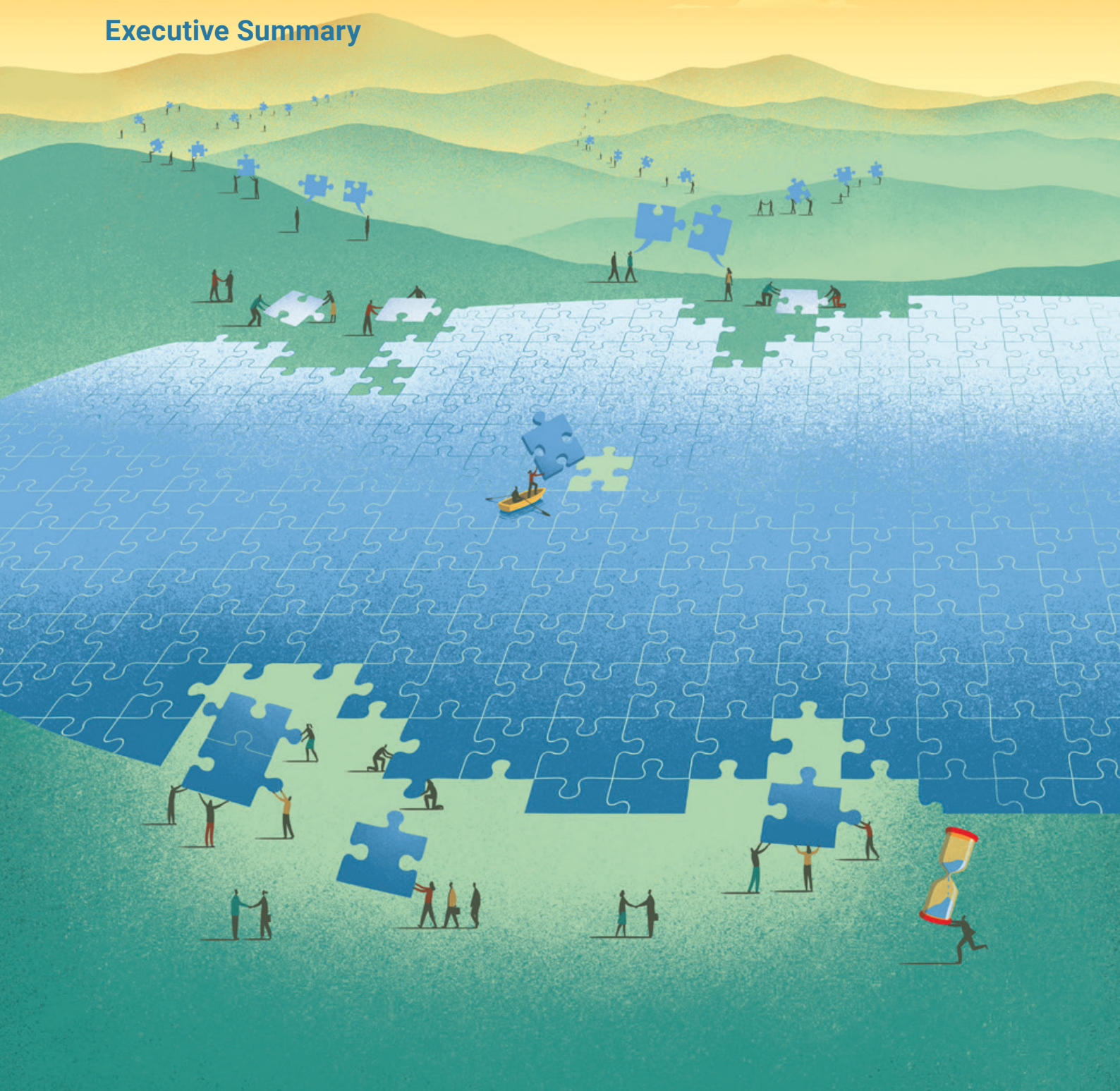


The United Nations World Water Development Report 2023

Partnerships and cooperation for water

Executive Summary



The year 2023 marks the first major conference of the United Nations (UN) dedicated to water since 1977. The UN 2023 Water Conference focuses on progress towards water- and sanitation-related goals, coinciding with the mid-term comprehensive review of the International Decade for Action, 'Water for Sustainable Development 2018–2028'.

