

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

**DOMINICAN REPUBLIC**

**SANTIAGO WATER SUPPLY SERVICE IMPROVEMENT PROGRAM**

**(DR-L1057)**

**LOAN PROPOSAL**

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## CONTENTS

### PROJECT SUMMARY

I.	DESCRIPTION AND RESULTS MONITORING .....	1
A.	Background, problem to be addressed, and rationale .....	1
B.	Objective, components, and costs .....	7
C.	Key results indicators .....	8
II.	FINANCING STRUCTURE AND RISKS .....	8
A.	Financing structure .....	8
B.	Environmental and social safeguards .....	9
C.	Fiduciary risk .....	10
D.	Other key issues .....	11
III.	IMPLEMENTATION AND MANAGEMENT PLAN .....	13
A.	Implementation arrangements .....	13
B.	Program monitoring and evaluation .....	15

ANNEXES	
<b>PRINTED ANNEXES</b>	
Annex I	Summary Development Effectiveness Matrix (DEM)
Annex II	Results Matrix
Annex III	Fiduciary Agreements and Requirements

  

ELECTRONIC LINKS	
<b>REQUIRED</b>	
1.	Annual work plan <a href="http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=37245923">http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=37245923</a>
2.	Monitoring and evaluation arrangements <a href="http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=37245924">http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=37245924</a>
3.	Procurement plan <a href="http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=37245944">http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=37245944</a>
4.	Environmental and Social Management Report <a href="http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=37245936">http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=37245936</a>
<b>OPTIONAL</b>	
1.	Technical analysis <a href="http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=37245938">http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=37245938</a>
2.	Socioeconomic analysis <a href="http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=37245940">http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=37245940</a>
3.	Institutional analysis <a href="http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=37245941">http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=37245941</a>
4.	Financial analysis <a href="http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=37245942">http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=37245942</a>
5.	Environment and Safeguards Classification <a href="http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=37245719">http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=37245719</a>

## ABBREVIATIONS

AWP	Annual work plan
CAASD	Corporación del Acueducto y Alcantarillado de Santo Domingo [Water and Sewer Corporation of Santo Domingo]
CORAABO	Corporación del Acueducto y Alcantarillado de Boca Chica [Water and Sewer Corporation of Boca Chica]
CORAAMOCA	Corporación del Acueducto y Alcantarillado de Moca [Water and Sewer Corporation of Moca]
CORAAPLATA	Corporación del Acueducto y Alcantarillado de Puerto Plata [Water and Sewer Corporation of Puerto Plata]
CORAAROM	Corporación del Acueducto y Alcantarillado de la Romana [Water and Sewer Corporation of la Romana]
CORAASAN	Corporación del Acueducto y Alcantarillado de Santiago [Water and Sewer Corporation of Santiago]
CORAAVEGA	Corporación del Acueducto y Alcantarillado de la Vega [Water and Sewer Corporation of La Vega]
EBITDA	Earnings before Interest, Taxes, Depreciation, and Amortization
ESMP	Environmental and Social Management Plan
ICAS	Institutional Capacity Assessment System
INAPA	Instituto Nacional de Aguas Potables y Alcantarillados [National Water and Sewer Institute]
IPAC	Participatory Anti-Corruption Initiative
O&M	Operation and maintenance
PEU	Program Executing Unit
PGOTCRANC	Project for Management and Technical-Commercial Optimization to Reduce Unaccounted-for Water
PIRANC	Comprehensive Program to Reduce Unaccounted-for Water
UFW	Unaccounted-for Water
WAL	Weighted Average Life
W&S	Water and Sanitation

## PROJECT SUMMARY

### DOMINICAN REPUBLIC SANTIAGO WATER SUPPLY SERVICE IMPROVEMENT PROGRAM (DR-L1057)

Financial Terms and Conditions			
<b>Borrower:</b> Dominican Republic through the Ministry of Finance  <b>Executing agency:</b> Corporación del Acueducto y Alcantarillado de Santiago [Water Supply and Sewer Corporation of Santiago] (CORAASAN)		<b>Flexible Financing Facility*</b>	
		Amortization period:	25 years
		Original WAL***	15.25 years
		Disbursement period:	5 years
		Grace period:	5.5 years
<b>Source</b>	<b>Amount</b>	Interest rate:	LIBOR
IDB (Ordinary Capital)	US\$25 million	Inspection and supervision fee:	**
		Credit fee:	**
Local	0	Currency:	U.S. dollars from the Bank's Ordinary Capital
Total	US\$25 million		
Project at a Glance			
<b>Project objective:</b> The general objective is to improve access to drinking water in the metropolitan area of Santiago de los Caballeros. The specific objectives are (i) to improve the continuity of drinking water service in areas where it is deficient; (ii) to reduce energy consumption in water production sources and distribution systems; and (iii) to improve operational efficiency by improving business management and corporate governance.			
<b>Special conditions precedent to the first disbursement:</b> The first disbursement of the loan will be contingent upon fulfillment of the following requirements, to the Bank's satisfaction: (i) a letter of agreement between the borrower and the executing agency, setting out terms for the transfer of loan proceeds and other execution obligations of the parties, will be signed and take effect (paragraph 3.1);(ii) the program Operating Regulations will be in force in accordance with terms previously agreed to with the Bank and with the Environmental and Social Management Plan (ESMP) as an annex thereto (paragraph 3.2); and (iii) the Program Executing Unit (PEU), including a program coordinator, a procurement manager, an environmental specialist, and an accountant, will have been formed (paragraph 3.1).			
<b>Special conditions for project execution:</b> (i) Each of the bidding processes for building infrastructure, as described in component 1 of the project, may not start until the Bank verifies that the Ministry of the Environment and Natural Resources has granted CORAASAN the relevant environmental authorization in accordance with applicable environmental legislation (paragraph 2.6); and (ii) within no more than six months following the effective date of the loan contract, CORAASAN will obtain the corresponding environmental authorization for existing drinking water facilities in accordance with national environmental legislation (paragraph 2.6).			
<b>Exceptions to Bank policies:</b> None			
<b>Project consistent with country strategy:</b>		Yes [X]	No [ ]
<b>Project qualifies as:</b>		SEQ [X]	PTI [ ]      Sector [ ]      Geographic [ ]      Headcount [ ]
<b>Procurement:</b> Procurement will be in accordance with Bank policies (documents GN-2349-9 and GN-2350-9).			

(\*) Under the Flexible Financing Facility (document FN-655-1), the borrower has the option of requesting changes to the amortization schedule, as well as currency and interest rate conversions, subject in all cases to the final amortization date and the original weighted average life (WAL). When considering such requests, the Bank will take market conditions into account, along with operational and risk management considerations.

(\*\*) 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 landing charges, in accordance with the applicable policies. In no case will the credit fee exceed 0.75% or the inspection and supervision fee exceed, in a given six-month period, the amount that would result from applying 1% to the loan amount divided by the number of six-month periods included in the original disbursement period.

(\*\*\*) Maximum WAL, which may be lower depending on the date the loan contract is signed.

## I. DESCRIPTION AND RESULTS MONITORING

### A. Background, problem to be addressed, and rationale

- 1.1 According to the 2010 census, the Dominican Republic has a population of 9,445,281, with 7,023,949 people living in urban areas and 2,421,332 people living in rural areas (74% and 26%, respectively). The country is divided into 31 provinces and a national district, with close to 50% of the country's population living in the two principal cities, Santo Domingo and its metropolitan area<sup>1</sup> and Santiago de los Caballeros.
- 1.2 **Water and sanitation (W&S) sector.** In 2007, coverage of safe drinking water was 86.1% nationally, with 91.7% coverage in urban areas and 73.3% coverage in rural areas.<sup>2</sup> In that same year, national sanitation coverage reached 82.7%, with urban and rural coverage at 86.8% and 73.5%, respectively. These data confirm a positive trend in terms of the sector's coverage, as access to safe drinking water in the Dominican Republic rose from 66.4% in 1991 to 86.1% today. During that same period, sanitation coverage grew from 61.1% to 82.7%.
- 1.3 However, despite these improvements, the W&S sector continues to face major challenges. The main challenges in terms of safe drinking water can be summarized as a need to continue increases in coverage and substantially improve the low levels of continuity of supply and high rates of water lost or unaccounted-for water (UFW),<sup>3</sup> amounting to 60% in urban areas due to infrastructure in disrepair and inadequate operation and maintenance (O&M) practices. As regards sanitation services, coverage for collection, treatment, and final disposal of wastewater is very low. It should be emphasized here that sanitary sewer service covers 21% of the population and wastewater treatment covers 35% of the country's urban population.
- 1.4 **Sector structure.** The structure of this sector includes: (i) the Instituto Nacional de Aguas Potables y Alcantarillados [National Water and Sewer Institute] (INAPA), which is the lead agency in its service area and also operates in 26 of the 31 provinces representing the Dominican Republic's political and administrative divisions; (ii) seven autonomous corporations, CAASD, CORAASAN, CORAAPLATA, CORAAMOCA, CORAAROM, CORAAVEGA, and CORAABO,<sup>4</sup> which are responsible for all matters related to the supply of safe drinking water and the collection, transport, treatment, and final disposal of

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<sup>1</sup> The metropolitan area of the city of Santo Domingo includes the National District, the province of Santo Domingo, and the municipio of San Cristóbal.

