



Project Information Document (PID)

Concept Stage | Date Prepared/Updated: 23-May-2023 | Report No: PIDC35886

**BASIC INFORMATION****A. Basic Project Data**

Project Beneficiary(ies) Brazil	Operation ID P180430	Operation Name Brazil: Pernambuco Rural Water and Sanitation Project (PROSAR)	
Region LATIN AMERICA AND CARIBBEAN	Estimated Appraisal Date 02-Oct-2023	Estimated Approval Date 14-Dec-2023	Practice Area (Lead) Water
Financing Instrument Investment Project Financing (IPF)	Borrower(s) Government of the State of Pernambuco	Implementing Agency Secretariat of Water Resources and WSS (Secretaria de Recursos Hídricos e Saneamento), Pernambuco Water and Climate Agency (Agência Pernambucana de Águas e Clima - APAC)	

Proposed Development Objective(s)

To increase access to sustainable, safely- managed drinking water supply and safely-managed sanitation for selected rural communities in the state of Pernambuco; and to build State's capacity for reaching universal RWSS services.

PROJECT FINANCING DATA (US\$, Millions)**SUMMARY**

Total Operation Cost	113.00
Total Financing	113.00
of which IBRD/IDA	90.00
Financing Gap	0.00

DETAILS**World Bank Group Financing**

International Bank for Reconstruction and Development (IBRD)	90.00
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Non-World Bank Group Financing



Counterpart Funding	23.00
Borrower/Recipient	23.00

Environmental and Social Risk Classification

Substantial

Concept Review Decision

The review did authorize the preparation to continue

B. Introduction and Context

Country Context

1. **Brazil’s economy continues to recover, with Gross Domestic Product (GDP) growing at 2.9 percent in 2022, propelled by a successful COVID-19 vaccination campaign, rising demand for services, and fiscal stimulus.** The labor market improved through 2022, including for women and youth, as unemployment fell to 7.9 percent by December 2022 (down from a peak of 11.1 percent in December 2021). Persistent inflation (5.6 percent as of February 2023) has prompted the tightening of monetary policy rate (13.75 percent as of February 2023) to anchor 2023-24 inflation expectations. Improved revenues, gradual economic recovery and elevated prices of commodities boosted fiscal results in 2022, with the 12-month primary surplus of the public sector reaching 1.2 percent of GDP and public debt declining to 72.9 percent of GDP as of January 2023 (a 5.4 per cent reduction). GDP growth is expected to slow to 0.8 percent in 2023 due to the lagged effects of domestic monetary tightening, persistent inflation, and the deceleration of the global economy, and to mildly accelerate to 2.0 percent in 2024 on the back of a more accommodative monetary policy, easing inflation and higher global growth. Fiscal balance is expected to deteriorate in 2023 as projections indicate a primary deficit of 0.7 percent of GDP, reflecting the higher social expenditures in 2023 and lower economic activity.

2. **With the economic recovery, poverty is expected to have gone down from 28.4 in 2021 to 25 percent in 2022,¹** responding to increased job opportunities and expansion of the *Bolsa Familia* cash transfer program. A real increase in the minimum wages combined with a major overhaul of the *Bolsa Familia* and a planned introduction of additional benefits to families with children are expected to drive poverty down to 23.9 percent in 2023. Further reduction may occur as the economy recovers but despite the social gains of earlier decades poverty and disparities remain prominent in the lives of many Brazilians in the absence of stronger investments in human capital among the less well-off. Before the pandemic, one in five Brazilians were chronically poor; the onset of the pandemic widened pre-existing inequalities and today nearly half of Brazil’s children – the country’s future workforce – are growing up in poor households.

3. **Brazil faces significant climate change impacts compounded by deforestation and land degradation.** Climate change is altering temperature and rainfall patterns in the country, resulting in reduced water availability and extended droughts, and could push another 800,000 to 3,000,000 Brazilians into extreme poverty as soon as 2030. Climate studies^{2,3} show increasing occurrences of droughts in Northeastern Brazil from 2012 – 2018 including the several droughts analyzed by National Institute of Meteorology (INMET) amongst others. Continued deforestation in the Amazon and Cerrado biomes remains a matter of urgency, as it has increased land-use emissions – the main source of greenhouse (GHG) emissions in Brazil. Climate change impacts are predicted to further exacerbate droughts and floods not only in

¹ Using the recently published US\$6.85 PPP line for upper middle-income economies.

² <https://www.sciencedirect.com/science/article/pii/S2405880721000649>

³ <https://www.mdpi.com/2073-4441/14/4/601>



Northeastern Brazil but rather in the entire country and Amazon basin resulting in dire water scarcity and water security challenges. Strengthening resilience to climate change and protection of natural assets, especially the fragile ecosystems of the Amazon and Cerrado, is essential for environmentally sustainable economic growth.