As the UN system's principal authoritative report on water, the *United Nations World Water Development Report 2023* directly informs the UN conference discussions, describing how building partnerships and enhancing cooperation across all dimensions of sustainable development are essential to accelerating progress towards the Sustainable Development Goal for water and sanitation (SDG 6) and realizing the human rights to water and sanitation.

The world's water: demand, availability and quality

Water use has been increasing globally by roughly 1% per year over the last 40 years and is expected to grow at a similar rate through to 2050, driven by a combination of population growth, socio-economic development and changing consumption patterns. The bulk of this increase is concentrated in middle- and lower-income countries, particularly in emerging economies.

Water scarcity is becoming endemic as a result of the local impact of physical water stress, coupled with the acceleration and spreading of freshwater pollution. As a result of climate change, seasonal water scarcity will increase in regions where it is currently abundant – such as Central Africa, East Asia and parts of South America – and worsen in regions where water is already in short supply – such as the Middle East and the Sahel in Africa. On average, 10% of the global population lives in countries with high or critical water stress.

Low-, middle- and high-income countries all show signs of risks related to water quality. Poor ambient water quality in low-income countries is often related to low levels of wastewater treatment, whereas in higher-income countries runoff from agriculture is a more serious problem. However, water quality data remain sparse, due in large part to weak monitoring and reporting capacity. This is especially true in many of the least developed countries in Asia and Africa.

Progress towards SDG 6 Targets

Half-way through the 2030 Agenda timeline, progress towards SDG 6 targets is only significantly reported for drinking water and sanitation, with some preliminary and rough indications of progress for water stress, water use efficiency, transboundary cooperation and Integrated Water Resources Management (IWRM), leaving 5 of the 11 target indicators without quantified information on progress.

At current rates, progress towards all the targets of SDG 6 is off-track and in some areas the rate of implementation needs to quadruple, or more.

According to the latest figures from 2020, 26% of the world's population (2 billion people) did not have access to safely managed drinking water services (**Target 6.1**), and an estimated 46% (3.6 billion) lacked access to safely managed sanitation (**Target 6.2**).

Approximately 60% of the world's reported water bodies were categorized as having 'good' ambient water quality (**Target 6.3**). However, the poorest 20 countries are grossly under-represented in this global estimate.

Globally, water use efficiency (**Target 6.4**) rose by 9% from 2015 to 2018 (from 17.3 to 18.9 US\$/m³). Progress has been greatest in the industrial sector (15% increase), followed by the water supply and sanitation services and agricultural sectors (8% increase).

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Cooperation improves water governance and decision-making, stimulates innovative solutions, and leverages efficiencies

While most countries have reported some progress, the global rate of progress on IWRM implementation (**Target 6.5**) needs to double to approach the target.

The data required to track changes in the extent of water-related ecosystems over time (**Target 6.6**) are not yet refined enough to reveal discrete trends in recent years. However, available data show an 80% loss in the extent of natural wetland area since the pre-industrial era (1700).

Official development assistance (ODA) committed and disbursed to 'water' in 2020 was estimated at US\$8.7 billion globally, up from US\$2.7 billion in 2002. However, international cooperation and capacity-building support to developing countries in water- and sanitation-related activities and programmes (**Target 6.a**) had not yet been specifically reported at the time of this report's production.

The number of countries with clearly defined procedures in law or policy for participation by users/communities (**Target 6.b**) has increased between 2014 and 2019, but still remains low overall. Levels for both laws/procedures and participation are very low for drinking water in both urban and rural settings compared to the other subsectors.

