

UN-Water Joint Message and Call for Action

Groundwater: The Invisible Resource for Sustainable Development



United
Nations



Rationale

Groundwater is fundamental to life on earth. Its contributions range from drinking water provisioning to food production, from sanitation to climate change adaptation and disaster risk reduction, from ecosystem and biodiversity support to land surface stability. Worldwide, half of all drinking water, about 40% of irrigation water for agriculture, and about 30% of water for industry comes from groundwater. The prevalence of groundwater combined with its many attributes and uses creates immense opportunities for enhanced water provision and human health, socioeconomic development, resilience, and ecosystem integrity. Hence, groundwater plays an indispensable role in achieving the Sustainable Development Goals (SDGs) of the United Nations 2030 Agenda for Sustainable Development. Fifty-three of the SDG's 169 targets have a link to groundwater.

Yet, due to groundwater's underground and "invisible" nature, sustainable management and sound governance of the resource has been underprioritized. Current levels of groundwater use are unprecedented, with a six-fold increase in abstraction globally over the last 70 years. Aquifer degradation from overexploitation, pollution, salinization, and subsidence on one hand and underdevelopment of the resource mainly due to lack of financial resources, knowledge and capacity on the other hand can hinder safe water access and economic development in many regions. High-level commitment and concerted action are called upon to properly develop and protect groundwater, driving an agenda for integrated water resources, land and environmental management for an equitable, resilient, and sustainable future.

Key Messages:

1. Access to clean and adequate groundwater is fundamental to safe water supply and sanitation and to human and ecosystem health.
2. Groundwater is key to global food production and food security; it supports livelihoods, industries, geothermal energy, and contributes significantly to socioeconomic development.
3. Groundwater sustains wetlands, streams, lakes, and other aquatic and terrestrial ecosystems. Excessive groundwater use and pollution threaten the ecological health of such systems.
4. Groundwater systems play a strategic role in adapting and building resilience to climate change and disaster risks and in preventing and recovering from humanitarian crises.
5. Transboundary cooperation on aquifer resources management can be a catalyst for regional integration, peace, and stability.
6. The integrated and intersectoral co-management of surface water and groundwater systems, together with desalinated and reclaimed water, can help balance water supply and demand and enhance sustainable water access, while maintaining ecosystem services.
7. Groundwater protection is key. Degradation from human activities – often associated with poor land, agricultural, and waste management – threatens not only current uses and human and ecosystem health but also limits benefits of future generations.
8. Governance, actions and investments on groundwater should be prioritized in vulnerable and climate change/hazard-exposed regions, including sub-Saharan Africa, Small Island Developing States (SIDS) and coastal zones, areas with no or slowly renewable and vulnerable aquifers, and aquifers with naturally occurring but hazardous contaminants, like arsenic. Focus should be on underserved and hard-to-reach communities, including women, youth, and indigenous people.

With reference to background resolutions and antecedents (Annex 1); in accordance with the UN Global Acceleration Framework for the achievement of SGD 6; and supporting the Water Action Agenda.

Governments, the donor community, the private sector, and civil society are called upon to declare voluntary commitments and announce accelerated action toward:

A. Financing sustainable groundwater management, development, and use

Sustaining and expanding societal benefits from groundwater requires political commitment and investments. Investments in groundwater management, monitoring and protection generally lag behind. Investments in groundwater need to be augmented as part of integrated water resources management, climate change adaptation and mitigation, and broader strategies including capacity strengthening.

B. Collection and sharing of data and information

We cannot manage what we do not measure. Achieving long-term climate resilience, aquifer integrity, and sustainable and equitable groundwater use requires investments in systematic data collection, monitoring and assessments of groundwater systems. Groundwater data collected with public funds, including on climate change and other stressors, hydrogeology, land and water use, and borehole siting and drilling, should be freely accessible, and private companies should be encouraged to disclose information on water abstraction and effluent discharges. Data collected should be disaggregated (according to gender, age, location, etc.) to improve regulation and decision-making.

C. Strengthening human and institutional capacity

Without adequate knowledge and skills and informed decision-making – recognizing local and indigenous knowledge – groundwater resources may be underused or compromised. Strengthening human and institutional capacity, public literacy, and vocational and academic programs on groundwater is an absolute imperative for achieving sustainable access to and management of groundwater.

