SDG 6 Country Acceleration Case Studies 2023

Brazil

United Nations | UN WATER

SDG 6 Country Acceleration Case Studies

UN-Water is a coordination mechanism of the United Nations. It is comprised of over 30 United Nations entities (Members) and over 40 other international organizations (Partners) working on water and sanitation issues. UN-Water's role is to ensure that Members and Partners deliver as one in response to water-related challenges.

The latest progress report shows that we are off track to achieve SDG 6. At the current rate of progress, the world will not reach the SDG 6 targets by 2030. In 2021, UN-Water reported that the world – on average – must quadruple current rates of progress to have a chance to achieve SDG 6 by 2030.

It is not enough to look at what is not working. There is so much we can learn from the many countries that have made significant progress. Since 2022, UN-Water has therefore commissioned case studies to understand how some countries are advancing towards SDG 6. The case studies highlight achievements and describe processes, enabling conditions and key lessons learned in countries selected for their progress on SDG 6. As such, each case study is a significant recognition of the progress made at the country level on one or several SDG 6 targets.

The case studies are meant to enable the replication of what has worked in other countries and encourage continued action to achieve SDG 6 in the selected countries. The 2030 Agenda for Sustainable Development forms an overarching lens for the case study to capture interlinkages and opportunities that are relevant across sectors and SDGs.

1. As evidenced by UN-Water (2021).

Three countries are selected every year, starting in 2022. The selection of the case studies is made by the UN-Water Expert Group on the 2030 Agenda for Sustainable Development, based on country progress reporting on the SDG 6 global indicators, compiled by the United Nations custodian agencies. For 2023, the selected countries for case studies are Brazil, Ghana and Singapore.

The contents of the case studies are prepared by UN-Water, based on material shared by UN-Water Members and Partners and representatives from relevant ministries and institutions in the selected countries, including the country monitoring focal points for the SDG 6 global indicators. The 2023 case studies also include inputs from a participatory webinar, as well as background interviews with a variety of stakeholders, conducted online and in-person during the UN 2023 Water Conference. The case studies are reviewed and validated by UN-Water Members and Partners before publication.

To enable cross-country comparison and learning, the case studies examine key underlying factors and enabling conditions that brought about the change. Very often these are political, institutional or behavioural, and they span over the five accelerators identified in the SDG 6 Global Acceleration Framework: financing, data and information, capacity development, innovation and governance.

So far, the following countries have been selected for country acceleration case studies:

2022: Costa Rica, Pakistan, Senegal

2023: Brazil, Ghana, Singapore

More information: www.unwater.org/news/sdg-6-country-acceleration-case-studies

Table of contents

Executive summary

Over 20 years, Brazil's investment in wastewater treatment has contributed to significantly improving its water quality. In the 1990s, information campaigns were conducted on the links between sanitation and the environment. In the 2000s and 2010s, large-scale federal investment was put in place, with contributions from states and other sources. As a result, 900 wastewater treatment plants were built in the period between 2013 and 2019, corresponding to a total investment of more than 10 billion USD. Septic tanks also play an important role, especially in rural areas. Efforts are currently in place to sustain public funding and attract private investment for sanitation and wastewater treatment, as two-thirds of municipalities still lack wastewater treatment and 100 million people lack sanitation. Key factors and drivers that enable these achievements include:

- **Massive federal investment** through the Growth Acceleration Program that financed wastewater treatment plants, drinking water supply systems in arid regions and hydropower plants; however, needs remain huge, with significant regional gaps;
- **Different financial tools** with utilities in larger cities having good loan capacity, while small municipalities remain dependent on public investment; however, cross-subsidies between richer and poorer communities remain limited;
- **Water is high on the Brazilian political agenda**, with certain parties campaigning over water, sanitation and the environment for decades; there is commitment at the highest level of government;
- **Sound legal and institutional framework**, with a combination of decentralized management and centralized standards, with basin organizations and coordination platforms enabling participation at the federal, state, basin and local level;
- **No plan, no funding**, meaning that adequate planning is required for a municipality to receive federal funding; however, the quality of plans is variable;
- **Data is used in water planning**, thanks to water and sanitation information systems that feed into local, basin and federal plans, reinforced by regular SDG 6 reporting sanitation information systems that feed into local, basin and federal plans, reinforced by regular SDG 6 reporting;
- **Disaggregated data is available**, particularly by region and to some extent by gender; however, it is necessary to further disaggregate by economic status, ethnicity, as well as sectors;
- **Projects and initiatives reflect the diversity of a large country**, tackling a variety of environmental and societal challenges, like informal housing, and specificities, such as the presence of indigenous and Quilombola people.