4. **Pernambuco, located in the Northeast region of Brazil, is a relatively small state, with an economy mostly based on services that experienced modest growth over the past two decades.** Pernambuco accounted for 1.2 percent of Brazil's territory, 4.5 percent of its population and 2.6 percent of its GDP in 2022. About 80 percent of the State's territory is semiarid⁴ which has been considered a constraint for socio-economic development.⁵ Its economy heavily relies on the services sector (75 percent of the GDP as of 2022). Between 2002 and 2020, Pernambuco's economy grew at an average of 2.2 percent/year, like Brazil as a whole.⁶ Pernambuco is the 10th economy among Brazil 27 federal units, its GDP/capita of R\$20,101 in 2020 occupies the 20th place nationwide and 3rd place among the 9 Northeast states.

5. **Pernambuco's population is mostly urban, while its rural residents are particularly vulnerable to water scarcity.** The State has a population of 9.67 million inhabitants, of which 83 percent is urban and mostly located near the coast.⁷ Population is expected to peak at 10.37 million in 2044 and then decline slightly.⁸ While Pernambuco's urban population has been increasing, its rural one has been shrinking by 12 per cent over the past 20 years, from 1.83 million in 2000 to 1.6 million in 2019. This has been attributed to rural-urban migration as cities offer better services, including water supply and sanitation (WSS), and better economic opportunities than rural areas. Most of the rural population relies on agriculture and animal husbandry for its livelihood, which is generally of low productivity and vulnerable to droughts, with limited potential for irrigation due to water scarcity.

6. **Pernambuco is among the poorest states of Brazil.** In 2021, Pernambuco had the 4th highest poverty rate among the 27 states of Brazil and the 3rd of the Northeast region, with about 50 percent of its population below the poverty line, against about 30 percent for Brazil as a whole.⁹ Extreme poverty rate in rural areas is more than double the rate in cities (23 percent against 10 percent with extreme poverty below US\$2.15/day, 2017 PPP). During the pandemic, between 2019 and 2021, Pernambuco's poverty increased by 8.14 points, the highest rise among the states.⁸ The average monthly household income per capita (R\$1,010) is among the lowest in the country, as Pernambuco stands at the 24th position among the 27 entities of the federation in 2022.¹⁰ The latest estimation of its Human Development Index (HDI) at 0.673 in 2010, ranked the State 19th in Brazil.

7. **In Pernambuco, climate change impacts the well-being of its population, economy and environment principally through increased droughts, floods and water scarcity risks.** The CCDR for Brazil notes that the projected warmer climate could convert the semiarid Northeast into an arid region, and impact water availability for all uses, commercial and subsistence farming and population health, forcing people to migrate to other regions. Moreover, climate change coupled with deforestation has been a driver for desertification in rural areas.

Sectoral and Institutional Context

8. **Universal access to water and sanitation is the country's national goal.** On June 25, 2020, a new basic water

⁴ The semiarid zone is an area that is defined by both a minimal amount of annual rainfall (i.e., 800 millimeters per year on average) and a concentration of that rainfall during only a few months per year. (World Bank, Living with the Semi-Arid and Proactive Drought Management In Northeast Brazil: a New Perspective, 2015)

⁵ World Bank, Growth and Poverty Reduction in Pernambuco: Developing a Sustainable Development Framework, 2002

⁶ IBGE. Sistema de contas regionais: Brasil 2020.

⁷ IBGE. <https://cidades.ibge.gov.br/brasil/pi/panorama> [Access on 03.09.2023]

⁸ IBGE, population projections, edition 2018.

⁹ "Mapa da Nova Pobreza", Marcelo Neri – 40 págs., Rio de Janeiro, RJ – junho/2022 - FGV Social. <https://cps.fgv.br/MapaNovaPobreza> <https://cps.fgv.br/en/NewPovertyMap>. The poverty line is estimated at R\$497 a day (equivalent to USD5.5/day, 2021 PPP). The states with higher poverty rates are Maranhão (57.90 per cent), Amazonas (51.42 per cent) and Alagoas (50.36 per cent).

