



# Board of Executive Directors

## For consideration

On or after 19 December 2012

PR-3984  
4 December 2012  
Original: Spanish  
**Simultaneous Disclosure**

**To:** The Executive Directors  
**From:** The Secretary  
**Subject:** Brazil. Proposal for a loan for the “Environmental Sanitation Program for the Ipojuca River Basin-PSA Ipojuca”

**Basic Information:** Loan type ..... Global Multiple Works Program (GOM)  
Borrower ..... State of Pernambuco  
Amount ..... up to US\$200,000,000  
Source ..... Ordinary Capital

**Inquiries to:** Irene Altafin (telephone Country Office in Brazil 5561-3317-4255) or  
Fernando Bretas (extension 1910)

**Remarks:** This operation is included in document GN-2661-4, “2012 Operational Program Report”, approved by the Board of Executive Directors on 25 April 2012. However, its amount exceeds the ceiling established for Group A countries. Therefore, the operation does not qualify for approval by Simplified Procedure.

**Reference:** GN-1838-1(7/94), DR-398-11(4/11), GN-2661-4(4/12)



SIMULTANEOUS DISCLOSURE

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

## **BRAZIL**

# **ENVIRONMENTAL SANITATION PROGRAM FOR THE IPOJUCA RIVER BASIN—PSA IPOJUCA**

**(BR-L1295)**

## **LOAN PROPOSAL**

This document was prepared by the project team consisting of Irene Altafin (WSA/CBR), Project Team Leader; Fernando Bretas, Alternate Project Team Leader; Kleber Machado (INE/WSA); Yvon Mellinger (WSA/CBR) and Yolanda Galaz (INE/WSA); Andrés Consuegra (LEG/SGO); and Carlos Lago and José Luis Vázquez (PDP/CBR).

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ELECTRONIC LINKS	
<b>REQUIRED</b>	
1.	Annual work plan (AWP) (in Portuguese) <a href="http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=37094070">http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=37094070</a>
2.	Monitoring and evaluation plan (in Portuguese) <a href="http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=37089298">http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=37089298</a>
3.	Full procurement plan (in Portuguese) <a href="http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=37094051">http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=37094051</a>
4.	Environmental and Social Management Report (ESMR) (in Portuguese) <a href="http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=37094106">http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=37094106</a>
<b>OPTIONAL</b>	
1.	Socioeconomic viability (in Portuguese) <a href="http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=37065073">http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=37065073</a>
2.	Technical annex: Description of components (in Portuguese) <a href="http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=37089181">http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=37089181</a>
3.	Fiscal and institutional analysis (in Portuguese) <a href="http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=37097137">http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=37097137</a>
4.	Operational guidelines for implementing the public utilities policy <a href="http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=37089354">http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=37089354</a>
5.	Progress monitoring report (PMR) <a href="http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=37120633">http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=37120633</a>
6.	Analysis of compliance with Operational Policy OP-708 <a href="http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=37089059">http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=37089059</a>
7.	Environmental safeguards <a href="http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=37292678">http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=37292678</a>

## ABBREVIATIONS

APAC	Agência Pernambucana de Águas e Clima [Pernambuco Water and Climate Agency]
ARPE	Agência de Regulação de Pernambuco [Pernambuco Regulatory Agency]
BOD <sub>5</sub>	Biochemical oxygen demand
CBH	Comitê da Bacia Hidrográfica [Ipojuca River Basin Committee]
COMPESA	Companhia Pernambucana de Saneamento [Pernambuco Sanitation Company]
CPRH	Agência Estadual de Meio Ambiente [State Environmental Agency]
ESMR	Environmental and Social Management Report
GCI-9	Ninth General Increase in the Resources of the Bank
ICAS	Institutional Capacity Assessment System
IRR	Internal rate of return
LIBOR	London Interbank Offered Rate
PHCHI	Plano Hidroambiental da Bacia do Rio Ipojuca [Ipojuca River Basin Water and Environmental Plan]
PMU	Program management unit
R\$	Brazilian reais
SRHE	Secretaria de Recursos Hídricos e Energéticos [Department of Water and Energy Resources]
WAL	Weighted average life

## PROJECT SUMMARY

### BRAZIL

### ENVIRONMENTAL SANITATION PROGRAM FOR THE IPOJUCA RIVER BASIN—PSA IPOJUCA (BR-L1295)

Financial terms and conditions			
<b>Borrower:</b> State of Pernambuco <b>Executing agency:</b> State of Pernambuco, through the Department of Water and Energy Resources (SRHE) <b>Guarantor:</b> Federative Republic of Brazil		<b>Flexible Financing Facility*</b>	
		Amortization period:	24 years
		Original WAL:	15.25 years
		Grace period:	6.5 years
		Disbursement period:	6 years
<b>Source</b>	<b>Amount (US\$)</b>	Inspection and supervision fee:	**
IDB (Ordinary Capital)	200,000,000	Interest rate:	LIBOR-based
Local contribution	130,000,000	Credit fee:	**
Total	330,000,000	Currency:	U.S. dollars from the Ordinary Capital
Project at a glance			
<b>Project objective/description.</b> The general objective of the program is to promote the environmental sanitation of the Ipojuca River basin through expanded coverage of sanitary sewerage services and higher wastewater treatment rates, mainly in the 12 seats of municipal government, as well as through social and environmental improvements. To this end, the program will support three sets of specific actions: (i) institutional strengthening of the Pernambuco Sanitation Company (COMPESA) and the Department of Water and Energy Resources (SRHE); (ii) installation of wastewater collection and treatment systems; and (iii) support for environmental and social sustainability in the basin, including the recovery of portions of the riverbank that are at an advanced stage of degradation.			
<b>Special contractual conditions precedent to the first disbursement:</b> (i) evidence that the program's financial and accounting monitoring and support system has been installed and is operational, with issuance of consolidated reports on the operation, in keeping with the program-specific account code (paragraph 2.5); (ii) signature of the execution agreement between the State of Pernambuco and COMPESA, under the terms previously agreed on with the Bank (paragraph 3.2); (iii) transmittal to the Bank of the revised Environmental Construction Manual, under the terms agreed on with the Bank (paragraph 2.3); and (iv) submittal of the Operating Regulations to the Bank for approval (paragraph 3.3).			
<b>Special contractual conditions for execution:</b> (i) Within 90 days after signature of the loan contract, the borrower will establish the program management unit (PMU) and appoint its managers, through normative acts; (ii) up to eight months after signature of the loan contract, the executing agency will hire a management company to support the PMU (paragraph 3.2); (iii) before the start of any work, the executing agency must show legal possession of the land and easements, environmental permits, and other applicable items (paragraph 3.3); (iv) up to 90 days after signature of the loan contract, the borrower will present evidence of the entry into force of the agreements signed with the Pernambuco Water and Climate Agency and the State Environmental Agency (paragraph 3.2); (v) prior to the start of execution of program interventions in the municípios, the borrower will present evidence of the entry into force of the agreements signed with the respective municípios (paragraph 3.2); and (vi) up to 120 days after signature of the loan contract, the borrower will establish the program advisory committee, through a normative act (paragraph 3.2).			
<b>Special contractual condition:</b> The deadline for the physical start of program works will be four years (paragraph 2.1).			
<b>Exceptions to Bank policies:</b> None.			
<b>Program consistent with country strategy:</b>		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
<b>Program qualifies as:</b>		SEQ <input checked="" type="checkbox"/> PTI <input checked="" type="checkbox"/> Sector <input type="checkbox"/> Geographic <input checked="" type="checkbox"/> Headcount <input type="checkbox"/>	

(\*) Under the terms of the Flexible Financing Facility (document FN-655-1), the borrower has the option of requesting modifications to the amortization schedule, as well as currency and interest-rate conversions. In considering such requests, the Bank will take operational and risk-management considerations into account.

(\*\*) The credit fee and inspection and supervision fee will be established periodically by the Board of Executive Directors as part of its review of the Bank's lending charges, in accordance with the corresponding policies.

## I. DESCRIPTION AND RESULTS MONITORING

### A. Background, problems addressed, and rationale

- 1.1 Pernambuco is one of nine states in the Northeast Region of Brazil. It extends over 98,311.6 square kilometers, is divided into 185 municípios, and is home to 8.8 million people. The state of Pernambuco includes 6% of the land and 18% of the population of the Northeast Region. Seventy-six percent of the population lives in urban areas, with 42% concentrated in the Recife metropolitan area, which includes the city of Recife and 14 surrounding municípios. The state of Pernambuco is divided into five mesoregions: the Recife metropolitan area, Mata (in the coastal region, with 41 municípios), Agreste (73 municípios), Sertão (41 municípios), and São Francisco (15 municípios).
- 1.2 Pernambuco's economy, which accounts for 2.3% of Brazil's GDP,<sup>1</sup> is in the process of recovering from 10 years of stagnation. The state's GDP rose 9.3% in 2010 over the previous year, while Brazil's GDP grew 7.5% overall. The Pernambuco state government has been carrying out a US\$9 billion investment program focused on the Recife metropolitan area and the coastal region. Development of the interior is challenging due to severe disparities from region to region and a lack of water resources. The state has two distinct climate patterns: the warm, humid climate along the coast, and the semiarid interior. While the coastal region receives 2,000 millimeters in annual precipitation distributed over a six-month period, there is little rainfall in the interior, with 500 millimeters per year concentrated in a few short months. Pernambuco has the country's lowest rate of water availability per capita, at 1.188 cubic meters per person per year, since 89% of its land is in the semiarid region, which contains only 20% of the state's water resources.<sup>2</sup>
- 1.3 Located in the state of Pernambuco—and the Ipojuca River basin in particular—are two of the country's driest regions: Agreste and Sertão. The lack of water in these regions limits their development. Some cities in these regions can go days, or even months, with no running water. This problem, for which solutions have been proposed since the 1800s, will be alleviated by the Agreste branch line of the Eastern Hub of the system to divert water from the São Francisco River, which is now under construction with financing from the national government. The Agreste branch line will carry four cubic meters of water per second to a large reservoir at the headwaters of the Ipojuca River, from which a transmission line will be used to benefit 64 cities and 80 smaller communities.<sup>3</sup>
- 1.4 **The Ipojuca River basin and its problems.** The Ipojuca River, one of the most important in the state, is in Brazil's East-Northeast Atlantic hydrographic region, primarily in the Agreste mesoregion. The river basin covers 3,435.34 square

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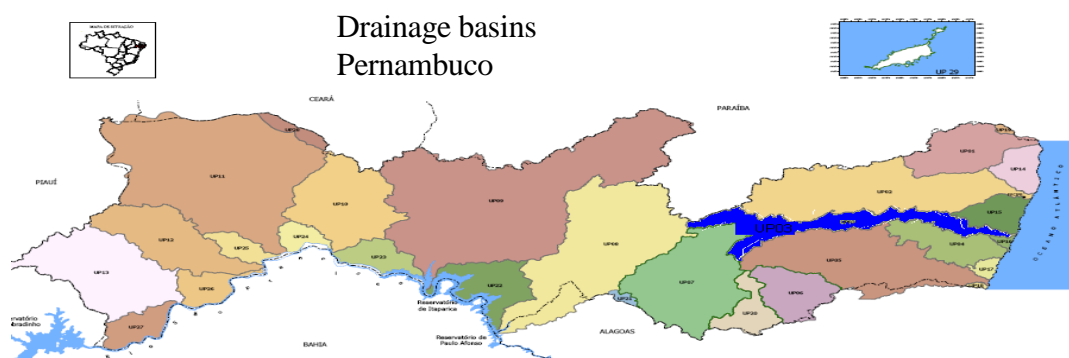
<sup>1</sup> Brazilian Geography and Statistics Institute, 2010.