Diversity of partnerships and collaboration

The currently inadequate rate of progress towards the SDG 6 targets highlights the need to explore opportunities through partnerships and cooperation. Cooperation improves water governance and decision-making, stimulates innovative solutions, and leverages efficiencies. By promoting inclusive engagement, participation and dialogue, and giving voices to those that are otherwise not heard, partnerships can help ensure that no one is left behind and that the human rights to water and sanitation are realized.

Each party invariably comes with its own knowledge, perceptions, interests, positions and objectives, such that disagreements on priorities and strategies are commonplace. While partnerships and cooperation, at all levels, overwhelmingly deliver positive outcomes, in rare occasions, they can institutionalize exclusion, distort resource allocations and encourage fragmentation.

The categorization adopted for the purposes of this report is based on the water-related outcomes that partnerships seek to achieve. The first category involves partners with a **common objective**, such as supplying water and sanitation to local communities or managing shared irrigation systems. The second involves actors with **different** (potentially competing) **water-related objectives**, including cooperation between municipalities and farmers over the allocation of water supplies, or payment for environmental services schemes. The third involves actors from 'outside the water domain', where objectives of some partners are **not primarily water-related**, but where water plays a determining role. These partnerships support water-related interventions that in turn serve objectives related to human health or climate change adaptation and mitigation.

Thematic perspectives

Agriculture

Water user associations (WUAs) are formal organizations through which farmers manage a common irrigation system. Smaller-sized WUAs, in which farmers share similar norms, and have social capital from other local institutions (e.g. village councils or religious groups), long-term involvement of local non-governmental organizations (NGOs), and democratic internal processes (e.g. elected chairpersons and board members) have been most

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successful. Others have underperformed due to poor implementation, unclear roles and responsibilities, lack of women participation, and lack in administrative authority, among other factors. The imposition of central and national directives by governments (e.g. irrigation departments and water ministries), often through mandated scheme by-laws or rules, may limit the effectiveness of WUAs.

While urban water demand is projected to increase by 80% by 2050, water allocation from agriculture to urban centres has become a common strategy to meet freshwater needs in growing cities. The reallocation of water from agriculture has been generally successful in terms of meeting the demands of growing cities. From an agricultural/rural perspective, negative consequences have been observed as less water is available for irrigation, leading to reduced food security and lower farmer livelihood incomes. Compensation, including financial payments or new infrastructure, and benefit-sharing arrangements can help offset these negative impacts.

The water–energy–food–ecosystem (WEFE) nexus provides a systematic approach to understanding WEFE interconnectedness and trade-offs. The WEFE approach integrates across all sectors and provides a holistic vision of sustainability that seeks to balance the different goals, interests and needs of people and the environment.

Environment

Watershed protection or rehabilitation measures are among the oldest of water-related partnerships. Many watershed services schemes address climate change adaptation by building resilience, and their role in mitigation is increasingly recognized.

Co-benefits generated through ecosystem-based approaches provide a strong justification for nature-based solutions. Water utilities are mainly interested in reducing infrastructure risks, ensuring compliance and reducing costs. Climate adaptation benefits, such as flood mitigation, are particularly attractive to rural communities. Additional benefits include biodiversity conservation, and jobs and training opportunities. This diversity and scale of benefits forge strong interests among a broader scope of stakeholders and potential partners.

Water funds, as a means of financing these schemes, support partnerships that bring together downstream users, like cities, businesses and utilities, to collectively invest in upstream habitat protection and land management to improve water quality and/or quantity and generate long-term benefits.

Partnerships involving local communities are increasingly used to improve monitoring of the environment. These are particularly important in order to address the huge gaps in water quality data.

Human settlements

A diversity of actors, including the private sector, NGOs and communities, along with government ministries and departments responsible for water, sanitation and hygiene (WASH), health, housing, agriculture, education, planning and infrastructure, handle various aspects of WASH. Cooperation also opens up space for an even broader range of partners.