<sup>2</sup> Encuesta Nacional Demográfica y de Salud [National demographic and health survey] (ENDESA), 2007.

<sup>3</sup> UFW = 1 - volume billed / volume produced (measured as a percentage).

<sup>4</sup> CAASD: Corporación del Acueducto y Alcantarillado de Santo Domingo [Water and Sewer Corporation of Santo Domingo], CORAAPLATA: Corporación del Acueducto y Alcantarillado de Puerto Plata [Water and Sewer Corporation of Puerto Plata], CORAAMOCA: Corporación del Acueducto y Alcantarillado de Moca [Water and Sewer Corporation of Moca], CORAAROM: Corporación del Acueducto y Alcantarillado de la Romana [Water and Sewer Corporation of la Romana], CORAAVEGA: Corporación del Acueducto y Alcantarillado de La Vega [Water and Sewer Corporation of La Vega]; and CORAABO: Corporación del Acueducto y Alcantarillado de Boca Chica [Water and Sewer Corporation of Boca Chica].

wastewater in the cities of Santo Domingo, Santiago, Puerto Plata, Moca, La Romana, La Vega, and Boca Chica, respectively; (iii) 80 *Asociaciones Comunitarias de Agua Rural* [rural community water associations]; and (iv) smaller private systems that provide safe drinking water and sanitation services to hotels.

- 1.5 **Regulatory framework.** The Ministry of Economy, Planning, and Development defines the national development plan, under which W&S sector development plans and budgetary allocations are determined. The Ministry of Public Health evaluates and monitors drinking water quality, and the Ministry of the Environment and Natural Resources sets limits on sanitary discharges and regulates the concession for water use and conservation. The water companies and INAPA are responsible for delivering W&S services nationwide. This regulatory framework has been characterized by certain weaknesses related to the lack of a clear separation between regulatory and governance functions. To resolve the sector's regulatory problems, the Water and Sanitation Act was submitted to the National Congress in February of this year. This law includes the creation of governing and regulatory agencies for the sector, which will support the proper operation of the sector, the efficiency of which has been hampered in the past by fragmentation of functions, problems identifying responsibilities, and unclear and inconsistent procedures. The Bank has supported this process through a technical cooperation operation (DR-T1056). The enactment of this law will not pose any risk to the proposed program given that the bill contains no provisions impacting or making any changes to the project.
- 1.6 **Rationale for the operation. Santiago's problem with respect to W&S services.** According to the 2010 census, the province of Santiago has the second largest population in the country, with 942,509 inhabitants. In 2007, the W&S coverage in the province was 91% for drinking water and 90.2% for sanitation.<sup>5</sup> CORAASAN currently serves approximately 850,000 people in the municipios of Santiago de los Caballeros, Licey, Tamboril, Puñal, and Villa González, representing 90% of the total population in the province of Santiago, with INAPA providing service to the rest of the province. CORAASAN was created by Law 582 in 1977 and currently operates a water supply service serving more than 155,000 users. As for wastewater, CORAASAN currently operates seven treatment plants. It should be noted that sanitation in the city of Santiago will benefit from approval of the Comprehensive Sanitation Project of Santiago (PSIS). In addition, CORAASAN is negotiating approval of the Program to Improve the Sanitary Sewer System and Environment of Santiago, to be financed by the Japan International Cooperation Agency (JICA).
- 1.7 CORAASAN's principal challenges are: (i) low service continuity levels, with approximately 68% of the population served by CORAASAN receiving substandard water service (about 542,000 people);<sup>6</sup> (ii) high physical and

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<sup>5</sup> Provincial Sociodemographic Profiles, Northern Region. National Statistics Office (ONE), 2010.

<sup>6</sup> See socioeconomic annex and results matrix for detailed data.

commercial loss percentages, with an estimated UFW rate of 60%; (iii) inefficient use of electricity, which is reflected in high levels of consumption and high monthly expenses to operate electromechanical facilities (see paragraph 1.9); (iv) low collection levels of about 69% of total billing; (v) adjusted operating cost recovery levels (see paragraph 1.10); and (vi) a very heavy workload, with 13 employees for every 1,000 connections, which is above the regional average. Nonetheless, this rate has been falling over the last four years, primarily due to retiring employees and the outsourcing of certain company activities.

- 1.8 **Continuity of drinking water service and water losses.** Although CORAASAN has been operating its drinking water distribution systems consistently (qualified management staff, decision-making based on client needs, and streamlined demand management), inefficiencies have arisen in recent years with an adverse impact on service delivery. The lack of ongoing operational infrastructure maintenance and replacement practices has led to network components that, based on their age and unreliable condition, no longer have the capacity specified in their design. A significant percentage of drinking water systems have served their useful life and show high loss rates. Moreover, the stock of meters has a negative impact on the quality of drinking water service (13.4% of meters need to be replaced). These factors have led to increased physical and commercial losses, currently amounting to 60% of the water produced by CORAASAN. Lastly, the municipio of Santiago has grown exponentially in recent decades. Between 1979 and 2010, the land area and population of the city went from 28 km<sup>2</sup> and 250,000 inhabitants to 90.6 km<sup>2</sup> and 760,000 inhabitants, respectively. This growth has impacted the company's ability to provide quality W&S services. In recent years, the decline in free zone activity, coupled with immigration from other provinces, have led to changes in population density, increasing the population in periurban areas. This territorial expansion has also resulted in the development of urban areas at higher elevations, making it difficult to provide an adequate supply of drinking water. The combination of these factors has impacted drinking water service continuity levels.
- 1.9 **Energy consumption.** Increasing water losses have deteriorated the water distribution system's electromechanical equipment, causing more intensive use of the equipment due to the lack of water in the system. This situation is reflected in an increase in CORAASAN's energy costs, which represent 29% of operating costs. It is estimated that based on current operating conditions, the electromechanical equipment is operating at 50-60% of its original specifications.<sup>7</sup>
- 1.10 **Company financial position.** In terms of operating cost recovery with operating income, CORASAAN is in a position where its income almost covers operating costs, with a gross operating margin or earnings before interest, taxes, depreciation, and amortization (EBITDA) of -0.3% and -1.2% on income in 2010 and 2011, respectively. It is notable that the most significant operating cost items in its

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<sup>7</sup> La Eficiencia Energética en Empresas de Agua y Saneamiento en Países de América Latina y El Caribe: Mejores Prácticas y Lecciones Aprendidas, Rosas, R., IDB Technical Note 328, 2011.



operating structure are personnel costs and the aforementioned energy cost, representing about 50% and 29% of operating costs, respectively.

- 1.11 In terms of business management, collection rates are low (approximately 69%). More efficient business management will allow CORAASAN to increase its collection levels and thus attain a more acceptable operating cash position. Priority areas for improving the business include renewing the stock of water metering equipment and implementing rate structures that make financial sustainability achievable, while at the same time protecting the poorest users. In recent years, the percentage of metered connections has fallen from 85% to 75%.<sup>8</sup> In addition, the company's stock of meters has aged, resulting in a growing number that do not operate properly (13.4% in 2010). The stock of meters must be increased, their maintenance procedures must be reviewed, and a switch to other types of meters better suited to the type of user in Santiago should be analyzed. In addition, the rates to be paid by users are set and approved each year by CORAASAN's board of directors. The rate structure considers various types of clients (residential, commercial, industrial, government, social) and three economic levels (high, medium, low). The company is targeting changes in its rate structure on increased sectorization of the structure, since it has been shown that keeping rates even based on consumption without any differentiation based on income levels according to population group or individual leads to increased accounts receivable due to some users' inability to pay.
- 1.12 **Corporate management systems.** Planning, budgeting, cost analysis, and rate calculation activities are performed using separate information systems. The commercial, operational, and financial-accounting systems operate separately and do not share information, hampering adequate coordination across the different departments of CORAASAN. In this respect, in order to ensure adequate maintenance of W&S equipment and infrastructure, an updated database is needed to systematize network and user information. This will require creating dynamic updating, consultation, data cross-check, and maintenance and repair control systems. In addition to completing data input and location for all facilities in the Geographic Information System, information must be included in the database on age, materials, condition, repairs and replacements made, and other data that can be used to monitor system sectorization, locate macrometers, plan repairs, conduct periodic inspections, and locate problems. This means that it will be essential to improve system management procedures and practices as well as include a data integrator system. It will thus be possible to create a starting point for sustainable development of the integrated management of CORAASAN goods and services.
- 1.13 **Water resources.** With respect to the environment and stress on the country's watersheds, according to the 2010-2030 National Development Strategy, in 2005 the demand for water in the Dominican Republic reached a level five times higher

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<sup>8</sup> However, these percentages are well above the prevailing rates for most of the country's operators, which range between 2% for CORAAPLATA and 28% for CAASD.

than the demand in 1980. Santiago is located in the Yaque del Norte watershed, one of the three watersheds with the highest water stress and frequent water shortages during dry seasons. The project will help improve drinking water service in Santiago without increasing water production, i.e., without increasing the stress on the Yaque del Norte River.

