Justice into Peace Processes Environmental concerns must be elevated to core components of the peace process, moving beyond their historical treatment as secondary issues. This requires a systemic shift in how negotiations are approached.

a. Integrate Environmental Justice into Peace Negotiations: Environmental concerns must be treated as core components of the peace process. Negotiators should include environmental experts, local ecological knowledge holders, and civil society actors to ensure that ecological harm is acknowledged and addressed in any future agreements.



b. **Recognize and Document Environmental Destruction:** Environmental harms caused by decades of armed conflict, including deforestation, water contamination, land degradation, and biodiversity loss, must be acknowledged. Truth and memory mechanisms that center community testimony, ecological data, and cultural memory must be established to support the process.

c. **Adopt a Green Transitional Justice Framework:** Policymakers and international actors should treat the principles of GTC as foundational to post-conflict recovery. These principles broaden the concept of justice to include environmental destruction, ecological repair, and interspecies victimhood. This framework should be integrated into peacebuilding efforts to ensure that ecological damage is recognized and addressed as part of a more inclusive and sustainable post-conflict recovery.

d. **Foster Positive Peace Through Ecological Inclusion:** Peacebuilding efforts must move beyond the pursuit of “negative peace” — the mere absence of violence — and instead embrace positive peace, which includes social justice, ecological restoration, and democratic inclusion. Nature should be recognized not only as a victim of conflict but as a participant in peacebuilding.

2. **Fostering Community-Led Restoration and Equitable Resource Governance** Sustainable peace requires empowering local communities and establishing fair governance over natural resources.

a. **Support Community-Led Ecological Restoration:** Environmental restoration projects in conflict-affected areas should be led by local and Indigenous communities. These initiatives should prioritize ecological regeneration, cultural continuity, and sustainable livelihoods, and be protected from top-down development agendas.

b. **Ensure Equitable Access to Natural Resources:** Post-conflict governance structures must guarantee fair and inclusive access to land, water, forests, and other natural resources. This includes dismantling discriminatory policies and practices that have historically marginalized certain communities as well as stateless or Indigenous groups.

c. **Promote Cross-Border Environmental Cooperation:** Given the transboundary nature of ecosystems and Kurdish geography, regional cooperation between neighboring states is essential. Joint environmental monitoring, watershed



management, and climate adaptation strategies can serve as confidence-building measures and contribute to long-term peace.

d. Empower Local and Traditional Governance Structures: Peacebuilding and environmental management should be rooted in regional or community-level ownership and grassroots legitimacy. Transitional justice processes must strengthen local capacities and integrate traditional leadership into peacebuilding efforts to ensure context-specific solutions, inclusivity, and long-term sustainability.

3. Strengthening Protection and Accountability Establishing robust mechanisms for protection and accountability is paramount to ensuring environmental justice in post-conflict settings.

a. Protect Environmental Defenders and Ecological Knowledge: Legal and physical protection must be ensured for environmental activists, researchers, and community leaders who document or resist ecological harm. Traditional ecological knowledge must be recognized and supported as a valuable resource for post-conflict recovery and sustainability.

b. Advance the Right to a Healthy Environment: The right to a healthy environment must be integrated into post-conflict legal and policy frameworks, including clean air, safe water, fertile soil, and access to nature — not only as environmental goals but as fundamental human rights.

c. Mechanisms for Environmental Reparations and Accountability: Standalone systems to assess and fund environmental reparations post-conflict must be created. These mechanisms should enable prompt ecological rehabilitation and prioritize environmental harm even amid broader post-war claims.

4. Sustainable Financing for Green Peacebuilding Adequate and sustainable financing is critical to translate the principles of GTJ into tangible action.

a. Leverage International Funds: International funding mechanisms must be leveraged to support environmental peacebuilding. Global institutions such as the United Nations, the Global Environment Facility (GEF), and the Green Climate Fund (GFC) should support environmental peacebuilding by aligning their mandates more closely with the intersection of environment and conflict. Shifts in institutional priorities, such as the World Bank's growing focus on climate-conflict links, should



offer more opportunities to integrate environmental goals into peace and recovery efforts.

b. Promote Innovative Financing Mechanisms: Novel funding models like peace bonds, public–private partnerships should be pursued to diversify and stabilize financing for green post-conflict transitions.