Brazil focused on three of the five accelerators of the UN-Water SDG 6 Global Acceleration Framework — financing, governance, and data and information — to achieve the observed progress on SDG 6. In the future, action also on the remaining two — capacity development and innovation — may lead to further acceleration of progress to achieve SDG 6.

Brazil's experience is highly relevant for other large emerging economies wishing to make progress across SDG 6 indicators, particularly wastewater treatment and water quality. Brazilian partners frequently and actively participate in international forums, sharing experience and good practices. In 2018, the hosting of the 8th World Water Forum in Brasilia confirmed the country's role as a global leader on the water agenda. Transboundary cooperation with neighbouring countries at the basin and bilateral level and the action of the Brazilian Cooperation Agency, particularly in the framework of the Community of Portuguese Language Countries, can help replicate some of the experiences of Brazil across the world. Brazil participated at the UN 2023 Water Conference, with the National Water and Sanitation Agency (ANA) organizing a high-level side event. A large number of Brazilian partners participated actively and submitted commitments to the Water Action Agenda.

1. Country context

Brazil is a large emerging economy in Latin America. The population exceeds 214 million inhabitants. Most of the population is urban and concentrated along the coast (Table 1). Still, the rural population is significant. It varies between 13 per cent and about one third of the population, depending on definitions. With a Gross Domestic Product of 16,031 United States dollars (USD) per capita, Brazil is considered an upper-middle income country, despite huge differences across regions and within society. Since the early 2000s, it has been one of the five BRICS, because of its fast economic growth. It is a federal republic, with a presidential system of government. Elections take place regularly. Political mandates typically last four years. The federation consists of 26 states, with their own government and constitution. Water and sanitation mostly fall under the competence of states and municipalities. There are 5,570 municipalities, some of which are very large.

Water management in Brazil is based on multiple water uses and is organized by river basin. The country is divided into 12 hydrographic regions, the largest being the Amazon basin. The provision of water and sanitation services in Brazil mostly fall under the competence of states and municipalities. The National Water and Sanitation Agency (ANA) is the main federal institution fully dedicated to water resources, implementing the country's National Water Resources Policy and defining reference standards for the regulation of basic sanitation services. It acts under the supervision of the Ministry of the Environment and Climate Change. Other institutions involved in the management of water and sanitation include the Ministry of Health, the Ministry of Regional Development, the Brazilian Institute of Geography and Statistics and the Geological Survey of Brazil. A National Water Resources Council was established to promote coordination and participation. It is chaired by the Minister of the Environment and Climate Change.

Brazil holds a large share of the world's freshwater resources, corresponding to more than 40 thousand m^3 of renewable freshwater resources per habitant. Still, resources are not spread equally, with areas experiencing water stress, especially in the north. About three-quarters of resources are located in the Amazon river basin, without counting the considerable green water contained in its vegetation. The Amazon river basin and its forest cover, which is seriously threatened by deforestation, are essential for the hydrologic cycle and climate system at global and regional levels. More than one-third of renewable freshwater is formed in neighbouring countries, making transboundary cooperation essential to manage the resource. Groundwater resources are also considerable, with highly variable distribution and extraction rates.

Environmental flows represent 76 per cent of renewable freshwater resources. Even if water-related inland ecosystems are only 1.2 per cent of the land area, they are important for water quality, drought, erosion and flood protection, as well as biodiversity conservation. Many important wetlands and mangroves are located in deltas and along the coast. Their protection is paramount, especially in densely inhabited coastal areas and in a context where the risk of both drought and flood can be high. In the 1990s, information campaigns were conducted on the links between sanitation and the environment.