- 1.14 **Country strategy.** The project is consistent with the National Development Strategy approved by Congress in January 2012. The strategy addresses the W&S sector as part of the second and fourth strategic pillars (“a cohesive society with equal opportunity and low levels of poverty and inequality” and “sustainable management of the environment and appropriate adaptation to climate change”). The general objective of the second pillar is access to “decent housing in healthy settings” and its specific objective is “to guarantee universal access to safe water and sanitation services, provided with quality and efficiency.” To achieve this objective, the strategy establishes lines of action including the following: (i) transform the model of management for W&S services to focus on controlling demand to discourage irrational use and take into account the social nature of such services; (ii) develop new system infrastructure to allow expanded coverage of drinking water and sanitary sewer, storm drainage, and wastewater treatment services, using a sustainable development approach; (iii) ensure maintenance of the necessary infrastructure for the provision of W&S services and the final disposal of waste; and (iv) develop citizen awareness regarding saving, conservation, and rational use of water resources and sustainable waste management. One of the guidelines for the fourth strategic pillar is the sustainable and efficient management of water resources. The project will help achieve these objectives by improving the continuity of W&S services, reducing O&M costs, reducing water losses, and protecting the watershed of the Yaque del Norte River.
- 1.15 **Project’s consistency with Bank strategy.** The project is consistent with the Bank’s country strategy with the Dominican Republic (2010-2013) (document GN-2581) in that it will directly contribute to the strategic objective of improving “water and sanitation service coverage and management in low-income rural and periurban areas.” The operation is also included in the 2012 Operational Program Report (document GN-2661-4). Similarly, the project is in line with the Ninth General Capital Increase (GCI-9) lending priorities for small and vulnerable countries, and climate change, renewable energy, and environmental sustainability initiatives, given that it involves works and institutional strengthening targeting the preservation and appropriate management of water as a natural resource as well as the optimized use of energy resources for water distribution. It also falls within the regional objective of developing infrastructure for competitiveness and social welfare.
- 1.16 **Bank involvement in the sector.** The Bank has two operations being executed in the sector. The Project to Consolidate Reform and Modernization of the Potable Water and Sanitation Sector (loan 1198/OC-DR) was approved in 1999 and restructured in 2007. The objectives of this operation include improving the

delivery of W&S services in Santo Domingo and strengthening the CAASD. The second operation, the INAPA Water and Sanitation Investment Program (loan 2430/OC-DR and grant GRT/WS-12442-DR), was approved in October 2010. Its objectives are to help increase the coverage of efficient and sustainable W&S services and deconcentrate the delivery of W&S services in six southern provinces and one eastern province. The Bank is also participating in reform of the sector through the Water Board, formed within the framework of the Participatory Anti-Corruption Initiative, (IPAC). The IPAC was created with the objective of helping to improve transparency levels in Dominican society and, in the case of the water sector, approval of the Water and Sanitation Act has been identified as the first objective to be achieved in the process of improving the sector.

- 1.17 **Technical cooperation operation ATN/OC-13182-DR.** Seeking to support preparation of the project, in February 2012, the Bank approved the nonreimbursable technical-cooperation operation Support for the Preparation of the Safe Drinking Water Operation in Santiago (ATN/OC-13182-DR) in the amount of US\$500,000, plus a local contribution of US\$50,000. The specific objectives are to: (i) review UFW reduction projects implemented by CORAASAN; (ii) prepare final engineering designs and other viability studies for the proposed works to be financed with the loan; (iii) review and propose improvements in the rate system and cost structure; (iv) conduct an energy audit and prepare an energy efficiency plan for company facilities; (iv) design the CORAASAN planning department; (v) design a computer platform for integrating the databases of the different departments of CORAASAN; and (vi) design environmental, corporate, work safety, and risk management policies. This operation will allow the company to become familiar with the Bank's goods procurement, consultant contracting, and financial management policies.
- 1.18 **Lessons learned.** Bank experience in the Dominican Republic indicates that institutional weakness in the sector, marked by the lack of a framework of standards and regulations and the duplication of functions, has kept the sector from making sufficient progress to be on a par with the regional average. It should be emphasized, however, that progress has been made in the last two years in reforming the sector's institutional framework, resulting in the submission of the aforementioned Water and Sanitation Act. In addition, the performance of the sector's companies is contingent on factors including the formation of Boards of Directors. In the case of CORAASAN, its public-private board model has been one of the factors helping this company to achieve operational and financial efficiency indicators exceeding the national average. The project will continue to support CORAASAN in its efforts to make efficient use of the public resources assigned to it as well as its own income in such a way that the company will be able to increase the coverage and quality of W&S services.
- 1.19 **Effectiveness of the intervention.** In order to focus on controlling demand and discouraging irrational water use, CORAASAN has been working on the Comprehensive Program to Reduce Unaccounted-for Water (PIRANC) and the

Project for Management and Technical-Commercial Optimization to Reduce Unaccounted-for Water (PGOTCRANC), which consist in developing works projects to achieve and maintain a level at which loss components due to leaks, overflowing tanks, clandestine water use, waste, operational consumption, special consumption, metering errors, and estimating errors are minimized. Implementation of the PIRANC began in 2008 by identifying a central area in the city where the first cell, called the Zurza Cell, consisting of about 340.45 hectares and a population of 46,064 inhabitants, would be created. Studies conducted by CORAASAN showed that this program made it possible to recover average flows of 3,500 cubic meters per day, manage stress on the system, and reduce the rate of water loss by 15%, while at the same time increasing continuity of service for users in this sector to the highest level (between 18 and 24 hours of service per day). The program has proven effective and will be expanded to other sectors of the city under this operation.<sup>9</sup> Reduced electricity costs will be achieved by installing the new pumping equipment considered under the program and storage tanks. Currently, the sources of inefficient energy use in operating the infrastructure are based on two factors. The first is the use of pumping equipment operated at low efficiency ranges due to high pump flow, which is reflected in inefficient use of the equipment because it is used at ranges far exceeding its design specifications. The second source of inefficiency is the deficit of storage tanks, which means that there is little ability to regulate the system so as to meet demand during peak hours. This means that pumping hours must be continuous, with water going directly to the system, and it is impossible to rationalize the use of equipment in low demand hours. There were similar findings in the energy audits conducted in various Latin American and Caribbean countries.<sup>10</sup>

## **B. Objective, components, and costs**

- 1.20 **Objectives.** The general objective of the project is to improve access to drinking water in the metropolitan area of Santiago de los Caballeros. The specific objectives are: (i) to improve the continuity of drinking water service in areas where it is deficient; (ii) to reduce energy consumption in water production sources and distribution systems; and (iii) to improve operational efficiency by improving business management and corporate governance.
- 1.21 **Component 1. Investments in drinking water infrastructure (US\$20 million).** This component will finance optimization of the operation of CORAASAN's systems, including: (i) installing pipes to reduce physical water losses and forming macrosectors to improve distribution system management; (ii) constructing and rehabilitating water regulation tanks; (iii) supplying and installing macrometers on regulator tank outlets, installing pressure-reducing valves, building registers, and installing junctions to optimize systems; (iv) providing and installing pumping

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<sup>9</sup> See report in [energy link](#).

<sup>10</sup> *La Eficiencia Energética en Empresas de Agua y Saneamiento en Países de América Latina y El Caribe: Mejores Prácticas y Lecciones Aprendidas*, Rosas, R., IDB Technical Note 328, 2011.

equipment; and (v) works improving collection and production sources to reduce physical water losses.

- 1.22 **Component 2. Support for institutional management (US\$2.98 million).** This component will finance: (i) activities to strengthen business management, to include a program to replace micrometers, preparation of preventive maintenance plans for meters, development of pilot programs for changing the type of meters used, modernization of the company's call center to provide better customer service, and design and implementation of the "Social Water Policy," which seeks to establish rate systems that take the poorest clients' ability to pay into account and establishes billing frequencies and payment methods suited to the needs of those customers; (ii) to consolidate improvements in CORAASAN's corporate governance, financing will be provided to strengthen the company's internal audit department, conduct external audits of the company's financial statements during the five years of program execution, design the Code of Ethics and Corporate Governance, and modernize the company's information systems; (iii) the purchase and installation of equipment for data integration of all the company's departments; (iv) purchase of equipment to measure the quality of drinking water and effluents as well as technical assistance for certification of drinking water and wastewater laboratories; and (v) a program for education, building awareness, utilization, and maintenance of individual sanitation solutions.

