Combined Project Information Documents / Integrated Safeguards Datasheet (PID/ISDS)
### BASIC INFORMATION

#### A. Basic Project Data

<table>
<thead>
<tr>
<th>Country</th>
<th>Project ID</th>
<th>Project Name</th>
<th>Parent Project ID (if any)</th>
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<tbody>
<tr>
<td>Brazil</td>
<td>P165055</td>
<td>Ceará Water Security and Governance</td>
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<th>Region</th>
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<th>Estimated Board Date</th>
<th>Practice Area (Lead)</th>
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<td>19-Mar-2019</td>
<td>30-Apr-2019</td>
<td>Water</td>
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<tr>
<th>Financing Instrument</th>
<th>Borrower(s)</th>
<th>Implementing Agency</th>
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#### Proposed Development Objective(s)

The proposed Project's Development Objective (PDO) is to strengthen capacity for water resources management in the State, improve reliability of water services in select municipalities, and improve operational efficiency of water services in the city of Fortaleza.

#### Components

- Contingency Emergency Response Component - CERC
- Increasing Water Security
- Improving the Efficiency of Water Services
- Strengthening Public Sector Management

### PROJECT FINANCING DATA (US$, Millions)

#### SUMMARY

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<table>
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<td>Total Project Cost</td>
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<td>Total Financing</td>
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<td>of which IBRD/IDA</td>
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<td>Financing Gap</td>
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#### DETAILS
B. Introduction and Context

Country Context

A. Country Context

1. After a decade of rapid growth and social progress up to 2013, Brazil’s economy first stumbled and then fell into deep recession. A decade of sound macro policies and a favorable external environment contributed to fast economic and social progress between 2001 and 2010. However, the deterioration in both factors led to a steady decline in growth after 2010. Growth declined from an average of 4.5 percent per year in 2006–10 to 2.4 percent in 2011–14, followed by contractions of 3.5 percent in 2015 and 2016. 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.

2. The crisis threatens a decade of development progress. Brazil experienced an unprecedented reduction in poverty and inequality when 24.8 million Brazilians escaped poverty between 2006 and 2015 and the Gini coefficient of household incomes fell from 0.59 in 1999 to 0.51 in 2015. Most of this reduction was explained by the creation of formal sector jobs, with a sharp decline in the unemployment rate to a low of 6.8 percent in 2014. However, the economic crisis precipitated a rapid rise in unemployment with job losses of 0.6 million in 2015 and 2.0 million in 2016. As a result, poverty increased in 2015 and 2016. With on-going tepid economic growth, poverty is estimated to have leveled off at 20.6 percent in 2017.

3. Restoring fiscal sustainability is the most urgent economic challenge for Brazil. 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. Implementing this fiscal adjustment requires alleviating the rigidities affecting public spending and revenue earmarking mechanisms, which turn mandatory over 90 percent of the federal government’s primary spending. It will also require a comprehensive reform of social security to halt the projected increase in the deficit. Other measures such as controlling the civil service wage bill and rationalizing programs to support the private sector may likewise be needed. Furthermore, this large fiscal disequilibrium also affects subnational governments, with limited capacity to cope with growing wage bill and pension payments unless reforms are adopted.

4. **Brazil will also need to accelerate its productivity growth and infrastructure development.** The income of an average Brazilian 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. This is mainly explained by the lack of total factor productivity (TFP) growth between 1996 and 2015. The productivity problem in Brazil is affected by the absence of a conducive business environment, distortions created by market fragmentation and multiple business support programs, a relatively closed market to external trade and competition. 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 improved planning capacity at government level, and to the regulatory environment and leveraging private resources to finance investments.

5. **Located in the Northeast Region, the State of Ceará, the fourth largest state in the region, faces significant economic challenges.** Ceará spans an area of 148,886 km², equivalent to approximately 2 percent of Brazil’s geographic expanse. While its 9 million inhabitants represent nearly 4.5 percent of the Brazilian population, its economy accounted only for 2.10 percent of Brazil’s GDP in 2016. Following three consecutive raises in the GDP between 2012 and 2014¹, the State suffered the impacts of the global fiscal crisis in 2014 that led to 3.85 and 5.33 percent contractions in 2015 and 2016 respectively. During the third quarter of 2018, the State’s economy showed signs of recovery, with an increase of 1.48 percent, compared to the same period in 2017. The agriculture and livestock sector represented 12.48 percent of this expansion, followed by services².

6. **Despite some economic progress, the State currently ranks third in the Northeast region and seventh in the country in terms of inequality levels and is highly exposed to extreme weather events (droughts and floods) that constrain social and economic development.** This situation is expected to exacerbate with increasing impacts of climate change. It is home to the largest urban agglomeration in the Northeast (and the sixth largest in the country) - the Metropolitan Region of Fortaleza (MRF) with 19 municipalities³. Its 4 million inhabitants represent almost half of the State’s population (44 percent)⁴ and deliver close to 50 percent of Ceará’s GDP⁵. Overall, the State urbanization rate is 75 percent while close to 17 percent of its population is under the poverty line, 10 percent considered under extreme poverty conditions⁶. Study key findings show that for the State of Ceará in the period between droughts (1998-2012), while poverty declined significantly (following implementation of an anti-poverty program by the government that included financial and human capital investments) an expected reduction in vulnerability did not occur, in part because

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¹ Ceará GDP growth rates in the period were 1.63%, 5.06% and 4.18%, while Brazil GDP growth was 1.92%, 3.00%, 0.50%.
² IPECE
³ IBGE (Instituto Brasileiro de Geografia e Estatística) Brazilian Geography and Statistic Institute projection for 2017.
⁴ IBGE (Instituto Brasileiro de Geografia e Estatística) Brazilian Geography and Statistic Institute projection for 2017.
⁵ IPECE
⁶ Population with monthly house income per capita up to R$ 70,00. IBGE, 2010.
households were not investing in risk management strategies.\textsuperscript{7}

Sectoral and Institutional Context

7. Brazil’s overall abundance in water resources belies highly uneven spatial distributions, particularly in relation to population densities and industrial development. Whereas 73 percent of the country’s freshwater is located in the Amazon basin – which houses less than 5 percent of the population, the semi-arid Northeast region – which accounts for 28 percent of the population -- provides a mere 4 percent of water resources, while the South and Southeast regions – which account for 56 percent of the population and are home to large urban metropolises and robust industrial development, confront continuous water scarcity due to mismanagement, over-exploitation, and pollution. This uneven distribution poses challenges to efficient water resources management. Brazil has made progress in water resource management since the adoption of the National Water Law in 1997 and the creation of the National Water Agency (\textit{Agência Nacional de Águas}, ANA) in 2000, which set the foundations for multi-level and integrated governance of water resources in the country. However, water management has not fully reaped the expected economic, social and environmental benefits.

8. Water 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, and by supporting key drivers of economic growth. However, increasing water stress poses a challenge to Brazil’s sustainable growth. Indeed, the sectors that contribute the most to Brazil’s economy are also the most dependent on water, including inter alia: (i) irrigated agriculture, which accounts for 46 percent of bulk water withdrawals; (ii) the electricity sector, 65 percent of which is generated by hydropower plants; and (iii) industry, which represents 9.5 percent of water withdrawals\textsuperscript{8}. This, together with wide-spread urbanization, pose ever increasing and competing demands on already scarce resources. Urban water supply accounts for 23 percent of total withdrawals. Increased pollution over the last decades and ever more prominent climatic variability have accentuated the stress on water resources and the need for a more integrated approach to water resources management to meet Brazil’s sustainable livelihoods and economic development objectives.