Hydropower generates three-quarters of the electricity in the country, including from the binational Itaipu Dam, located at the border and jointly owned with Paraguay. Particularly in

time of drought, the water used for hydropower generation has sometimes been competing with the water withdrawn for municipal uses.

Brazil exports water to the world. Estimated at 67.1 billion m³/year, its gross virtual water exports are comparable to the renewable freshwater resources of entire countries like Kazakhstan and the Republic of Korea[2]. Brazil is a major producer of agricultural and indus-trial products, which it exports around the world, supported by the expansion of trade in the region and globally. Agriculture is responsible for 62 per cent of water withdrawals, even if only 8.7 per cent of agricultural land is irrigated. With 14 per cent of withdrawals, industry is also a significant user, together with navigation and recreation in both natural and artificial water bodies.

2 Calculated in Da Silva et al. (2016); comparison based on data from FAO Aquastat (2020).

Table 1: Overview of key water-related data

Population	214,326,223 (13% rural) *Source: World Bank (2021)*
Gross domestic product	16,031 USD per capita/year (PPP, upper middle income) *Source: World Bank (2021)*
Renewable freshwater resources	40,680 m³/habitant/year (35% external) *Source: FAO AQUASTAT (2020)*
River basins	Amazon (73%), Plate (10%), Tocantins-Araguaia (7%), others (10%) *Source: FAO AQUASTAT Country Profile (2015)*
Groundwater	112,000 Km3 *Source: FAO AQUASTAT Country Profile (2015)*
Water-related ecosystems	4.2% of land area *Source: Calculated from the Freshwater Ecosystem Explorer (2020) data*
Water withdrawal	62% agriculture, 24% municipal, 14% industry *Source: FAO AQUASTAT (2020)*
Irrigate land	8,7% of cultivated area *Source: FAO (2020)*
Hydropower	75% of power generation *Source: IEA (2020)*
Drought risk	Low to medium-high *Source: World Resources Institute (WRI) Aqueduct 3.0*

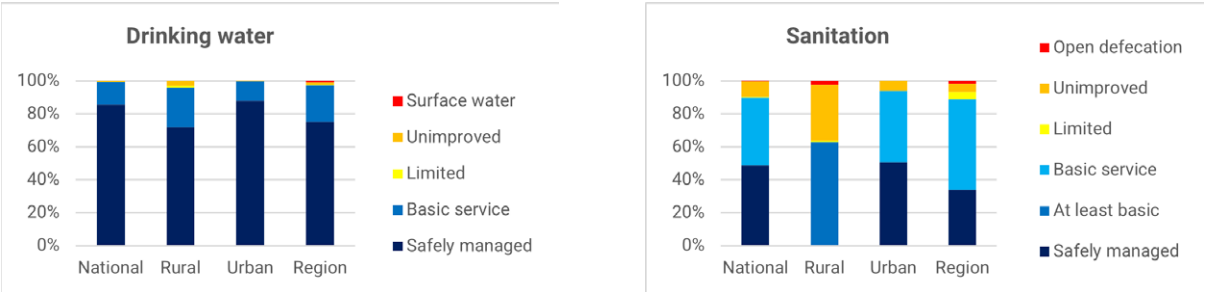

Figure 1: Access to drinking water and sanitation, compared to the regional average for Latin America and the Caribbean (2020).

Sanitation remains a huge challenge, particularly in rural areas. Access to safe dringking water and sanitation are above the regional average for Latin America and the Caribbean. Still, sanitation coverage is lower than drinking water coverage. Morever, rural areas have lower coverage than cities. Also, there are areas, particularly in the noth and north-east of Brazil, as parts of cities, particularly informal housing, and of the population, especially indigenous and Quilombola people, where and for whom coverage is much lower than the national average.[3] This results in higher exposure to waterborne disease and other related problems.