### C. Key results indicators

- 1.23 Table 1 shows the key indicators and targets. The project is expected to benefit approximately 329,000 people whose water service will be improved, 211,000 of whom will receive service for more than 12 hours per day.

**Table 1: Key results indicators**

Indicators	Baseline	Target
Households with improved residential access to drinking water in the metropolitan area of Santiago (12 or more hours of drinking water service per day)	74,743	134,701
Cost of electricity /total operating costs (percentage)	29%	26%
Coverage efficiency (collection over billing percentage)	69%	74%

## II. FINANCING STRUCTURE AND RISKS

### A. Financing structure

- 2.1 The borrower for this operation will be the Dominican Republic, through the Ministry of Finance. The executing agency will be CORAASAN. The total cost of the operation will be US\$25 million in funds from the Bank's Ordinary Capital, with an amortization period of 25 years and a grace period of 5.5 years. The project does not include counterpart resources, but CORAASAN will finance part of the team that will make up the Program Executing Unit (PEU). In addition, the Dominican government's commitment to the sector and the project in particular are

reflected in the inclusion of the project's objectives in the National Development Strategy (paragraph 1.14).

**Table 2. Costs Summary (US\$)**

Category	IDB	Total	%
<b>I. Program administration</b>	1,460,000	1,460,000	5.8
1.1 Program Executing Unit	560,000	560,000	2.2
1.2 Works inspection and supervision	900,000	900,000	3.6
<b>II. Direct costs</b>	22,980,000	22,980,000	91.9
<b>1. Component 1: Infrastructure investments</b>	20,000,000	20,000,000	80.0
1.1 Distribution system pumping equipment	1,360,000	1,360,000	5.4
1.2 Construction, assembly, and start-up of regulator tanks	2,200,000	2,200,000	8.8
1.3 Supply and installation of pipes and meters	15,170,000	15,170,000	60.7
1.4 Improvement in water collection and production systems	1,270,000	1,270,000	5.1
<b>2. Component II: Support for institutional management</b>	2,980,000	2,980,000	11.9
2.1 Micrometering program	600,000	600,000	2.4
2.2 Support for business management	500,000	500,000	2.0
2.3 Corporate governance program	1,080,000	1,080,000	4.3
2.4 Information systems programs	500,000	500,000	2.0
2.5 Laboratory certification and improvement	200,000	200,000	0.8
2.6 Individual sanitation solutions program	100,000	100,000	0.4
<b>III. Concurrent costs</b>	200,000	200,000	0.8
3.1 Audits	100,000	100,000	0.4
3.2 Monitoring and evaluation	100,000	100,000	0.4
<b>IV. Contingencies</b>	360,000	360,000	1.4
<b>Total costs</b>	25,000,000	25,000,000	100.0

2.2 **Disbursements Schedule.** Table 3 shows the tentative disbursement schedule.

**Table 3. Disbursement Schedule (millions of US\$)**

Source	Year 1	Year 2	Year 3	Year 4	Year 5	Total
IDB	1.3	3.2	7.9	8	4.6	25
Percentage	5%	13%	32%	32%	18%	100

## **B. Environmental and social safeguards**

2.3 Execution of the project will have a clearly positive environmental and social impact to the extent that it will improve drinking water service in the Santiago metropolitan area through improvements in supply system efficiency. According to the Bank's Environment and Safeguards Compliance Policy (Operational Policy OP-703), the program has been classified as a category "B" operation. The works included in the program may generate low to medium intensity, short-term negative impacts during construction (for example, noise and traffic interruptions); these will be mitigated by measures that are well known.

- 2.4 To address environmental assessment needs, an environmental and social analysis was conducted and an Environmental and Social Management Plan (ESMP) was prepared for the project, including assessment of the environmental and social impacts of all components during the construction and operation phases, definition of the mitigation measures needed for all interventions, review of the institutional framework in the area of environmental and social management, and any recommendation resulting from that process for the program's environmental and social management structure, and identification of all necessary environmental and social management and monitoring tools. All these aspects are summarized in the Environmental and Social Management Report. To provide the necessary opportunity for access to information and consultations, a consultation strategy was carried out with the impacted communities, including a public consultation and the publishing and release of reports, in accordance with Bank requirements. The costs of mitigation measures are included in the project costs.
- 2.5 The program's environmental and social management system includes the contracting of an environmental specialist in the PEU, who will monitor all the environmental and social aspects of the program's implementation, including compliance with the ESMP and Bank policies. The ESMP will be an integral part of the program Operating Regulations.
- 2.6 As special execution conditions: (i) each of the bidding processes for infrastructure construction works described in component 1 of the project may not begin until the Bank confirms that the Ministry of the Environment and Natural Resources has granted CORAASAN the relevant environmental authorization in accordance with applicable environmental legislation; and (ii) within no more than six months after the loan contract takes effect, CORAASAN will obtain the corresponding environmental authorization for existing drinking water facilities in accordance with national environmental legislation.

### **C. Fiduciary risk**

- 2.7 During preparation, an institutional assessment was conducted for CORAASAN based on the components and guidelines of the Institutional Capacity Assessment System (ICAS) ([see electronic link](#)), including: (i) programming and organization capacity (activities programming system and administrative organization system); (ii) execution capacity (personnel management system, goods and services administration system, and financial administration system); and (iii) control capacity (internal control system and external control system). The result of this assessment indicates a satisfactory level of development associated with a low level of risk for program execution. Note should be made of CORAASAN's capacity to perform adequate monitoring of activities, including fiduciary management, as demonstrated during execution of a similar project using funds from Denmark. The lesson learned in the context of that project is that even though execution was primarily carried out by a firm contracted for that purpose, appointing a team responsible for monitoring at CORAASAN was essential for achieving efficiency in project execution and fulfilling its objectives. To support the execution of this

project, it has been proposed that staff be responsible for the general monitoring of the operation and, since CORAASAN has no experience executing projects financed by multilateral organizations, that actions be taken to strengthen the procurement unit by training staff and supporting procurement management under the program.

**D. Other key issues**

- 2.8 **Technical viability.** The proposed technical solutions meet the needs of improving drinking water services for prioritized geographic sectors. CORASAAN conducted a study of engineering options and configurations, comparing them to find the most feasible option. Costs were determined for those options and compared with cost figures in the context of local and regional prices in order to select the most economical option. As a result of this exercise, it was possible to identify the interventions that will have the greatest impact in terms of improving the continuity of service for the beneficiary population. The parameters for the installations, including pipe diameters, materials, tank volumes, and electromechanical and instrumentation equipment power, comply with national and international recommendations for sanitary, hydraulic, structural, and environmental engineering. In addition, the technologies involved are well known in the Dominican Republic and are handled by CORAASAN. It was also noted that CORAASAN has the procedures and practices needed to operate and maintain the new assets during their useful life. The institutional elements that CORAASAN needs to strengthen to improve the execution, operation, and maintenance of these assets have been considered in the institutional management support component as well as in the nonreimbursable technical-cooperation operation “Support for the Preparation of the Drinking Water Operation in Santiago” (ATN/OC-13182-DR). The conclusion is that CORAASAN will implement an operation that is technically viable with risks and contingencies that are already identified and mitigated in accordance with conventional practices for construction projects, notably planning works using the critical path method, cost control, and planning traffic detours.
- 2.9 **Financial viability.** In 2011, CORAASAN billed for a total of 45.7 million cubic meters of water, 75% of which correspond to a metered billing system. The financial analysis of CORAASAN included a historical analysis based on the company’s financial statements, and the development of a financial model projecting the estimated financial position over the next ten years ([see electronic link](#)). Based on historical financial information, it should be noted that the gross operating margin (EBITDA) over operating income was 4.8%, -0.3%, and -1.2% for fiscal years 2009, 2010, and 2011, which means that the company is close to covering its operating costs with its own funds. With a view to consolidating and increasing its operational and financial sustainability in the future, CORAASAN should focus its efforts primarily on: (i) reducing its levels of UFW; (ii) increasing efficiency and optimizing its operating cost structure (high personnel and energy costs as indicated above); (iii) more efficient management of accounts receivable;



and (iv) proposing and applying periodic rate reviews based on cost recovery and updating criteria.

