

The sound macro policies and a favorable external environment that characterized this period contributed to fast economic and social progress.

While external factors triggered the slowdown, an expansionary policy response led to rapidly rising fiscal disequilibria and, with rising domestic political uncertainty, a loss of confidence and sharp drop in investment. The economic recovery has remained weak with 1 percent growth in 2017, 1.3 percent growth in 2018, and 2.5 percent growth projected in 2019.

With on-going tepid economic growth, poverty is estimated to have leveled off at 20.6 percent.

To address unsustainable debt dynamics the government adopted a constitutional amendment to limit public expenditure growth that entails an accumulated adjustment of 5 percentage points of GDP for the period 2019-2026 and that would stabilize debt at around 89 percent of GDP by 2026, to start declining afterwards.

Brazil will also need to accelerate its productivity growth and infrastructure development. The average per capita income has risen by just 0.7 percent per year since the mid-1990s, one tenth of the rate in China and only one half of the average in OECD countries.

Brazil also posts one of the lowest investment levels in infrastructure (2.1 percent of GDP) when compared to its peers and the quality of this investment is low. Accelerating productivity growth remains a key priority for the country given that the demographic transition is over and there will be limited space for public sector led growth. Reforms could focus on boosting market competition, access to external markets, cheaper inputs and technologies, and simplification of the tax system. Higher levels of investment in infrastructure will also be needed to ensure adequate maintenance of existing infrastructure stock, removing bottlenecks and expanding access to social services. This calls for improving planning capacity at government level, strengthening regulatory environment and leveraging private resources to finance investments.

The semi-arid Northeast region with 28 percent of the Brazilian population has only 4 percent of the water resources, while the South and Southeast regions where 56 percent of the population live and are home to large urban metropolises and robust industrial development, confront continuous water scarcity due to mismanagement, over-exploitation, and pollution.

Water has supported key drivers of economic growth and has been key to reduce poverty and promote shared prosperity through more equitable and widespread provision of water supply and sanitation (WSS) services to a growing population.

with an increase of 1.48 percent, compared to the same period in 2017.

The third quarter of 2018 showed signs of recovery,

The semi-arid Northeast Region could see an average increase of 0.5 to 1 degree Celsius in temperature and a decrease in 20 percent of rainfall by 2040.

The Bank is supporting CAGECE in increasing the efficiency of the sanitation system of Fortaleza through a lending operation¹⁵, which finances household connections in low-income areas and a comprehensive campaign to non-poor users to connect.

Besides providing incentives for responsible water use through a contingency tariff, with additional charges for water consumption above established targets, CAGECE has been working on a design, build and operate contract for a seawater desalination plant to increase water security to the municipalities within the MRF.

CAGECE is working in line with the maximizing finance for development (MFD) approach. In addition to the proposed desalination plant, CAGECE is seeking partnering with the private sector to increase services coverage. The company has also engaged with the Brazilian National Economic and Social Development Bank (BNDES) in the assessment of other possible public-private-partnership (PPP) arrangements. However, as public sector investment capacity is reducing as a result of tighter fiscal situation, CAGECE will need to increasingly rely on its own cash generation capacity to finance needed investments. To this end, CAGECE also needs to increase its credit worthiness, through a series of measures comprising, among others, efficiency gains, cost reduction and increasing revenues from tariffs.

Currently, the Bank is supporting preparedness plan for drought in the MRF and increased capacity of water-related institutions to sustain water sources for agriculture and build resilience in water resource management through the use of tools and monitoring systems¹⁸

The proposed Project will support the implementation of a number of priority investments under the Strategic Action Plan.

As mentioned in the CPF, the Bank will continue to invest in water and sanitation to foster resilience against the increased variability of water supply, while also focusing on pricing policies to ensure that water charges reflect provision costs; and the support from the Bank will be embedded in the broader context of water resource management and protection of scarce water resources, representing key areas of the proposed Project.