3 Quilombola people are descendants of African slaves who escaped to remote areas of Brazil

2. What was achieved

Brazil built more than 900 wastewater treatment plants in six years

Over recent years, the area of water bodies assessed with good ambient water quality increased (SDG 6.3.2). In 2017, Brazil reported that 63 per cent of the water bodies as-sessed had good ambient water quality; by 2020 this figure had risen to 71 per cent, representing a progression of 8 percentage points (Figure 2)[4]. Even if two data points are not sufficient to establish a trend, this progression is evidenced by several basins making good progress, particularly in the Eastern North-East Atlantic region. The positive developments follow from improvements in wastewater treatment. In some cases, increased water quantities due to more generous rainfall helped offset pollution, also contributing to improved water quality values.

At the same time, wastewater treatment also increased (SDG 6.3.1). Between 2013 and 2019, more than 900 wastewater treatment plants were constructed in Brazil, made possible by massive investment in the sector. This progress captures increases in the capacity for centralized treatment but also the population served by sewage collection networks. Decentralized solutions, such as septic tanks at the user's own place of residence, also explain the observed improvement. However, two-thirds of municipalities still lack wastewater treatment, primarily in rural areas[5].

4 For more detailed information on progress with SDG 6.3., see the snapshot by UN-Water and United Nations Environment Programme (UNEP) (2023). ANA started federal-level monitoring of water quality in 2016.

5 Likewise for SDG 6.3.1, see the relevant snapshot by UN-Water, World Health Organization (WHO) and UN-HABITAT (2023). The official country reporting on SDG 6.3.1 is currently under revision and validation, to ensure clarity on the proportion of total wastewater flows that are safely treated. Earlier reporting indicates a two-digit increase over the last decade in the treatment of wastewater from urban households and the service sector. Recent estimates by WHO on domestic wastewater flows concludes that 43 per cent are safely treated, also considering flows from septic tanks.

SDG indicator 6.3.1 "Proportion of domestic and industrial wastewater flow safely treated" tracks the proportion of domestic and industrial wastewater flow safely treated in compliance with national or local standards for its intended recipient or further use. The domestic component includes both sewage and faecal sludge, treated on-site and off-site, and is monitored together with indicator 6.2.1 on sanitation. The monitoring of the total and industrial components of indicator 6.3.1 relies on existing data from governments.

SDG indicator 6.3.2 "Proportion of bodies of water with good ambient water quality" tracks the proportion of bodies of water with good ambient water quality, as per national and/or subnational water quality standards and based on measurements of five water quality parameters that inform on the most common pressures on water quality at the global level: oxygen (surface water), salinity (surface water and groundwater), nitrogen (surface water and groundwater), phosphorus (surface water) and acidification (surface water and groundwater).

Brazil has experienced a systemic improvement in water management. This is reflected in all reported SDG 6 indicators, especially:

- **Safely managed drinking water (SDG 6.1.1)** coverage increased by 7 percentage points between 2010 and 2020, from 79 per cent to 86 per cent;
- **Safely managed sanitation (SDG 6.2.1a)** coverage increased from 40 per cent in 2010 to 49 per cent in 2020, representing an increase of 9 percentage points;