- 2.10 It is estimated that the works to be financed by the project will not involve increased O&M costs for the company, given that the operation and maintenance of the project's assets will involve more preventive than corrective maintenance. In addition, the installation of new pumping equipment will entail electricity cost savings. The implementation of these measures, in conjunction with an adequate rate increase, will allow the company to consolidate the coverage of its O&M costs with its operating income. In that sense, the letter of agreement to be signed by the borrower and the executing agency, as described in paragraph 3.1 of this document, and the loan contract to be signed by the borrower and the Bank, will establish, in accordance with the provisions of the program Operating Regulations: (i) CORAASAN's obligation to maintain the works, goods, and equipment according to generally accepted technical standards; and (ii) that CORAASAN's operating income will allow it to cover its operating, maintenance, and management costs or, if not, it should adopt appropriate measures acceptable to the Bank, which could include a rate increase.
- 2.11 To make investments intended to improve and expand water and sewer services, as well as to pay for electricity, the company will continue to depend on the contributions it periodically and systematically receives from the Dominican government. Based on the financial annex, a methodology will be established for monitoring the following aspects of CORAASAN's financial performance: (i) cost recovery based on operating income; (ii) efficient collections; (iii) capacity to finance the investment program internally; and (iv) a cost and rate study.
- 2.12 **Institutional viability.** As part of project preparation activities, CORAASAN was evaluated using the ICAS, resulting in an overall weighted result of 83.37%, equivalent to a "satisfactory" level of development (SD) associated with a "low" risk level (LR). The results show strengths in organizational systems, administration, financial management, and internal control mechanisms that: (i) qualify CORAASAN to assume administrative, financial, and technical management responsibilities for the program in accordance with the administrative, fiduciary, and control requirements of the Bank and the Dominican government; and (ii) ensure CORAASAN's capacity and flexibility to absorb the incremental responsibilities and requirements involved in the administration and execution of program activities and components.
- 2.13 As a result of the ICAS, certain weaknesses were identified in CORAASAN's planning systems. Therefore, in response to CORAASAN's request to the Bank for institutional support in this area and using funds from the technical cooperation operation Support for the Preparation of the Drinking Water Operation in Santiago, financing is being provided for the design and formation of a strategic and operational planning department, which will assume responsibility for activities programming, monitoring, and evaluation. These actions will contribute both to institutional strengthening and to the execution and monitoring of the project.

- 2.14 **Socioeconomic viability.** A cost-benefit analysis was conducted on component 1 of the project to improve water service, which is socioeconomically viable with an economic internal rate of return of 35% and a net present value of US\$24.4 million ([see electronic link](#)). The analysis was complemented with a sensitivity analysis, which confirmed the soundness of the project.
- 2.15 According to information provided by CORAASAN, the average payment made by users, for an average household, is approximately RD\$350 per month (US\$8.90). Based on information on the income of beneficiary households obtained from the socioeconomic survey conducted for this project's cost-benefit analysis, this amount represents 1.7% of average monthly family income. There is a social rate for households in the poorest quintile, so that the monthly amount to be paid by this type of user is RD\$118 per month (US\$3.00), which represents 1.8% of average monthly family income in this quintile, which is an acceptable figure.

### III. IMPLEMENTATION AND MANAGEMENT PLAN

#### A. Implementation arrangements

- 3.1 **Executing agency.** The project's executing agency will be CORAASAN. **Therefore, as a condition precedent to the first disbursement, a letter of agreement between the borrower and the executing agency, setting out the terms for transferring the loan proceeds as well as other obligations of the parties, will be signed and take effect.** To carry out its functions, CORAASAN will set up a PEU in the Engineering and Project Management Office under the General Management Department. It will primarily consist of CORAASAN staff, with support from external consultants to be contracted using project funds, in accordance with Bank policies, to support CORAASAN basically in the performance of accounting and procurement functions, while serving as the basis for training and transfer of knowledge to the company regarding applicable Bank rules and procedures. CORAASAN will appoint an in-house staff member to act as "program coordinator" or, using project funds, it may consider contracting an external consultant to assume those functions on a full-time basis. As indicated in paragraph 2.5, the PEU will also have an environmental specialist. The PEU will monitor compliance with the program's objectives and targets, will serve as point of contact between the executing agency and the Bank, and will ensure compliance with the fiduciary, administrative, and technical requirements associated with program administration and execution. **The formation of the PEU, which includes a program coordinator, a procurement manager, an environmental specialist, and an accountant, will be a condition precedent to the first disbursement of the loan proceeds.** This employee may be appointed from among CORAASAN personnel or contracted in accordance with Bank policies.
- 3.2 **Program Operating Regulations.** Execution of the loan will be governed by the program Operating Regulations, the objectives of which include: (i) establishing the project's organizational structure and execution arrangements; (ii) defining the

activities and responsibilities of the various CORAASAN participants as well as other government agencies relevant to the project; (iii) establishing the requirements and fiduciary arrangements for procurement execution and financial management; (iv) describing areas of work to contribute to the effective, efficient, and transparent execution of the program and the corresponding fulfillment of its objectives, particularly in the areas of planning, execution, monitoring, evaluation, and technical, administrative, and financial management; and (v) establishing the project's risk mitigation actions. **The implementation of the program Operating Regulations, in accordance with terms previously agreed to with the Bank, will be a condition precedent to the first disbursement of the loan proceeds.**

- 3.3 **Procurement.** The procurement of works and goods and the selection and contracting of consulting services will be performed 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 Policies for the Selection and Contracting of Consultants Financed by the Inter-American Bank (document GN-2350-9); no exceptions are anticipated. Project procurement will be supervised on an ex post basis for: (i) the procurement of goods and nonconsulting services in amounts up to 40% of the threshold stipulated for the Dominican Republic for national competitive bidding; (ii) contracting consulting services for amounts up to 40% of the threshold stipulated for the Dominican Republic, with a shortlist that may include domestic firms only; (iii) procurement of goods and nonconsulting services in amounts within the thresholds stipulated for the Dominican Republic for shopping; (iv) contracting of individual consulting services for amounts up to US\$50,000; and (v) contracting of works for amounts within the threshold stipulated for the Dominican Republic for shopping.<sup>11</sup> Other processes will be supervised on an ex ante basis. The threshold for applying the ex post review method in each case may be modified based on a new evaluation of procurement management. Procurement planned under this program must be included in the Procurement Plan approved by the Bank and will be carried out in accordance with the established bidding methods and deadlines. The executing agency will reach agreement with the Bank on a Procurement Plan for the first 18 months of execution and this plan will be updated every 12 months, or as needed, during the execution of the operation.
- 3.4 **Audit.** In the context of corporate governance activities, an initial external audit of CORAASAN with a closing date as of 31 December 2012 will be financed by the operation, as will annual external audits during project execution. These audits will be conducted by independent external auditors contracted using loan proceeds. As a part of these audits, the program's annual financial statements will be audited, for which external audit reviews and the related opinions should cover the evaluation of: (i) the preparation of accounting and financial information by the PEU; (ii) the preparation and content of the financial statements; (iii) the application of

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<sup>11</sup> Current amounts are up to US\$50,000 <http://dev/PRM/Spanish/Thresholds.aspx>.

Dominican and IDB public accounting procedures; and (iv) the effectiveness, operability, and transparency of the internal control system.

**B. Program monitoring and evaluation**

- 3.5 The program will be monitored using the Bank's supervision instruments, based on the annual work plan (AWP), the Multiyear Execution Plan, the Procurement Plan, and the development and collection of information in the Results Matrix prepared by the PEU and accepted by the Bank. The costs for these activities are included in the program budget. In turn, independent evaluations will be conducted—the first at 18 months after disbursements are declared eligible or when 20% of the loan proceeds have been disbursed, whichever occurs first, and the final evaluation when 80% of the loan proceeds have been disbursed. The final evaluation will include an ex post socioeconomic evaluation, the components of which are defined in the Monitoring and Evaluation Arrangements ([see electronic link](#)).
- 3.6 For program monitoring, the PEU will submit progress reports every six months, which will be the basis for preparing the Project Monitoring Reports. Each year the fulfillment of program objectives will be reviewed; problems that have arisen during execution will be analyzed; and there will be joint agreement on relevant adjustments. Semiannual reports will be submitted based on the program indicators and will include: (i) a description and general information on activities carried out, including compliance with contractual conditions agreed to in the loan contract; (ii) progress made in terms of the Results Matrix indicators; (iii) a summary of the program's financial situation; (iv) the estimated cash flow for the next six months; (v) the annual year-end report, the updated AWP and Procurement Plan; (vi) analysis of problems encountered and corrective measures adopted; and (vii) issues that could compromise the timely and complete execution of the program.

