



Task Force 6
Accelerating SDGs: Exploring New
Pathways to the 2030 Agenda



IMPROVING ACCESS TO SAFELY MANAGED DRINKING WATER SERVICES: RECOMMENDATIONS FOR G20 EMERGING ECONOMIES

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Abstract



The policy brief examines the governance models in domestic water supply management, advances in data and information to enable effective monitoring and evaluation, sustainable financing options for water supply projects, technological innovations, and capacity-building for effective operation and maintenance that have been adopted by the G20 countries to achieve Target 6.1 of the Sustainable Development Goals (SDGs). The objective is to draw lessons from the experiences of these accelerators (governance, data

and information, finance, technology, and capacity-building), and provide recommendations to progress towards equitable access to safe and affordable drinking water for all, especially those in the emerging economies, by 2030. The main challenges the recommendations address include the adverse impact of climate change on water availability, unreliable year-round supply of potable water, and ensuring the safety of the drinking water supply services. The focus is on poor and marginalised households who have limited access to safe drinking water.



The Challenge

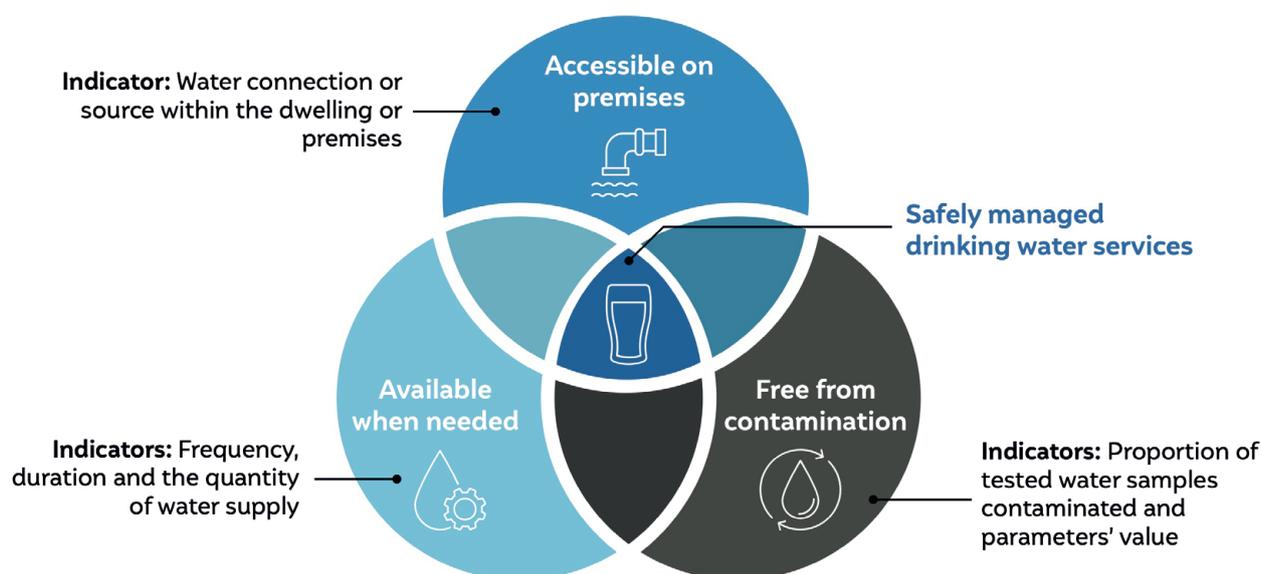


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Sustainable Development Goal (SDG) target 6.1 focuses on achieving universal and equitable access to safe and affordable drinking water for all by 2030. However, as of 2020, 26 percent of the world's population (about two billion people) did not have access to safely managed drinking water services¹ which are characterised by access to the improved source of drinking water that is located on the premises, available when needed, and free from faecal and priority chemical contamination (see

Figure 1).^{2, 3} Of the two billion people lacking such access, 1.2 billion people have access to an improved water source but within a round trip of 30 minutes (basic drinking water services) and 282 million with more than 30 minutes of a round trip (limited access to water services); 367 million people use unimproved water sources, and 122 million drink (untreated) water directly from surface water sources.⁴ As per the estimates, achieving universal coverage by 2030 will require a quadrupling of current rates of progress in safely managed drinking water services.^{5,6}