D. Leveraging and scaling up innovations for groundwater management

Advances in science, technology, infrastructure, policy, standards and practice play a key role in achieving the SDGs. Critical groundwater innovations include amongst others earth observation/remote sensing techniques, novel monitoring and modeling technologies, digitalization, resilient and robust infrastructure, affordable climate- and groundwater-smart pumping technologies, and cost-effective novel aquifer and soil remediation technologies. Integrated groundwater-sensitive circular and nature-based solutions include managed aquifer recharge and storage; sustainable land, ecosystem, and soil management; conservation agriculture; and green storm- and urban water management. Groundwater management should be long-term, adaptive, and iterative, reducing uncertainty and risks as critical knowledge and solutions become available.

E. Enhancing groundwater governance

Sound governance ensures groundwater sustainability for the benefit of humankind and dependent ecosystems. Predicated upon the rule of law, human rights, equity, transparency, and accountability, it involves identifying goals and implementing policies, administering legal and institutional frameworks, assigning dedicated personnel and financial resources, promoting stakeholder participation, and taking responsibility for outcomes. Perverse incentives, such as subsidizing large users to pump groundwater leading to overexploitation, should be avoided. Effective governance arrangements need to extend to the local level and respect cultural diversity, gender, and indigenous rights. The governance of transboundary aquifers, of which more than 450 exist globally, calls for international cooperation. Finally, because decisions are often taken outside the water sector (e.g. on food, land and urban planning; waste management; health; and chemical substances), there is a need for greater cross-sectoral coordination and collaboration.

Member States are specifically called upon to register voluntary commitments on groundwater capacity development, data and information, innovation, governance, and finance as part of the Water Action Agenda of the UN 2023 Water Conference

Annex 1

Background resolutions and antecedents

1. Groundwater is central to achieving the 2030 Agenda for Sustainable Development, including the UN General Assembly's Resolutions (2010, 2015, 2021) on the human rights to water, sanitation, and a clean, healthy and sustainable environment; the Committee on World Food Security's Global Strategic Framework for Food Security and Nutrition 2017; the Sendai Framework for Disaster Risk Reduction 2015-2030; the 2015 Addis Ababa Action Agenda on Financing for Development; the 2015 Paris Agreement within the UN Framework Convention on Climate Change (UNFCCC); and the UN New Urban Agenda 2016.
2. UN-Water members and partners agreed to dedicate the World Water Day 2022, World Toilet Day 2022 and the UN World Water Development Report 2022 to groundwater with the theme 'Groundwater: Making the Invisible Visible'.
3. The SDG 6 Global Acceleration Framework aims to deliver fast results at an increased scale as part of the Decade of Action to deliver the SDGs by 2030.
4. The UN General Assembly resolved to convene the United Nations Conference on the Midterm Comprehensive Review of the Implementation of the Objectives of the International Decade for Action, 'Water for Sustainable Development' 2018-2028 (short: UN 2023 Water Conference) in March 2023 (73/226).
5. Significant momentum and outcomes have been achieved over the last two years, placing groundwater high on the international agenda at global events, e.g. UNFCCC COP26, Africa Water Week 2021, UNESCO ISARM 2021, 2nd IGAD Water Forum 2022, World Water Forum 2022, IAHS/UNESCO 2022: Groundwater - key to the SDGs, World Water Weeks 2021/2022, IWRA Conference 2020 and World Water Congress 2021, IAHS Assembly 2022, IWA Congress 2022, and other relevant events.
6. Recent high-level global declarations have created consensus on the urgency to accelerate local to global action on groundwater, e.g. Sao-Paulo-Brussels Groundwater Declaration 2021, Dakar Declaration 2022, AMCOW White Paper 2022, and Dushanbe 2022 Conference.
7. The General Conference of UNESCO adopted the UNESCO Recommendation on Open Science at its 41st session in November 2021.
8. The Executive Board of UNESCO adopted a resolution on Groundwater in October 2022 (UNESCO Executive Board - 215th Session - October 2022 Document 215 EX/50).
9. The proposed UN Draft Articles on the Law of Transboundary Aquifers (UNGA Resolution 63/124, 2008).
10. UN-Water decided to convene the Summit on Groundwater in December 2022 as a culmination of the 2022 'Groundwater: Making the Invisible Visible' campaign and in the lead-up to the UN 2023 Water Conference.