Development Effectiveness Matrix				
Summary				
I. Strategic Alignment				
1. IDB Strategic Development Objectives		Aligned		
Lending Program		Lending to small and vulnerable countries.		
Regional Development Goals		Incidence of waterborne diseases (per 100,000 inhabitants).		
Bank Output Contribution (as defined in Results Framework of IDB-9)		Households with new or upgraded water supply (afro-descendant).		
2. Country Strategy Development Objectives		Aligned		
Country Strategy Results Matrix		GN-2581	Increased coverage of uninterrupted water service in areas served by CAASD.	
Country Program Results Matrix		GN-2661-4	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
		8.9		10
3. Evidence-based Assessment & Solution		8.5	25%	10
4. Ex ante Economic Analysis		10.0	25%	10
5. Monitoring and Evaluation		7.1	25%	10
6. Risks & Mitigation Monitoring Matrix		10.0	25%	10
Overall risks rate = magnitude of risks*likelihood		Low		
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: budget, treasury, accounting and reporting, and internal audit.	
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	One of the activities of the program is to carry out educational campaigns for the project beneficiaries on hygiene and the use of septic tanks.	
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	As part of the project preparation the TC ATN/OC-13182-DR "Support for the preparation of the potable water project in Santiago" was approved.	
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 general objective is to improve the quality and efficiency of the potable water service in the metropolitan area of Santiago de los Caballeros. The specific objectives are to: 1) better the service by improving its continuity in deficient areas; 2) reduce the energy consumption of the water producing systems, and 3) improve the operational efficiency by improving the commercial management and the corporate governance of the service.

The POD presents the problems to be addressed by the project as well as the factors which have contributed to the problems. The intended beneficiary population is also clearly identified. The proposed interventions are linked to the problems identified in the diagnosis and magnitudes are presented for all problems. In addition, references are made to studies and experiences that demonstrate the internal and external validity of the intervention.

The results matrix has vertical logic. The outcomes and outputs are clearly presented and the output indicators are all SMART. Two of the outcome indicators are not SMART since they are not specific. One of the outcome indicators does not have a baseline but it will be gathered at the start of the project. All indicators have targets and sources of information. With regards to the data required for the PMR, all outputs have annual targets and the costs of the first two years of the project are broken down by output. However, the outputs that are presented in the POA are not identical to those included in the results matrix. Since only the costs for the first two year of project execution are presented, the summation of the products' costs does not correspond to the total cost of the project.

The project was analyzed using a cost-benefit analysis. The economic benefits are clearly spelled out and the costs reflect real resource costs to the economy. The assumptions are spelled out and justified, and a sensitivity analysis of the assumptions was undertaken. The project has a monitoring and evaluation plan. The evaluation plan follows the DEM guidelines. The operation will be evaluated using a reflexive methodology and an ex post cost-benefit analysis.

Finally, the risk matrix presents the projects risks which are rated for magnitude and probability. Mitigation measures are presented for each risk as well as indicators to monitor its implementation.

## RESULTS MATRIX

Objective	The general objective is to improve access to drinking water in the metropolitan area of Santiago de los Caballeros. The specific objectives are: (i) to improve the continuity of the drinking water service in areas where it is deficient; (ii) to reduce energy consumption in water production systems; and (iii) to improve operational efficiency by improving business management and corporate governance.							
Component 1. Investments in Drinking Water Infrastructure								
	Baseline	Year 1	Year 2	Year 3	Year 4	Year 5	Target	Comments/Mean of verification
Outputs								
Drinking water distribution systems built (km)	0	0	0	10	20	30	60	Record of certification of work by CORAASAN. Reports from supervision company.
Storage tanks built (tank)	0	0	0	1	3	0	4	Record of certification of work by CORAASAN. Reports from supervision company.
New macrometers installed (macrometer)	0	0	0	0	10	12	22	Record of certification of work by CORAASAN. Reports from supervision company.
Water pumping stations rehabilitated (pumping station)	0	0	0	0	3	0	3	Record of certification of work by CORAASAN. Reports from supervision company.
Collection works rehabilitated (collection work)	0	0	0	0	0	1	1	Record of certification of work by CORAASAN. Reports from supervision company. Note: collection works include rehabilitation of gates at the purification plant in order to reduce water losses.
Drinking water treatment plant rehabilitated (plant)	0	0	0	0	0	1	1	Record of certification of work by CORAASAN. Reports from supervision company.

	Baseline	Year 1	Year 2	Year 3	Year 4	Year 5	Target	Comments/Mean of verification
								company.
<b>Outcomes</b>								
Households with improved residential access to drinking water in the Santiago metropolitan area (household)	74,743	74,743	74,743	90,410	131,288	134,701	134,701	Semiannual progress reports. Definition of improved: increases compared to baseline in continuity of service (12 or more hours/day).
Percentage of households with improved residential access to drinking water in the Santiago metropolitan area (percentage)	34%	34%	34%	41%	59%	60%	60%	Semiannual progress reports. Definition of improved: increases compared to baseline in continuity of service (12 or more hours/day).
Percentage of households by service continuity levels in the Santiago metropolitan (percentage)	excellent: 11% good: 23% average: 34% precarious: 30% critical: 2%	excellent: 11% good: 23% average: 34% precarious: 30% critical: 2%	excellent: 11% good: 23% average: 34% precarious: 30% critical: 2%	excellent: 13% good: 28% average: 32% precarious: 26% critical: 1%	excellent: 18% good: 41% average: 31% precarious: 10% critical: 0%	excellent: 18% good: 42% regular: 31% precarious: 9% critical: 0%	excellent: 18% good: 42% average: 31% precarious: 9% critical: 0%	Note: the following definitions are used for each of the categories: excellent: between 112 and 168 hours/week; good: minimum of 87 hours/week; average: between 16 and 28 hours/week; precarious: between 4 and 16 hours/week; critical: no more than 4 hours/week. Semiannual progress reports.
Percentage of electricity costs/total operating costs (percentage)	29%	29%	29%	29%	26%	26%	26%	Audited financial statements of CORAASAN.
Physical water losses (physical losses over production volume, percentage)	50%	50%	50%	50%	42%	42%	42%	Semiannual progress reports.
<b>Component 2. Support for Institutional Management</b>								
<b>Outputs</b>								
External audits conducted of the company's financial statements (external audit)	0	1	1	1	1	1	5	Audited financial statements of CORAASAN.
Code of Ethics prepared (code of ethics)	0	0	1	0	0	0	1	Semiannual progress reports. Consulting reports.

	Baseline	Year 1	Year 2	Year 3	Year 4	Year 5	Target	Comments/Mean of verification
Action plans on corporate governance and internal audit prepared (action plan)	0	0	1	1	0	0	2	Semiannual progress reports. Consulting reports.
Rate and Subsidy Study; Social Water Program developed (study)	0	0	1	0	0	0	1	Semiannual progress reports. Consulting reports.
Client satisfaction surveys conducted (survey)	0	0	1	1	1	1	4	Survey results. Semiannual progress reports.
System installed for integration of administrative management, operational, and commercial information programs (hardware and software)	0	0	0	0	0	1	1	Semiannual progress reports.
Training workshops on “use of integrated management information systems” conducted (workshop)	0	0	0	0	0	3	3	Semiannual progress reports. Consulting reports. Attendance records.
Training workshops conducted on “internationally accepted accounting principles and internal control practices” (workshop)	0	0	0	3	0	0	3	Semiannual progress reports. Consulting reports. Attendance records.
New customer service (call center) information system implemented (system). Note: “implemented” is understood as the purchase and installation of equipment and start-up of new procedures for call center operation.	0	0	0	0	0	1	1	Semiannual progress reports.
Maintenance plan developed for micrometers (plan)	0	0	0	1			1	Semiannual progress reports. Consulting reports.
Micrometers installed (micrometer)	0	0	0	14,000	0	0	14,000	Semiannual progress reports. Receipt of meters certificate.



	Baseline	Year 1	Year 2	Year 3	Year 4	Year 5	Target	Comments/Mean of verification
Technical assistance finalized for certification of drinking water and wastewater quality laboratories (technical assistance)	0	0	1				1	Semiannual progress reports. Consulting reports.
Laboratory equipment installed for measuring drinking water and wastewater quality (equipment)	0	0	0	1	1	0	2	Semiannual progress reports.
Citizen awareness campaign conducted on hygiene and maintenance of individual sanitation systems (campaign)	0	1	1	1	1	1	5	Semiannual progress reports. Consulting reports.
<b>Outcomes</b>								
CORAASAN internal control system operating under generally accepted international practices (system)	0	0	0	0	1	0	1	Semiannual progress reports.
Annual ethics reports submitted to the Board of Directors (report)	0	0	0	1	1	1	3	Board of Directors resolutions. Semiannual progress reports (July-December period).
Collections efficiency (collections over billing) (percentage)	69%					74%%	74%	Audited financial statements of CORAASAN. Note: the target for this indicator will be confirmed upon conclusion of consulting financed by technical cooperation operation DR-T1085, "Engineering Designs and Program Feasibility," including commercial and rate analysis of the company.
Water quality laboratories certified (cumulative laboratories)	0	0	0	0	2	2	2	Semiannual progress reports. Documents from competent authority granting certification.