¹⁰ IBGE. <https://cidades.ibge.gov.br/brasil/pi/panorama> [Access on 02.03.2023]



supply and sanitation (WSS)¹¹ Legal Framework (Law 14026/2020) was approved, which calls for universal access to WSS by 2033. To achieve this goal, the Law mandates a bold reform of the WSS regulatory frameworks at the three levels of government (federal, state and municipal), promotes private sector's participation in service delivery, and introduces credit enhancement mechanisms. The National Plan for basic WSS (PLANSAB) indicates that in 2017, 60 percent of Brazilians had access to adequate water supply services and 55 to adequate sanitation.¹² However, access levels vary across the country, the North and Northeast regions lagging the most. Another critical issue in the Northeast region is the quality of drinking water. Across the country, WSS access in rural areas is lower than in urban areas, the former with access to water for only 76 percent of the population and to sanitation for 40 percent (as opposed to 94 and 75 percent, respectively, in urban areas). As part of the PLANSAB, the National Program for Rural WSS (*Programa Nacional de Saneamento Rural* - PNSR) was launched in 2019 focusing on the universal access goal for the rural space, considering that around 30 million people are living in rural areas, in around 97 thousand community/village agglomerations. PNSR highlights the importance of investing in rural WSS to improve health, reduce poverty, and sustain rural development (with specific focus on nutrition, family-level agriculture, and clean energy). All of which support the achievement of the UN Development Goals.

9. **Reaching universal access to WSS has been challenging, especially in rural Pernambuco.** Urban areas are operated by either the State Water Utility (Compesa), in 173 municipalities and Fernando de Noronha island, or by Municipal-Owned WSS Institutions (*Serviços Autônomo de Água e Esgoto* – SAAE), in 11 municipalities. In contrast, in rural areas few communities are served by Compesa or SAAEs; the majority that have water access are either operated by local communities themselves (known as self-supplied); or are not operated at all. Currently, 82 percent of Pernambuco's population has access to water supply systems and 31 percent to sanitation networks.¹³ In rural areas the issue is more critical. According to the State's Rural WSS database,¹⁴ 47 percent of the rural population lack access to water supply services,¹⁵ of which 74 percent do not have regular delivery of drinking water even through tanker trucks.¹⁶ This is in stark contrast with access in urban areas, estimated at 92.6 percent.¹⁷ Based on a field survey carried out in 2018,¹⁸ 10 percent of all villages do not have any water supply system and rely on water tankers run by municipalities or the military on a permanent basis. Of the 90 percent that have a system, about 75 percent rely on groundwater (mostly deep wells, 66 percent of all systems) and a quarter on surface water (mostly from dams). Many of those systems are not functioning at any given time, because of inadequate operations & maintenance (O&M) or because the water source dries-up, primarily in times of drought. In these times, many villages also rely on water tankers. The use of trucks and deep wells highlights the challenge associated with increasing water scarcity, compounded by multi-year drought (2012-2017) that had reduced considerably other water sources, such as reservoirs, shallow aquifers and semi-perennial rivers at the time of the visit. This study also revealed the concerning situation about drinking water quality as 59 percent of the systems did not treat water before distribution to families and in none of the systems, water quality was monitored. As for sanitation, little is known. According to the State RWSS platform 99 percent of the families rely on individual sanitation solutions; out of

¹¹ In Brazil, *Saneamento Básico* (Basic Sanitation) includes water supply, sanitation, sewerage, and wastewater treatment, in addition to solid waste and pluvial draining.

¹² *PLANSAB* 2019. <https://www.gov.br/mdr/pt-br/assuntos/saneamento/plansab>

¹³ Trata Brasil think tank. <https://tratabrasil.org.br/principais-estatisticas/dados-regionais/>

¹⁴ The GoPE, hosted by Compesa, created the RWSS database, (<http://www.compesa.com.br/saneamentorural/>). which includes information from rural communities such GPS location, water supply and sanitation status, closest water sources; population data, and water infrastructure available (dams, wells, pipelines, etc.). Although the population number seems to be closer to the 2019 information available for the universe of rural population in Pernambuco, more updated and reliable total rural population will be known once the ongoing Country Census is released. The database also would need a validation of available information, as some urban small cities seem to also have included its information.

¹⁵ The community indicates if supplied by water supply systems operated by either Compesa, SAAE, Municipality or Self-supplied; water trucks, or has no water system.

¹⁶ Carta Consulta, State of Pernambuco, 2022.

¹⁷ Sistema Nacional de Informações sobre Saneamento

¹⁸ Field survey of 76 localities from 34 municipalities. Pernambuco RWSS management model study, State of Pernambuco, 2018.



which, 1 percent practices open defecation, 28 percent have some sort of latrine/septic tank but most have no treatment solution. Families are typically in charge of the O&M of their sanitation solution, including the emptying of their tanks and the disposal of sludge. In most cases, the structures are in disrepair, their operation and maintenance are inadequate, causing health and environmental risks for the communities, especially for children.

10. **Poor access to WSS has significant socio-economic impacts in rural Pernambuco.** Various studies show clear linkages between the lack of access to safe water supply and sanitation services and higher morbidity and mortality rates, particularly among children below 5-years-old, with incidence on labor productivity, family incomes and expenditures, as well as school attendance. In Pernambuco, in 2019, 102/1000 inhabitants were hospitalized and 2.25/1000 inhabitants died because of water-borne diseases.¹⁹ During severe droughts, the lack of sustainable access to potable water supply has been one of the drivers for accelerated migration to urban areas.