<sup>2</sup> Aldo Rebouças, 2004.

<sup>3</sup> Fred Jordão and Raimundo Rodrigues Pereira, Água para o Agreste [Water for Agreste], Editora Manifesto, 2010.



kilometers—or 3.49% of the land in Pernambuco—and runs 320 kilometers from west to east across the state. At its mouth, the river empties 10.22 cubic meters of water per second into the ocean near the Port of Suape, in the Recife metropolitan area. The flow of water is intermittent in as much as half of the Ipojuca River basin, and is regulated by two dams (two more are planned) built mainly for human consumption.<sup>4</sup> Eight dams are located among its distributaries to supply water for various uses. Some of these dams are eutrophied,<sup>5</sup> and their surroundings are at varying degrees of environmental degradation due to misuse and mismanagement.<sup>6</sup> Currently under construction in the Ipojuca River, 25 kilometers upstream from its mouth, is the Engenho Maranhão dam, with 50x10<sup>6</sup> cubic meters in storage capacity and a regulated flow of 8 cubic meters per second, to provide a full water supply to the Recife metropolitan area. The following map shows the Ipojuca River basin in the state of Pernambuco.



- 1.5 In accordance with the Water Resource Plan of the State of Pernambuco, completed in 1998,<sup>7</sup> plans and diagnostic assessments of water resources were prepared for all of the state's river basins. The Ipojuca River Basin Master Plan, prepared in 2001, divided the basin into four units of analysis for specifying water balances and other studies. The Ipojuca River Basin Water and Environmental Plan (PHCHI),<sup>8</sup> completed in 2010, updated the information in the master plan and presented a detailed diagnostic assessment of potentialities and the main obstacles to achieving sustainability in the basin. The PHCHI confirmed the water deficits in the upper and middle portions of the basin, and recommended diverting water from

<sup>4</sup> Of the 10 existing dams in the basin, only two are in the Ipojuca River: Pão de Açúcar and Belo Jardim. Two more are proposed: Maranhão and Carauassú.

<sup>5</sup> Eutrophication entails the excessive growth of microalgae due to high concentration of nutrients such as phosphates and nitrates in still waters such as reservoirs and lakes.

<sup>6</sup> Plano Hidroambiental da Bacia Hidrográfica do Rio Ipojuca [Ipojuca River Basin Water and Environmental Plan], 2010. Vegetable farming and small livestock raising occur at the edge of some reservoirs, which contributes to the pollution of their waters.

<sup>7</sup> Plano de Recursos Hídricos do Estado de Pernambuco [Water Resources Plan for the State of Pernambuco], 1998.

<sup>8</sup> Government of Pernambuco, Ipojuca River Basin Water and Environmental Plan, 2010.

neighboring basins and drawing on the São Francisco River as ways to eliminate this problem. The PHCHI also identified the leading sources of pollution in the river, starting with household, industrial, and agroindustrial effluents. Irregular land use has led to the degradation of river banks, especially in urban areas. In addition to its initiative to restore water quality in the river, the state government is pursuing a program titled “Janelas para o Rio” [Windows onto the River] to recover the river banks and restore the tradition of building homes facing the river and not with their sides to it.

- 1.6 In accordance with the criteria used in the PHCHI,<sup>9</sup> in terms of residual organic matter measured as biochemical oxygen demand (BOD<sub>5</sub>), the sugar and alcohol industries account for 26.7%; household effluents, 67.3%; and other industries, 6%. As for household effluents, the 12 municípios in the basin account for 94.7% of the organic load. The municípios of Caruaru, Gravatá, Belo Jardim, Bezerros, and Escada account for 79% of the organic load of household origin, and the city of Caruaru alone accounts for 42% of the entire residential organic load.<sup>10</sup> To reduce the influx of organic material into the river, the Ipojuca River Basin Committee (CBH) and the State Environmental Agency (CPRH) are working with agroindustry, and the Department of Water and Energy Resources (SRHE) is seeking resources to reduce household loads by installing secondary treatment systems in the municípios located in the basin, which are responsible for 94.7% of the household loads.
- 1.7 The dumping of solid waste along the banks of the Ipojuca River, especially near urban areas, is further degrading the river's waters and the local landscape. The Department of the Environment and Sustainability prepared a Statewide Solid Waste Plan, which underwent consultations throughout the state and was approved in July 2012. The main objective of the plan is to eliminate garbage dumps by 2014. Forty percent of all municípios in the Ipojuca River basin deposit their solid waste in dumps, and the municípios that generate the most solid waste are Caruaru (164 tons per day), Pesquera (67 tons per day), and São Caetano (45 tons per day). The Statewide Solid Waste Plan will be implemented by the CPRH using resources from the state government or from other sources, in coordination with the municípios, and will not be addressed by this loan.
- 1.8 **Water quality in the Ipojuca River basin.** The CPRH is responsible for monitoring water quality in rivers and reservoirs, and has been doing so since 1995. The monitoring network initially included 14 stations, which were later expanded to 16, and ultimately the 24 currently in operation.<sup>11</sup> The 18 years of monitoring

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<sup>9</sup> The effluents into the river may be broken down as follows: 10% (surface runoff) in effluents from the sugar and alcohol industries, 60% in household effluents, and 20% in effluents from other industries. The PHCHI criteria entail some degree of treatment of household and industrial effluents, as well as the use of agroindustrial effluents for farm irrigation, thereby reducing the effluents directly dumped into the river. Information included in Ipojuca River Basin Water and Environmental Plan, 2010.

<sup>10</sup> Ipojuca River Basin Water and Environmental Plan, 2010.

<sup>11</sup> Ipojuca River Basin Water and Environmental Plan, 2010.

(1995-2012) have seen changes in the parameters monitored. Only BOD<sub>5</sub>, dissolved oxygen, and fecal coliform have been tested in all samples throughout this 18-year period. The network includes an offshore monitoring station near the mouth of the river, and another station in the estuary. Four stations in the initial network were included in the Caruaru urban perimeter, one in Belo Jardim, one in Poção, and one in Pesquera. The CPRH posts on its website the water quality index, which measures trophic level, salinity risk, and the ecotoxicity level.<sup>12</sup> In 2010, 2011, and 2012, the Caruaru upstream sampling station found dissolved oxygen levels ranging from 3.5 to 7 milligrams per liter (mg/l) and BOD<sub>5</sub> on the order of 5 mg/l. In the same period, the Caruaru downstream station recorded dissolved oxygen levels of 3.1 mg/l in 2010, less than 0.5 mg/l in 2011, and 0 mg/l in 2012. BOD<sub>5</sub> ranged from 10 mg/l in 2010 to 71.4 mg/l in 2012, indicating a significant deterioration in water quality in the Ipojuca River due to the dumping of effluents from Caruaru. This segment of the river also posted 1,000 mg/l of dissolved solids, fecal coliform levels above the Class II limits (most probable number of 1,000 per 100 milliliters), and phosphorus levels above 2 mg/l. Contacts with the CPRH and the Pernambuco Water and Climate Agency (APAC), the two entities responsible for managing the state's water resources, stress the need for support in modernizing their water-quality monitoring and hydrometeorological systems to expand the network and increase the frequency of monitoring.

- 1.9 **Provision of water and sanitation services in the Ipojuca River basin.** The Pernambuco Sanitation Company (COMPESA) has the concession for water and sanitation services in 173 of the state's 185 municípios, serving an estimated 5.5 million people. COMPESA was established by Law 6307 of 1971 as a mixed public/private company with the State as majority shareholder. Water service coverage is 81.3% in urban areas and 67% statewide. Service interruptions and rationing, however, do occur in 46% of the state's cities. COMPESA also provides sewer services in 21 municípios, with a coverage rate of 17.1%. Only 27.7% of collected effluents are treated. As a result, the state's largest rivers are polluted due to a lack of effluent collection and treatment, and this represents a major environmental liability for the government. Water services in the Ipojuca River basin follow the statewide pattern of service interruptions noted in paragraph 1.3, and only the cities of Caruaru, Belo Jardim, and Gravatá have partial sewer networks that cover only 39.91%, 1.64%, and 1.55% of their respective urban areas.<sup>13</sup> COMPESA's indicators reveal a need for improved commercial and operational management. Its distribution losses are at 66.2%, compared to 38.8% nationwide; billing losses are 57%, far above the national average of 35.9%; and it has 3.85 employees per 1,000 connections, compared to the national average of 3.37. In view of these indicators, COMPESA needs support to expand its coverage and better manage its services.

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<sup>12</sup> [www.cprh.pe.gov.br](http://www.cprh.pe.gov.br).

<sup>13</sup> National Sanitation Information System, 2010.