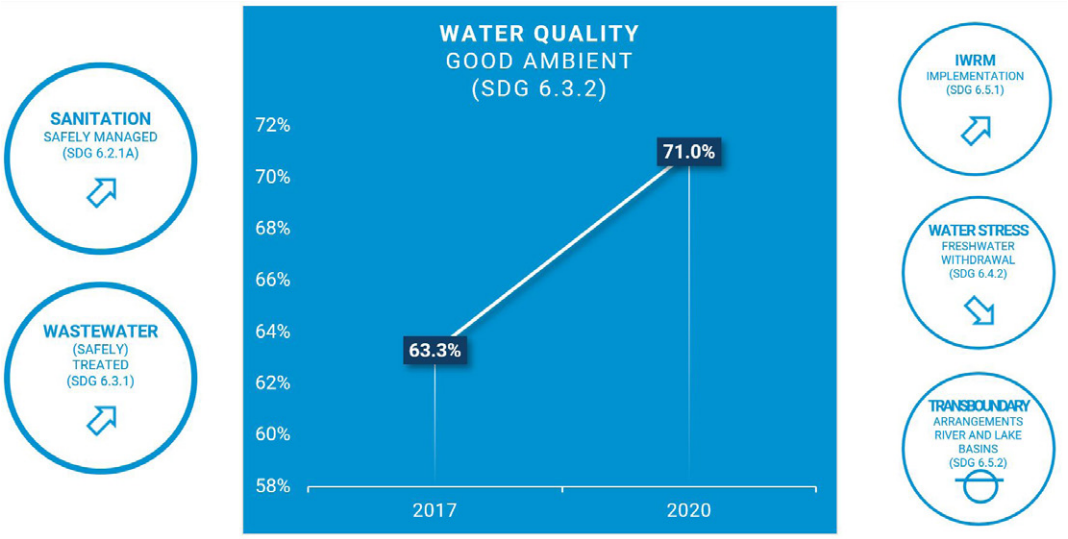

Figure 2: Progress on the proportion of bodies of water with good ambient water quality (SDG 6.3.2) and other SDG 6 indicators impacting this progress in Brazil.

Source: UN-Water SDG 6 Data Portal, with data from the World Health Organization (WHO) and United Nations Children's Fund (UNICEF) (6.2.1, 2010-2020), WHO and UN-Habitat (6.3.1), United Nations Environment Programme (UNEP) (6.3.2, 6.5.1, 2017-2020), FAO (6.4.2, 2010-2020) and United Nations Economic Commission for Europe (UNECE) and United Nations Educational, Scientific and Cultural Organization (UNESCO) (6.5.2, 2017-2020).

- **Water-use efficiency (SDG 6.4.1)** has increased by 11 per cent across sectors be-tween 2010 and 2020, to 21.3 USD/m3, and of 73 per cent in irrigated agriculture, to 0.51 USD/m3;
- **Level of water stress (SDG 6.4.2)**, which is generally low, was further reduced from 3.5 per cent in 2010 to 1.5 per cent in 2019;
- **Integrated water resources management (IWRM) (SDG 6.5.1)**, whose implementa-tion went from 51 per cent in 2017 to 63 per cent in 2020, an increase of 12 per-centage points;
- **Transboundary water cooperation (SDG 6.5.2)**, where 98 per cent of transboundary river and lake basins are covered by an operational arrangement for cooperation.

Still, challenges remain large, with almost 30 million people lacking access to safely managed drinking water and more than 100 million without access to safely managed sanitation. There is no operational arrangement for transboundary aquifers with the notable exception of the 2010 Guarani Aquifer Agreement. Moreover, 21 per cent of water basins experienced rapid changes in their surface water area in 2020, indicative of floods and droughts, which are increasing under climate change, and exacerbated by increasing water demands (SDG 6.6.1). While procedures for participation by users and communities in water and sanitation management are well-defined in laws or policy, the extent of participation has dropped between 2014 and 2021 in multiple sub-sectors and locations (SDG 6.b.1).

Rehabilitation of the Rio das Velhas, Minas Gerais

Going through mining sites, including gold and iron ore, and the industrial city of Belo Horizonte, the Rio das Velhas used to be extremely polluted. Public participation was developed; pollution control was strengthened; a river basin committee was established. The state water utility COPASA constructed several wastewater treatment plants, currently reaching more than 70 per cent of the population. It aims at reaching 90 per cent by 2033. Nowadays, Belo Horizonte and the Rio das Velhas are among the best examples of progress in wastewater treatment and rehabilitation of a water body in Brazil.

More information: https://tratabrasil.org.br/belo-horizonte/

Photo: CBH Rio das Velhas

3. Understanding the achievement

This section describes how and why the progress took place. It examines the direct and indirect factors that enabled the achievement, paying attention to which factors can perhaps be replicated in other countries. Four main drivers have been identified in the case of Brazil: financing, governance, data and information, as well as diversity and dynamism. They are presented in order of relevance.

Finance: massive investment in wastewater treatment

Federal funding enabled local governments to invest in water and sanitation. As a result, 900 wastewater treatment plants were built between 2013 and 2019, worth more than 10 billion USD. Drinking water supply was also improved in arid zones. Hydropower generation capacity was also increased. Still, needs remain huge, with an estimated 150 billion USD required to achieve universal sanitation, particularly in the northern and north-eastern part of the country, as well as rural areas[6].