	Baseline	Year 1	Year 2	Year 3	Year 4	Year 5	Target	Comments/Mean of verification
Percentage of users satisfied with service provided in area of intervention	NA						+25%	Results of customer satisfaction surveys. Baseline will be determined with the satisfaction survey to be conducted at the start of the project.
Percentage of women trained in the use of “integrated management information systems” (percentage)	0%						50%	Semiannual progress reports. Consulting reports. Workshop attendance records.
Percentage of women trained in the use of “internationally accepted accounting principles and internal control practices” (percentage)	0%						50%	Semiannual progress reports. Consulting reports. Attendance records.

## **FIDUCIARY AGREEMENTS AND REQUIREMENTS**

**Country:** Dominican Republic

**Project number:** DR-L1057

**Name:** Santiago Water Supply Service Improvement Program in Santiago de Los Caballeros, Dominican Republic

**Executing agency:** Corporación de Acueducto y Alcantarillado de Santiago [Water and Sewer Corporation of Santiago] (CORAASAN)

**Prepared by:** Carolina Escudero (Procurement Specialist, FMP/CDR) and Christian Contín (Financial Specialist, FMP/CDR)

### **I. EXECUTIVE SUMMARY**

- 1.1 The references used as inputs for preparing this Annex III include the latest Public Expenditure and Financial Accountability (PEFA) report issued in late 2010, indicating progress in some areas of the Dominican government's Public Financial Management system, such as accounting and budget, as well as the financial supervision conducted by the Bank's procurement and financial management specialists for the first operation under the Conditional Credit Line for Investment Projects (CCLIP). It should be noted that the MAPS/OECD diagnostic on the government contracting system is under way, and the Bank is developing actions to support and strengthen national financial management and public sector procurement systems, in coordination with government authorities and other international organizations.
- 1.2 With respect to financial management, accounting, report production, cash management, and budgeting, all current sovereign guaranteed loan operations use the UEPEX/SIGEF module. In the Dominican Republic, the Comptroller General's Office is the agency responsible for internal control and internal audit, while the Auditor General's Office is responsible for the external audit and legislative oversight. Both institutions show technical limitations for carrying out their assigned functions and are thus ineligible to conduct financial audits of Bank programs. Instead the services of external audit firms deemed eligible by the Bank are used. Regarding the public procurement system, the Bank provided technical assistance and monitoring for the MAPS/OECD diagnostic assessment. The findings show that one notable strength of the system is the structure of its legal framework. However, there are significant challenges for achieving a level of development based on international standards that would allow its application in

Bank operations.<sup>1</sup> The improvement plan based on that diagnostic assessment includes short-, medium-, and long-term activities. With support from the Bank, as one of the short-term activities, the authorities are now introducing improvements in the Regulations Implementing Purchasing and Contracting Law 490-07. As a result, the Bank could evaluate the feasibility of adopting some national subsystems<sup>2</sup> for the execution of Bank-financed operations.

## II. FIDUCIARY CONTEXT OF THE EXECUTING AGENCY

- 2.1 An institutional assessment of CORAASAN was conducted during preparation of the operation, based on the components and guidelines of the Institutional Capacity Assessment System (ICAS), including: (i) planning and organizational capacity (activities planning system and administrative organization system); (ii) execution capacity (personnel management system, goods and services administration system, and financial administration system); (iii) control capacity (internal control system and external control system); and (iv) operational system for procurement.<sup>3</sup>
- 2.2 Although the weighted results achieved by CORAASAN following application of the ICAS assessment reveal a satisfactory level of development associated with a low risk to execution, the fact that this agency does not have prior experience executing projects financed by multilateral organizations could, initially, limit its capacity to execute the operation. The recommendations made in this document seek to mitigate any risk factor that could affect the operation's fiduciary execution.
- 2.3 Bank operations in the country perform financial management using the Executing Units for Externally Financed Projects (UEPEX) subsystem of the national Integrated Financial Management System (SIGEF). There have been various consultations during the design of the operation and the possibility of using the UEPEX for financial administration has been analyzed. However, the Ministry of Finance's implementation of this system has not yet reached decentralized institutions like CORASAAN. Therefore, it has been agreed that financial administration will be performed using the Visual Accounting System<sup>4</sup> supported by the AS400 system that CORAASAN uses in its day-to-day operations.

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<sup>1</sup> It has been determined, *a priori*, that adjustments are needed in the Regulations Implementing the Purchasing and Contracting Law now in effect: develop and implement the Transactional Website for Public Purchasing and Contracting; strengthen the capacities of employees responsible for the purchasing and contracting function; and improve the control mechanisms.

<sup>2</sup> Methods for shopping and contracting individual consultants; and publication of specific procurement notices on the National Purchasing and Contracting Website.

<sup>3</sup> See Final Report on ICAS assessment prepared by Consultant Andrés Garrett (IDBDOCS #36945271).

<sup>4</sup> Bank financial administration and accounting system that meets the financial reporting requirements and was used in fiduciary management of the portfolio of Bank-financed projects in the country prior to implementation of the UEPEX.

### III. FIDUCIARY RISK EVALUATION AND MITIGATION MEASURES

- 3.1 The level of fiduciary risk for executing the loan has been rated as low. Although the fiduciary systems used by CORAASAN operate adequately for its normal operations, an agreement has been reached on providing additional strengthening to ensure an adequate level of specialized capacities for fully assuming the fiduciary obligations associated with execution of this investment program. Although fiduciary risk is low, this strengthening consists of actions contained in the PRM Matrix,<sup>5</sup> including contracting an accountant for financial management and a procurement specialist to provide in-house staff with training and support in the planning, management, and monitoring of project procurement.
- 3.2 Note should be made of CORAASAN's capacity to perform adequate monitoring of activities, including fiduciary management, as demonstrated during execution of a similar project using funds from Denmark. The lesson learned in the context of that project is that even though execution was primarily carried out by a firm contracted for that purpose, appointing a team responsible for monitoring at CORAASAN was essential for achieving efficiency in project execution and fulfilling its objectives. In the case of this operation, it has been proposed that staff be responsible for the general monitoring of the operation, including fiduciary management.

### IV. CONSIDERATIONS FOR THE SPECIAL CONDITIONS OF THE CONTRACT

- a. **Special conditions precedent to disbursement of the loan proceeds:** The first disbursement of the loan will be contingent upon fulfillment of the following requirements, to the Bank's satisfaction: (i) a letter of agreement will be signed and in effect between the borrower and the executing agency, setting out the terms of reference for the transfer of the loan proceeds and other execution obligations of the parties; (ii) the program Operating Regulations will be approved and in effect; and (iii) the Program Executing Unit (PEU) will be set up, with selection of the Program Coordinator and the staff necessary for its operation.
- b. **Special execution conditions:** (i) each of the bidding processes for infrastructure construction works described in component 1 of the project may not begin until the Bank confirms that the Ministry of the Environment and Natural Resources has granted CORAASAN the relevant environmental authorization in accordance with applicable environmental legislation; and (ii) within no more than six months after the loan contract takes effect, CORAASAN will obtain the corresponding environmental authorization for existing drinking water facilities in accordance with national environmental legislation.

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<sup>5</sup> See Project Risk Management Matrix (IDBDOCS #36948727).

- c. Exchange rate agreed to with the executing agency for purposes of rendering accounts:** For purposes of the provisions of Article 3.06 (b) of the General Conditions of this contract, the parties agree that the applicable exchange rate will be that indicated in paragraph (b)(i) of that article ([see electronic link](#)).
- d. Financial statements and other reports whether audited or not:** During program execution, each year the executing agency will submit the program's financial statements in accordance with IDB policies. A preliminary audit report may also be required for the first half of each year. External audits of the program will be performed by a firm of independent auditors acceptable to the IDB. Loan proceeds will be used to cover the costs of these audits.

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

- 1. Procurement execution.** Procurement will be carried out by CORAASAN in accordance with the policies set forth in documents GN-2349-9 and GN-2350-9.
  - a. Procurement of works, goods, and nonconsulting services.** Contracts for works, goods, and nonconsulting services<sup>6</sup> generated under the project and subject to International Competitive Bidding (ICB) will be executed using the standard bidding documents (SBDs) issued by the Bank. Procurement subject to National Competitive Bidding (NCB) will be executed using the National Competitive Bidding documents agreed upon with the Bank (or satisfactory to the Bank if not yet agreed to). Review of the technical specifications for procurement during the preparation of procurement processes is the responsibility of the project's sector specialist.
  - b. Selection and contracting of consultants.** Consulting services contracts generated under the project, regardless of the contract amount, will be executed using the Standard Request for Proposals (SRP) issued or agreed to with the Bank (or satisfactory to the Bank if not yet agreed to). Review of the terms of reference for contracting consulting services is the responsibility of the project's sector specialist.
    - **Selection of individual consultants.** The contracting of individual consultants will be based on comparing at least three candidates' qualifications for performing the work. When the situation so warrants, notices will be published in the local or international press or at UNDB online in order to obtain background on qualified consultants. Review of the terms of reference for contracting is the responsibility of the project's sector specialist.