WASH initiatives are more likely to meet their objectives if the intended beneficiaries participate in a meaningful way, especially in rural areas and secondary towns. Effective stakeholder involvement in planning and implementation leads to services that are

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more appropriate to the needs and resources of poor communities, and increases public acceptance and ownership of systems. Stakeholder engagement from the onset also fosters accountability and transparency.

Water operators' partnerships (WOPs) connect established, well-functioning utilities with others that need assistance or guidance. The resulting improvements in capacity and performance can facilitate utilities' access to financing for infrastructural investments, supporting further extensions or improvements in services. WOPs can be a valuable instrument to reach underserved populations in both rural and urban contexts.

Forced migration puts an increased strain on local entities (utilities, communities) responsible for providing water supply and services. While states are the primary duty-bearers for fulfilling these human rights, multi-stakeholder partnerships between United Nations agencies, international organizations, NGOs and civil society are needed to respond to the complex dynamics that impact both displaced populations and host communities. Within displacement settings, water user committees can facilitate collaboration with local water authorities as well as promote women's participation.

Industry

Industry turns to collective action when desired outcomes cannot be obtained through internal or unilateral action alone. Industry has the capacity to advance responsible practices and devise market-based solutions to accelerate the SDGs at scale, but this ability can be undermined by governance gaps, market failures, cultural barriers and trust deficits. Collective action, in the form of partnerships and coalitions, is vital to overcoming these impediments.

For collective action to be effective, companies typically have to establish unconventional relationships with non-traditional partners. There must be a commitment to shared goals and a recognition of the potential for trade-offs between company interests and broader public benefits. Collective action requires companies to develop new skills and knowledge, such as greater understanding of community needs and values, and enhances their ability to connect with government actors and NGOs.

In recent years the increased value of adding environmental, social and governance (ESG) and water stewardship scopes to such arrangements has become very evident – not only in the commercial sense but also in the broader context of overall water sustainability to provide beneficial results for all parties.

Health

Despite interdependences between the WASH and health sectors, gaps in coordination and governance occur because they are led by different ministries, local authorities, international organizations, NGOs and private sector actors. Partnerships aligned at the scientific, strategic and operational levels are therefore necessary to optimize and accelerate positive health outcomes through WASH.

Fully functioning WASH services in health care facilities are essential to the delivery of safe quality care. While the provision of WASH in hospitals, in- and out-patient health centres and clinics is a health sector responsibility, it has until recently been neglected due to health actors either not accepting the role, not knowing how to develop and maintain WASH services, or being overwhelmed with curative tasks. COVID-19 efforts have been increasingly leveraged to strengthen policies, regulations and investments in WASH.

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New health risks are emerging from exposure to ‘contaminants of emerging concern’ in water, such as pharmaceuticals, industrial and household chemicals, personal care products, pesticides, and manufactured nanomaterials. WASH plays an essential role in preventing neglected tropical diseases that are close to elimination from bouncing back. Safe WASH limits the avoidable use of antimicrobials for WASH-preventable infections, thus contributing to address the antimicrobial resistance (AMR) crisis. Progress requires cooperation across a wide range of stakeholders, such as policy-makers, engineers and scientists, health care professionals, veterinarians, farmers, donors, NGOs, and private citizens and corporations.

Wastewater disease surveillance can complement diagnostic testing. The global polio eradication programme is a well-established example of a health partnership (with wastewater laboratories) using wastewater as part of a wider surveillance and control approach.

Climate change

The coordination of climate and water agendas is bidirectional. On the one hand, climate policy-makers need to better understand the needs of the water community to adapt to climate change, as well as the role that water resources management and supply and sanitation can play in mitigation. On the other hand, water policy-makers need to proactively reach out to climate stakeholders to better understand how climate-led processes work, and to integrate water-related climate risks into national water policies, strategies and implementation plans.

Accelerating action through partnerships and cooperation between water and climate stakeholders can create additional benefits to freshwater ecosystems and to the most exposed and vulnerable people, reducing disaster risks, delivering cost savings, fostering job creation and generating economic opportunities. The cross-sectoral nature and interdependence of water and climate change with other vital natural resources, such as land or energy, create further opportunities for partnership and cooperation.