Funding sources are diversified. In Brazil, water utilities are traditionally public. They are typically organized at the state level. A large majority of costs are covered by tariffs paid by users. This limits the capacity of services to expand coverage, as this can be expensive. External investment is therefore necessary. In the 2010s, most investment came from federal sources, but other sources were also important. Federal funding allowed leveraging about one-fifth of the financial resources from state funding and about one-tenth from international financial institutions and other sources.

A division of labour is emerging. State utilities in large cities have good loan capacity, un-like smaller municipalities, which require subsidies. Some utilities like COPASA in Belo Horizonte and SABESP in Sao Paulo managed to establish cross-subsidies between richer and poorer communities. This is typically the result of political negotiations between water facilities and local authorities. Still, affordability remains a major issue, limiting expansion to the poorer communities.

Official development assistance is limited. While remaining one of the main areas of cooperation for the United Nations Country Team in Brazil, for over a decade the water sector has been receiving limited official development assistance, as it is now the 12th largest economy in the world, even if needs remain considerable.

6 See ABCON SINDCON (2022).

The Growth Acceleration Program

It was a massive investment programme, launched by the Brazilian Government in 2007. Drinking water supply in arid areas, sanitation, wastewater treatment and hydropower were among the focus areas. A new federal investment program is currently under preparation, including a component called “Water for All”.

More information: https://agenciabrasil.ebc.com.br/

Governance: getting laws, institutions and utilities right

Water is high on the political agenda. Parties have been campaigning over water and sanitation for decades. Brazil is committed to achieve universal access by 2033. This is inscribed in the law, which defines universal access to safe drinking water as 99 per cent and universal access to sanitation as 90 per cent.

There is a sound legal and institutional framework. The provision of water supply and sanitation has been decentralized since 1967. Policy, regulation and operations are separated. The country adopted a river basin approach. It has a legal framework protecting investment. The National Water and Sanitation Agency (ANA) was established in 1997, providing guidance and standards for the whole country.

Regulation and planning are required to receive federal subsidies

A National Water Council is also in place and is chaired by the Ministry of the Environment and Climate Change, which provides political guidance to the sector. It is currently being reactivated. Still, the legal framework for coastal waters and local sanitation regulation needs improvement.

Brazil and its neighbours have a strong culture of transboundary cooperation. Upstream and downstream, Brazil enjoys good relations with neighbours. All except one transboundary river and lake basins have operational arrangements. Ensuring good ambient water quality of transboundary watercourses is important to maintain good neighbourly relations. The two largest basins in the country are transboundary and are covered by the Amazon Cooperation Treaty Organization (ACTO) and the Intergovernmental Coordinating Committee (CIC) for the River Plate Basin Countries. Itaipu Binacional and the Paraná-Paraguay Waterway are cornerstones for cooperation with Paraguay. The Organization of American States (OAS) is supportive of cooperation, particularly in the River Plate basin. The 2010 Guarani Aquifer-specific arrangement between Argentina, Brazil, Paraguay and Uruguay that entered into force on 26 November 2020 is the only example of cooperation in the region on shared aquifers.

Data, information and communication: well-organized reporting

Data is accessible through federal water and sanitation information systems. There is a National Water Resources Information System (SNIRH) under ANA and a National Sanitation Information System (SNIS) under the Ministry of Regional Integration and Development. An open data approach is adopted. Interactive dashboards were developed and are available. However, data on the ground is often incomplete.

Amazon Regional Observatory

In the Amazon River basin, huge progress is being made in transboundary monitoring, with real-time exchange of data in the framework of the ACTO. An Amazon Regional Observatory was established in 2021. It monitors both the quantity and quality of transboundary waters.

More information: https://oraotca.org/

In the 2010s, droughts in the southern part of the country were a wake-up call about the need to take water-related data more into consideration for planning and management.