11. **There are two main challenges to universal access to rural water supply and sanitation (RWSS) in the state: (i) securing the water source in a context of climate change-exacerbated droughts and water scarcity, and (ii) setting-up climate resilient and sustainable management models for service delivery.**

- a. *Water scarcity, recurrent droughts and pollution are significant constraints to secure a water source.* With low precipitation, high evapotranspiration, long dry seasons, intermittent rivers and limited groundwater, the state faces chronic water scarcity and recurrent droughts on ninety percent of its territory (Sertão and Agreste regions), located in Brazil's dry polygon. In these regions, during the dry season of a typical year, rivers not regulated by dams dry-up and, during multi-year droughts, as occurred in the 2010s, water availability in regulated rivers decrease substantially and, sometimes dry-up.²⁰ In those years, RWSS systems in the Sertão and Agreste regions that rely on surface water other than the São Francisco River, are at risk of temporary failure. Moreover, groundwater resources are limited in the State. They are mostly from crystalline aquifers with low productivity and often brackish. Deep wells, where they are feasible, can nevertheless be a secure source of drinking water during droughts and they now supply 66 percent of RW systems in Pernambuco.²¹ Water quality is another issue. It is mostly not monitored in rural areas, and where it is in selected rivers and reservoirs, water quality can be low, sometimes very low, in part because of untreated domestic and industrial effluents (only 32 percent of collected sewerage was treated in Pernambuco in 2019)²², further reducing water availability for many uses. This is concerning for rural water supply as most systems do not treat water. With limited, erratic and contaminated water resources, the challenge of providing reliable water supplies to people and the economy,^{23,24} while safeguarding the environment, has become increasingly complex.

Climate change has been exacerbating these water resources constraints. Historical records and available climate projections for the *Northeast* region in Brazil, including Pernambuco, reveal that climate change is playing a pivotal role in the increased frequency and intensity of droughts, as well as in the increased intensity of water scarcity. According to Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment, the Northeast region has seen increasing temperatures over the past decades, decreasing precipitation and increasing number and strength of droughts (*virtually certain*). Moreover, average temperatures are very likely to continue rising in the region at a pace higher than global average, precipitations are expected to further decline (*high confidence*), the severity of droughts is expected to increase (*high confidence*) and extreme precipitations and floods are expected

¹⁹ Trata Brazil. Saneamento e doenças de veiculação hídrica DATASUS e SNIS, 2019. Water-borne diseases in this case include diarrheic diseases, dengue, malaria e leptospirosis.

²⁰ State Water Resources Plan - *Plano Estadual de Recursos Hídricos de Pernambuco, 2022.*

²¹ Pernambuco RWSS management model study, State of Pernambuco, 2018

²² Sistema Nacional de Informações sobre Saneamento

²³ Pernambuco RWSS management model study, State of Pernambuco. *Estudo de Modelos de Gestão de Sistemas Rurais de Abastecimento de Água e Esgotamento Sanitário para o Estado de Pernambuco, 2018.*

²⁴ Sistema Nacional de Informações sobre Saneamento



to increase (*medium confidence*). The combination of higher temperatures and lower precipitations is expected to progressively increase water scarcity.²⁵ The increases in water scarcity and droughts severity are expected to adversely impact rural water access, as existing water sources may become increasing insufficient to meet competing demands, may dry-up entirely more frequently and water quality may worsen due to reduced dilution capacity, turning more pressing the need to scale-up drinking water quality treatment and sanitation (including WW treatment). This situation may lead to further water deficits, increased conflicts and rural exodus as well as further investment needs to reach universal access to WS, as alternative, more costly water supplies must be tapped (inter-basin transfers, desalinization, tanker trucks). Finally, the expected future increases in extreme rainfall events highlight the need to improve the security of unsafe hydraulic infrastructure, whose failure, more likely in case of high flows, may affect RWSS services and the population they serve.

- b. *Setting-up sustainable long-term RWSS O&M management solutions has been challenging.* It is indeed frequent that a new RWSS system is abandoned by the local communities it is supposed to serve (known as self-supplied), sometimes because the technology is too complex, rely on too sophisticated solutions, but mostly because of the lack of prolonged technical assistance to the rural community in charge of its O&M and insufficient tariff payment. In 2009, a Bank study²⁶ on management of Rural Water Supply (RWS) services in Brazil, which included examples from the Pernambuco state, indicated that most self-supplied communities would face sustainability issues (either technical or financial) at early ages of operation if not backed up by a multi-village scheme and/or expert institutions. Similar results were observed during implementation of the Bank-financed Pernambuco Rural Economic Inclusion Project–P120139, when communities who had already received investments from previous projects would request additional investments as systems had collapsed in less than 3-5 years.