This

component aims at increasing water security through improved water resources management, expanded bulk water infrastructure and specific investments to ensure the safety of Project-related dams.

Implementation will follow a design and build approach in line with the MFD bringing the private sector through performance-based contracts.

Activities are in line with the MFD approach, especially with the preparation of a turnaround plan and development of a proposal for reforming tariffs and subsidies.

The technical assistance activities focused on improving water resources management and strengthening the public sector will benefit the whole State population, around 9 million people.

The World Bank is also uniquely positioned to support water resources management and water supply infrastructure investments and reforms due to its strong local presence, specialized staff, and considerable experience implementing water projects in the Northeast region of Brazil.

From a multisectoral perspective, between 2003-2019, the World Bank supported the State on several key areas of social and human development, service delivery, leveraging the greatest possible benefit for government actions and enhancing public sector management capacity in a scenario of high debt services commitments.

It helps manage expectations, facilitates ownership and trust, and supports accountability mechanisms.

Sustainability of water investments supported by the Project relies on the financial and economic sustainability and technical capacity of beneficiary utility to efficiently operate and maintain built infrastructure and to bear at least the O&M costs. The investment cost will be covered by the State and it is not expected to be recovered from the tariff.

The Project will assist CAGECE in improving its financial and technical performance through technical assistance towards improving commercial efficiency, increasing operational efficiency, and being better prepared to plan and manage service delivery and operation of water infrastructure, especially with the use of the Utility Turnaround Framework.

The public good nature of climate change adaptation interventions related to more reliable supply of water, coupled with the large capital outlays required for their construction, justifies public financing of these investments.

This Project will contribute to this aim by revising and supporting the application of new tariff structure, setting the stage for the most direct beneficiaries of infrastructure investments to start paying for these services.

The decision to invest in water losses reduction was driven by the need to improve efficiency of water services provision to the city of Fortaleza, which relies on inter-basin transfers.

Costs and benefits

were expressed in constant prices as of 2018 at an exchange rate of 3.72 Reais per US dollar.

The net present value (NPV) of net benefits reaches US\$59 million with a benefit to cost ratio of 1.42. The Internal Economic Rate of Return (IERR) for the Project reaches 14.5 percent.

The financial analysis of CAGECE shows that in the year 2017, the company obtained net revenues from services rendered of reaching R\$1.16 billion (US\$311.8 million) and in the year 2016, net revenues amounted of R\$1.06 billion (US\$284.9 million). Gross revenues, or revenues before taxes in 2017 were estimated at R\$941.89 million (US\$253.2 million) for water supply services and R\$335.75 million (US\$90.2 million) for sanitation services. In 2016, gross revenues were R\$869.88 million (US\$233.8 million) for water supply services and R\$298.07 million (US\$80.3 million) for sanitation services.

CAGECE is tackling losses based on reviewing accounts receivable and other receivables and contractual assets for an amount equal to the expected credit loss, to ultimately improve its financial position based on increasing operating margins vis-à-vis debt and liabilities.

decision making and
strengthening the State's
economic growth.

To fulfill their mandate, the State annual budget law (LOA) includes a capital increase for the respective companies, which are transferred annually to each entity, through their line Secretariats.

Procurement of works. Procurement of works are expected under the project, including one large Water Treatment and Distribution Plant estimated at US\$132 million and smaller water loss control interventions.

Procurement of goods.

This

component aims at contributing to increase water security through improved water resources management, expanded water infrastructure and specific investments to ensure the safety of Project-related dams.

According to

the law, water charge aims to encourage the rational water use, obtain financial resources for program financing, cover water resources management systems and associated interventions contemplated in the Water Resources State Plan and in the River Basin Plans.

urban supply,

industries, irrigated perimeters), fostering the right assessment of volumes produced and volumes delivered.

It comprises the construction of 4500 km of treated water pipeline network for a total estimated investment of US\$1.4 billion that will benefit 6.3 million people in the next 25 years.

