

Executive summary

The increased frequency and intensity of water-related events in Brazil due to climate change puts people at risk, reduces the reliability of water infrastructure and undermines national food and energy security. In 2020, 1.1 million people were affected by floods and about 15 million by droughts, with many more affected by knock-on effects, such as higher food prices. In addition, the depletion in hydropower reservoirs that had started in 2013, meant that, in 2021, 213 million people, reliant on hydropower for two-thirds of their electricity, were at increased risk of electricity supply default. Urgent policy responses for water resilience are therefore needed to tackle the consequences of climate uncertainties.

The economic crisis following the COVID-19 pandemic has put additional strain on the capacity of Brazil to implement water resources and sanitation policies and reduce infrastructure gaps. Although, the Brazilian economy began to recover in 2021 (with projected growth of 5.2%), it was hit hard by COVID-19, contracting by 4.4%, above the world average (-3.4%) in 2020. The pandemic also exacerbated longstanding public health challenges. The pandemic also exacerbated longstanding public health challenges. Indeed, as of January 2022, Brazil had 2 899 per 1 million of COVID-19 related deaths ranking second in the Latin American and Caribbean (LAC) region. More than 100 million people in Brazil lack access to safe sanitation, while 21.6 million use inadequate sanitation facilities. Another 2.3 million people use unsafe water sources for human consumption and hygiene, while around 15 million urban dwellers lack access to safe drinking water and in rural areas, around 8 million inhabitants lack access to safely managed water.

Brazil has adopted various funding and regulatory mechanisms to respond to water security challenges. In 2019, the National Water Security Plan (PNSH) set out an investment plan based on 114 actions to be taken by 2035, which should benefit one third of the 74 million people living in areas where water supply is at risk, and who will likely suffer from the consequential loss of industrial and agricultural production if no action is taken. The Water Security Programme (PSH) attached to the PNSH foresees a total of BRL 27.6 billion in capital investment and BRL 1.2 billion per year on average to operate and maintain water infrastructure. This doubles current levels (BLR 12.94 billion per year from 2013 to 2017 and BLR 13.7 billion in 2020, roughly 0.2% of GDP), although investments in the sanitation sector remain lower than in other sectors, such as electricity (0.54% of GDP in 2017). The 2020 Sanitation Law set conditions for legal clarity and transparency to engage the private sector in water-related infrastructure projects with the aim of building and maintaining sanitation services throughout the country. In doing so, the law expands ANA's role from managing water resources to defining standards for water sanitation services.

This report provides a series of policy recommendations and tailored action plan (Annex B) for Brazil to move from strategy to action in three main areas:

First, shift from a risk-based approach to a resilience approach to deal with future uncertainties due to climate change effects:

- Create a culture where water is regarded as a scarce and valuable resource, for instance through techniques such as the use of tariffs on a geographic (scarcity) basis. Issues to be taken into account include: the degree of water scarcity; the level of environmental sensitivity and degree of

ecosystem stress; the proportion of used water that is returned to a location where it could be reused; and effluent quality. It is also key to identify how to safeguard low-income and vulnerable households and other users, such as through cross-subsidies, social tariffs, income support or special rebates or discounts. A culture of water can be also created through the introduction of more water-efficient fixtures, coupled with education and awareness-raising.

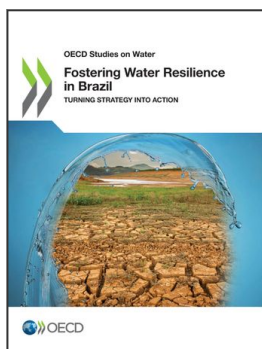
- Use incremental and scalable options for better managing water demand and supply, through fostering rational use and behavioural change, while also adopting a range of supply-side options in a timely manner.
- Leverage green infrastructure as flexible and cost-effective alternatives to hard engineering solutions to the water security challenge when possible, while generating beneficial outcomes for water quality, ecosystems, flood risk management and river flows.

Second, make river basin organisations deliver and use economic instruments to tackle water risks:

- Implement a multi-level governance system that ensures water management at the basin scale in coordination with state agencies and the federal government. This also implies evaluating whether catchment-based institutions are delivering on their mandate to identify possible governance gaps and plan measures to overcome them.
- Engage stakeholders in water resource management to ensure a balanced and representative consultation process that takes diverse ideas and opinions into account, and pay specific attention to the involvement of municipalities and the underserved/disadvantaged communities.
- Allocate water where it is most needed and attribute a value to water through economic instruments such as abstraction charges. These create incentives to reduce water demand and allocate water cost effectively while raising funds to finance infrastructure and integrated water resource management. Pragmatically, the initial priority could be to target users with the largest water withdrawals. To be more cost-effective, charges should be combined with other instruments such as water allocation regimes and minimum ecological river flows (direct regulation) and the promotion of best available technologies (information measures).

Third, accompany infrastructure development with regulatory oversight and monitoring. For this to happen, ANA, which is at the centre of the reform in the new Sanitation Law, would need to:

- Set up effective coordination mechanisms with sub-national authorities to ensure that the application of the new law creates no formal or perceived conflict across levels of government in relation to taking decisions, evaluating impacts and regularly reviewing implementation.
- Strengthen stakeholder engagement mechanisms to enhance the understanding of and compliance with the rules and regulations, and raise awareness of the activities of the regulator to increase public acceptance.
- Build adequate capacity and power for the regulator so that ANA's new mandate is accompanied by a focused effort to ensure adequate funding, skills and competences.



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