- 1.10 **The institutional legal framework for the sector in Pernambuco.** Brazil's Water and Sanitation Act (Law 11445 of 2007) and its regulations establish the regulatory framework for the sector throughout the country, including relations between sanitation companies and municípios through concessions, the need to establish regulatory agencies at the state and/or municipal level, and management instruments such as the municipal sanitation plans. The Water and Sanitation Act requires that concession contracts be updated and that municípios prepare their municipal sanitation plans. The former requirement is being met in the state of Pernambuco, but not the latter.
- 1.11 In Pernambuco, Law 13205 of 2007 established the State Department of Water Resources, and Law 13968 of 15 December 2009 expanded its jurisdiction to include the energy sector, renaming it the Department of Water and Energy Resources (SRHE), and cemented the relationship between COMPESA and the SRHE, with the roles described in paragraph 1.9. Law 14028 of 2010 created APAC, which is charged with executing the state's water resources policy and managing matters related to weather and climate. Environmental management is the responsibility of the Department of the Environment, which sets policies, and the CPRH, in accordance with Law 14249 of 17 December 2010, is responsible for implementing such policies, issuing permits, and carrying out environmental monitoring, including the monitoring of water quality. COMPESA, acting through its environmental management office, performs the environmental management of the works it executes, and the handling of environmental permits alongside the CPRH is an important activity in implementing water and sanitation works.
- 1.12 In 2001, anticipating passage of the Water and Sanitation Act, State Law 12126 created the Pernambuco Regulatory Agency (ARPE), which was subsequently amended by Law 12524 of 30 December 2003, to regulate the following public services: water and sanitation, energy, transportation, and natural gas. ARPE was created as a special entity directly linked to the government cabinet and granted financial and administrative autonomy.
- 1.13 **The state government's strategy for the water and sanitation sector.** In view of the state's deficiencies in provision of water and sewerage services, and considering that Pernambuco will host 2014 World Cup of soccer, the state government has set two goals for the water and sanitation sector: (i) strengthening of the sector's legal and institutional framework; and (ii) universal access to water and sanitation services for urban areas by 2014 and 2018, respectively. The Pernambuco state government plans to invest R\$5 billion in the sector over the next four years, mainly in the Recife metropolitan area.<sup>14</sup> This, however, will not be enough to meet the targets, and further lending operations are needed. This program is one such operation.
- 1.14 **Strategy for the operation.** The PHCHI identified three main action areas: social and environmental, water infrastructure, and water resource management. Total

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<sup>14</sup> COMPESA Management Report, 2010.

investment needed to carry out identified projects—including universal access to water services, sanitary sewerage services, and wastewater treatment in the 12 municipal seats of government—is US\$500 million.<sup>15,16</sup> This operation will contribute US\$200 million in loan proceeds and US\$130 million in counterpart resources toward this objective. Program resources are sufficient to install sanitary sewerage systems and effluent treatment systems in the 10 cities that are the leading sources of pollution: Caruaru, Gravatá, Sanharó, Bezerros, Tacaimbó, Escada, and São Caetano; and, in the river basin, Pesqueira, Venturosa, and Arcoverde. The water supply systems of the cities of Bezerros and Ipojuca/Porto de Galinhas will be rehabilitated. Financing will also be provided for projects related to basin management and institutional strengthening—including for COMPESA, to improve management, including environmental management, as well as for APAC and CPRH, to restructure the water quality monitoring program and improve management of the river basin. The State of Pernambuco has already expressed its willingness to complete in the future the additional investments (US\$170 million) needed to execute the pending projects.

- 1.15 **The Bank's role.** The Bank has been supporting the Pernambuco state government and the Recife city government for decades through interventions in various areas. The program to support sustainable development in Pernambuco's Mata Region (US\$180 million), executed from 2002 to 2011, focused on increasing the amount of agricultural land used for diversified production, raising the income of small farmers, and expanding the Mata Atlântica protected area.<sup>17</sup> The "Support for Modernization of Fiscal Management of the State of Pernambuco" program (US\$15 million), signed in July 2010 and with 10% disbursed, is currently being executed; and "PRODETUR II Nacional" (US\$70 million)<sup>18</sup> was concluded this year. This year the Board of Executive Directors approved the Recife Procidades Program (loan 2825/OC-BR) for US\$20 million to the Município of Recife for urban rehabilitation of the city.
- 1.16 **Coordination with other entities.** Other lending and multilateral cooperation institutions providing direct or indirect support to the water and sanitation sector of the state of Pernambuco include, at the national level, Caixa Econômica Federal, the Growth Acceleration Plan, Banco do Nordeste, and the National Economic and Social Development Bank; and at the international level, the World Bank. These entities are directly involved in implementing the state government's strategy described in paragraph 1.13. One of the initiatives being pursued is public-private

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<sup>15</sup> Strategic Plan for Water Resources and Sanitation, 2008.

<sup>16</sup> Ipojuca River Basin Water and Environmental Plan, 2010.

<sup>17</sup> The program was carried out from June 2002 to December 2010 and was fully disbursed. The outcomes were deemed positive, as shown in Project Completion Report BR0246 – loan 1357/OC-BR, approved in May 2011.

<sup>18</sup> The Project Completion Report for loan 1392/OC-BR, which is in the process of being approved, shows the project outcomes were positive, primarily with the creation of the Costa dos Arrecifes Tourism Corridor. The project was disbursed in full.

collaboration for approximately R\$4 billion for installing and operating 41 sewerage and wastewater treatment systems in the Recife metropolitan area. This program will be integrated with the other actions of the strategy.

- 1.17 **Lessons learned.** The recovery of water ecosystems through the treatment of effluents dumped into them is widely addressed in the literature. Paranoá Lake, in Brasília, went from a eutrophied lake due to the dumping of effluents from the city, to a tourist attraction and potential source of clean water.<sup>19</sup> Based on this experience and others, the lessons learned in executing and preparing similar operations by the Bank have been taken into account in the strategy for preparing this operation, in particular the need to: (i) clearly define the objectives and scope of projects related to environmental recovery of the Ipojuca River basin, translated into readily measurable monitoring indicators; (ii) involve the various sectors of the Pernambuco state government in project preparation to facilitate execution (SRHE, COMPESA, APAC, ARPE, Department of Finance, and CPRH);<sup>20</sup> (iii) ensure the participation of civil society by involving the CBH from the start and by implementing a communication strategy<sup>21</sup> to promote the support of those involved; (iv) finance household connections to avoid delays in execution;<sup>22</sup> and (v) ensure that a technical and administrative team receives training in Bank procedures to avoid delays in starting execution, through the creation of a program preparation unit, which will later become the program management unit (PMU).
- 1.18 **Relevance to the Bank's country strategy with Brazil.** The operation is consistent with the strategic lines of: (i) improving the country's infrastructure in the priority sector of water and sanitation (target of increased coverage and quality of sanitation); and (ii) development of sustainable cities in the priority sector of urban development in the Bank's country strategy with Brazil (2012-2014) (document GN-2662-1). The operation is also aligned with the institutional priority for Brazil by directing resources toward the country's Northeast Region and its semiarid region, and contributes to the objectives in the country strategy's results matrix of expanding urban coverage of sewerage services in Brazil from 43.2% in 2008 to 46% in 2014, and expanding the coverage of wastewater treatment from 34.6% in 2008 to 39.8% in 2014.<sup>23</sup> This operation is also consistent with the priority area of support for infrastructure for competitiveness and social welfare,

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<sup>19</sup> Patrick O'Sullivan, C. S. Reynolds, *Lake Handbook: Lake Restoration- Volume 2- Technology & Engineering*, 2008.

<sup>20</sup> Institutional coordination from the start helps involve the various entities and facilitates execution, as occurred in the Social and Environmental Program for the Igarapés in Manaus (BR-L1164), known as PROSAMIM. IDBDOCS36337865.

<sup>21</sup> This is particularly important to securing support for the project among potential users and a network connection rate that can help ensure the expected benefits. IDBDOCS37083715.

<sup>22</sup> Experience gained in preparing and executing operation BR-L1166 (Tietê River Cleanup Program, Stage III) with the State of São Paulo Basic Sanitation Company. IDBDOCS1845824.

<sup>23</sup> Technical Note on Water and Sanitation in Brazil. Information for preparing the Bank's country strategy with Brazil, 2011.

and contributes to the GCI-9 lending targets for “poverty reduction and equity enhancement” and “support for initiatives related to climate change, energy efficiency, and environmental sustainability.” The operation also adds 12 municípios toward the target of the 100 Cities Program, and one river basin toward the target of the Water Defenders Program, both of which are part of the Water and Sanitation Initiative (document GN-2446-2).

- 1.19 **The Bank’s sector policies.** This program is consistent with the objectives and conditions of the Public Utilities Policy (OP-708) and complies with the operational guidelines related to this policy ([Guidelines for Implementing OP-708](#)). The roles of policy-making, regulation and service delivery are separate. COMPESA’s operational revenues cover its maintenance costs and capital costs. ARPE sets its service rates based on economic efficiency and social criteria. COMPESA offers a reduced rate for low-income populations and a program to provide access to them ([Analysis of Compliance with OP-708](#)). This program is also in compliance with the Basic Environmental Sanitation Policy (OP-745).

## **B. Objectives and components**

- 1.20 The general objective of the program is to promote the environmental sanitation of the Ipojuca River basin through expanded coverage of sanitary sewerage services and higher wastewater treatment rates, mainly in the 12 seats of municipal government, as well as through social and environmental improvements. To this end, the program will support three sets of specific actions: (i) institutional strengthening to improve the operational, financial, and environmental management of COMPESA and the SRHE; (ii) installation of wastewater collection and treatment systems; and (iii) support for environmental and social sustainability in the basin, including the recovery of portions of the riverbank that are at an advanced stage of degradation. In addition, the water supply systems of Bezerros and Porto de Galinhas/Ipojuca will be rehabilitated. The program includes three components:
- 1.21 **Component 1: Institutional strengthening** (US\$20 million). This component will finance the operational improvement of COMPESA’s water and sanitation systems by: (i) developing procedures and methods and establishing targets to improve operations and supervision; (ii) implementing an operational training plan; (iii) implementing an equipment automation plan; (iv) implementing an asset management plan; (v) implementing a project management system; (vi) preparing and implementing COMPESA’s environmental management system; and (vii) implementing, internal control systems at the SRHE and COMPESA.
- 1.22 **Component 2: Works and equipment** (US\$264 million). This component will finance: (i) construction of interceptors and collectors, pump stations, a collection network, and wastewater treatment plants, *inter alia*, for the municípios of Tacaimbó, Sanharó, Bezerros, Pesqueira, Venturosa, Arcoverde, Escada, São Caetano, Caruaru, and Gravatá; (ii) rehabilitation of the water systems for the municípios of Bezerros and Porto de Galinhas; (iii) preparation of engineering

projects for the sewerage systems for the municípios of Caruaru, Gravatá, Belo Jardim, Chã Grande, and Primavera; (iv) nearly 60,000 of the 143,000 household connections to the sewerage system (projection); and (v) creation in the Ipojuca River basin of a decentralized unit of COMPESA for performing maintenance on the systems.