9. The lack of access to reliable water and wastewater services are strongly related with poverty and contributes to gender inequality. Leading to withdrawals from routine activities (including labor, education, domestic and recreational hours), the recurrence of waterborne and gastrointestinal diseases due to the lack of access to water supply services on a daily basis, sewage networks and toilets for exclusive household use has direct adverse impact on school achievements, labor market performance and incomes. There is robust evidence in Brazil showing that these withdrawals are more frequent among the poor and among the least educated people. In addition, they are more frequent among women than men and particularly more frequent among poor women, contributing to the large gender gaps that prevail in the country.\textsuperscript{9} In 2016, women accounted for 53 percent of the people who had to withdraw from routine activities due to diarrhea or vomiting. On average, each woman spent 3.48 days per year away from their routine activities due to diarrhea and vomiting, whereas men lost, on average, only 3.15 days per year (10.5 percentage points’ gap). Mortality rates due to gastrointestinal diseases were also higher among women than men: 2.5/100,000 women \textit{vis-à-vis}

\textsuperscript{8} ANA, 2017 – Brazil Water Resources Status
\textsuperscript{9} Nationwide and statewide data show that gender gaps remain large, leading to a gap in average earnings from jobs equal to 23. In 2016, 83% of the women and only 65% of men carried domestic works, whereas 28% of women and just 19% of men were responsible for health care activities in their households. While 48% of the women at productive age are out of the labor force, just 28% of men faced this situation. Women accounted for just 48% of the total working force, 43% of the people employed, and 28% of them have only part-time jobs (BRK Ambiental, 2018, \textit{O Saneamento e a Vida da Mulher Brasileira}. Available at \url{http://www.tratabrasil.org.br/images/estudos/itb/pesquisa-mulher/relatorio.pdf}).
2.3/100,000 men (8.7 percentage points’ gap).10

10. The need to efficiently manage competing water and development demands is particularly relevant in the water scarce Northeast, including the State of Ceará. Roughly 93 percent of the State territory is semi-arid, with elevated temperatures, spatial and temporal variability of rains, and high-water scarcity. Rivers are intermittent, most of the territory is underlaid by crystalline rock formation with shallow soil cover, thus minimizing the availability of groundwater storage and natural retention of surface flows. The State is particularly susceptible to climatic adversities related to water scarcity, which are exacerbated by prolonged periods of climate change-induced drought, undermining its economic and social development.

11. Due to global climate change, the Northeast Region is susceptible to adverse weather conditions that stand to worsen Ceará’s water stress as well as economic and social inequalities. Such conditions include changes in rainfall patterns, heat waves, and increased occurrences of droughts and floods (in the coastal region). Climate change projections place the Northeast as one of the world’s regions likely to face increases in the intensity and duration of droughts. The semi-arid northeast region could, likewise, confront an average 0.5ºC to 1ºC increase in air temperature and up to a 20 percent decrease in rainfall levels by 2040. The semi-arid region is subject to periodic droughts as is amply evidenced by Ceará’s six consecutive years of drought (2012 to 2017) which bore serious losses both in terms of access to water and to the State’s economy. According to the Ceará Meteorology and Water Resources Foundation (FUNCEME), in 2017, the State registered rainfall patterns a little below historical average, with a percentage deviation of -12.8 in relation to climatological standards (1981-2010), as shown in figure 1 below. The total rainfall registered was 698.2 mm, the average being between 800.2 mm. This decrease in availability has impacted water availability for human consumption (implementation of a contingency plan in MRF led to a 20 percent reduction since 2016) and productive use (12 percent decrease in rice production and 51 percent decrease in corn), the impacts of which are particularly felt by the poor. In this context, it is fundamental to develop actions to guarantee water supply in Ceará, thereby raising the State’s resilience to droughts and promoting prospects for sustainable development going forward.

Figure 1. Average Rainy Season Rainfall (mm) - Ceará: 1990 – 2016

Source: FUNCEME (2017). Note: The red line represents the historical mean of rainfall

12. Decreasing rainfall levels throughout the past years have led to a sharp decrease in State reservoir water levels, aggravating the water scarcity challenge and deteriorating water quality in some key reservoirs. Following the six

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consecutive years of drought and the 2018 rainy season\textsuperscript{11}, the reservoir levels of the 155 dams monitored by the Water Resources Management Company (Companhia de Gestão dos Recursos Hídricos – COGERH), have reached a mere 11 percent of their total capacity (estimated at 18.6 billion m$^3$) by December 2018. Out of the total, 99 reservoirs were below 30 percent and the three main reservoirs in the State were below 10 percent. The significant shortfall in reservoir levels prompted the implementation by COGERH of stringent water allocation rules, which in 2017 resulted in the provision of roughly 75 percent of stored water to priority human consumption, relegating 16 percent of water allocations to agriculture and 7 percent to industry. Figure 2 shows the total inflows to the reservoirs monitored by COGERH from 1986 to 2018. Lower reservoir levels have, likewise, deteriorated water quality in some of the key supply sources, jeopardizing the provision of safe and reliable water supply to the served population in certain areas of the State.

13. For the last year, the World Bank has been providing technical assistance\textsuperscript{12} to the State of Ceará, supporting 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 systems. This technical support specifically comprises the implementation of an agriculture drought monitoring and prediction system for the Northeast region and the State of Ceará by coupling local information with Earth Observations. This work builds upon previous activities facilitated by the Bank supporting the development of a Drought Monitor and Drought Preparedness Plans in the Northeast region (see website: monitordesecas.ana.gov.br). Additionally, in 2016 and 2017, a World Bank’s Water Experts Team provided technical assistance to COGERH\textsuperscript{13} with the objective of proposing a methodology and recommendations for improving water quality in the State’s reservoirs. The proposed Project will further support FUNCEME and COGERH with the strengthening of the State’s climate forecasting system and the improvement of water quality and quantity monitoring.

![Figure 2. Inflows to the reservoirs monitored by COGERH](image)


14. In addition to the water scarcity issue, Ceará faces low access levels to water supply and efficiency challenges in the provision of water services. In 2017\textsuperscript{14}, only 79.8 percent of Ceará’s households had access to piped water, below the coverage rate in the Northeast Region of 80.3 percent, and the national average of 85.7 percent. The rate of urban household connections was 81 percent in 2016, compared to the Northeast rate of 89.28 percent, lagging behind Brazil’s

\textsuperscript{11}February to May 2018.

\textsuperscript{12}“Piloting of an Agriculture Drought Monitoring and Prediction System in Brazil” (P166896) supported by the Japan-World Bank Program for Mainstreaming Disaster Risk Management in Developing Countries.

\textsuperscript{13}Improving Water Quality Management in the Reservoirs of the Northeast Region of Brazil – linked to the Federal Integrated Water Sector Project (P112073)

\textsuperscript{14}IBGE (\textit{Instituto Brasileiro de Geografia e Estatística}) Brazilian Geography and Statistic Institute projection for 2017 (PNAD-C).
92.96 percent urban access rate\textsuperscript{15}. Water supply service in the State is characterized by intermittent water provision and high levels of water losses. Total water losses amount to close to 43 percent of the total volume supplied in the State (21 percent are real losses)\textsuperscript{16}, higher than the Northeast average of 46 percent and the country’s average of 38 percent\textsuperscript{17}. The inefficient provision of water supply service contributes to the growing pressure on already limited water resources in the State. Studies indicate a close relationship between the lack of adequate water supply and important health indicators, such as infant mortality. Therefore, the absence of reliable water supply can be one of the main factors of proliferation of diseases, through the consumption of untreated (bulk) water.