Institutional context

12. **Water Resources Management. The Pernambuco water and climate agency (APAC) is the main entity in charge of water resources management.** APAC, under the State Secretariat for Water Resources and Water Supply and Sanitation (SRHS), was created in 2010. It oversees the execution of the 2005 State Water Resources Policy²⁷ which defines the policy instruments²⁸ and organizational framework for water resources management in Pernambuco. APAC's main functions include : (i) water resources and climate information (the O&M of the State Water Resources Information System, the coordination of the state hydrological (quantity and quality) and meteorological monitoring and forecasting system; the coordination of studies and research); (ii) water resources planning at state level; (iii) the emission and control of water use rights, discharge permits and authorization of hydraulic works; (iv) setting ambient water quality targets in water bodies based on predominant use in coordination with environment; (v) the definition and collection of water use and discharge fees; (vi) dam safety regulation (except for the energy sector); and (vii) operation and maintenance of the State infrastructure part of the PISF and collection of related bulk water tariff. There are two main issues that APAC faces to implement its functions: (i) the lack of staff and (ii) the lack of offices in the field as most water resources functions are implemented in the field (i.e. water resources monitoring, control of illegal water uses and contamination, dam safety control, O&M of the PISF state infrastructure). SRHS has also a dedicated Water Resources Executive Secretary (SERH) to build, maintain some of the major water infrastructure owned by the State, including dams, the operation being carried out by the users.

13. **Rural Water Supply and Sanitation.** According to the Government of Pernambuco's (GoPE) Strategy for RWSS,

²⁵ Pernambuco Hydrological Atlas, 2022

²⁶ Brazil Water Series 13. Rural Water Supply Management Models in Brazil, 2016.
<https://documents1.worldbank.org/curated/en/378901479099282672/pdf/Parte-I.pdf>

²⁷ Law No. 12,984 of 2005.

²⁸ The 7 policy instruments are: the state water resources plan; the classification of water bodies for water quality targets based on predominant use; water rights and discharge permits; water use and discharge fees; water resources information system; control and enforcement; water resources monitoring.



Municipal, State and Federal Governments contribute with capital investment (i.e. preparation of engineer designs and works). SRHS, through the Executive Secretary for WSS, is responsible for RWSS policy development and updating the RWSS information system with data on RWSS investments. Comesa defines technical standards for designs and works; monitors results and water quality delivered by the RWS systems; subsidizes SISARs during their incubation phase, estimated to be the first three years of each SISAR implementation, and UGSR, for its first four years of implementation.²⁹ SISARs are responsible for carrying out specialized RWS maintenance needs; acquisition of chemicals for water treatment, supporting the establishment, strengthening and technical assistance to community associations to ensure their sustainability over time; and carrying out socio-environmental education activities. Communities operate the RWS systems and carry out minor maintenance. They read micrometers, deliver the bills and collect tariffs. They are expected to fully cover their costs (mostly energy and local operator) through tariff collection from households. A challenge for the proposed Project in supporting the implementation of the Government strategy for RWSS is that the institutional framework is still being put in place: the SRHS is new and in the process of being staffed and strengthened; Comesa is being restructured to comply with the 2020 law and could potentially be privatized (subject under discussion within the Government) and the SISARs are being established or at an early stage of implementation (incubation phase).

14. **Regulatory framework and Planning.** The Pernambuco Regulatory Agency (*Agência Reguladora de Pernambuco* – ARPE) is responsible for regulating the WSS sector (among others), but is not currently exercising this function in the rural space. In line with the 2020 National Law for basic WSS, the State has approved legislation establishing two regions for WSS service provision: (i) the Metropolitan Region of Recife - Pajeu; and (ii) the Sertão Region.³⁰ Both regions will have their specific WSS plan prepared by SRHS.

Relationship to CPF

15. **The proposed operation is consistent with the priorities of the World Bank Group’s Country Partnership Framework (CPF) for the Federative Republic of Brazil for FY18-FY23 (Report No. 113259-BR),** discussed by the Executive Directors on July 13, 2017 and confirmed by the corresponding Performance and Learning Review (PLR). The Program will directly support Focus Area 3 (“Inclusive and Sustainable Development”), and is aligned with objective 3.1 “Support the achievement of Brazil’s Nationally Determined Contributions-NDCs with a particular focus on land use” and objective 3.3 “Promote socio economic development of small rural producers and vulnerable groups” through its support to government efforts to increase the sustainability of rural water systems; provide more efficient water services and more resilient water infrastructure to the state’s rural population; and increase the state’s institutional capacity to manage water resources and prepare for droughts exacerbated by climate change.

C. Proposed Development Objective(s)

16. The Project Development objectives (PDOs) are to increase access to sustainable, safely-managed drinking water³¹ supply and safely-managed sanitation³² for selected rural communities in the state of Pernambuco; and to build State’s capacity for reaching universal RWSS services.