Guiding questions

- How can transboundary and international water cooperation contribute to peace, stability, and sustainable development?
- What models or frameworks have proven most effective for fostering equitable and inclusive governance of shared water resources?
- In what ways can scientific and technical cooperation enhance trust, joint decision-making, and evidence-based water management across borders?
- How can local, national, and regional stakeholders—including marginalized and vulnerable groups—be meaningfully included in transboundary water governance processes?
- What mechanisms can strengthen institutional coordination and data sharing between riparian countries?
- How can water cooperation initiatives adapt to emerging challenges such as climate change, population growth, and geopolitical tensions?

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(e) Water in multilateral processes: Sustainable Development Goal 6, the 2030 Agenda for Sustainable Development and beyond, and global water initiatives;

Recommendations

Water is at the heart of the 2030 Agenda for Sustainable Development, most directly through SDG 6 on clean water and sanitation, but also as a foundation for achieving health, equity, and resilience across all goals. Multilateral processes and global initiatives on water must therefore go beyond infrastructure and service delivery to recognize the deep connections between water security, human well-being, and mental health. The daily stress of collecting unsafe or unreliable water, the trauma of droughts and floods, and the inequities in access disproportionately affect vulnerable populations, eroding both physical and psychological resilience. Embedding well-being and mental health into global water dialogues ensures that policies are not only about meeting technical targets but also about restoring dignity, reducing anxieties, and enabling communities to thrive. As the world looks beyond 2030, water governance in multilateral forums should promote holistic, inclusive, and rights-based approaches that value water as a catalyst for both sustainable development and healthy societies.

Achieving Sustainable Development Goal 6 (SDG 6) by 2030 represents a critical milestone on the global pathway to sustainability. Effective water and sanitation management underpins the achievement of many other SDGs, directly and indirectly. Yet, ensuring universal and sustainable access to water and sanitation remains a major challenge for many countries. Evidence and data needed to guide policy and decision-making on SDG 6 are often missing, overlapping, or fragmented—at a time when the urgency for action continues to grow. The United Nations has renewed calls for accelerated efforts under the “Decade of Action” to ensure timely progress toward the 2030 Agenda for Sustainable Development.

Against this backdrop, strengthening and realigning the enabling environment for SDG 6 is essential. Reliable and coherent evidence can help countries apply a systematic approach to designing and implementing effective water and sanitation policies. However, decision-making in the SDG era is complex, requiring institutions across multiple sectors to assess and integrate evidence on targets and indicators while working collaboratively to shape



more effective policies. For this reason, countries need a clear understanding of their strengths, weaknesses, data gaps, and opportunities if they are to achieve SDG 6 by 2030.

The SDG 6 Policy Support System (SDG-PSS) was developed through a partnership between the United Nations Office for Sustainable Development (UNOSD), the United Nations University Institute for Water, Environment and Health (UNU-INWEH), the Ministry of Environment of the Republic of Korea (MOE), and the Korea Environment Corporation (K-eco), under the project Water in the World We Want. Since 2022, two additional partners—the UNESCO International Centre for Water Security and Sustainable Management (UNESCO i-WSSM) and the Korea Water Resources Corporation (K-water)—have joined the initiative.

SDG-PSS includes six key components: Capacity Assessment, Finance, Policy and Institutional Assessment, Gender Mainstreaming, Disaster Risk Reduction (DRR)/Resilience Mainstreaming, and Integrity. These components provide a holistic understanding of the enabling environment in which water and sanitation policies are developed and implemented for achieving SDG 6. They build on more than 20 well-established tools, processes, and practices already in use across many countries. The questions within the tool were refined through national workshops in five countries and subjected to a comprehensive review process. This project directly supports UNU's mission to address urgent regional and global water challenges of concern to the United Nations, its Member States, and their people.

Guiding questions

- How do water crises directly impact mental health and social resilience, especially among vulnerable populations? And why should multilateral water processes (SDG 6 and beyond) address well-being and mental health, not just infrastructure and access (WASH)?
- Can global water initiatives prioritize dignity and equity, and well-being in the post-2030 water-focused agenda?
- How can UN System support member States in the capacity building to achieve SDG 6?
- How can UN prepare countries and support them for water integration post 2030?
- Do we need a water framework to guide countries, what are the best policy models that have instigated change and impact at local levels?