In commitments made by Parties to the Paris Agreement, more than 80% of countries have reported freshwater resources as an adaptation priority area. However, mitigation opportunities through water management – ranging from biogas recovery from wastewater treatment systems to geothermal power generation – deserve greater attention from climate planners and should open the door to further collaboration with water stakeholders.

Regional perspectives

Sub-Saharan Africa

Developing water infrastructure, harnessing groundwater resources, addressing climate change effects and investing in science and technology are all needed to drive sustainable water security in Sub-Saharan Africa. However, the coordination, communication and exchange of the generally limited data and information available to African water stakeholders have been very weak due to the lack of appropriate strategies and platforms to enhance dialogue between researchers, decision-makers and community members. Cooperation is particularly critical for ensuring water security in the region’s many transboundary basins and aquifers.

Community–public partnerships (CPPs), usually established between a water utility and an elected group within a community, offer win–win arrangements that enable private operators, public utilities and communities to derive benefits through mutual understanding, shared responsibilities, and exchange of knowledge and experiences.

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There are currently numerous activities at all levels that require coordination to optimize efforts and resources. Several subregional, regional and continental partnerships could be strengthened. Member states, development partners and other stakeholders should consider reinforcing existing structures, rather than developing new ones.

Europe and North America

Water-related partnerships and cooperation initiatives are frequent in Europe and North America. The *Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters* and the *Convention on the Protection and Use of Transboundary Watercourses and International Lakes* stress the need for cooperation and involvement of stakeholders, as do several relevant Directives of the European Union. These instruments have facilitated the development of various types of partnerships in the region and are also contributing to stakeholder participation outside the region.

Stakeholder involvement is an objective that has been proactively pursued and, to a large degree, it remains a common challenge in water management, governance and cooperation across the region.

The International Joint Commission (IJC) between Canada and the United States of America has a long history of successful water cooperation, not only across borders but also within countries and between sectors, administrative levels and other stakeholders.

Latin America and the Caribbean

The different types of partnerships and forms of cooperation in the region are mainly water-focused or closely connected to water-dependent sectors, such as agriculture. Evidence points to limited engagement outside the water-based domain, such as water initiatives linked to social justice, gender, education or job creation, or even other environment-related aspects, such as biodiversity.

The most common water-related partnerships at the local level have been established for overseeing drinking water supply and sanitation services, particularly in rural areas. Agricultural producer groups, such as WUAs, are also widespread. One common trait of these associations is that they usually operate independently of urban area regulators, with varying levels of involvement from national-level authorities.

There is a long history of basin management organizations in the region, which mostly focus on data monitoring, research, coordination of actions, regulation, planning, financing, and development and administration, among other aspects. They often face similar challenges related to technical capacity, governance structures and, particularly, funding.

There are additional instances of inter-institutional coordination where public, private and community actors work together with the aim of improving water management. These involve public- and private-sector entities, academia, community and national networks, and national as well as international NGOs.

Asia and the Pacific

Water resources management contributed to the economic and social welfare of the region over the last decade through the provision of basic WASH services, improved food production, industrial development and ecosystem-based services. However, Asia and the Pacific remains far from being on track to meet the targets of SDG 6.

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In many parts of the world, water management is shaped by local knowledge and practices

Inequity in terms of water access remains an issue. Women, who are primarily responsible for water collection in local communities, often have limited participation in water management due to traditional norms and practices, such as power imbalances and sociocultural factors. Other critical regional challenges include inadequate sanitation services and pollution, as well as shortcomings in transboundary cooperation.

There is a need to strengthen existing partnerships and networks, to enhance existing platforms for better stakeholder engagement at all levels, and to ensure that all relevant stakeholders are included in water governance. Participative governance approaches at subnational and national levels, across multiple government agencies, would support the mainstreaming and financing of water management and expedite progress across other water-dependent sectors.