It includes a pipeline system of approximately 670km for supplying water to the urban areas of the nine municipalities and additional extensions to 37 existing districts as listed in Table A2.1.

Although the focus of the project is the urban population, and therefore does not contemplate the construction of pipeline systems for the rural population, the project will consider in its dimensioning the entire population of the municipality, to allow, in the future, the integration with other supply systems, serving as a water source.

Activities are in line with the MFD approach, especially with the preparation of a turnaround plan and development of a proposal for reforming the current tariff and subsidies.

Improving public sector investments and management.

It will also include the implementation of a Public Investment Management System (PIMS) to support decision making throughout the entire public investment cycle (proposal, design, implementation and evaluation), as well as improve the management and monitoring of investments. ⁵⁴

46. Improving accountability in public investment.

Public investments

by the state are necessary for strengthening water security because of the limited financial return on these investments.

Hence, the Project will provide benefits in the form of consumer surplus of 57.6 moving from truckers to piped water services (adjusted with the connection charges).

The net present value (NPV) of net benefits reaches US\$59 million with a benefit to cost ratio of 1.42. Overall NPV of costs (capital, operation and maintenance costs) reaches US\$140 million, and NPV of benefits reaches US\$199 million. The Internal Economic Rate of Return (IERR) for the Project reaches 14.5 percent.

Using a more conservative discount rate of 6 percent, the NPV of the Project reaches US\$193 million. The Project also yields positive NPV of net benefits under a 30 percent benefits reduction (US\$0.65 million) and a 30 percent

Most of this population already has access to water distribution services of some kind but depends heavily on water trucks.

million to US\$62 million.

Thus, the NPV with health benefits increases from US\$59

The average values between low and high prices are applied to the GHG emissions assuming a growth rate of 2.26 percent per year for the lifetime of the Project. Accounting for the GHG emission, the NPV of the Project increases from US\$59 million to US\$60.5 million. By adding both the GHG estimates and health benefits, the NPV of the Projects reaches US\$69.5 million.

Sensitivity of Project Adding Health and GHG benefits

	NPV Total (US\$ million)	ERR
Baseline	59.0	14.5%
Adding health benefits	62.1	14.7%
Adding GHG estimates	60.5	14.6%
Adding GHG + Health Benefits	61.9	14.7%

In addition, COGERH and CAGECE would need to improve coordination to maximize the returns of the Project in terms of water management and resilience against scarcity, water infrastructure delivery, and water and sanitation services.

In the year 2017, CAGECE obtained net revenues from services rendered reaching R\$1.16 billion (US\$311.8 million) and in 2016 in the amount of R\$1.06 billion (US\$284.9 million). Gross revenue, or revenue before taxes in 2017 was R\$941.89 million (US\$253.2 million) for water supply services and R\$335.7 million (US\$ 90.2 million) for sanitation services. In 2016, it was R\$869.88 million (US\$233.8 million) with water supply and R\$298.07 million (US\$80.3 million) with sewage services.

The objective of this review was to achieve the average tariff of R\$3.55 per cubic meter (US\$0.95 per cubic meter).

CAGECE is also showing an increase in net revenues over the last year. Net revenues for the third quarter of 2018 had an increase of R\$65.6 million (US\$17.6 million) compared to the same period in 2017.

The Company is tackling losses by reviewing accounts receivable and other receivables and contractual assets for an amount equal to the expected credit loss, to ultimately improve its financial position based on increasing operating margins vis-a-vis debt and liabilities.

The financial

leverage ratio for 2017 was 13 percent and reduced due to stable financial indicators to 10 percent for 2018. This indicates that the company has margin to inject debt for capital investments without threatening a substantial decline in operating margins.

Simultaneously,
the share of the Brazilian population with access to wastewater services rose from 38.4% to 51.9%, giving access to sewage systems to more 40.6 million people, which means an increase of 64.2% in the number of Brazilians served.