- How do we make sure that the policy discussions are based on scientific evidence and also do serve the needs of the local communities?

Relevant Sources and Links

- <https://inweh.unu.edu/water-in-the-world-we-want-sdg-6-project-final-report/>



(f) Investments for water: financing, technology and innovation, and capacity-building.

Introduction

Ensuring the human right to water sustained investments that go beyond infrastructure to encompass well-being, dignity, and resilience. We argue that water insecurity not only threatens physical health but also undermines mental health, particularly for vulnerable populations who live with daily stress and uncertainty. Investments must therefore be designed to deliver safe, reliable, and equitable access to water, while reducing the psychological burden that accompanies scarcity. Whilst adequate and inclusive financing mechanisms are critical, expanding climate and development finance streams to address water crises is key to ensuring affordability for marginalized groups, and prioritizing community-driven solutions that directly respond to local well-being needs, the role of innovative technologies—for water treatment, and smart monitoring and early-warning for water related climate events like floods and droughts—can improve water quality and reliability is paramount. When deployed equitably, these reduce the daily anxieties of water collection and enable healthier, more productive lives..

Solutions

Strengthening institutional and community capacities, like training local actors, empowering women and youth, and embedding mental health awareness into water governance frameworks, can help communities to adapt, cope, and thrive in the face of uncertainty. In essence, investments in water are investments in human well-being. By aligning financing, technology, innovation, and capacity-building with the broader goal of resilience, societies can secure not only clean water but also healthier, more equitable, and mentally resilient futures.

Artificial Intelligence (AI) has the potential to transform how societies manage water resources and safeguard human well-being. When aligned with rights-based and inclusive approaches, AI can become a critical enabler of financing efficiency, technological innovation, and capacity-building in the water sector. AI-driven analytics can help governments and financiers identify where water investments will deliver the highest impact, ensuring resources reach vulnerable groups most affected by water insecurity and mental distress. And, through user-friendly AI applications, communities and local institutions can access knowledge and tools for monitoring water quality, reporting service disruptions, or



co-managing resources, and integrate climate, hydrological, and socio-economic data to generate early warnings for droughts, floods, or infrastructure failures. By anticipating crises, these pathways have the potential to protect both physical and mental health, offering communities time to prepare and adapt. Also, AI-powered models can forecast demand, optimize distribution, and detect leakages or contamination in real time. This improves the reliability of supply, reducing the daily stress and anxiety faced by communities struggling with water scarcity. These aggregated AI-based innovations can also strengthen the role of the foster agency and reduce the sense of helplessness (due to lack of data or access to data) that often accompanies water crises. At the same time, AI must be deployed with safeguards for equity, privacy, and transparency. Without inclusive governance, AI risks deepening divides, excluding marginalized populations, or overlooking psychosocial dimensions of water insecurity is not a substitute for governance or social justice, but when integrated responsibly into financing, technology, and capacity-building frameworks, it can accelerate progress towards water security for all—while supporting healthier, more resilient societies.

Relevant Sources and Links

- Thomas, R., Davies, J., King, C., Kruse, J., Schauer, M., Bisom, N., Tsegai, D., Madani, K., 2024. [Economics of Drought: Investing in Nature-Based Solutions for Drought Resilience – Proaction Pays](#). A joint report by UNCCD, ELD Initiative and UNU-INWEH, Bonn, Germany; Toronto, Canada
- Obringer, R., Kumar, R. and Madani, K. (2024). Harnessing the Power of AI for Climate Change Impact Assessment, United Nations University Institute for Water, Environment and Health (UNU-INWEH), Richmond Hill, Ontario, Canada, ISBN: 978-92-808-6120-4 , DOI: [10.53328/INR24ROR012](#)
- "The Hidden Environmental Cost of Cryptocurrency: How Bitcoin Mining Impacts Climate, Water and Land," United Nations University, UNU-INWEH, 2023-10-24, <https://unu.edu/inweh/article/hidden-environmental-cost-cryptocurrency-how-bitcoin-mining-impacts-climate-water-and>.