15. **Ceará is one of the pioneer states in the implementation of a water resources management (WRM) model.** Even before the approval of the 1997 National Water Resources Policy Law, the State already had a State Water Resources Policy\textsuperscript{18} in place, which effectively established an Integrated Water Resources Management System (Sistema Estadual de Gerenciamento de Recursos Hídricos – SIGERH) and a set of water resources management instruments, including water resources plans. The State Water Resources Plan (Plano Estadual de Recursos Hídricos – PLANERH), prepared in 1992 and revised in 2005, included the diagnosis of water availability and demands, guidelines and strategic programs underlying water resources management in the State. Under this framework, six River Basin Water Resources Plans have been prepared. The Water Pact Initiative led by the Legislative Assembly between 2007 and 2009, resulted in a State Water Resources Strategic Plan that incorporates the multisectoral aspect of water resources management, identifies alternatives and solutions for water security, and establishes institutional agreements for the implementation of proposed actions.

16. **The State’s institutional framework for water resources management has been established since 1987.** It started with the creation of the Secretariat of Water Resources (Secretaria de Recursos Hídricos - SRH), the Superintendence of Water Works (Superintendência de Obras Hídricas - SOHIDRA), and the Ceará Meteorology and Water Resources Foundation (Fundação Cearense de Meteorologia e Recursos Hídricos - FUNCEME), followed by the creation of COGERH in 1993, which is responsible for managing water resources and supplying bulk water. Water supply and sanitation services in the State mainly rely on the Ceará Water and Sanitation Utility (Companhia de Água e Esgoto do Ceará – CAGECE), which treats and supplies water and sanitation services to 152 out of State’s 184 municipalities.

17. **CAGECE is one of the largest WSS utilities in the country.** It supplies water to 5.7 million inhabitants (2.65 million inhabitants only in the city of Fortaleza), reaching 98.26 percent coverage in State. Nevertheless, service quality and efficiency remain a challenge. The utility faces prominent levels of water losses, which by 2018, represented 53.13 percent (21.53 percent are real losses) of the total volume supplied to Fortaleza. Sanitation coverage reaches only 40.95 percent of the state, 62 percent in the city of Fortaleza. Despite the challenges, CAGECE has been able to deal with the adverse water crisis scenario, which the state has been facing over the past years. Besides providing incentives for responsible water use through a Contingency Tariff, which consists of charging an additional amount for water volume above the consumption target established by client; CAGECE has been working on a design, build and operation PPP approach for a seawater desalination plan to supply water to the Metropolitan Region of Fortaleza to increase water security to the municipalities supplied by the system. Initially, the new system will generate 1m\(^3\)/s of desalinated water, with an increase of 12 percent in water supply. The Project will support CAGECE to improve its efficiency in the provision of services to the city of Fortaleza with investments on control and reduction of water losses.

18. **The legal and institutional framework for rural water supply and sanitation has been recently defined.** The 2016 State WSS Policy\textsuperscript{19}, which features rural challenges predominantly, establishes that the Secretary of Cities will be

\textsuperscript{15} SNIS (Sistema Nacional de Informações sobre Saneamento) National Sanitation Information System, 2016.
\textsuperscript{16} CAGECE.
\textsuperscript{17} SNIS (Sistema Nacional de Informações sobre Saneamento) National Sanitation Information System, 2016.
\textsuperscript{18} Law N. 11.996 of 1992, revised in 2010
\textsuperscript{19} Law No. 162 of June 2016
responsible for coordinating WSS services in the State; and for rural WSS (RWSS), will work in close collaboration with the Secretariat of Agrarian Development (Secretaria de Desenvolvimento Agrário – SDA), currently responsible for RWSS infrastructure, and SRH. The World Bank has been supporting the State in the implementation of RWSS activities for more than fifteen years through several Investment Project Financing (IPF) operations, including the São José III Project\(^\text{20}\) at implementation stage, and its Phase II\(^\text{21}\), currently under preparation.

19. **For over two decades, the World Bank has supported the establishment and strengthening of the State WRM model as well as the expansion of bulk water resources infrastructure.** World Bank support began in 1993, with the financing of the Urban Development and Water Resources Management Project\(^\text{22}\). This US$140 million operation included a specific WRM component to support the implementation of the State’s 1992 Water Law and the construction of 16 strategic medium-size reservoirs to increase water storage for multiple uses. The US$9.6 million Ceará WRM Pilot\(^\text{23}\) and the US$136 million PROGERIRH Project, with an Additional Financing of US$103 million\(^\text{24}\) followed in 1998, 2000 and 2008, respectively, to assist the State of Ceará in consolidating its institutional framework, and implementing modern WRM policies, planning and management tools as well as water storage and distribution infrastructure to overcome the impact of water scarcity and recurrent droughts. WRM and WSS programs have also been supported through a series of multisectoral SWAPs and PforR projects financed by the World Bank over the past years.

20. **Despite the successful implementation of Ceará’s water resources model, the current water crisis and vulnerability context coupled with projections of increased climate variability call for a more proactive approach to water management to ensure water security and improve resilience in the State.** Considering the State challenges and planning processes carried out over the last thirty years, the Government of Ceará (GoC), with support from the recently closed World Bank-financed PforR project\(^\text{25}\), has prepared a Strategic Action Plan (*Plano de Ações Estratégicas*), that establishes a set of water sector priorities, including expanding water infrastructure and improving water management and governance, which are considered crucial to promoting water security and improving resilience in the State.

21. **The proposed Project will support one of the main infrastructure projects embodied in the GOC’s Strategic Action Plan through the construction of the Banabuiú – Serão Central Pipeline System —thereby increasing the water infrastructure’s resilience to droughts.** The *Malha D’água* project aims at increasing water supply reliability in quantity and quality and water storage management efficiency by placing water intakes inside the reservoirs, thereby, reducing the flows released from these reservoirs for river perenization and consequent losses to infiltration and other uses. It entails the construction of a network of water mains that will allow the transfer of treated near the source and pressurized water from the sources at lower collapse risks (medium and large reservoirs and water transfer canals) to the distribution reservoirs in the urban centers with minimal or no water physical losses in pipes. It comprises the construction of 4,500 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.

22. **The drought period, from 2012 to 2016, revealed serious impacts resulting from water scarcity, which led the main reservoirs of the State to depletion, and exposed the vulnerability of some existing systems abstracting water from rivers perenized by the reservoirs.** Such abstractions require the release of water flows from the reservoirs highly above the demands of the urban centers to be served, considering the losses in transit and the consumption of the other

\(^{20}\) Ceará Rural Sustainable Development and Competitiveness Project – São José III (P121167 – US$100M).

\(^{21}\) Ceará Rural Sustainable Development and Competitiveness Project (P167455)


\(^{25}\) Strengthening Service Delivery for Growth, Poverty Reduction and Environmental Sustainability in the State of Ceará PforR – Loan 8302-BR of US$350M.
uses throughout the perennial, such as irrigation. This type of operation, in times of prolonged droughts, must be very restricted and even suspended, which compromises the operation of these existing pipelines and generates serious conflicts of use reducing the supply for other uses, once the priority is human supply. The Malha D’água project intends to change the current logic by significantly reducing the risk of shortages due to a prolonged drought. It is a medium to long-term action strategy that goes well beyond the actions proposed in this Project.