Figure 1: Components and indicators of safely managed drinking water services



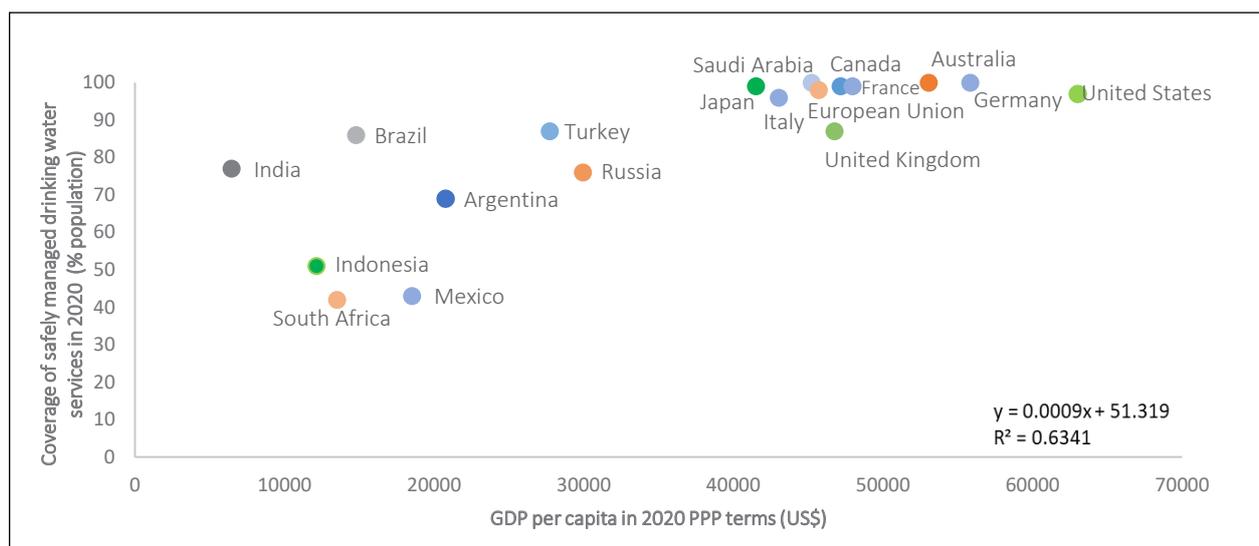
Source: Council on Energy, Environment, and Water ⁷

Detailed below are the main challenges to achieving safely managed drinking water services:

- Human-caused climate change and contamination of water resources are leading to an adverse impact on water availability.^{8,9} As per the estimates, the world now faces the prospect of a 40 percent shortfall in freshwater supply by 2030.¹⁰ This will adversely impact water availability for drinking water supply as well.
- Many countries are unable to extend services to remote areas

and to poor and vulnerable populations who are most at risk of being left behind. Sub-Saharan Africa had the most significant disparity in coverage of safely managed drinking water services between urban (54 percent) and rural (13 percent) areas.¹¹ In the case of the G20 member countries, the proportion of people with access to safely managed drinking water services is higher for those having high per capita gross domestic product (GDP) in purchasing power parity (PPP) terms (see Figure 2).

Figure 2: The safely managed drinking water services coverage in 2020 (percentage population) was higher for countries with high per capita GDP in 2020 PPP terms (r-square is 0.63)



Source: Authors' analysis using the data presented in WHO and UNICEF¹² and World Bank¹³

- Even for households with access to improved water sources within the premises, water is not always available when needed or free from contamination. While in the case of the former, the problem is with the reliability of the source, in the case of the latter, it is the poor handling, storage practices, and surveillance of the water source.¹⁴ In fact, poor handling and storage practices at the household level are the major reasons for secondary bacteriological contamination. Nevertheless, only a handful of countries undertake water safety planning that can help eliminate the causes of contamination and ensure the delivery of safe water to end users.
- The quantity of domestic water allocated and supplied may not be sufficient since many countries do not account for other productive uses of the same water such as for livestock, homesteads, and small-scale processing units in emerging economies.¹⁵
- Investment in water and sanitation is typically performed by the public sector, with the concessional scheme in many cases. Private finance is limited to only well-managed zones or developed economies. More than just public investments and development aid, but the progress of private finance mobilisation is slow.
- Data and information availability to make inferences on the progress with the safely managed drinking water services is still scarce.¹⁶ About 138 countries had estimates for safely managed drinking water services, representing only 45 percent of the global population.¹⁷
- In cases where the community-based local institutions are managing the operation and maintenance of the water supply schemes, the necessary resources, skills, and expertise to ensure the safety of the drinking water supply services are missing.