Brazil invested in monitoring stations. There has been a significant increase in water quality monitoring stations between 2016 and 2020, leading to the development of new assessments and tools. An information portal on water quality is under preparation. It is however necessary to further develop in-situ wetland and mangrove monitoring, as well as biomarking. Data on groundwater and on effluents from agriculture and industry need to be further developed.

Disaggregated data is available, especially by region and basin. This data has been essential to identify priorities. Efforts are currently in place to disaggregate data by gender. There is also a need to further develop disaggregation by ethnic background and economic status.

The country produces regular reports on water and sanitation. It is among the global champions in SDG 6 monitoring and reporting. This is possible thanks to the federal information systems[7]. Reports are clear and accessible to the general public.[8]

Diversity and dynamism: a vibrant community of practice

Brazil is a megadiverse country and initiatives reflect this diversity. The country is large, spans across multiple latitudes and different types of ecosystems. It has a rich history, as well as a vibrant multicultural society. Environmental and social challenges can therefore be very different across the country. To tackle them, many initiatives are launched, promoted by all sorts of actors, from the federal government to local councils, from private companies to civil society organizations, academic institutions and religious organizations.

Some populations have been left behind but efforts are being made. This is particularly the case in informal housing (favelas), where access to public water and sanitation facilities is generally low. Few cities have been making efforts to improve this situation. Localized efforts are also in place to help poorer communities. However, given the reliance of the water sector on user fees, affordability is critical. Consequently, some cities are developing lower water tariffs schemes, based on social and vulnerability grounds. Several projects and initiatives are in place to address the specific conditions of indigenous and Quilombola people, as well as LGBTQI+ people.

Environmental challenges are huge and are being tackled by projects. There also are many projects to reduce the risk of drought and flooding, promote forest and mangrove conservation, as well as reduce plastic pollution. The preservation of the Amazon Forest is a major challenge. Recently, drought has been less of an issue, as rainfall has been generous. However, this was often not the case in the 2010s. Drought is expected to remain an issue in the context of climate change.

Projects and initiatives are plenty but need to be consolidated and systematized. They are often short-lived, as they depend on the organizations and sometimes individuals that promote them, as well as on the funding available. They are also inherently unfair, because they often address issues that are also found across the country, while targeting a limited area and community. Federal and state governments play a key role to address these issues.

7 Brazilian indicators for SDG 6 are published here and are disaggregated at the state level: https://odsbrasil.gov.br/objetivo/objetivo?n=6

8 See for instance ANA (2022) about SDG 6 and the yearly reports of the SNIS on sanitation

Community water in Buíque, Pernambuco

In this community, water had to be fetched with animals or on foot. Some people had never taken a shower in 30 years. The Cáritas Diocesana de Pesqueira, a local NGO, initiated a project developed by the community: materials were provided by the partner, while labour was provided by community members. 320 families benefited from the intervention, which used artisanal wells. Solutions are now owned by the community.

Public toilets for the homeless in Brasilia

The No Setor Cultural and Social Institute and the National University of Brasilia built a free public restroom in a public square, aimed mainly at homeless people, but open to all. Water and electricity are funded by public administration while everything else is funded by donations. Some homeless people started to work with the promoters, with one now responsible for managing the bathroom.

More information: https://nosetor.com.br/

Nature-based solutions for the Sistema Cantareira, São Paulo

Managed by SABESP, this source of drinking water supply was greatly affected by drought. After 2012, monitoring and control were reinforced, planning at the catchment level was improved, resulting not only in less erosion and greater resilience to drought, but also less need for water treatment.

Blue Keepers Campaign

The plastic in the ocean mostly comes from the rivers. Starting from a di-agnostic of the waste found on beaches, the project traces back to the sources of plastic pollution, working with companies to reduce it. Hotspots were identified, consisting of 600 entry points to the ocean in Brazil. The project then prioritized hotspots, looking for solutions that can be scaled up. This project is part of the UN Global Compact Brazil.