Key Results (From PCN)

²⁹ Long-term sustainability of the UGSR would need to be discussed during Project preparation.

³⁰ State Law - Lei Complementar 455/2021

³¹ Safely managed drinking water – as per the Joint Monitoring Program for Water Supply and Sanitation’s (JMP) standards – include drinking water from an improved water source that is accessible on premises, available when needed and free from contamination.

³² Safely managed sanitation – as per JMP’s standards – include the use of improved facilities that are not shared with other households and where excreta are safely disposed in situ or removed and treated offsite. For the Project, treatment and disposal solution would still need to be discussed during preparation. Other similar projects in Brazil, treat and dispose excreta in situ.



17. Achievement of the Project's results will be measured through the following PDO-level indicators.

- State tools/entities strengthened to reach WSS universal access goal (text)
- Project beneficiaries satisfied with SISAR services (beneficiary survey) (percentage)
- Rural population benefiting from access to safely managed drinking water supply (number);
- Rural population benefiting from access to safely managed sanitation (number);
- Share of communities served by the Project with a climate resilient drinking water supply system³³ (percentage).

D. Concept Description

18. **The proposed Project is a US\$113 million Investment Project Financing (IPF) operation, financed by a US\$90 million IBRD loan and US\$23 million in State counterpart funds with a seven-year implementation.**³⁴ The selection of the IPF instrument was based on the IPF's flexibility and suitability to incorporate financing for a broad range of activities, including several specific investments, technical assistance and capacity enhancement measures. Considering the client's low capacity, the dispersed areas of interventions, the needed community mobilization and commitment, and previous similar experiences in Brazil (e.g. Ceará and Bahia States), the implementation of the SISAR scheme does need time to consolidate and mature, therefore, the client has requested a seven-year implementation period. The counterpart funds will finance the entire value of contracts for ongoing works that contribute to the project results: there will not be contracts co-financed by the IBRD loan and the counterpart funds.

19. The Project has three components:

20. **Component 1 – Increase access to sustainable, safely-managed rural drinking water supply and sanitation (US\$98.35 million of which US\$75.35 million IBRD financing and US\$23 million counterpart funds).** This component aims at increasing climate-resilient, safely-managed rural population's access to climate-resilient drinking water supply and on-site sanitation solutions, thereby contributing to the State universal WSS access goal. It will be done considering the climate-resilience of the RWSS systems as well as their water sources.

21. As the rural communities' requests for improved rural WSS solutions will exceed Project's capacity; eligibility, prioritization and feasibility criteria will be defined during preparation. Possible eligibility criteria include, communities located in the areas served by already established SISARs or SISARs to be created by the Project and communities exceeding a certain number of families. Priority criteria could include a climate-resilient water source, low human development index, high infant mortality index, existence of health care facility and/or schools.

22. **Subcomponent 1.1 –Increase access to rural water supply system and on-site sanitation solutions with climate-resilient designs.** This subcomponent aims at increasing access to RWSS by financing the design, construction, expansion and rehabilitation of drinking water supply system³⁵ and sanitation solutions³⁶ in selected rural communities, including where required, the community health centers and schools. Financed activities include feasibility studies, engineer designs, civil works and supervision of works. Activities under this subcomponent will be designed to take into

³³ A climate-resilient potable water supply system guarantees access to potable water in case of severe droughts or more pronounced water scarcity brought about by climate change. This could be either because the source of water for the system is climate-proof or because contingency plans exist to activate an alternative source of potable water if the first one fails.

³⁴ Client's Concept Note as approved by the Federal Government. Resolution n. 053 from COFIE, 2022.

³⁵ Water supply systems would include water source intake, treatment, storage, conveyance and distribution network at household level.

³⁶ Sanitation solutions would include construction of onsite sanitation structures– complete household sanitary kits (*módulos sanitários domiciliares* - MSD) or treatment units for existing sanitary kits - in the communities identified to receive new water systems. Complete sanitary kits include water-flushed toilet, water tank, laundry, washbasin, shower, inspection box, and treatment.



consideration climate change and variability. For example, priority will be given to RWS systems with a drought resilient water source (i.e. São Francisco River, unstressed deep sedimentary aquifers), and if still after applying the priority process the Project was to finance a RWS system with a water source vulnerable to severe droughts, a contingency plan would be developed and implemented under component 2.

23. **Subcomponent 1.2 – Improve climate-resilience of rural water sources.** The subcomponent seeks to increase the sustainability of selected rural water systems by protecting and improving their water source resilience to climate. This includes improving the safety of selected dams in a context of possible increasing peak river flows and the implementation of the Arataca II pipeline to increase the resilience of the Botafogo water system, by complementing its current vulnerable water source. The Arataca II pipeline will be financed with counterpart funds. Financed activities include: dam safety assessment, feasibility studies, engineering designs, instrumentation and civil works and their supervision.