1.23 **Component 3: Environmental and social sustainability** (US\$15 million). This component will finance: (i) rehabilitation of the banks of the Ipojuca River at specific locations and of the surroundings of the reservoirs to recover native vegetation in compliance with national and state laws; (ii) development of methods for rating watercourses in the Ipojuca River basin to support the establishment of a system of payment for environmental services and the issuance of permits for municípios for wastewater dumping; (iii) development of a usage-based billing system for water; (iv) implementation of a physical structure unit in the basin to support environmental management by CPRH; (v) installation of the hydrometeorological monitoring network operated by APAC; and reconditioning of the CPRH's water quality monitoring network; and (v) execution, with APAC, of social and environmental management actions, including a communication strategy and an environmental education program to involve residents in efforts to manage the river basin.

1.24 The category of engineering and administration, for US\$15 million, includes: (i) completion of specific studies, commissioning of a consultant for management, supervision, and support for efficient program management.

### C. Cost and financing

1.25 The total cost of the program is US\$330 million, of which US\$200 million will come from the loan and US\$130 million from counterpart resources provided by the Pernambuco state government. The costs are broken down in Table I-1 by source.

**Table I-1: Costs**<sup>24</sup>

Category / Component	US\$000			Percentages		
	Total	Bank	Counterpart	Bank	Counterpart	Total
I Engineering and administration	15,000	15,000		00.00%	0.00%	4.55%
1.1 Management and supervision	15,000	15,000		00.00%	0.00%	4.55%
II Direct costs	299,000	169,000	130,000	56.52%	43.48%	0.61%
2.1 Institutional strengthening	20,000	18,250	1,750	91.25%	8.75%	6.06%
2.2 Works and equipment	264,000	135,750	128,250	51.42%	48.58%	0.00%
2.3 Environmental and social sustainability	15,000	15,000		00.00%	0.00%	4.55%
III Associated costs	1,000	1,000		00.00%	0.00%	0.30%
3.1 Auditing, evaluation, and monitoring	1,000	1,000		00.00%	0.00%	0.30%
IV Not specifically allocated	15,000	15,000		00.00%	0.00%	4.55%

<sup>24</sup> The financial costs, interest, credit fee, and inspection and supervision fee, totaling some US\$10 million, will be paid outside the program.



Category / Component	US\$000			Percentages		
	Total	Bank	Counterpart	Bank	Counterpart	Total
4.1 Contingencies	15,000	15,000		00.00%	0.00%	4.55%
<b>TOTAL</b>	<b>330,000</b>	<b>200,000</b>	<b>130,000</b>	<b>61%</b>	<b>39%</b>	

#### **D. Key indicators in the results matrix**

- 1.26 The expected outcomes include: (i) connection of some 143,000 residences (450,000 people) to the sanitary sewerage system and wastewater treatment plants; (ii) construction of 1,190 kilometers of sewers and 465 kilometers of collectors, and installation of five wastewater treatment plants; (iii) improved operational management of COMPESA, as reflected in the quality of services provided in terms of continuity, reliability, reduced losses, and other variables. The program will directly benefit 143,000 families with connections to the sanitary sewerage system and 63,000 families with connections to the water network. The specific outcomes are detailed in the results matrix, Annex II.

## **II. FINANCING STRUCTURE AND RISKS**

#### **A. Financing instruments and financial conditions**

- 2.1 The loan, structured as a global multiple works operation and financed with resources from the Bank's Ordinary Capital under the Flexible Financing Facility, will have the following initial conditions: (i) LIBOR-based interest rate; (ii) 24-year amortization period; (iii) a four-year period for material startup of program works; and (iv) a six-year disbursement period and grace period.

#### **B. Environmental and social risks and mitigation measures**

- 2.2 At its meeting of 12 April 2012, ESR approved the program's environmental and social strategy and classified this as a category B operation. An environmental and social strategy and the Environmental and Social Management Report ([ESMR](#)) were prepared for the program. The environmental and social strategy found that the program's environmental and social impacts are mostly positive. The organic load, measured in terms of BOD<sub>5</sub> dumped in watercourses, will be decreased from 24.5 tons to 2.5 tons, and 143,000 residences will be connected to the sanitary sewerage system, reducing the sanitary risks to which residents are exposed and improving water quality in the basin's receptor bodies of water. Aesthetically, the landscape will be renewed by the elimination of water pollution and recovery of the river banks, becoming a viable alternative to beach tourism for residents of the Recife metropolitan area, mainly by virtue of their historical and cultural value. Lastly, water quality in the estuary will be improved, facilitating the restoration of its flora and fauna. Some of the sanitation works have their respective permits for installation and construction of sewerage systems and wastewater treatment plants. Other positive impacts of the program include: (i) restructuring of the water quality monitoring system; (ii) development of a method of payment for environmental

services and billing for water usage; (iii) implementation of an environmental management system at COMPESA; and (iv) development of a communication strategy for the program.

- 2.3 The negative impacts are associated with the works phase due to the generation of temporary, localized disturbances such as dust, noise, potential minor occupational accidents, and traffic changes, but these impacts are easily mitigated through the adoption of good construction and occupational health practices. A draft of the Environmental Construction Manual is attached to the ESMR for the executing agency to review and for incorporation as part of the work documents. It has been confirmed that no families will need to be resettled, and special precautionary measures will be adopted for works located in areas with archaeological potential. The risk of deficient operation and maintenance in treatment plants due to the institutional weakness described in paragraph 1.9 will be minimized through the environmental management system and the institutional strengthening of COMPESA. **As special contractual condition precedent to the first disbursement, the executing agency will submit to the Bank the revised Environmental Construction Manual, under the terms previously agreed with the Bank.**
- 2.4 The PHCRI,<sup>25</sup> the document that gave rise to this operation, underwent extensive consultations with residents and includes records of these consultations. To complete the consultation process and comply with the Bank's policy OP-102, an additional consultation on the environmental and social strategy was held in the Ipojuca River Basin Committee on 3 September 2012.

**C. Other key considerations and risks**

- 2.5 **Financial fiduciary risk.** The fiduciary risk analysis was based on the COMPESA institutional capacity assessment report, conducted using the methodology of the Institutional Capacity Assessment System (ICAS), and on the risk analysis based on the program risk management methodology. The ICAS yielded a score of 76.96%, which indicates that COMPESA has a medium level of development and a medium level or risk, with emphasis on the need to improve and finish implementing a management system, including budgeting, to make reliable financial data available for preparing financial statements and other reports. Despite the SRHE's and COMPESA's experience in loan operations with international organizations,<sup>26</sup> training must be provided to the team responsible for executing the program to familiarize them with guidelines for preparing the Bank's disbursement requests. The financial supervision plan (Annex III) is based on the evaluation of potential

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<sup>25</sup> Ipojuca River Basin Water and Environmental Plan, 2010.

<sup>26</sup> The SRHE already has experience with loans with international organizations. Since March 2010, it has been the executing agency for a US\$410 million project of the World Bank, the Pernambuco Sustainable Water Project, to which the World Bank is contributing US\$190 million. To help manage this program, the structure of the management unit created in 1997 to support another World Bank loan, the PROAGUA project, was reinforced; and a project implementation unit was created in COMPESA to be responsible for water and sanitation projects and works.

- risks and their respective degrees of severity, and describes the budgetary, accounting, and disbursement processes and related systems. **As a special contractual condition precedent to the first disbursement, evidence will be presented that the financial and accounting monitoring and support system for the program has been installed and is running, with the issuance of consolidated reports on the operation, in keeping with the program-specific account code.**
- 2.6 **Institutional and technical viability.** The program is consistent with the strategic priorities of the Pernambuco state government and COMPESA. The commitments to the Fédération Internationale de Football Association (FIFA) for the 2014 World Cup ensure that the state government and COMPESA will strive to achieve strategic interagency agreements for execution. Moreover, the start of works in any of the beneficiary municípios will be contingent upon the signature and entry into force of a legal instrument between the município, the Pernambuco state government, and COMPESA for operation and maintenance of the systems in the município. Technical viability is based on reviewed projects and reflects the standards of the Brazilian Technical Standards Association ([technical annex](#)).
- 2.7 **COMPESA's finances.** The financial analysis of COMPESA shows that net operational revenues have grown steadily from R\$627,000 in 2008 to R\$35.1 million in 2011, which represents a 5.81% net profit margin for that fiscal year. COMPESA generated financial surpluses in 2011, after operational expenses on the order of R\$55 million. The extra maintenance and operation costs inherent to the works in the sample of projects are estimated at R\$1.7 million per year. Thus, in the short term COMPESA will generate the financial surpluses needed to operate and maintain the assets under its concession, including those yet to be incorporated with proceeds from this loan. The Pernambuco state government is making the necessary investments to expand water and sewerage services, which, upon completion, will be incorporated into COMPESA through an increase in its capital stock. COMPESA has invested R\$1.8 billion over the last five years, and R\$335 million in 2011 alone.
- 2.8 **Financial security.** To guarantee the borrower's financial obligations, the Federative Republic of Brazil requires compliance with the Financial Responsibility Act, the Fiscal Adjustment Program, and the counterguarantee of the Pernambuco state government. The state government's financial capacity was assessed in light of: (i) budgetary execution from 2007 to 2011; and (ii) the requirements of the Financial Responsibility Act. The outcomes indicate that the state government meets the legal requirements for all indicators in the period under review, and that it has the additional capacity to acquire and service debt, including for this operation ([fiscal and institutional analysis link](#)).
- 2.9 **Operation and maintenance.** The works financed by the program will be transferred to COMPESA for operation and maintenance. The actions to strengthen COMPESA will significantly improve operation of its systems. In addition, US\$8.7 million are allocated to establish a unit to maintain the sewerage systems to