Thus, the challenges to achieving drinking water security relate to governance, data and information, finance, technology, and capacity-building.



The G20's Role

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So far, the issues pertaining to water resources have been mainly dealt with either under the ‘Agriculture’ or ‘Environment’ track under the G20 Sherpa track.

The first G20 Water Dialogue took place in 2020, during the Saudi Arabian Presidency (2019–20). All G20 members shared case studies on the theme ‘G20 Best Practices on Managing Water, Sanitation, and Hygiene (WASH) to Combat Infectious Diseases and Pandemics such as COVID-19.’ Further, water resources ministers were invited for declaration and introducing a full paragraph in the Ministers’ Communiqué titled ‘Fostering Sustainable and Resilient Water Management’.

As a result, G20 countries agreed to have a dialogue on water every year and share the outcomes on a digital platform, to be hosted by Saudi Arabia for the first five years. Subsequently, the G20 Water Platform was officially launched during the second G20 Dialogue on Water, organised by Italy’s G20 presidency (2020–21). The Water Platform is a digital instrument to share experiences on sustainable water management across the globe.

The Indonesian Presidency (2021–22) also proposed a paragraph in the Joint G20 Environment and Climate Ministers Communiqué with the title ‘Integrated and Sustainable Water Management’.

Water is part of the Environment and Climate Sustainability Working Group under India’s 2023 G20 presidency. Universalisation of water and sanitation is one of the focus areas under the water track. With an investment of about US\$43.5 billion,¹⁸ India is implementing one such programme, the ‘Jal Jeevan Mission’ (JJM), with an aim to provide a functional tap connection within the premises of every rural household by 2024. This makes it one of the largest missions of its kind in the world. As of May 31, 2023, almost 62 percent of rural households have tap connections within their premises, as compared to only 17 percent in 2019 when JJM was launched. Going forward, India wants to focus on the safety of the drinking water supply through investments in improving source sustainability and water quality surveillance. India can leverage its G20 presidency to share the achievements of JJM, and discuss how to ensure the sustainability of such initiatives that can help accelerate the SDG target 6.1.



Recommendations to the G20



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We present recommendations under five accelerators that have been identified by the United Nations for achieving SDGs:

Governance models for sustainable water supply

The role of governance in water sustainability is crucial.^{19,20} However, the prevailing water governance system in many emerging economies is often confronted with sectoral coordination problems that are unable to meet the challenges posed by complex water management problems, increasing resource scarcity, and variable climatic conditions. For instance, often, the institutions in charge of supplying water for domestic uses and for agriculture are different, and seldom coordinate for developing, allocating, and managing the water resources, which are common.

Moreover, simplistic norms for water supply in several countries that consider only basic survival needs have proven to be detrimental to public health as communities often fall back on unimproved water sources to meet water demand. To ensure sustainable

water supply under climate change scenarios, a more adaptive and flexible governance system is needed that considers the context and current conditions under which water needs to be supplied.

Further, water resources in different river basins are to be allocated across various competing use sectors by a legitimate independent agency, to ensure sufficient and equitable water availability for various needs, rather than leaving it to the institutions that are operating in silos. The decisions on the type of institutions to manage water supply schemes—that is, whether by the government or by the community-led institutions—should be based on the technology and scale of the scheme (single-village or multi-village).

The role of the legal system in increasing access to safely managed drinking water is imperative, as it in conjunction with other governance systems can help enforce the human right to water. For instance, European Union’s 2021 revised Drinking Water Directive (DWD)²¹ elucidates this point. Europe has a broad coverage of drinking water services, but marginalised groups still face access constraints in some countries, and



pollution of water sources is a growing concern. DWD addresses this situation by following a preventive approach that favours actions to reduce pollution at source, reinforces water quality standards, and measures to ensure better access to water and increase the transparency of the water sector.