23. **The GoC also recognizes that public sector governance is critical for sustainable development.** Over the past years the GoC, with World Bank support, has launched several initiatives aimed at improving its public resources management and decision-making capacities as well as increasing its accountability. To these ends, the GOC has, inter alia, introduced results-based management initiatives, adopted measures to improve its human resources; revamped its transparency portal to foster citizen engagement and invested resources in Ceará’s Economic Research and Strategy Institute (IPECE) with the aim of developing cutting-edge research to inform government planning and policy-making. Although these initiatives have contributed significantly to improving public sector governance, Ceará must now invest additional resources in sectoral governance initiatives to embed the use of evidence to improve service delivery and manage its resources. Given the strategic relevance of the water sector in the State, governance initiatives that support better planning, decision-making, and management in this sector can have a long-lasting impact on Ceará’s development.

24. **The GoC has requested World Bank assistance to address the challenges prevailing in the water and public governance sectors.** The activities to be supported by the proposed Project have been selected based on their relevance to the State's objectives and sectoral planning and the World Bank’s experience in other Brazilian states and other countries. The proposed activities will contribute to: (i) improving water resources sector governance to strengthen water management, regulation, and pricing; (ii) strengthening climate forecasting capacities; (iii) improving the efficiency of water services provision and use; and (iv) expanding water infrastructure. The operation also represents an evolution of World Bank support to public sector reform in Ceará as it will have a particular focus on water sector governance with the objective of embedding the use of evidence in planning and decision-making, improving service delivery and better management of its water resources, as well as increasing accountability. In addition to responding to the State’s priorities, this Project will contribute to enhance the well-being of the poorest segment of the population, increase the state residents’ resilience to droughts and floods, and boost future sustainable growth and shared prosperity.

**C. Proposed Development Objective(s)**

Development Objective(s) (From PAD)

25. The proposed Project’s Development Objective (PDO) is to strengthen capacity for water resources management in the State, improve reliability of water services in select municipalities, and improve efficiency of water services in the city of Fortaleza.

Key Results

(a) Percentage of strategic water users regularized.
(b) People benefiting from more reliable water services (Number).
(c) Women benefiting from more reliable water services (Number).
(d) Continuity of water systems supplied with water from Banabuiú – Sertão Central Pipeline System\(^{26}\) (Percentage).
(e) Reduction in Non-Revenue Water in the city of Fortaleza (liters/connections/day).

\(^{26}\) Following National water quality standards.
D. Project Description

26. The proposed Project is a US$174.85 million IPF operation financed by a US$139.88 million IBRD loan and US$34.97 million in State counterpart funds. The Project will comprise three main components and a Contingent Emergency Response Component (CERC) to support the State of Ceará should emergencies associated with natural disasters negatively impact the State’s water systems during implementation. Project activities comprise a set of interventions in three main areas: (i) water resources management, (ii) water service provision, and (iii) governance. Each component will include activities related to one of these areas and will be implemented by a different institution based on their competency.

27. **Component 1. Increasing Water Security (US$149.93 million; US$39.97 counterpart funds).** 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. Project activities under this Component have been divided into two sub-components.

(a) **Sub-component 1.1: Integrated Water Resources Management (US$10.82 million).** This sub-component will contribute to strengthen the State’s integrated water resources management and increase its resilience to droughts by strengthening the technical capacity of key state agencies involved in WRM. The proposed activities complement ongoing State’s efforts on water resources management in a context of continued need for improvement, especially considering the challenges of increasing and prolonged water scarcity periods exacerbated by climate change. Although Ceará has one of the most advanced water resources management systems in the country, continued support over time for improving water resources management is needed for consolidation of results.

Specifically, the sub-component will support (i) COGERH in increasing knowledge on bulk water usage by universalizing water use macro metering and regularizing water users; and (ii) FUNCEME in the strengthening of the climate forecasting system and the improvement of water quality and quantity monitoring. The proposed activities not only focus on water supply but also on water demand. Information obtained from medium- and long-term forecasts/scenarios together with improved knowledge on water demand in the river basins will serve as inputs for the negotiated water allocation process followed by the State. The climate forecasts produced by FUNCEME are relevant in decision-making processes concerning drought response, preparedness and mitigation actions at both State and Regional level. Information generated will be incorporated by COGERH with FUNCEME’s support for presentation to the users during the water allocation meetings, allowing for more adequate water distribution and more efficient use restriction policies when needed.

The sub-component will also include capacity building actions to SRH, COGERH and FUNCEME. Integrated Water Resources Management increases the available supply of clean water and contributes to its efficient use and distribution. It, therefore, directly addresses the problem of increasing water shortages. Improved WRM—based on hydrological models and forecasts of key climate variables—will indirectly contribute to a higher supply of water and a more efficient use and allocation of water.

(b) **Sub-component 1.2: Water Infrastructure (US$139.11 million).** This sub-component will support the construction of the Banabuiú – Sertão Central Pipeline System to supply treated water from the Banabuiú
reservoir\(^{27}\) to municipalities, districts and selected rural areas in the Banabuiú and middle Jaguaribe river basin via the construction of a 670km pipeline network and a treatment station near the source. It will benefit an estimated 120,000 people. The prioritization of the Banabuiú – Sertão Central Pipeline System, conceived in the ambit of SRH’s Malha D’água project, to be supported under the Project was based on a set of hydrological criteria including water source availability, criticality of current water supply and availability of immediate alternative water sources – factors that are all severely affected by climate change.

Based on the concept study carried out under the PforR project and complementary studies carried out by SRH during Project preparation, the preliminary environmental license has been issued with the requirements for the preparation of an Environmental Viability Analysis (EVA). The study of alternatives, environmental and social analysis (including the EVA), detailed designs and the works will be procured in the first year of Project implementation under a design and build format. The water delivered by the pipeline at the entrance of municipalities and districts will be stored in dedicated reservoirs and distributed by the existing systems. The proposed Banabuiú – Sertão Central Pipeline System will directly increase the supply of water available to the State, making beneficiary population more resilient to drought; as well as enhance the State’s water security by guaranteeing water supply in adequate quantity and quality to selected State areas.

The Sub-component will also support dam-safety related institutional strengthening activities for SRH and COGERH, as well as specific measures related to the safety of the two dams directly linked to Project interventions, Gavião and Banabuiú dams, following the results of the Dam Safety Assessment carried out during Project preparation. These measures will include the mobilization of a dam safety independent panel of experts; the preparation of a Dam Safety Periodic Review of Gavião; improvement of the Gavião dam safety and instrumentation plans, and installation of additional monitoring instruments for Gavião. In addition, for Banabuiú, it will include immediate actions recommended by the independent expert and provide technical support for DNOCS for safety and operational monitoring.