More information: www.pactoglobal.org.*br*

4. Role of the global accelerators

In the last decade, Brazil invested in three global accelerators. For the country, it would have not been possible to achieve such impressive progress on SDG 6 if it had not employed three of the five accelerators identified in the SDG 6 Global Accelerator Framework, namely financing, governance and data and information. The available evidence shows that ambient water quality was improved most likely thanks to a combination of massive investment in wastewater treatment and in some cases abundant rainfall. This progress was enabled by a conducive policy and institutional framework, as well as a good data and information base, which allowed the better targeting of investments, particularly in recent years.

To achieve SDG 6, further investment in capacity development and innovation may help sustain the observed improvements. It is estimated that a ten-fold increase in investment is required to achieve universal sanitation, compared to the previous decade. The legal and institutional framework will also need to be further strengthened, particularly at the state and local level. Data collection also needs to be further improved. However, without sufficient capacity at the local level, particularly in small cities and rural areas, a significant part of these resources may go wasted, due to lack of proper construction, operation, maintenance, as well as overall management. Brazil is a huge country. Innovation is also essential to ensure that solutions fit societal needs in each specific locality.

The SDG 6 Global Acceleration Framework is a unifying initiative that aims to deliver fast results, at an increased scale, towards the goal of ensuring the availability and sustainable management of water and sanitation for all by 2030. The Framework contributes to the new Water Action Agenda, an outcome of the UN 2023 Water Conference, held in March 2023.

More information: www.unwater.org/our-work/sdg-6-global-acceleration-framework

5. Replicability in other countries

The experience of Brazil is highly relevant for other large emerging economies wishing to make progress across SDG 6 indicators, particularly wastewater treatment and water quality. Key factors and drivers that may be replicated in other countries include:

- **Massive federal investment** through the Growth Acceleration Program that financed wastewater treatment plants, drinking water supply systems in arid regions and hydropower plants; however, needs remain huge, with significant regional gaps;
- **Different financial tools** with utilities in larger cities having good loan capacity, while small municipalities remain dependent on public investment; however, cross-subsidies between richer and poorer communities remain limited;
- **Water is high on the Brazilian political agenda**, with certain parties campaigning over water, sanitation and the environment for decades; there is commitment at the highest level of government;
- **Sound legal and institutional framework**, with a combination of decentralized management and centralized standards, with basin organizations and coordination platforms enabling participation at the federal, state, basin and local level;
- **No plan, no funding**, meaning that adequate planning is required for a municipality to receive federal funding; however, the quality of plans is variable;
- **Data is used in water planning**, thanks to water and sanitation information systems that feed into local, basin and federal plans, reinforced by regular SDG 6 reporting;
- **Disaggregated data is available**, particularly spatial and temporal data, to some extent by gender; however, it is necessary to further disaggregate by economic status, ethnicity, as well as sectors;
- **Projects and initiatives reflect the diversity of a large country**, tackling a variety of environmental and societal challenges, like informal housing, and specificities, such as the presence of indigenous and Quilombola people.

Brazil used three accelerators of the SDG 6 Global Acceleration Framework plus diversity and dynamism to achieve the observed progress on SDG 6.

Opportunities for experience sharing

Brazilian partners frequently and actively participate in regional and global forums, such as events related to the Water Action Decade and at the World Water Week in Stockholm. Participants typically include government, civil society, indigenous people, academia, as well as the private sector.

Transboundary river basin organizations, such as ACTO and CIC for the River Plate Basin Countries, are solid platforms for cooperation with neighbouring countries, on top of bilateral relations and regional institutions, such as OAS and MERCOSUR (the Southern Common Market).

The Brazilian Cooperation Agency can help replicate some of the experiences of Brazil in other countries, particularly in the framework of the Community of Portuguese Language Countries.

In 2018, the 8th World Water Forum took place in Brasilia. This was an opportunity to present Brazil's achievements to the world, confirming the country's role as a global leader on the water agenda.

Participation in the UN 2023 Water Conference

Brazil actively participated in the UN 2023 Water Conference, held in New York in March 2023. The high-level delega-tion was led by Mr. João Paulo Capobianco, Deputy Minister of the Environment and Climate Change. Brazilian partners submitted initiatives to the Water Action Agenda. For instance, the Foundation of the River Basin Agency of the Upper Tietê committed to strengthen the management of water resources in the State of Sao Paulo.

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