The Arab region

The region's surface water scarcity, along with other rising challenges such as climate change, high dependency on transboundary water resources and high usage of water resources by the agricultural sector, requires successful cooperation and partnership initiatives in order to progress towards water security.

Several such arrangements have already been initiated in the Arab region despite the financial and political barriers that might hinder collaboration. These have demonstrated the importance of collaborative efforts, trust-building processes and data exchange for better water management. However, given the immense challenges, increased collaboration is needed, especially to secure additional financing, advance innovation and share information.

Most Arab states largely rely on rivers and/or aquifers shared with neighbouring countries for their water supply. Despite certain inter-state tensions between some neighbouring countries, several examples of cooperation modalities do exist in the region, including transboundary aquifers. These transboundary cooperation arrangements have led to improved water management through iterative trust-building processes that started with targeted data-sharing, information-gathering and scientific research, which then developed into more robust cooperation modalities.

Accelerating change

The following sections align with each of the five 'accelerators' of the SDG 6 Global Acceleration Framework (GAF), in which partnerships and cooperation play a central role. Such partnerships and cooperation transcend boundaries and sectors, making SDG 6 everyone's business.

Education and capacity development

Education and capacity development are crucial to accelerate the development, adoption and institutionalization of more sustainable and equitable water management practices. They involve the sharing of knowledge and skills between teachers, students, institutions, and other providers and recipients of information.

Technological progress is a major driver of such collaborative opportunities. The recent COVID-19 pandemic, in particular, has given a major boost to the development of digital content and the adoption of information and communication technologies (ICT) for teaching and training worldwide.

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Government agencies tasked with resource monitoring and management often lack the capacity to generate all the data needed to address water-related economic and social issues

In many parts of the world, water management is shaped by local knowledge and practices. Often based on natural processes that provide multiple ecosystem services, they can add flexibility and adaptive capacity. Integrating this knowledge requires multidirectional forms of knowledge exchange, such as occurs in communities of practice and professional networks.

Maximizing these opportunities poses several challenges. Some of them are technical in nature, such as creating inclusive online platforms and systems that maximize access to disadvantaged groups and communities. But partnerships for more efficient, sustainable and equitable education and capacity development on water can also benefit from a stronger adoption of approaches such as communities of practice, citizen science, open innovation and life-long learning.

Many citizen science projects are cross-disciplinary partnerships that bring together scientists, water professionals and the broader public. These projects often have a strong educational dimension, and are increasingly used to build awareness on local issues, such as water pollution and equitable resource allocation, and to increase transparency and inclusivity.

Data and information

Data and information are essential to water-related decision-making. While the potential breadth and scope of water-relevant data is vast, so too are the data gaps from the local through to the international levels. Additional challenges include insufficient levels of disaggregation and difficulties (or reluctance) in sharing data.

Water-related data are often generated by different users (or 'sectors') and therefore not interoperable for multiple users due to differences in terminology and other factors. While data may be considered to be neutral, the information generated after data analysis may not be. Partnerships can help ensure that relevant data are effectively generated and processed into objective information.

A broader engagement process, involving partners in priority-setting, planning, data collection and joint development of data governance mechanisms, fosters collective ownership. Successful partnerships also require time, transparency and mutual respect. At initial stages, areas of common interest need to be explored, expectations discussed and trust built in order to reach a common understanding of the objectives. Consultation, communication and consensus-building are critical throughout the process.

Open-access global data repositories can be used at national and regional scales, but such data tend to lack the spatial resolution or level of disaggregation required for more targeted interventions. Government agencies tasked with resource monitoring and management, such as agricultural or environmental industries, often lack the capacity to generate all the data needed to address water-related economic and social issues. The problem is compounded further when these agencies fail (or refuse) to share what data they do have between them.

Joint monitoring of transboundary water resources promotes a shared understanding of the system and provides a platform where data can be shared and applied in a timely manner. Transboundary actors such as river basin organizations, national government entities, academic institutions, as well as development organizations, are repositories of data that can be streamlined and shared through these platforms. Harmonizing various databases, within and across borders, requires partnerships between government institutions and private sector actors such as companies and landowners.