Data and information enabling effective monitoring and evaluation

As of 2022, only 45 percent of the global population had data for access to safely managed water services.²² Even in countries that report data on safely managed drinking water services, the quality, quantity, and quantum of data are not sufficient to enable effective governance. For instance, even with massive improvements in infrastructure provision for tap water connection under Jal Jeevan Mission in India, data for safely managed water services has scope for improvement.²³

Thus, adopting a standardised and holistic list of indicators to report progress on the safely managed drinking water services is a must. Further, there is a need to adopt an Internet of Things (IoT)-based smart

water supply monitoring system. Such systems should report the quantity of daily water supply (through the installation of smart bulk water supply and individual water meters), frequency and duration of water supply, and values of water quality parameter. The water quality monitoring specifically can focus on pH, electrical conductivity (EC) or total dissolved solids (TDS), nitrate, biochemical oxygen demand (BOD), residual chlorine, faecal coliforms (FC), and total coliforms (TC), which are considered the most common pressures on water quality at the global level. Such monitoring will help determine the reliability and safety of drinking water supply services.²⁴

Sustainable financing for water supply projects

Achieving equitable access to safe drinking water for all by 2030 could require tripling current investment levels.²⁵ To enhance the sustainable financing options for water supply projects, one of the aspects that need to be addressed is the commercial viability of water projects.

To increase the financing flows towards water projects, the risk–return profile of

water projects needs to be given a more creditworthy form. Hence, there is a need to increase the credit enhancement effort through government finance. The credit enhancement programme could take the form of a guarantee provision, convertible loan scheme, viability gap fund, and other blended finance instruments with government finance playing the role of a catalyst. Once properly set up, credit enhancement through government finance can leverage the water projects in tapping into international and domestic private pools of funds.

It is imperative to realise that technological and governance decisions on water supply also have a bearing on widening or narrowing the spectrum of financing options. For instance, technological advances that improve water-use efficiency like bulk water meters, or bundling of sanitation services with reusing–recycling of treated wastewater can reduce water losses and hence improve investment efficiency.

Lastly, keeping water tariffs at their economic value will enhance the commercial viability of water projects.^{26,27} To achieve this, any subsidy

mechanism provided to ensure water pricing matches its economic value should be managed by the government and not the operator to minimise the potential of market failure.

Technological innovations

Technological innovations should enable the water supply utilities and the local community to better track risks related to the water sources and supply. Some of the innovations include:

- **Smart water meters with real-time data technologies:** They can help utilities track water consumption, identify leaks, and reduce non-revenue water. Countries such as Ghana, Niger, China, Kenya, Uganda, and Tanzania have implemented smart metering to enhance revenue recovery, promote smart energy rollout, and improve water management in rural and urban areas.²⁸
- **Digital management solutions:** This includes SCADA (supervisory control and data acquisition) and cloud-based IoT platforms that enable remote monitoring and control of water distribution systems. SCADA technology



is widely used in India for large water distribution systems, and IoT systems are being adopted for groundwater-based source monitoring in Africa and Asia. Such solutions provide valuable insights for the effective management of water supply systems.²⁹

Capacity-building for effective operation and maintenance

The capacity-building programmes should enable a change from water sufficient to water efficient climate resilient communities. For this purpose, resource centres should be opened that can provide Training of Trainers (ToT), training to village water and sanitation committee (VWSC) on water security and safety planning focusing on demand-side management; undertake information, education, and communication and community engagement activities involving youth and school children; and training on technology and innovations. For instance, in India, the JJM is achieving this through empanelment of the Key Resource Centres, Implementation Support Agencies, and Development Partners to implement various capacity-building programmes on providing safe and adequate drinking water to rural

households.³⁰ Such programmes have resulted in communities being fully empowered to take ownership of the water service delivery and system maintenance.³¹

In Brazil, the national water agency has established the National Water Quality Evaluation Program to increase knowledge about surface freshwater quality and guide environmental restoration policies. A national network for water quality monitoring has been created, which consists of state networks that monitor over 2,100 sampling points across 17 of the country's 26 states.³² The information is disseminated through the water quality portal and organising courses on water quality in the local language along with video demonstrations.

In Africa too, the CLARA (capacity-linked water supply and sanitation improvement for Africa's periurban and rural areas) simplified planning tool, which is a decision-making tool for identifying the best solutions for water supply and sanitation interventions, has strengthened the local capacity. The tool has been implemented in five African regions involving all stakeholders and compares different water supply and



sanitation systems at the early planning stage based on a cost–benefit analysis.³³

The above recommendations can play a major role in ensuring the safety

of drinking water supply services in rural and urban areas of the emerging economies and the G20 member countries which are lagging in terms of the progress made on SDG target 6.1.

Attribution: Nitin Bassi et al., “Improving Access to Safely Managed Drinking Water Services: Recommendations for G20 Emerging Economies,” *T20 Policy Brief*, July 2023.

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