- be installed. **A special condition precedent to the first disbursement will be the entry into force of the agreement between the Pernambuco state government and COMPESA, under the terms previously agreed with the Bank.** COMPESA will submit to the Bank, during the seven years following completion of the first work under the program, in the first quarter of each year, a report on the status of such works and equipment and the annual maintenance plan.
- 2.10 **Socioeconomic viability.** The socioeconomic viability of the sample projects was evaluated. The benefits and costs have a baseline date of April 2012. The economic value of the benefits of sanitary sewerage services and wastewater treatment was determined through a nonparametric estimation of willingness to pay and by comparing it to the willingness to pay on similar projects for other Brazilian cities, updated as of July 2012 through currency corrections of average household income and consumer price index (benefit transfer). The costs used in the evaluation were incremental for investment and operation and maintenance, valued at efficiency prices. All projects underwent an analysis of alternatives to help determine the alternative with the lowest economic cost (cost-effectiveness). A cost-benefit analysis was carried out for the selected alternative (cost-efficiency). The sanitary sewerage projects for the cities of Bezerros, Pesqueira, and Sanharó have internal rates of return (IRR) greater than 12% and benefit-cost ratios over 1. The sanitary sewerage project for the city of Tacaimbó has in IRR of 10%, but it is cost-effective as the alternative with the lowest per-connection cost. The economic evaluations of projects that are not part of the sample will be conducted in accordance with the Operating Regulations and will be based on an estimation of willingness to pay based on specific surveys being conducted with technical-cooperation resources (operation ATN/OC-12348-BR), and the projects' socioeconomic viability will be verified before they are put out for bid. This evaluation will help measure the effect of the program and develop a baseline for the ex post socioeconomic evaluation ([see link](#)).
- 2.11 **Risk assessment.** To assess risk for the projects, a sensitivity test was conducted for the following variables: (i) investment costs; (ii) operating and maintenance costs; (iii) willingness to pay; and (iv) number of first-time connections. Demand for the project throughout its useful life is expressed in this last variable, justifying its importance in the risk assessment. The outcomes of the risk models for the sample projects indicate that these projects have a 10% probability of not being socioeconomically viable; and they systematically show that the most sensitive variable in all models is the number of first-time connections, followed by investment costs and, lastly, willingness to pay. This profile is confirmed on all projects in the sample. The assessment is detailed in the link to the economic analysis.
- 2.12 **Capacity to pay.** Capacity to pay was calculated for the beneficiaries of sewerage systems for the 13 cities<sup>27</sup> in the Ipojuca River basin, using as a reference the fact

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<sup>27</sup> Pesqueira was added to the 12 cities in the Ipojuca River basin, as it was part of the program sample.

that the monthly bill for service was less than 5% of household income. Based on data of the Brazilian Geography and Statistics Institute, the average monthly income of beneficiary families was estimated at a weighted R\$2,717.22 in 2012.<sup>28</sup> According to COMPESA's current fee structure,<sup>29</sup> the average monthly rate for water and sanitary sewerage service for all users in the 12 cities of the basin was R\$18.64 per household per month in 2011. Thus, the average rate for service represents 0.7% of average weighted household income. Still, COMPESA applies a reduced rate of R\$8.46 per household per month to 48.2% of all people in the cities in the basin. Taking R\$610.87 as average monthly income, the average monthly rate is 1.4% of household income. Data is presented for each city in the economic analysis link.

- 2.13 **Social equity and poverty reduction.** This operation qualifies as a social equity enhancing and poverty reducing project, in accordance with the geographic classification criteria of the Report on the Ninth General Increase in the Resources of the Inter-American Development Bank (document AB-2764). The percentage of low-income families in the Ipojuca River basin is 48.2%, ranging from 38.2% in Caruaru to 65.4% in Poção.<sup>30</sup> The 48.2% figure is similar to the percentage of low-income families in Pernambuco (51.1%), and 16.3 percentage points higher than the nationwide average.

### III. EXECUTION AND ADMINISTRATION PLAN

- 3.1 **Borrower, executing agency, and guarantor.** The borrower will be the State of Pernambuco, and the executing agency will be the State of Pernambuco, represented by the SRHE. The Federative Republic of Brazil will be the guarantor of the financial obligations stemming from the loan contract to be signed between the borrower and the Bank. The State of Pernambuco, represented by the SRHE, will execute the program through COMPESA.
- 3.2 **Execution plan.** The SRHE will be the program executing agency through COMPESA, with support from APAC and the CPRH. The SRHE will work in coordination with the participating municípios and the CBH, and for which it will establish agreements. The program management unit (PMU)<sup>31</sup> will be established in COMPESA and supported by an advisory committee consisting of representatives of the SRHE, COMPESA, APAC, the Department of Planning and Management (SEPLAC), the CPRH, and the CBH. The advisory committee will serve as a forum and mediator in cases affecting execution. The following are special execution

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<sup>28</sup> Average weighted income of all residents of the 13 cities in the Ipojuca River basin who benefited from the program: R\$811.66 per person. Average household size: 3.11 persons. Source: Census 2010 – Brazilian Geography and Statistics Institute, and 2012 minimum wage.

<sup>29</sup> Resolution ARPE 003, published in the Official State Gazette on 23 November 2011.

<sup>30</sup> Brazilian Geography and Statistics Institute (IBGE), 2010 demographic census.

<sup>31</sup> The project preparation unit was created to perform the studies to update the final projects in the sample. The unit will be trained in Bank policies for its transformation into the PMU.

conditions: (i) Within 90 days after signature of the loan contract, the borrower will establish the program management unit (PMU) and appoint its managers, through a normative act; and (ii) up to 120 after signature of the loan contract, the borrower will establish the program advisory committee, through a normative act. The PMU, consisting of a full-time coordinator and four full-time managers (administrative/financial manager, project manager, environmental manager, and procurement/legal manager), will be responsible for coordination, execution, monitoring and evaluation, and fulfillment of agreed deadlines and targets, as well as compliance with Bank policies. As a special contractual condition for execution, up to eight months after signature of the loan contract, the SRHE will hire a project management company to support the PMU. **As a special contractual condition precedent to the first disbursement, the State of Pernambuco will sign an execution agreement with COMPESA, under the terms previously agreed with the Bank.** As a special execution condition, up to 90 days after signature of the loan contract, the borrower will sign agreements with APAC and the CPRH, and the borrower will also sign agreements with each município involved, prior to the interventions in those municípios.

- 3.3 **Execution of components.** The PMU will be responsible for carrying out engineering, bidding, and procurement of works, goods, and services, supervision and monitoring of works, and procurement of consulting services for the institutional strengthening of COMPESA. To prepare the projects and execute the works that are not part of the sample, Operating Regulations detailing eligibility criteria, the evaluation methodology, and procedures for program execution will be prepared. **Submittal of the Operating Regulations for the Bank's approval will be a special contractual condition precedent to the first disbursement.** Also, as a special contractual conditions for execution, at the start of any work, the executing agency must demonstrate that it is in legal possession of land and easements, environmental permits, and other applicable items. The disbursement timetable is shown in Table III-1.

**Table III-1. Disbursements (US\$000)**

Source	Year 1		Year 2		Year 3		Year 4		Year 5		Year 6		Total	
	US\$	%	US\$	%	US\$	%	US\$	%	US\$	%	US\$	%	US\$	%
IDB	12,987	18.84	58,606	71	64,717	100	40,995	100	14,197	37	8,497	25	200,000	61
Counterpart	55,950	81.16	24,050	29	0	0	0	0	24,320	63	25,680	75	130,000	39
Total	68,937	100	82,656	100	64,717	100	40,995	100	38,517	100	34,177	100	330,000	100

- 3.4 **Procurement.** Procurement of goods, works, and consulting services for the program will be in accordance with Bank policies set forth in documents GN-2349-9 and GN-2350-9, both dated March 2011. Procurement processes will be reviewed by the Bank in accordance with Annex III.
- 3.5 **Advances.** Advances may be made for program disbursements. The PMU will control the use of funds and will prepare disbursement requests.

- 3.6 **Recognition of expenditures.** The Bank may recognize up to US\$15 million charged to the local counterpart in expenses incurred by the borrower in connection with studies, works, and program supervision. Only those expenses made in the 18 months prior to the date on which this operation was approved will be recognized, provided they are made after the approval date of the program profile, 10 May 2012.
- 3.7 **Monitoring and evaluation.** The PMU will submit semiannual progress reports to the Bank, indicating achievements for each component and overall program performance, in accordance with the indicators in the results matrix. The executing agency will also submit a progress evaluation prepared by a consultant 18 months into the loan disbursement period. A final program evaluation will be conducted by a consultant within 90 days after 90% of the loan proceeds are disbursed. This final evaluation will include: (i) outcomes of financial execution by component; (ii) fulfillment of targets, in accordance with the agreed outcome and impact indicators; (iii) an evaluation of the socioeconomic indicators; and (iv) fulfillment of contractual commitments.
- 3.8 **External auditing.** The program's financial statements will be audited by a firm of independent auditors acceptable to the Bank (degree of eligibility I) or by the Audit Office of the State of Pernambuco using loan proceeds. This work will be in accordance with international auditing standards. The reports to be audited will include basic financial statements (cash flow, origin and use of resources, program investments), notes on the statements, including reconciliation of liabilities with the Bank and advance of funds, internal control environment, management letter, and security letter. The audited financial statements will be submitted every year to the Bank as of 31 December of each year within 120 days after the end of each calendar year, starting with the year in which loan proceeds are first disbursed.

Development Effectiveness Matrix			
Summary			
I. Strategic Alignment			
1. IDB Strategic Development Objectives	Aligned		
Lending Program	Lending to support: (i) Poverty reduction and equity enhancement, and (ii) Climate change initiatives, renewable energy and environmental sustainability.		
Regional Development Goals	(i) Incidence of waterborne diseases (per 100,000 inhabitants).		
Bank Output Contribution (as defined in Results Framework of IDB-9)	(i) Households with new or upgraded water supply; (ii) Households with new or upgraded sanitary connection, and (iii) Municipal or other sub-national governments supported.		
2. Country Strategy Development Objectives	Aligned		
Country Strategy Results Matrix	GN-2662-1	Water and sanitation: Support the implementation of an institutional framework to make service delivery more efficient.	
Country Program Results Matrix	GN-2662-3	The intervention is included in the 2012 Country Program Document.	
Relevance of this project to country development challenges (If not aligned to country strategy or country program)			
II. Development Outcomes - Evaluability	Highly Evaluable	Weight	Maximum Score
	8.4		10
3. Evidence-based Assessment & Solution	8.4	25%	10
4. Ex ante Economic Analysis	10.0	25%	10
5. Monitoring and Evaluation	7.5	25%	10
6. Risks & Mitigation Monitoring Matrix	7.5	25%	10
Overall risks rate = magnitude of risks*likelihood		Medium	
Environmental & social risk classification		B	
III. IDB´s Role - Additionality			
The project relies on the use of country systems (VPC/PDP criteria)	Yes	Financial management: Internal audit. Procurement: Information system, Shopping method, Advanced use of national public bidding (electronic public bidding system).	
The project uses another country system different from the ones above for implementing the program			
The IDB's involvement promotes improvements of the intended beneficiaries and/or public sector entity in the following dimensions:			
Gender Equality			
Labor			
Environment	Yes	Promotes better involvement of stakeholders through the Watershed Management Committee and APAC. These institutions will be supported by a communication plan to raise awareness of the issues and the present operation activities in the watershed. Furthermore, the ESMR was discussed with the stakeholders on September 3rd, marking the first wave of internalization of the watershed issues through environmental actions and instruments.	
Additional (to project preparation) technical assistance was provided to the public sector entity prior to approval to increase the likelihood of success of the project	Yes	Preparation approval and execution of the technical Cooperation BR-T1182 for US\$ 850.000; which will be used to prepare projects and start the process of institutional strengthening in preparation for project execution.	
The ex-post impact evaluation of the project will produce evidence to close knowledge gaps in the sector that were identified in the project document and/or in the evaluation plan.			