28. **Component 2. Improving the Efficiency of Water Services (US$ 15.95 million).** This component will seek to improve both water supply service efficiency in the city of Fortaleza, and CAGECE’s operational efficiency. The component includes two main sets of activities:

(a) **Water Losses Control and Reduction.** This activity will support CAGECE in improving water supply efficiency by financing water losses control and reduction activities in the city of Fortaleza. The proposed activities will contribute to CAGECE’s Water Losses Reduction Program with focus on controlling pressure, sectorization and creation of 25 District Metering Areas (DMAs) in the four biggest sectors of the city of Fortaleza: Aldeoda, Cocorote, Expedicionários and Mucuripe. The activity implementation will follow a design and build approach while focusing on MFD by bringing private sector through performance-based contracts. The Water Losses Reduction Program, CAGECE presents structuring actions for progressive reduction of water losses in distribution also in alignment with other strategic projects such as the PPP for design, build an operation of a seawater desalination plant to increase water security in specific sectors of the city of Fortaleza, which are being prioritized for the creation of DMAs.

The creation of DMAs will allow CAGECE to have detailed knowledge of losses related problems in the system, provide better equalization of pressures, as well as contribute to manage the losses in smaller areas, bringing better returns both in relation to actual losses and apparent losses. The lower NRW levels expected will reduce

\(^{27}\) Banabuiú reservoir as well as the other reservoirs included as water sources under the Malha D’Água project, is a secure water source, being a multiyear reservoir, which has been resilient to the recent six-year drought period.
water shortages and increase water availability to other users of the system. It may also require less water withdrawals from existing sources, thereby contributing to flexibility in the face of climate shocks and increase the residents’ resilience to droughts. In addition, with the reduction of losses and the adequacy of the pressures in the network, there is also a forecast of lower energy demand.

(b) Technical assistance to support CAGECE in improving its governance capacity and operational efficiency, through the preparation of (i) CAGECE’s organization restructuring plan focusing on improving corporate governance through a broader approach, using the turnaround framework for a performance improvement plan, from short to long term; (ii) economic and social studies to revise CAGECE’S tariff structure with the objective of providing CAGECE with a new tariff structure by level of water consumption able to cover its operational and investment costs; and (iii) guidelines for improved infrastructure asset management processes. The operational efficiency improvement will also benefit from the strengthening of the regulatory functions of ARCE proposed under component 3.

29. **Component 3. Strengthening Public Sector Management (US$8.62 million).** This component will contribute to improving public sector governance, particularly in the water sector, by supporting a set of activities aimed at embedding the use of evidence in planning and decision-making, improving service delivery and management of the State water resources, as well as increasing accountability. Component activities have been divided into three groups based on their primary objective.

(a) **Improving the use of evidence for better planning and decision-making.** Activities within this group include support to establish, a dedicated group at the IPECE that would provide technical support in designing policies in the water and agribusiness sectors through on-demand research. The Bank will also support capacity building activities, including for data analysis, particularly in those institutions that directly work in or with the water sector. This activity is aligned with the State’s recent decree that establishes a statewide data policy encouraging the use of data for decision-making, and the overall deficit of personnel capable of processing and analyzing data.

(b) **Improving public sector investments and management.** Activities to be supported under this subcomponent include the optimization, strengthening and modernization of ARCE’S management and regulatory activities to help improve the control and inspection processes of the Agency and its overall management. It will also finance a program in ADECE to assess the efficiency of water usage in the agricultural sector in five basins of Ceará, helping prioritize agricultural activities, as well as the support of the State Water System Plan, including urban and rural water supply. The State lacks a Public Investment Management System (PMIS), which would help make better informed decisions throughout the entire public investment cycle (proposal, design, implementation and evaluation), as well as improve the management and monitoring of investments.

(c) **Improving accountability in public investment.** This subcomponent will support two main activities: the development and implementation of a contract management system in the CGE that will help it assess performance and compliance across the State; and, second, the development of a public works management system that will enhance the TCE’s ability to oversee and monitor water infrastructure works by allowing for

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28 Decree 32.555 of March 2018
29 ARCE (Agência Reguladora de Serviços Públicos Delegados do Estado do Ceará) – Ceará State Delegated Public Services Regulatory Agency.
30 ADECE (Agência de Desenvolvimento do Estado do Ceará) – Ceará Development Agency
31 The World Bank’s PforR financed the development of the methodology behind the PMIS and successfully piloted it in the water sector (Cinturão das Águas do Ceará).
32 CGE (Controladoria Geral do Estado) – State General Controller
33 TCE (Tribunal de Contas do Estado) – State’s Court of Accounts
audits to be uploaded, monitored, analyzed and published. These two activities will help improve the audit of public works of water infrastructure in Ceará.

30. **Component 4. Contingent Emergency Response Component (CERC).** The objective of this zero-fund component is to support the State of Ceará in eventual emergencies associated with natural disasters that affect water systems. This disaster recovery contingency component could be triggered following the declaration of a disaster or emergency. When triggered, funds may be reallocated from other components and activities to facilitate the rapid financing of goods and services under streamlined procurement and disbursement procedures. Eligible activities may include emergency rehabilitation works, supply of critical equipment, or any other critical inputs to ensure the continued operation of water infrastructure and provision of services. This component therefore directly enhances the residents’ resilience to droughts and floods. During project preparation, the definition of the key aspects of the CERC will be detailed in the Project Operational Manual.

E. Implementation

Institutional and Implementation Arrangements

31. **Project implementation arrangement.** The Borrower will be the State of Ceará. Following the successful structure of the recently closed World Bank financed PforR Project, IPECE/SEPLAG will be responsible for overall Project coordination through the establishment of a Project Management Unit (PMU) and the creation of an Intersectoral Committee, including representatives of all beneficiary and executing agencies that will follow the Project's performance and strategic issues. The PMU will include a coordinator, procurement and financial management specialists, a safeguards specialist and a monitoring and evaluation specialist.

32. The implementation of proposed Project activities will be distributed among the institutions involved: (i) SRH, COGERH and FUNCME will carry out activities under Component 1; (ii) CAGECE will carry out activities under Component 2; and (iii) IPECE, SEPLAG, ARCE, SCIDADES, CGE and TCE will carry out activities under Component 3. ADECE will be a Project beneficiary while providing technical support for the implementation of activities under Component 3 by IPECE as well as activities coordinated with FUNCME. The PMU will be responsible for monitoring the overall Project execution, providing support to all implementing agencies on each of its responsibilities, reviewing each document for quality assurance, providing guidance in each procurement step and issuing internal no-objections to them. The PMU will also be responsible for safeguards compliance and legal matters; it will be the primary contact with the World Bank. Safeguards responsibilities related to Component 1 activities will remain under SRH considering its long experience in implementing World Bank investment operations with social, environmental and dam safety impacts.

F. Project location and Salient physical characteristics relevant to the safeguard analysis (if known)

Ceará is mostly located in the semi-arid. Around 90% of its territory is semi-arid, with elevated temperatures, spatial and temporal variability of rains and high-water scarcity. Rivers are intermittent, most of the territory is underlain by crystalline rock formation with shallow soil cover, thus minimizing availability of groundwater storage and natural retention of surface flows. The semi-arid region faces periodic droughts and Ceará recently faced five consecutive years (2012 to 2017) of drought resulting in serious losses in terms of access to water. Direct social and environmental impacts are expected mostly of the works related with the expansion of the water infrastructure and the implementation of water losses reduction plans. The
works for the expansion of the water infrastructure would take place in the region of the Banabuiú and middle Jaguaribe river basins, serving nine municipalities located southwest of the Banabuiú reservoir. The water losses reduction plans would be undertaken in the Region of the capital city. Water losses reduction plans would be implemented in four sectors of the capital city of Fortaleza – namely Aldeota, Cocorote, Expedicionários, and Mucuripe.