24. **Subcomponent 1.3 – Innovate with climate resilient RWSS pilot solutions.** Activities would include: development of studies and designs, implementation of pilots, monitoring of results and evaluation for replicability and scalability, dissemination of results. Pilots may include energy efficient design, sludge and grey water treatment innovations and re-use, small-scale desalinization.

25. **Component 2 – Build State capacity for reaching universal rural WSS access and sustainably manage RWS systems and their water sources (US\$8.45 million, fully IBDR financed).** This component aims to strengthen the organizational, management, knowledge, strategic and operational capacity of key entities (State, SISAR, community's associations) to deliver sustainable and safely managed drinking water and sanitation services to rural communities and to build State capacity for reaching universal rural WSS access.

26. **Subcomponent 2.1 – Build State capacity for reaching universal rural WSS access and sustainably managed RWS systems and their water sources.** Activities include: (i) support SISAR implementation in selected regions, including, *inter alia*, social, technical, and management activities; conducting training and capacity building of communities and SISAR team; structuring, refurbishment, equipping and vehicles for SISAR headquarters for the selected regions; (ii) improvement and expansion of the State's rural water and sanitation information system (including collection of in-situ data in selected regions); (iii) development of the State's two regional water supply and sanitation plans including climate change and variability considerations;³⁷ (iv) support the State to develop a sector policy; (v) strengthening of the State unit's (UGSR) for delivering technical assistance to the SISAR and rural communities, (vi) monitoring and evaluating SISAR's performance; and (vii) capacity building and behavior change activities to promote hygiene, the rationale use of water and of the sanitary kits.

27. **Subcomponent 2.2 – Strengthen capacity to manage rural water sources sustainably.** This subcomponent, in complement to the system-specific activities supported under subcomponent 1.2, aims at strengthening the resilience of the State's RWS system's water sources against climate (drought, flood, water scarcity) and other risks. More specifically, it will:

- a. Increase APAC's capacity to carry out its water resources management (WRM) and São Francisco inter-basin transfer (PISF) O&M and regulation functions where they will contribute to secure rural water sources. This includes, *inter alia*: (i) the construction/renovation/equipment of APAC's headquarters and two regional offices near the two PISF axes (engineer designs, civil works, capacity building, studies, and equipment) to increase its presence in the field and its working environment; (ii) capacity building, complementary studies and technical assistance to ensure the efficient use of PISF waters (including strengthening inspection capacity to reduce illegal use, formalization/regularization of informal potable water uses; flow monitoring systems; complementary studies on PISF management and tariffs; (iii) carry out hydrogeological studies of sedimentary aquifers; (iv) strengthen the hydromet observation networks (quantity and quality) focusing on rural water sources, drought

³⁷ Those regional plans consider both urban and rural WSS and would be articulated with the RWSS drought preparedness plan.



forecasting and climate projections; (v) develop a state-wide RWS drought preparedness plan.

- b. Improve the safety of the dams on which Project’s RWS systems may rely on, as well as the State’s capacity for dam safety, including, *inter alia*, an inventory of dams in the State; training of State professionals; hiring of dam safety experts panel (if needed), the development of planning and monitoring tools, including the preparation of contingency plans (if needed).
- c. Develop contingency plans for Project’s RWS systems that may be vulnerable to severe droughts.

28. **Component 3 - Support project management** (total of US\$6.20 million, fully IBRD financed). This component aims to support the State institutions to deliver the Project results. Activities include: strengthening and structuring the Project Management Unit (PMU)³⁸ to develop preparatory activities, planning actions, studies, monitoring & evaluation, procurement and financial management, environmental & social management of the Project. External consulting will be contracted to strengthen the PMU fulfilling its functions and for works supervision. Technical and operational support for the Project co-executors through consultants and continuous training will also be provided. This component will also support technical and financial audits; ad-hoc consultancies, including those necessary to comply with the management of the social, environmental and dam aspects of the Project; citizen and gender engagement; strengthening of the internal controls of the PMU and the State through the State’s Internal Control Agency (CGE).

Legal Operational Policies

Triggered?