The project's overall objective is to promote the environmental sanitation of the Ipojuca River Basin (IRB) through social environmental improvements and increased sewer coverage and wastewater treatment, mainly in the 12 cities which are heads of municipalities. The project documentation provides a diagnosis of the current state of the IRB as well as the main factors that contribute to the current environmental degradation. The vertical logic of the project is clear, most indicators are SMART and have appropriate baselines and target values.

A cost-benefit analysis for a sample of projects to be financed was performed after selecting the minimum cost alternative. The benefits have been estimated based on WTP estimates and the costs (investment, maintenance and operation) are incremental and valued at efficiency prices. A sensitivity analysis was carried out to assess the impact of changes in key variables to the viability of the sample projects. The monitoring mechanisms have been identified and budgeted. The evaluation plan is based on an ex-post cost benefit analysis.

The risk matrix does not identify all main risks. In particular, the failure of households to connect to the sewer network is not included, although it is highlighted as a key lesson learned and also as a key variable in the economic viability of the project.



Results Matrix											
Project title	Environmental Sanitation Program for the Ipojuca River Basin--PSA Ipojuca (BR-L1295)										
Project objective	The general objective of the project is to promote the environmental sanitation of the Ipojuca River basin through expanded coverage of sanitary sewerage services and higher wastewater treatment rates, mainly in the 12 seats of municipal government, as well as through social and environmental improvements. To this end, the project will support three sets of specific actions: (i) institutional strengthening to improve the operational, financial, and environmental management of COMPESA; (ii) installment of wastewater collection and treatment systems; and (iii) support for environmental and social sustainability in the basin, including the recovery of portions of the riverbank that are at an advanced stage of degradation. In addition, the water supply systems of Bezerros and Porto de Galinhas/Ipojuca will be rehabilitated.										
Impact indicators: Improved sanitation in Brazil											
Indicator	Unit of measurement	Baseline	Baseline year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	End of project	Comments/Mean of verification
Improved concentrations of dissolved oxygen in the Ipojuca River downstream from Caruaru and Gravatá	mg/l	0.00	2012	0.00	0.00	0.00	1.00		3.00	3.00	The CPRH monitors the Ipojuca River. The baseline was drawn from the 1995-2012 historical series. The monitoring network will be improved with proceeds from the future loan operation, and will be used to verify the hypotheses set forth here. Monitoring of water quality performed by the CPRH Financed with government resources.
Outcome 1: Increased efficiency of services provided by COMPESA											
Indicator	Unit of measurement	Baseline	Baseline year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	End of project	Comments/Mean of verification
Households with continuous service throughout the day	%	51.80	2010			80.00			100.00	100.00	Data from COMPESA's control system transmitted to the PMU
Customers satisfied with COMPESA	%	60.00	2011			65.00				75.00	Surveys conducted by the PMU
Complaints about services provided by COMPESA	rate per 1,000 users	80.00	2010			70.00				65.00	Data from COMPESA call center submitted to the PMU
Outcome 2: Expanded coverage of sanitation services in the Ipojuca River basin											
Indicator	Unit of measurement	Baseline	Baseline year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	End of project	Comments/Mean of verification
Households in urban areas in the Ipojuca River basin with new connections to the networked sanitation system	household	30,930	2010		10,000	10,000	40,000	40,000	43,000	143,000	Initial data were provided by COMPESA. The PMU will use COMPESA data to verify.
Wastewater flow in urban areas in the Ipojuca River basin, treated at the secondary level	l/s	0	2010			150		250	461	461	Hardly any wastewater is treated in the Ipojuca River basin. The PMU will use COMPESA data to verify.
Outcome 3: Expanded coverage of water services in the Ipojuca River basin											
Indicator	Unit of measurement	Baseline	Baseline year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	End of project	Comments/Mean of verification
Amount of water consumed per person in Porto de Galinhas	liter/person/day	80	2012			120				120	Responsible entity: PMU. How: Based on COMPESA data. Cost: Part of program management activities.
Water samples meeting national water quality standards, in accordance with procedures set forth in Health Ministry Standards 2914/2011.	%	70.00	2010			80.00			90.00	90.00	Responsible entity: PMU. How: Based on COMPESA data. Cost: Part of program management activities.
Outcome 4: Improved social and environmental quality in the Ipojuca River basin											
Indicator	Unit of measurement	Baseline	Baseline year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	End of project	Comments/Mean of verification
Percentage of rehabilitated hydrometeorological stations up and running	%	0	2012			60.00			100.00	100.00	Responsible entity: PMU. How: Based on CPRH data. Cost: Part of program management activities.
Surface area of river banks and reservoir surroundings rehabilitated for protection of water resources	Hectares	0	2012			66				258	Responsible entity: PMU. How: Based on APAC data. Cost: Part of program management activities.

Results Matrix												
Project title	Environmental Sanitation Program for the Ipojuca River Basin--PSA Ipojuca (BR-L1295)											
Project objective	The general objective of the project is to promote the environmental sanitation of the Ipojuca River basin through expanded coverage of sanitary sewerage services and higher wastewater treatment rates, mainly in the 12 seats of municipal government, as well as through social and environmental improvements. To this end, the project will support three sets of specific actions: (i) institutional strengthening to improve the operational, financial, and environmental management of COMPESA; (ii) installment of wastewater collection and treatment systems; and (iii) support for environmental and social sustainability in the basin, including the recovery of portions of the riverbank that are at an advanced stage of degradation. In addition, the water supply systems of Bezerros and Porto de Galinhas/Ipojuca will be rehabilitated.											
Percentage of cities with permits to dump effluents	%	0	2012					20.00		60.00	60.00	Definition of "rehabilitated": recovery of river banks and reservoirs by installing erosion control structures, creating recreation areas, and planting native species in accordance with the Forestry Code (Law 12651 of 2012).
Outputs												
Component 1: Institutional strengthening												
Output	Unit of measurement	Associated outcomes	Cost	Year 1 - 2013	Year 2	Year 3	Year 4	Year 5	Year 6	End of project	Comments/Mean of verification	
1.1 Study to evaluate COMPESA's assets, completed	Study		1,750.0		1					1	Responsible entity: PMU. How: Based on COMPESA data. Cost: Part of program management activities.	
1.2 COMPESA's automation system implemented			6,000.0									
COMPESA automation plan developed	Plan				1					1	Responsible entity: PMU. How: Based on COMPESA data. Cost: Part of program management activities.	
Sirigi, Bofafogo, and Varzea do Una systems with automation plan, implemented	System					1	1	1		3		
1.3 Program for micromasurement of water connections, developed and implemented			4,500.0									
Micrometers procured and installed	Micrometers			30,000	70,000	70,000	80,000			250,000	Responsible entity: PMU. How: Based on COMPESA data. Cost: Part of program management activities.	
Telemetry stations installed	Stations				50	100	50			200		
Telemetry stations reviewed	Stations					50	100	50	75	275		
1.4 Plan to regularize and standardize COMPESA processes, developed and implemented	Plan		2,100.0		1					1	Responsible entity: PMU. How: Based on COMPESA data. Cost: Part of program management activities.	
1.5 Training plan for operations area, developed and implemented			1,000.0									
Training plan developed	Plan				1					1	Responsible entity: PMU. How: Based on COMPESA data. Cost: Part of program management activities.	
Training workshops held	Workshop					10	10	5	5	30		
1.6 Integrated supplies and logistics system implemented			750.0									
Warehouses built/rehabilitated	Warehouses				2	2	4	2		10	Responsible entity: PMU. How: Based on COMPESA data. Cost: Part of program management activities.	
Pieces of equipment procured and installed	Pieces of equipment				4	4	4	4	4	20		
1.7 Preventive maintenance plan implemented	Plan		500.0		1					1	Responsible entity: PMU. How: Based on COMPESA data. Cost: Part of program management activities.	
1.8 Project management plan developed and implemented	Plan		450.0			1				1	Responsible entity: PMU. How: Based on COMPESA data. Cost: Part of program management activities.	
1.9 Institutional communication plan developed and implemented			200.0		1					1	Responsible entity: PMU. How: Based on plan data. Cost: Part of program management activities.	