G. Environmental and Social Safeguards Specialists on the Team

Alberto Coelho Gomes Costa, Social Specialist
Maria Bernadete Ribas Lange, Environmental Specialist

SAFEGUARD POLICIES THAT MIGHT APPLY

<table>
<thead>
<tr>
<th>Safeguard Policies</th>
<th>Triggered?</th>
<th>Explanation (Optional)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Under the Project, the following major types of activities are expected to be supported: (i) technical assistance activities (studies for improvements in the institutional governance capacity of several state agencies, and policy design), (ii) civil works (expansion of the water infrastructure in rural and urban areas, and water losses reduction interventions) and (iii) a contingent emergency response component to be triggered at the aftermath of natural disasters aiming to facilitate the rapid financing of emergency rehabilitation works, supply of critical equipment, fuel, generator rental, transport of chemicals and critical parts (electro-mechanical equipment) to ensure the continuous operation of the water supply infrastructure.</td>
</tr>
<tr>
<td>Environmental Assessment OP/BP 4.01</td>
<td>Yes</td>
<td>Among the activities under the four components, direct positive and negative social and environmental impacts are expected mostly of the works related with (i) Sub-Component 1.2, which would support the expansion of water distribution infrastructure in the region of the Banabuiú and middle Jaguaribe river basins, including the Banabuiú - Sertão Central pipeline; and (ii) Component 2 on the implementation of water losses</td>
</tr>
</tbody>
</table>
reduction plans in four sectors of capital city of Fortaleza (namely: Aldeota, Cocorote, Expedicionários and Mucuripe).

The proposed Banabuiu - Sertão Central pipeline system was conceived for guaranteeing water supply in adequate quality and quantity to urban areas using Banabuiu dam as water source. This system is part of the statewide Malha d’Água Project. The works for the expansion of the water infrastructure – comprising the construction of a 670 km pipeline network. The system will supply treated water to the urban areas of these nine municipalities and selected rural areas. Interventions would be expected in rural and urban areas. Nevertheless, the areas of direct intervention of proposed activities and project designs have not been fully defined yet.

In urban and peri-urban areas, the foreseen potential adverse environmental and social impacts are expected to be site specific. It is expected that mitigation measures would be required for the following direct potential environmental and social impacts that are common on these project types: (i) civil works/construction activities can bring about noise, dust, and wastes; (ii) local communities can be affected by the use of local roads for improving water services provision, affecting traffic patterns and local infrastructure, increasing levels of noise and dust and other nuisances and, consequently, posing risks to safety in local communities.

Potential social and environmental effects are also expected from technical assistance activities related with (a) the economic and social study to review CAGECE’s tariff structure, (b) the design of public policies to stimulate actions in the water resources and agribusiness sectors and (c) the preparation of the Basic Sanitation State Plan. The new tariff structure may have effect on the budget of low income families and, consequently, distributive impacts might be considered. The public policies in the water resources and agribusiness sectors may have effect on access to natural resources and protected areas and, consequently, these impacts might be addressed through measures aiming to
avoid, minimize, mitigate and off-set. And the state basic sanitation plan may also have effects related with natural resources uses and land acquisition.

The Contingency Emergency Response Component (CERC) could be triggered following the declaration of a disaster or emergency. Eligible activities may include emergency rehabilitation works, supply of critical equipment, or any other critical inputs to ensure the continued operation of water infrastructure and provision of services. The Environmental and Social Management Framework (ESMF) includes a section on the CERC, including the types of activities likely to be financed and evaluating the potential risks and mitigation measures associated with them. Given the uncertainties and rapid changes inherent in emergency situations and responses, the CERC-ESMF section was designed around a flexible, “adaptive management” approach, with emphasis on monitoring of key outcomes and mechanisms. In case of CERC activation, the following elements will be considered: (i) confirming which activities can proceed, with no additional environmental or social assessment and which ones require assessment prior to being initiated; (ii) rapidly assessing the environmental and social baseline of planned CERC activities and location; (iii) preparing specific safeguards instruments, including, as necessary, mobilizing, consultation, stakeholders engagement, institutional arrangements, monitoring and evaluation procedures and estimating the costs for safeguards preparation and implementation. If the CERC activities would result in potentially significant negative social or environmental impacts, a formal review of project safeguard category will be required.

Proposed EA Category. Based on the assessment of potential impacts, the proposed project is Category B, as there are not expected significant adverse environmental impacts that are irreversible or unprecedented.

Since the proposed project locations are not yet fully defined, site-specific investments are still in a preliminary design stage. Feasibility studies – which
consider alternative locations for site-specific facilities – are not expected to be completed before appraisal. In this context, an Environmental and Social Management Framework (ESMF) and a Resettlement Policy Framework (RPF) are the instruments to attend safeguard requirements.

The ESMF was prepared based on the WBG General and Water and Sanitation Environmental Health and Safety Guidelines (EHS Guidelines). An institutional capacity of the implementing agency for management of social and environmental risks was also carried- and provides inputs for an institutional capacity building strategy. The ESMF includes the requirement of the assessment of environmental and social impacts and risks in respective Terms of Reference and capacity-building content for technical assistance activities and consultations with civil society on relevant technical assistance.

Labor Influx Impacts. The proposed Project will involve construction of civil works, including labor force and associated goods and services, but no significant labor influx is expected. Nevertheless, the project ESMF and bidding documents include specific measures to address labor requirements and performance, assess and manage labor influx related risks, as well as monitor potential impacts from labor influx.

Licensing process. Under the Brazilian law, the installation of an enterprise or activity potentially harmful to the environment must undertake environmental licensing beforehand. Therefore, the proposed Banabuiú-Sertão Central pipeline system is subject of licensing requirements, under the responsibility of the State government. This licensing process includes three specific steps: previous license; installations license and operating license. The Banabuiú-Sertão Central system’ previous license was issued on December 27, 2017. The license includes requirements that should be considered during the preparation of the engineering design. The fulfillment of these measures is a sine qua non condition to be obtain the installation license and will be part of the bidding documents.
<table>
<thead>
<tr>
<th>Performance Standards for Private Sector Activities OP/BP 4.03</th>
<th>No</th>
<th>This policy would not be triggered, as the proposed project does not include Bank financing for private sector.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural Habitats OP/BP 4.04</td>
<td>Yes</td>
<td>Some activities under the proposed Project may have interference on water use on ecosystem and natural habitats as riparian forests and caatinga natural vegetation. Nevertheless, no significant conversion or degradation on natural habitats are expected. Springs and river margin areas are classified as Permanent Preservation Areas, and legally protected by the Brazilian Legislation (Federal Law 4771/65). According to the Brazilian Legislation, the Borrower would have to request previous authorization from the State Environmental Agency to convert natural vegetation and implement activities involving conversion or degradation of natural habitats. The ESMF includes clear guidance regarding direct and indirect impacts on natural vegetation and habitats. The ESMF also considers the provisions of the policy, national legislation, and any need to offset losses of habitat.</td>
</tr>
<tr>
<td>Forests OP/BP 4.36</td>
<td>Yes</td>
<td>This policy would be triggered. Some activities under the proposed Project may have interference on forests natural habitats. Nevertheless, the Project would not include activities that require commercial forest harvesting; or utilization of natural forests formations or plantation. The ESMF considers the requirements of OB/BP4.36 whenever restoration activities are supported in order to minimize or prevent negative impacts on natural vegetation areas. The ESMF also considers any need to offset losses of habitat.</td>
</tr>
<tr>
<td>Pest Management OP 4.09</td>
<td>No</td>
<td>This policy is not being triggered because the proposed Project will not support the purchase or increased use of pesticides and other agricultural chemicals and defined under the policy. The proposed Project will not include any support for agriculture land use which would promote pest management.</td>
</tr>
<tr>
<td>Physical Cultural Resources OP/BP 4.11</td>
<td>Yes</td>
<td>This policy would be triggered on a precautions basis, as there is no indication, so far, that the Project works may interfere with known cultural</td>
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</table>
resources. However, the nature and scope of civil works, 262 km long water main, may result in interference with historical and/or paleontological sites. The ESMF includes procedures for screening any known cultural property in the Project area and incorporate ‘chance find’ procedures if culturally significant resources are discovered during the Project implementation. The ‘chance find’ procedures would be defined in accordance with requirements from IPHAN (Instituto de Patrimônio Histórico e Artístico Nacional) and from OP 4.11.