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<sup>6</sup> Policies for the Procurement of Goods and Works Financed by the Inter-American Development Bank (document GN-2349-9) paragraph 1.1: Nonconsulting services are treated like goods.

- c. **Procurement planning.** CORAASAN will publish the Procurement Plan in the Procurement Plan Execution System and will update it at least annually or as required to reflect real project execution needs and progress made.
- d. **Advance procurement/retroactive financing.** These provisions will apply as established in the loan contract.
- e. **National preference.** The inclusion of national preference in procuring the planned goods will not be considered for executing this operation.

**2. Table of threshold amounts (thousands of US\$)**

Works			Goods and Nonconsulting Services			Consulting	
International Competitive Bidding	National Competitive Bidding	Shopping	International Competitive Bidding	National Competitive Bidding	Shopping	International Advertisement	100% National Shortlist
>US\$3,000	>US\$250	≤US\$250	>US\$250	>US\$50	≤US\$50	>US\$200	≤US\$200

The thresholds to be considered for ex post review are listed below:

Ex Post Review Thresholds			
Works	Goods and Nonconsulting Services	Consulting Firm Services Shortlist may be 100% National	Individual Consulting Services
Amounts within the thresholds stipulated for the Dominican Republic for shopping.	a. Up to 40% of the threshold stipulated for the Dominican Republic for national competitive bidding. b. For amounts within the threshold stipulated by the Dominican Republic for shopping.	Up to 40% of the threshold stipulated for the Dominican Republic with shortlist that may be 100% national firms.	For amounts up to ≤US\$50,000
Directly contracted purchases will be reviewed on an ex ante basis, without exception.			

- 3. **Major procurement processes.** CORAASAN will be responsible for preparing the Procurement Plan and the executing agency will provide assistance, ensuring that procedures are appropriate in accordance with the Bank's procurement policies by issuing the expert opinion for consideration of the sector specialist/Project Team Leader. Major procurement processes planned in this operation are detailed below:

Activity	Type of bidding	Estimated date	Estimated amount (US\$000)
<b>Goods</b>			
Procurement of pumping equipment for distribution system	ICB	Q2 2013	US\$1,360
Procurement of macrometers	ICB	Q1 2014	US\$600
Procurement of software for integrating commercial, operations, and engineering information systems	ICB	Q2 2016	US\$500
<b>Works</b>			
Works to supply and install pipes and macrometers	ICB	Q3 2014	US\$15,170
<b>Firms</b>			
Consulting services to perform inspection and supervision of works to supply and install pipes and macrometers	QCBS	Q3 2014	US\$707
Consulting services to conduct the independent external audit of CORAASAN's opening and annual financial statements	QCBS	Q1 2013	US\$475

\*To access the procurement plan for the first 18 months, click here ([see electronic link](#)).

4. **Procurement supervision.** The thresholds for ex post review are established on the basis of the executing agency's fiduciary capacity and may be modified by the Bank to the extent that such capacity changes. Considering the project's low risk level in fiduciary terms, there will be one ex post inspection visit per year; review reports will include at least visit one physical inspection of procurement.
5. **Records and files.** Files must be kept at CORAASAN's offices under adequate security conditions.

## VI. Financial management agreements and requirements

1. **Programming and budget.** The annual budget is prepared by the Ministry of Finance through the General Budget Office, in coordination with the Ministry of Economy, Planning, and Development, as well as with other government agencies. CORAASAN does not have an institutional division responsible for strategic and operational planning as part of its organizational structure. This aspect to be improved is part of the institutional strengthening provided under the program. In addition to the strengthening measures provided in the design and execution of the program, Bank planning instruments (PEP, AWP, procurement plan) will be used. No provision is made for counterpart resources; thus, they will not be required as part of budgetary programming.
2. **Accounting and information systems.** CORAASAN should use the Visual Accounting system, supported by its accounting and budgetary control system called AS400. In addition to recording accounting transactions and maintaining budgetary control, both systems are capable of generating the required financial statements, in accordance with Bank rules and policies. Accounting will be done on a cash basis. It is important to note that the Ministry of Finance is now in the process of improving the implementation of the International Public Sector Accounting Standards (IPSAS).



3. **Disbursements and cash flow.** Resources to be administered by the executing agency as advances of funds may: (i) be deposited under the project name in a special bank account opened by the borrower at the Central Bank (in US\$) and in the Reserve Bank (in RD\$) through the National Treasury; (ii) be entered in the borrower's general account (in the event that prior to eligibility for program disbursement, the Treasury Single Account, currently being implemented as a pilot project, becomes fully effective), and then in a separate subaccount under the project name, to which all incoming funds and payments for the Bank-financed operation will be posted (provided this mechanism is satisfactory to the IDB). Project funds will be used by the borrower and the executing agency exclusively for eligible expenditures, and there must be a suitable financial management and control system for executing those expenditures, following the procedures established in the loan contract as reflected in the Operations Manual and consistent with the financial plan periodically agreed to with the Bank.
4. **Internal control and internal audit.** The government's internal audit function is the responsibility of the Comptroller General's Office of the Dominican Republic (CGRD).<sup>7</sup> In carrying out this function, the CGRD is assisted by Internal Audit Units in each government agency. Besides this unit carrying out its functions according to the standards and guidelines established by the Government Accounting Office of the CGRD and other standards, CORAASAN has its own internal auditor. At this point, the main functions revolve around purchasing and payment processes. Although the Bank maintains ongoing exchanges with the CGRD with a view to improving the internal control systems of executing agencies for Bank-financed operations in the country, it plans to involve the internal auditor of CORAASAN in future training sessions.
5. **External control and reports.** The Auditor General's Office of the Dominican Republic (CCRD) is the autonomous agency responsible, *inter alia*, for conducting the external audit of agencies that receive or manage government funds (Law 10-04). For this operation, the services of medium- or high-level independent auditing firms need to be contracted for the annual external audits of the program. External audits will be performed based on terms of reference previously agreed to with the Bank. Audit services must be contracted on a timely basis so that the auditor can submit periodic interim or preliminary reports that promote the monitoring and maintenance of the executing agency's internal controls with respect to program management.
6. **Financial supervision plan.** Once the program coordinating unit is formed, a workshop should be completed to review the Bank's fiduciary policies and procedures. Periodic inspection visits should be scheduled, including at least one initial visit and another visit during the second half of the year, plus frequent meetings during the first year of execution to ensure the internal cohesion of CORAASAN in terms of the organization of the program. An effort will be made to

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<sup>7</sup> See Law 10-07, on the National Internal Control System and its Implementing Regulations and Presidential Decree 121-01.

include the external auditor in the process of reviewing the internal controls and a meeting will be held with the auditors, the executing agency, and the Bank to review the results of the preliminary audit report, before the end of each fiscal year. The operation's risk will be continuously monitored by the project team, particularly during the first year of execution.

7. **Execution arrangements.** To carry out its functions, CORAASAN will have the support of a Program Coordinating Unit (PCU), which will be part of CORAASAN's Engineering and Project Management Office. It will act as a link with the Bank as well as the technical, administrative, and financial divisions of CORAASAN and other participating agencies. The PCU's structure will include at least: (i) a general coordinator with experience in project administration, planning, and management, who will report directly to CORAASAN's Executive Director; (ii) a coordinator for each component, with technical experience in the area and in preparing and supervising operating and monitoring plans and evaluating investments; (iii) a technical analyst to support the component 2 coordinator; (iv) a procurement specialist; (v) an administrative financial specialist; and (vi) an accountant, all of whom will report to the general coordinator. This team will support CORAASAN's in-house staff in the various departments involved in program execution, who will share responsibility for execution in the following areas: (i) technical aspects related to activities; (ii) planning and control; and (iii) fiduciary management, procurement, and contracts. The profiles, functions, tasks, and relationships of in-house CORAASAN staff and the operation's PCU are part of the content of the program Operations Manual. As an initial strategy for proceeding with the institutional strengthening of CORAASAN, some of the staff of the proposed PCU will be line employees of that institution.

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

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

Dominican Republic. Loan \_\_\_/OC-DR to the Dominican Republic  
Santiago Water Supply Service Improvement Program

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 Dominican Republic, as Borrower, for the purpose of granting it a financing to cooperate in the execution of a program to improve water supply service in Santiago. Such financing will be for the amount of up to US\$25,000,000, from the resources of the Bank's Ordinary Capital, 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 \_\_\_\_ 2012)