Results Matrix												
Project title		Environmental Sanitation Program for the Ipojuca River Basin--PSA Ipojuca (BR-L1295)										
Project objective		The general objective of the project is to promote the environmental sanitation of the Ipojuca River basin through expanded coverage of sanitary sewerage services and higher wastewater treatment rates, mainly in the 12 seats of municipal government, as well as through social and environmental improvements. To this end, the project will support three sets of specific actions: (i) institutional strengthening to improve the operational, financial, and environmental management of COMPESA; (ii) installment of wastewater collection and treatment systems; and (iii) support for environmental and social sustainability in the basin, including the recovery of portions of the riverbank that are at an advanced stage of degradation. In addition, the water supply systems of Bezerros and Porto de Galinhas/Ipojuca will be rehabilitated.										
19	1.10 COMPESA's environmental management system developed and implemented			1,750.0					1		1	Responsible entity: PMU. How: Based on COMPESA data. Cost: Part of program management activities.
20	1.11 SRHE's administration, finance, and internal control system, developed and implemented			1,000.0				1				Responsible entity: PMU. How: Based on COMPESA data. Cost: Part of program management activities.
21	Component 2: Works and equipment											
Output		Unit of measurement	Associated outcomes	Cost	Year 1 - 2013	Year 2	Year 3	Year 4	Year 5	Year 6	End of project	Comments/Mean of verification
2.1 Sanitation system of city of Tacaimbó built (*)				4,500.0								
Collectors built		Km				2.263	5.282				7.545	Responsible entity: PMU. How: Based on data from the program supervision system. Cost: Part of the program supervision contract.
Sewerage networks built		Km				5.535	12.915				18.450	
Wastewater pump stations built		Station					2				2	
Wastewater treatment plant built		Plant					1				1	
2.2 Sanitation system of city of Sanharó built				7,600.0								
Collectors built		Km				3.957	9.236				13.193	Responsible entity: PMU. How: Based on data from the program supervision system. Cost: Part of the program supervision contract.
Sewerage networks built		Km				9.355	21.829				31.184	
Wastewater pump stations built		Station					2				2	
Wastewater treatment plant built		Plant					1				1	
2.3 Sanitation system of city of Bezerros built				29300								
Collectors built		Km				5.347	32.086	16.045			53.478	Responsible entity: PMU. How: Based on data from the program supervision system. Cost: Part of the program supervision contract.
Sewerage networks built		Km				12.640	75.842	37.922			126.404	
Wastewater pump stations built		Station					2	3			5	
Wastewater treatment plant built		Plant				1					1	
2.4 Sanitation system of city of Pesqueira built				24,800.0								
Collectors built		Km				13.59	31.709				45.299	Responsible entity: PMU. How: Based on data from the program supervision system. Cost: Part of the program supervision contract.
Sewerage networks built		Km				32.121	74.95				107.071	
Wastewater pump stations built		Station				2	5				7	
Wastewater treatment plant built		Plant					1				1	
2.5 Sanitation system of city of Escada built				6,000.0								
Collectors built		Km			10.155						10	Responsible entity: PMU. How: Based on COMPESA data. Cost: Part of program management activities.
2.6 Sanitation system of city of São Caetano built				15,000.0								
Collectors built		Km			1.318	1.979					3.297	Responsible entity: PMU. How: Based on COMPESA data. Cost: Part of program management activities.
Sewerage networks built		Km			46.933	70.4					117.333	
Wastewater pump stations built		Station			3	4					7	
Wastewater treatment plant built		Plant				1					1	
2.7 Sanitation system of city of Arcoverde built				17,500.0								
Collectors built		Km			705	471					471.000	Responsible entity: PMU. How: Based on data from the program supervision system. Cost: Part of the program supervision contract.
Sewerage networks built		Km			17.477	11.651					29.128	
Wastewater pump stations built		Station			2	2					4	
Wastewater treatment plant built		Plant				1					1	
2.8 Sanitation system of city of Venturosa built				17,500.0								

Results Matrix											
Project title	Environmental Sanitation Program for the Ipojuca River Basin--PSA Ipojuca (BR-L1295)										
Project objective	The general objective of the project is to promote the environmental sanitation of the Ipojuca River basin through expanded coverage of sanitary sewerage services and higher wastewater treatment rates, mainly in the 12 seats of municipal government, as well as through social and environmental improvements. To this end, the project will support three sets of specific actions: (i) institutional strengthening to improve the operational, financial, and environmental management of COMPESA; (ii) installment of wastewater collection and treatment systems; and (iii) support for environmental and social sustainability in the basin, including the recovery of portions of the riverbank that are at an advanced stage of degradation. In addition, the water supply systems of Bezerros and Porto de Galinhas/Ipojuca will be rehabilitated.										
Collectors built	Km				0.885	2.067					2.952
Sewerage networks built	Km				4	9.935					14.192
Wastewater pump stations built	Station				2	3					5
Wastewater treatment plant built	Plant					1					1
2.9 Expansion of water system of Porto de Galinhas/Ipojuca built			17,500.0								
Water distribution networks built	Km			15.06	10.04						25.100
Storage tanks built	Tank				3						3
2.10 Water treatment system of city of Bezerros built			4,750.0								
Water pumping stations built	Station				1						1
Water treatment plan built	Plant				1						1
2.11 Other sanitation systems built on the basis of projects to be carried out (**)			96,777.0								
Household connections to sewerage networks	Connection						20,000	20,000	20,000		60,000
2.12 Engineering projects for sanitation systems for Caruaru, Gravatá, Belo Jardim, Poção, Chã Grande, and Primavera developed	Project		3,850.0		2	4	2				8.000
2.13 Units for maintaining the built and equipped systems	Unit						1	1	1		3
<b>Component 3: Social and environmental strengthening</b>											
Output	Unit of measurement	Associated outcomes	Cost	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	End of project	Comments/Mean of verification
3.1 Conceptual study of system of payment for environmental services, developed and implemented	Study		2,600.0			1					Responsible entity: PMU. How: Based on APAC data. Cost: Part of program management activities.
3.2 Reservoir areas recovered			4,560.0								
Recovery plan developed	Plan				1						Responsible entity: PMU. How: Based on APAC data. Cost: Part of program management activities.
Reservoir surroundings reforested	Hectares					62.5	62.5	62.5	62.5	250	Responsible entity: PMU. How: Based on APAC data. Cost: Part of program management activities.

Results Matrix											
Project title	Environmental Sanitation Program for the Ipojuca River Basin--PSA Ipojuca (BR-L1295)										
Project objective	The general objective of the project is to promote the environmental sanitation of the Ipojuca River basin through expanded coverage of sanitary sewerage services and higher wastewater treatment rates, mainly in the 12 seats of municipal government, as well as through social and environmental improvements. To this end, the project will support three sets of specific actions: (i) institutional strengthening to improve the operational, financial, and environmental management of COMPESA; (ii) installment of wastewater collection and treatment systems; and (iii) support for environmental and social sustainability in the basin, including the recovery of portions of the riverbank that are at an advanced stage of degradation. In addition, the water supply systems of Bezerros and Porto de Galinhas/Ipojuca will be rehabilitated.										
3.3 Urban parks installed	Park		2,200.0			1	1	1	1	4	Responsible entity: PMU. How: Based on APAC data. Cost: Part of program management activities.
3.4 Study to classify the watercourses of the Ipojuca River, developed	Study		1,000.0			1					Responsible entity: PMU. How: Based on APAC data. Cost: Part of program management activities.
3.5 Study to implement a system of permits for the dumping of effluents in watercourses in the Ipojuca River basin, developed	Study		500.0				1				Responsible entity: PMU. How: Based on APAC data. Cost: Part of program management activities.
3.6 Hydrometeorological monitoring stations in the Ipojuca River basin installed	Station		1,000.0			10					Responsible entity: PMU. How: Based on APAC data. Cost: Part of program management activities.
3.7 Communication plan for the Ipojuca River basin developed	Plan		1,340.0			1					Responsible entity: PMU. How: Based on APAC data. Cost: Part of program management activities.
3.8 Study to implement billing for water usage in the Ipojuca River basin, developed	Study		500.0					1			Responsible entity: PMU. How: Based on APAC data. Cost: Part of program management activities.
3.9 Environmental management unit in the Ipojuca River basin, established	Unit		350.0			1					Responsible entity: PMU. How: Based on CPRH data. Cost: Part of program management activities.
3.10 Water quality monitoring networks in the Ipojuca River basin, reconditioned	Unit		950.0				1				Responsible entity: PMU. How: Based on CPRH data. Cost: Part of program management activities.

(\*) The technical and social work will be carried out alongside the works, as with all other systems. The costs include this work.

(\*\*) Estimated average cost per capita: US\$500; persons per connection: 3.27.

## **FIDUCIARY AGREEMENTS AND REQUIREMENTS**

**Country:** Brazil

**Project number/Title:** BR-L1295 - Environmental Sanitation Program for the Ipojuca River Basin—PSA Ipojuca

**Executing agency:** Department of Water and Energy Resources of the State of Pernambuco (SRHE)

**Prepared by:** José Luis Vázquez and Carlos Lago (CSC/CBR)

### **I. EXECUTIVE SUMMARY**

- 1.1 The fiduciary evaluation was based on an assessment of the institutional capacity of the Department of Water and Energy Resources of the State of Pernambuco (SRHE) and the Pernambuco Sanitation Company (COMPESA), the risk analysis conducted with teams from the SRHE, COMPESA, and the Pernambuco Water and Climate Agency (APAC), meetings with key personnel from the SRHE and COMPESA, a study conducted by a consultant hired by the Bank, and continual meetings with the project team.

### **II. THE EXECUTING AGENCY'S FIDUCIARY CONTEXT**

- 2.1 The SRHE will be the executing agency for the program and will be supported by COMPESA and APAC in executing the components for works and environmental and social sustainability. A Project Management Unit (PMU) will be established at COMPESA and supported by an advisory committee consisting of representatives of the SRHE, COMPESA, APAC, the Department of Planning (SEPLAG), the State Environmental Agency (CPRH), and the Hydrographic Basin Committee (CBH). The advisory committee will assist in executing the program and will serve as a forum and mediator in cases affecting execution. The PMU will be responsible for coordination, execution, monitoring and evaluation, and fulfillment of program deadlines and targets, as well as compliance with Bank policies.

### **III. FIDUCIARY RISK EVALUATION AND MITIGATION MEASURES**

- 3.1 The evaluation of financial administration—based on the report on the institutional capacity assessment of COMPESA, where the PMU will be housed, using the methodology of the Institutional Capacity Assessment System, and on the program risk management methodology, yielded a medium level of risk, with emphasis on the need to improve and finish implementing the management

system (Enterprise Resources Planning), including a module with accounting and finances to make reliable financial information available for preparing financial statements and other reports. Despite SRHE's and COMPESA's experience in loans with international organizations, the team responsible for program execution (the PMU and the Special Bid Commission) must be trained in preparing disbursement requests and in Bank procurement policies (document GN-2349-9 and GN-2350-9). Specific fiduciary risks and related mitigation measures are detailed in the risk mitigation matrix.