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for water-related
investments**

Innovation

Partnerships can accelerate the development and uptake of innovative technologies through knowledge transfer, entrepreneurship and applied research.

Strengthening and extending South–North and South–South partnerships between universities encourage the transfer of new technologies and innovative skills. Business incubators and accelerators can facilitate partnerships between universities, budding entrepreneurs and venture capital providers. Such incubators should be strengthened and expanded in middle- and low-income countries. Communities of practice for knowledge co-creation and innovation with partners from the North and South could go a long way towards developing technically feasible, economically viable, socially acceptable and locally adaptable solutions.

Novel partnerships across the wider water and sanitation industry are also needed to accelerate the uptake of new technologies for water processing, distribution and treatment. This can be achieved through partnerships between industry and technology providers, such as universities and entrepreneurs.

The introduction of new technologies and innovations, such as ICT, does not favour the participation of those without proper access to internet or mobile phones connections, not to mention electricity. Care should therefore be taken that the introduction of new technologies does not lead to unintended side effects, such as a widening the knowledge and socio-economic divides.

Financing

Achieving equitable access to safe drinking water for all by 2030 could require tripling current investment levels. Evidence suggests that some WASH-related funding may be poorly targeted and even counterproductive in addressing the needs of the poorest people and communities.

Better coordination across stakeholders can generate additional funding streams for water-related investments from various sources. Cooperation mechanisms are key for bringing these beneficiaries together and can facilitate joint financing of relevant projects. Water funds are examples of multi-stakeholder platforms that pool funding from various actors.

Cooperation among the different sources of finance can support and leverage co-financing arrangements. By spreading investment risks among multiple financiers (with differing risk appetites and requirements), public or development finance can be used strategically to improve the risk–return profile of a project and to mobilize additional investment – so-called ‘blended finance’ arrangements.

Better cooperation between the demand and supply sides of finance encompasses improved understanding of (i) the supply and demand side’s respective perceptions, characteristics and requirements; (ii) intermediary institutions and their diverse functions; and (iii) the translation of water-related risks and benefits into expressions relevant and understandable to the financial sector.

Investments for water supply and sanitation facilities at the household level require specific financial products, such as micro-credits for low-income consumers and households, and could attract finance from impact investors.

Governance

A whole-of-society approach embraces both formal and informal institutions in seeking a generalized agreement across society about policy goals and the means to achieve them.

Trust and hope are fundamental building blocks for social cohesion and security. Trust is the 'lubricant' needed to 'grease the wheels' of the economy, and hope can be the mortar that holds societies together. Addressing corruption has been shown to yield substantial cost savings across the water sector, and also reduce the incidence of cancellations and delays.

Meaningful participation and inclusive stakeholder engagement take time but stand to generate trust and hope. Policy and project processes need to adapt to the concerns and potential contribution of different groups. Strategic integration of cross-sectoral and stakeholder concerns involves developing norms, standards and allocation methods that affect water use efficiency and the protection of resources across sectors.

Public authorities, acting on behalf of the state, in principle determine whether and how to bring private operators in to deliver water and sanitation services. The authorities retain their sovereign duties for ensuring the progressive fulfilment of the human rights to safe drinking water and sanitation. To be successful, public–private partnerships (PPPs) need to build upon cooperation that is beneficial to all stakeholders – they need to serve the public interest while providing a decent return to the service provider. Both private sector and public sector operations are more effective in countries with clear, predictable and stable legislative frameworks, as these allow long-term investment to be supported with confidence and receive a reasonable return.

Coda

Safeguarding water, food and energy security through sustainable water management, providing water supply and sanitation services to all, supporting human health and livelihoods, mitigating the impacts of climate change and extreme events, and sustaining and restoring ecosystems and the valuable services they provide, are all pieces of a great and complex puzzle.

Only through partnerships and cooperation can the pieces come together.

And everyone has a role to play.

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