Projects on International Waterways OP 7.50

No

Projects in Disputed Area OP 7.60

No

Summary of Screening of Environmental and Social Risks and Impacts

Environmental Risk Rating

29. The Project is expected to generate a positive E&S impact in improving the quality of life of the benefited families, giving them access to drinking water/sanitation. As well as a broad environmental gain from the increase in the state's general capacity to manage and monitor water resources. Although the exact location of the Project’s main interventions are yet to be defined, the typology and scale of such interventions are relatively well-known. So far, it is known that the Rural WSS systems will be designed and implemented for communities with a population between 500-1000 inhabitants, in rural areas of the state. The civil works of the WSS systems do not entail higher-levels of complexity and will be located in rural areas with some level of anthropic activity (crops, pastures, etc.). Environmentally sensitive areas are not likely to be affected and, furthermore, the selection criteria for benefited rural communities – which would be defined during implementation – will consider environmental-sound criteria to avoid any kind of significant impacts to environmentally sensitive areas and/or native forested areas. Other civil works include the renovation of APAC’s headquarters and implementation of 2 regional units (in areas still to be defined). These interventions will be located in urban consolidated zones and/or areas already changed by anthropic interventions.

30. Environmental impacts will potentially be linked to waste and wastewater generation, dust and noise emissions, vibration, traffic disturbances, erosion and soil carryover, handling of fuel/chemicals for heavy machinery. Overall, the potential adverse risks and impacts of activities under Components 1 and 2 on human populations and/or the environment

³⁸ Formal creation of the PMU could be a condition for negotiations.



are not likely to be significant. These interventions are not complex and/or large, do not involve activities that have a high potential for harming people or the environment, and will be located away from environmentally or socially sensitive areas. As such, the potential risks and impacts and issues are likely to be: i) predictable and expected to be temporary and/or reversible; ii) low in magnitude; iii) site-specific, without likelihood of impacts beyond the actual footprint of the Project; and iv) low probability of serious adverse effects to human health and/or the environment. The risks and impacts can be easily mitigated in a predictable manner, with well-known E&S control and mitigation measures. Thus, Project's aforementioned activities are considered of Moderate risk.

31. Although the Project will not include the construction of new dams, it will most likely rely on the performance of existing large dams, as water sources for the Rural WSS to be implemented under the Project. In this sense, the Project will fund measures necessary to upgrade the existing dams to an acceptable standard of safety. Given the still to-understand safety conditions of potential relevant Project's dams, and as a precautionary approach, the risk is considered Substantial. Aiming to limit the Environmental Risk at a Substantial level, the Project will not fund water supply systems relying on existing dams with indication of serious dam safety issues or demanding complex rehabilitation works. The Arataca II System (counterpart) is concluded and currently under commissioning. The works were duly licensed according to the local environmental requirements. No environmental liabilities have been reported. During preparation, site visits and further assessment of technical soundness, and of E&S compliance will be carried out. Other soft activities of Comp. 1, 2 & 3, i.e., preparation of feasibility studies, engineering designs, training and capacity building, acquisitions, etc. are considered Moderate risk, based on initial screening, due to potential downstream effects, mainly the ones resulting from technical studies and engineering designs which could entail civil works. This risk will be properly assessed during preparation.

Social Risk Rating

32. The social risk is rated as Moderate at this stage. The social risk rating will be revisited during project preparation if there is new information and details that change the nature and risk of the project previously identified. The project interventions are small-scale and community based in nature which are not expected to have any significant or unmitigable social impacts and there will likely be no adverse impacts linked to resettlement or land acquisition. No significant adverse impacts are anticipated. The expected impacts are predictable, site specific, have minimal adverse impacts and easily mitigable. The Environmental and Social Framework (ESMF) will fully address all these areas to propose adequate mitigation measures and recommend modalities to maximize project benefits for the target population by aligning the project design with the socio-cultural and context specific needs of communities.

33. There is a risk of exclusion of disadvantaged and vulnerable social groups from the benefits of the Project, especially indigenous peoples and other traditional communities. To reduce this risk, the Project will engage these groups as early as possible, and will discuss WSS selection criteria for communities that include these groups among the beneficiaries. As part of the ESMF and SEP, guidelines will be raised to remove barriers to participation aiming to ensure women's and vulnerable groups views are considered and that they take part in and benefit from Project interventions.

34. Project workers may be exposed to health and safety risks, which will also be assessed as part of the ESMF. Measures to ensure OHS compliance will be defined in the Labor Management Procedures (LMP). Although Project-supported activities can take place in remotely located communities, they are not expected to increase risks ordinarily associated with the influx of workers on small rural communities as this number is expected to be low.

35. The project is expected to bring about better social outcomes through improved access to water and basic sanitation facilities, leading to better health and hygiene. Especially for women - menstrual hygiene, privacy, security, access and comfort will be greatly improved. Women are disproportionately affected with lack of access to water and sanitation. Therefore the project will address the gender gaps and will include among the indicators and targets to reduce the identified gaps. Improving access to water with adequate frequency, quantity and quality will improve the health



quality of children, women and students in associated institutions (schools and health centers) in the intervention area that can benefit from the Project. The actions to improve the capacity to manage water resources will increase transparency and water security for families and communities. The Project also foresees pilot investments for innovations to promote resilience to climate change in selected communities.

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