#### **IV. CONSIDERATIONS FOR THE SPECIAL PROVISIONS OF CONTRACTS**

The following are considerations for the financial conditions:

- a. Conditions precedent to the first disbursement: (i) implementation of the program's financial and accounting monitoring and support system with issuance of consolidated reports on the operation, and submittal of the program-specific account code; and (iv) submittal of the final version of Operating Regulations to the Bank for approval.
- b. Special conditions for execution: (i) hiring of the company to support program management and works supervision within six months after signature of the contract with the Bank.
- c. Exchange rate for accounting purposes: monetization exchange rate in effect at the time of the advance payment and submittal to the Bank (date of preparation) for reimbursement of payments made and recognition of the counterpart, or the option indicated by the borrower prior to the negotiation.
- d. The borrower will post the procurement plan on the Procurement Plan Execution System and will update it at least every six months, or as requested by the Bank, to reflect actual project needs and progress. It will be posted on the SRHE website ([www.srhe.pe.gov.br](http://www.srhe.pe.gov.br)) and on the Bank website ([www.iadb.org](http://www.iadb.org)) under project procurement.

#### **V. AGREEMENTS AND REQUIREMENTS FOR PROCUREMENT EXECUTION**

- 5.1 The fiduciary agreements and requirements for procurement processes establish the provisions applicable to all procurement processes for the project.

##### **1. Procurement execution**

- 5.2 Procurement processes will be carried out through the PMU, which will form a special bid committee for the project. Procurement processes for works, goods, and nonconsulting services will be in accordance with the Policies for the Procurement of Goods and Works Financed by the Inter-American Development Bank (document GN-2349-9), and the selection and contracting of consultants will be in accordance with the Policies for the Selection and Contracting of Consultants Financed by the Inter-American Development Bank (document

GN-2350-9), both dated March 2011. The Bank will review procurement processes in accordance with the procurement plan ([link](#)).

- 5.3 **Procurement of works, goods, and nonconsulting services.** Contracts for works, goods, and nonconsulting services<sup>1</sup> generated under the project and subject to international competitive bidding (ICB) will use the standard bidding documents issued by the Bank. Bidding processes subject to national competitive bidding (NCB) will use national bidding documents agreed upon with the Bank (or satisfactory to the Bank, if not yet agreed upon). The project's sector specialist will review the technical specifications during preparation of the procurement processes.
- 5.4 **Selection and contracting of consultants.** Consulting contracts generated under the project will use the standard request for proposals issued by the Bank. The project's sector specialist will review the terms of reference for procuring consulting services.
- 5.5 **Selection of individual consultants.** Individual consultants will be selected in view of their qualifications for performing the work, based on a comparison of qualifications of at least three candidates. When appropriate, notices may be published in the local or international media in order to obtain qualified consultants.

Thresholds (US\$)							
Works			Goods <sup>2</sup>			Consulting services	
International competitive bidding	National competitive bidding	Price comparison	International competitive bidding	National competitive bidding	Price comparison	International advertising consulting services	Shortlist 100% national
> 25,000,000	< 25,000,000 and > 500,000	< 500,000	> 5,000,000	< 5,000,000 and > 100,000	< 100,000	> 200,000	< 1,000,000

- 5.6 Thresholds for prior review are determined by the project's procurement-related risk. Below are the thresholds for prior review.

<sup>1</sup> In accordance with the Bank's procurement policies, nonconsulting services are treated like goods.

<sup>2</sup> Includes nonconsulting services.



**Prior review thresholds<sup>3</sup>**

Works	Goods <sup>4</sup>	Consulting services
Processes over US\$10 million, the first process for each method regardless of amount, and all direct contracting.	Processes over US\$500,000, if electronic bidding was not used for goods, and all direct contracting.	Processes over US\$1 million, the first process for each selection method regardless of amount, and all direct contracting.

5.7 **Recurring expenses.** These are operational and maintenance expenses needed to run the project during its useful life. They include expenses related to communication, translations, office supplies, photocopies, postage, and other expenses of the PMU needed for proper administration of the project. These expenses will be financed with loan proceeds as part of the annual budget approved by the Bank, and will be made pursuant to the PMU's administrative procedures. These expenses will be reviewed and accepted by the Bank provided they do not violate the basic principles of competition, efficiency, and economy. However, operating costs do not include the wages of civil servants.

5.8 **Domestic preference.** No domestic preference margins will apply.

**2. Initial procurement plan**

5.9 The proposal to date is attached. The final version may be updated during the project in view of circumstances (procurement plan link).

**3. Procurement supervision**

5.10 In view of the prior review thresholds, the special characteristics of the project, and the operational capacity of the PMU, an annual post review will be conducted.

**4. Records and files**

5.11 Files will be kept at the offices of the PMU under appropriate security conditions.

**VI. FINANCIAL MANAGEMENT**

**A. Programming and budgeting**

6.1 The SRHE will be responsible for executing the program. The SRHE is governed by the Fiscal Responsibility Act and Complementary Law 101/00 of 4 May 2000, which includes budget planning (four-year multiyear plans), budget guidelines, annual plans, budget execution, fulfillment of targets, asset management, transparency, control, and supervision.

<sup>3</sup> The Bank may modify the prior review thresholds during the project at its discretion if it believes that the fiduciary context of the executing agency and/or the country has changed. Should this occur, the Bank will notify the executing agency of this decision, which will be reflected in the new conditions for execution set forth in the procurement plan.

<sup>4</sup> Includes nonconsulting services.

6.2 Currently in effect are the Multiyear Budget Act 2012-2015 (Law 14532/2011) and the 2012 Budget Act (Law 14540/2011).

6.3 With support from the State Integrated Budget Management System (E-FISCO), the physical and budgetary targets in the plan will be monitored.

**B. Accounting and information systems**

6.4 Processes for budgeting, performance, contracting, recognition of expenditures, payment authorizations, and accounting will follow the State's usual procedures, with support from existing country systems and procedures: annual and multiyear budget laws, the annual budget management system (SIG), the financial and budget management system (E-FISCO), etc. Project records will be kept in E-FISCO and, with support from a device to extract information from the system, the financial reports will be prepared. To execute the project, the PMU will be supported by a management company that will provide a system for comprehensive project management (planning, physical progress of works, contract control, financial control, etc.). This system, in its module for issuing project financial reports, including disbursement requests, must be supplied in connection with E-FISCO.

6.5 The project's accounting records by source of financing and investment category, in accordance with the terms used in the project, will be kept in E-FISCO. As part of the conditions precedent to eligibility for Bank financing, the PMU will submit, as part of the administrative, financial, accounting, and internal control system to be used in the project, the specific account code to be used in E-FISCO for keeping program records, by investment category and source of financing.

**C. Disbursements and cash flow**

6.6 For approval and recognition of expenditures, pending authorization within the budgetary framework for the activity and authorization for commitments, supervisors will oversee each contract in accordance with Law 8666 and may include the participation of other entities (APAC, the CPRH, etc.). Payments will be made by payment order, with electronic transfers to the registered accounts of the contractors or suppliers by the Department of Finance (SEFAZ).

6.7 Disbursements of the financing will be placed into an account in the name of the project in the Department of Finance. The executing agency must provide the specific bank information in a timely manner, and provide for inclusion in the full Operating Regulations (technical, administrative, accounting/financial, and internal control) of the corresponding flowcharts for processes and actors involved.

6.8 The Bank's disbursements will be made mainly in the form of advances, in accordance with the cash flow projections for the following 120 days, and each remittance will be formed in such a way that it can be fully rendered within the 180 days after being formed. The justification requests (rendering of payments) will be in the framework of E-FISCO and with intervention from the management company, as mentioned above. Disbursements may be processed without the need

for prior (preventive) review by the Bank. The files of the executing agency (SRHE) will include the corresponding support documentation, including tax invoices, supervisory notes, payment vouchers (bank transfers), etc.

**D. Internal control and internal auditing**

- 6.9 The SRHE does not have an internal control unit. Resources have been allocated in this program to establish an internal control unit in the SRHE, including support for monitoring project management (outcome indicators).

**E. External control and reporting**

- 6.10 External auditing will be performed by the State Audit Office, including the review by sampling of procurement contracts of the state government, including the SRHE, but not covering the project as a whole. The audits of the project's financial statements will be performed by a firm of independent auditors acceptable to the Bank (degree of eligibility I). This firm will be hired with loan proceeds in accordance with selection procedures and an auditing scope acceptable to the Bank. This work will be in accordance with international auditing standards. The reports to be audited will include basic financial statements (cash flow and statements of investments), notes on the statements, including reconciliation of liabilities with the Bank and advance of funds, opinion on the internal control environment, management letter, and security letter. The audited financial statements will be submitted every year to the Bank as of 31 December of each year within 120 days after the end of each calendar year, starting with the year in which loan proceeds are first disbursed. They will cover midterm visits (as of June), including a review of disbursement processes and, if applicable, procurement processes.

**F. Financial supervision plan**

- 6.11 The proposal to date is attached. The final version may be updated during the project in view of circumstances (guidelines for financial supervision and supervision plan).

**G. Execution mechanism**

- 6.12 The organizational mechanism for project execution (organizational arrangement) will include, as a condition precedent, preparation and entry into force of the Operating Regulations, which will include matters related to accounting and finances, reporting, and internal control, as well as eligibility criteria for the multiple works component, setting forth the roles and duties of the entities involved in the program (SRHE, COMPESA, APAC, CPRH), with the corresponding flowcharts of processes and actors involved.

**H. Other agreements and requirements for financial management**

- 6.13 To support project management, the executing agency will use a management company that *inter alia*, will provide it with a management system. This system, if possible, should be installed in the State's systems and will work with the financial reports provided by E-FISCO. It will be operated by PMU staff to provide the proper degree of institutional strengthening.

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

PROPOSED RESOLUTION DE-\_\_\_\_/12

Brasil. Loan \_\_\_\_/OC-BR to the State of Pernambuco  
Environmental Sanitation Program for the Ipojuca  
River Basin–PSA IPOJUCA

The Board of Executive Directors

RESOLVES:

That the President of the Bank, or such representative as he shall designate, is authorized, in the name and on behalf of the Bank, to enter into such contract or contracts as may be necessary with the State of Pernambuco, as Borrower, and with the Federative Republic of Brazil, as Guarantor, for the purpose of granting the former a financing to cooperate in the execution of the Environmental Sanitation Program for the Ipojuca River Basin–PSA IPOJUCA. Such financing will be for an amount of up to US\$200,000,000 from the Ordinary Capital resources of the Bank, and will be subject to the Financial Terms and Conditions and the Special Contractual Conditions of the Project Summary of the Loan Proposal.

(Adopted on \_\_\_\_)

LEG/SGO/CSC/IDBDOCS: 37293677  
Pipeline No. BR-L1295