<table>
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<tr>
<th>Indigenous Peoples OP/BP 4.10</th>
<th>No</th>
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There are 14 Indigenous Peoples in the state of Ceará comprising a population of about 34,000 people. They include the Tapeba, Tabajara, Tapuia-Kariri, Jenipapo-Kanindé, Potyguara, Pitaguary, Tremembé, Anacé, Kanindé, Kalabaça, Tubiba-Tapuia, Kariri, Gavião and Tupinambá. Only one out of 25 claimed Indigenous lands has been regularized so far. These 25 areas claimed by Indigenous Peoples are located in 19 municipalities (Acarau, Aquiraz, Aratuba, Boa Viagem, Canindé, Carnaubal, Caucaia, Crateús, Itapipoca, Itarema, Maracanaú, Monsenhor Tabosa, Novo Oriente, Pacatuba, Porangá, Quiterianópolis, São Benedito, São Gonçalo do Amarante and Tamboril).

The claims of Indigenous Lands that are nearest to the envisaged areas of intervention are in Serra das Matas, which is located about 180 kilometers away of the Banabuiu dam and some dozen kilometers away from the envisaged route of the water main and outside of the Banabuiu river basin. Serra das Matas is located in the borders of the municipalities of Monsenhor Tabosa, Tamboril, Boa Viagem, Catunda and Santa Quitéria. Lands in Serra das Matas – at the Acarau River watershed. Its lands are claimed by the Tabajara, Potyguara, Tubiba-Tapuia and Gavião people.
<table>
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<tr>
<th>Category</th>
<th>Policy Code</th>
<th>Triggered</th>
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<tbody>
<tr>
<td>Involuntary Resettlement</td>
<td>OP/BP 4.12</td>
<td>Yes</td>
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</table>

It is expected that the works related with water losses reduction would not require land acquisition. Nevertheless, they may have adverse temporary impacts on mobility and commercial activities. It is very unlikely that adverse impacts related with involuntary resettlement occur in the works related with the expansion of water infrastructures, because the Borrower aims to use only public lands and the rights-of-ways of existing highway network for these works.

Nevertheless, the long extension of the water infrastructures makes possible that site-specific land acquisition for facilities or rights-of-way as well as adverse effects over formal or informal petty-mERCHANTS located in the rights-of-way occur. Technical assistance activities – for instance the State Basic Sanitation Plan – may also have downstream impacts related with land acquisition and involuntary resettlement.

The RPF has been prepared to attend the requirements of OP/BP4.12. Site-specific Resentment Action Plans will be prepared during implementation.

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<tr>
<th>Category</th>
<th>Policy Code</th>
<th>Triggered</th>
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<tbody>
<tr>
<td>Safety of Dams</td>
<td>OP/BP 4.37</td>
<td>Yes</td>
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</table>

This Policy is triggered because two activities to be funded by the Project would rely on existing dams: (i) the Banabuiú - Sertão Central Pipeline System (Sub-component 1.2) would rely on the performance of the Banabuiú Dam; and (ii) the Fortaleza water supply system, where water loss control interventions will be carried out, (Component 2) relies on the Gavião Dam Reservoir. Both dams are classified as “large dams” in accordance with OP 4.37. The Banabuiú Dam is operated by the National Department of Drought Works (DNOCS) and the Gavião Dam is operated by the Ceará State Government.

The Borrower retained an independent dam expert to inspect and evaluate the safety status of the existing dams, their appurtenances and performance history, in accordance to a TOR agreed with the Bank. The inspection findings and recommendations were consolidated in a written report submitted to
the Bank, confirming that the two dams do not exhibit major anomalies which could lead to imminent failure but made a number of recommendations. The client also conducted the potential risk of cascade dams in the upstream of Banabuiu Dam and confirmed that there would be no significant impacts due to their size and location.

The independent dam safety assessment report recommended additional investigations and analyses for detailed safety examination, monitoring instruments upgrading, some repair works, and the preparation of full pledged EPPs, O&M Plans and Instrumentation Plans, (dam safety instruments), for both dams. The framework of the referred plans was defined and agreed with the Borrower.

The Borrower has agreed to conduct a comprehensive review of the Gavião dam safety conditions and implement the required measures based on the planned additional investigation / analysis. These activities will be financed by the proposed Project.

The Banabuiú dam was subject to a comprehensive dam safety assessment by DNOCS in 2015/2016, aiming to improve its safety condition. The assessment led to the preparation of a comprehensive rehabilitation work design to be implemented by DNOCS. Following the Brazilian legal framework, the Borrower, as the dam regulator, will require DNOCS to prepare the dam safety instruments (i.e. instrumentation plan, O&M plan and EPP), as well as the timely and qualitative execution of the rehabilitation works defined in the 2015/2016 studies including required measures based on additional investigation and analyses. The State Government has agreed to implement the Banabuiu rehabilitation works and prepare the dam safety instruments if DNOCS does not carry them out by 2023.

The Borrower has also agreed to engage an Independent Dam Safety Panel (POE) for checking the results of detailed safety examination including additional investigation and analyses of both dams.
The TORs and composition of the POE have been agreed with the Borrower. The Project will also finance institutional strengthening activities for SRH and COGERH.

### Projects on International Waterways

**OP/BP 7.50**

No

The proposed project will neither affect the efficient utilization and protection of international waterways, nor adversely affect relations between the Bank and its borrowers, and between riparian states. Thus, this policy is not triggered. The Ceará State is located in the Brazilian Northeast and is not bordered by other countries.

### Projects in Disputed Areas

**OP/BP 7.60**

No

Not applicable, because the activities financed by the Project would not be located in disputed areas.

### KEY SAFEGUARD POLICY ISSUES AND THEIR MANAGEMENT

#### A. Summary of Key Safeguard Issues

1. Describe any safeguard issues and impacts associated with the proposed project. Identify and describe any potential large scale, significant and/or irreversible impacts:

   The proposed interventions may have net positive impacts on the local ecosystems, reducing raw wastewater spillovers and contributing for the resilience to droughts on the Ceará State. Among the activities under the four components, direct environmental impacts are expected mostly of the works related with (i) the expansion of the water infrastructure and (ii) the implementation of water losses reduction plans.

   The works for the expansion of the water infrastructure will supply treated water to the urban areas of these nine municipalities and selected rural areas. Interventions would be expected in rural and urban areas. Despite the diversity of activities to be supported by the Project, the foreseen potential adverse environmental and social impacts are expected to be site specific and, in most cases, mitigatory measures can be designed to prevent, minimize, mitigate or compensate adverse impacts and improve environmental and social performance.

   It is expected that mitigation measures would be required for the following direct potential environmental and social impacts that are common on these project types: (i) civil works/construction activities can bring about noise, dust, and wastes; (ii) local communities can be affected by the use of local roads for improving water services provision, affecting traffic patterns and local infrastructure, increasing levels of noise and dust and other nuisances and, consequently, posing risks to safety in local communities.

2. Describe any potential indirect and/or long term impacts due to anticipated future activities in the project area:

   As mentioned early, potential adverse environmental impacts on natural areas would be site specific and, in most cases, mitigatory measures can be designed to minimize or mitigate impacts as well as to improve environmental performance of the existing wastewater system. Most of the Project’s envisaged impacts would be site specific and reversible. Mitigatory measures were envisaged and can be designed and implemented during the project life.
3. Describe any project alternatives (if relevant) considered to help avoid or minimize adverse impacts.
Not applicable.

4. Describe measures taken by the borrower to address safeguard policy issues. Provide an assessment of borrower capacity to plan and implement the measures described.
As part of the preparation process and in accordance with the World Bank project financing procedures, it was made a screening of the type of activities proposed, their location, scale and magnitude and their potential direct and indirect socioenvironmental impacts. An institutional capacity assessment of the implementing agency for management of social and environmental risks was also carried out.

The proposed project locations are not yet fully defined. Site-specific investments are still in a preliminary design stage. In this context, an Environmental and Social Management Framework (ESMF) was prepared, publicly disseminated and consulted. The ESMF was also prepared based on the WBG General and Water and Sanitation Environmental Health and Safety Guidelines (EHS Guidelines).

The ESMF includes a section on the CERC, including the types of activities likely to be financed and evaluates the potential risks and mitigation measures associated with them.

Regarding the Safety of Dams Policy, the Borrower retained an independent dam expert to inspect and evaluate the safety status of the existing dams, their appurtenances and performance history, in accordance to a TOR agreed with the Bank. The inspection findings and recommendations were consolidated in a written report submitted to the Bank. The client also prepared a dam break study, which found that occasional failures of the existing dams, located upstream of Banabuiu, would not pose major risks to its stability.

The independent dam safety assessment report presented a few recommendations to improve the safety status of the two dams, including additional studies, technical investigations, improvements in the O&M and EPP plans. Most recommendations related to the Banabuiú dam are already being treated under the rehabilitation works to be conducted by DNOCS.

The Borrower agreed to engage an Independent Dam Safety Panel. The Project will fund institutional strengthening activities for SRH and COGERH, as well as specific measures related to the dams, including: preparation of a Dam Safety Periodic Review of Gavião; improvement of the Gavião dam safety and instrumentation plans.

Institutional Capacity. The Borrower has a long and positive experience with the safeguard policies of the World Bank, having developed operations in a satisfactory way since the 1990s.

5. Identify the key stakeholders and describe the mechanisms for consultation and disclosure on safeguard policies, with an emphasis on potentially affected people.
Key stakeholders, beneficiaries, and affected people were consulted by the Borrower during preparation. In addition to an online consultation, two meetings were held and convened 246 representatives of local people and authorities, members of the committees of the Banabuiu and Jaguaribe River basins, NGOs and water service providers, among others. These meetings occurred in the towns of Senador Pompeu and Solonopole, in November 13th and 14th, 2018, respectively. They addressed the findings of the social and environmental assessment and evaluated the identification of impacts and benefits derived from project activities as well as the proposed measures to avoid, minimize, and/or mitigate adverse impacts.
Citizen engagement. When increasing reliability of water supply services to populations in the nine municipalities of the semi-arid region of Sertão do Banabuiu, the Project will include citizen engagement mechanisms to enhance accountability. In this regard, the Project will promote education and communication programs to induce knowledge, attitude, and behavioral changes related to a range of drinking water, sanitation, and hygiene issues.

B. Disclosure Requirements

Environmental Assessment/Audit/Management Plan/Other

<table>
<thead>
<tr>
<th>Date of receipt by the Bank</th>
<th>Date of submission for disclosure</th>
<th>For category A projects, date of distributing the Executive Summary of the EA to the Executive Directors</th>
</tr>
</thead>
<tbody>
<tr>
<td>07-Dec-2018</td>
<td>30-Jan-2019</td>
<td></td>
</tr>
</tbody>
</table>

"In country" Disclosure

Brazil
07-Nov-2018

Links for safeguard documents consultation in-country:


Resettlement Action Plan/Framework/Policy Process

<table>
<thead>
<tr>
<th>Date of receipt by the Bank</th>
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<tbody>
<tr>
<td>07-Dec-2018</td>
<td>30-Jan-2019</td>
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</table>

"In country" Disclosure

Brazil
07-Nov-2018

Comments
C. Compliance Monitoring Indicators at the Corporate Level (to be filled in when the ISDS is finalized by the project decision meeting)

OP/BP/GP 4.01 - Environment Assessment

Does the project require a stand-alone EA (including EMP) report?
Yes
If yes, then did the Regional Environment Unit or Practice Manager (PM) review and approve the EA report?
Yes
Are the cost and the accountabilities for the EMP incorporated in the credit/loan?
Yes

OP/BP 4.04 - Natural Habitats

Would the project result in any significant conversion or degradation of critical natural habitats?
No
If the project would result in significant conversion or degradation of other (non-critical) natural habitats, does the project include mitigation measures acceptable to the Bank?
No

OP/BP 4.11 - Physical Cultural Resources

Does the EA include adequate measures related to cultural property?
Yes
Does the credit/loan incorporate mechanisms to mitigate the potential adverse impacts on cultural property?
Yes

OP/BP 4.12 - Involuntary Resettlement

Has a resettlement plan/abbreviated plan/policy framework/process framework (as appropriate) been prepared?
Yes
If yes, then did the Regional unit responsible for safeguards or Practice Manager review the plan?
Yes
### OP/BP 4.36 - Forests

Has the sector-wide analysis of policy and institutional issues and constraints been carried out?  
**NA**  
Does the project design include satisfactory measures to overcome these constraints?  
**Yes**  
Does the project finance commercial harvesting, and if so, does it include provisions for certification system?  
**No**

### OP/BP 4.37 - Safety of Dams

Have dam safety plans been prepared?  
**NA**  
Have the TORs as well as composition for the independent Panel of Experts (POE) been reviewed and approved by the Bank?  
**Yes**  
Has an Emergency Preparedness Plan (EPP) been prepared and arrangements been made for public awareness and training?  
**Yes**

### The World Bank Policy on Disclosure of Information

Have relevant safeguard policies documents been sent to the World Bank for disclosure?  
**Yes**  
Have relevant documents been disclosed in-country in a public place in a form and language that are understandable and accessible to project-affected groups and local NGOs?  
**Yes**
All Safeguard Policies

Have satisfactory calendar, budget and clear institutional responsibilities been prepared for the implementation of measures related to safeguard policies?
Yes

Have costs related to safeguard policy measures been included in the project cost?
Yes

Does the Monitoring and Evaluation system of the project include the monitoring of safeguard impacts and measures related to safeguard policies?
Yes

Have satisfactory implementation arrangements been agreed with the borrower and the same been adequately reflected in the project legal documents?
Yes

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