

## Technical Cooperation Document

### I. Basic Information for TC

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| ▪ Country/Region:                    | TRINIDAD AND TOBAGO  |
| ▪ TC Name:                           | Support for the Preparation of Trinidad and Tobago Water Supply Improvement Program  |
| ▪ TC Number:                         | TT-T1108   |
| ▪ Team Leader/Members:               | <p>Lewis, Gilroy Francis (INE/WSA) Team Leader; Cathala, Corinne (INE/WSA) Alternate Team Leader; Machado, Kleber B. (INE/WSA) Alternate Team Leader; Agostini, Dorri Michelle (CCB/CTT); Arauz Herrera, Alison (INE/WSA); Brathwaite, Neeca N. (CCB/CTT); Cayetano, Evan Stephen (INE/WSA); Corriols Diaz, Leonor Odilie (VPC/FMP); Denea Larissa, Trejo Carcamo (INE/WSA); Dipasquale, Irene Etelvina (INE/WSA); Dunbar, Gregory A (VPC/FMP); Lopez, Liliana M. (INE/WSA); Nalesso, Mauro (INE/WSA); Negret Garrido, Cesar Andres (LEG/SGO); Ramsumair-John, Priya Elizabeth (CCB/CTT); Riquelme, Rodrigo (INE/WSA); Salabie, Denise Ann (VPC/FMP); Sasaki, Keisuke (INE/WSA); Suarez Aleman, Ancor (VPC/002) Negret Garrido, Cesar Andres (LEG/SGO); Ramsumair-John, Priya Elizabeth (CCB/CTT); Riquelme, Rodrigo (INE/WSA); Salabie, Denise Ann (VPC/FMP); Sasaki, Keisuke (INE/WSA); Suarez Aleman, Ancor (VPC/002)INE/WSA) Team Leader; Cathala, Corinne (INE/WSA) Alternate Team Leader; Machado, Kleber B. (INE/WSA) Alternate Team Leader; Agostini, Dorri Michelle (CCB/CTT); Arauz Herrera, Alison (INE/WSA); Brathwaite, Neeca N. (CCB/CTT); Cayetano, Evan Stephen (INE/WSA); Corriols Diaz, Leonor Odilie (VPC/FMP); Dipasquale, Irene Etelvina (INE/WSA); Dunbar, Gregory A (VPC/FMP); Nalesso, Mauro (INE/WSA); Negret Garrido, Cesar Andres (LEG/SGO); Ramsumair-John, Priya Elizabeth (CCB/CTT); Riquelme, Rodrigo (INE/WSA); Salabie, Denise Ann (VPC/FMP); Sasaki, Keisuke (INE/WSA); Suarez Aleman, Ancor (VPC/002)INE/WSA) Team Leader; Cathala, Corinne (INE/WSA) Alternate Team Leader; Machado, Kleber B. (INE/WSA) Alternate Team Leader; Agostini, Dorri Michelle (CCB/CTT); Arauz Herrera, Alison (INE/WSA); Brathwaite, Neeca N. (CCB/CTT); Cayetano, Evan Stephen (INE/WSA); Corriols Diaz, Leonor Odilie (VPC/FMP); Dipasquale, Irene Etelvina (INE/WSA); Dunbar, Gregory A (VPC/FMP); Nalesso, Mauro (INE/WSA); Negret Garrido, Cesar Andres (LEG/SGO); Ramsumair-John, Priya Elizabeth (CCB/CTT); Riquelme, Rodrigo (INE/WSA); Salabie, Denise Ann (VPC/FMP); Sasaki, Keisuke (INE/WSA); Suarez Aleman, Ancor (VPC/002)INE/WSA) Team Leader; Cathala, Corinne (INE/WSA) Alternate Team Leader; Machado, Kleber B. (INE/WSA) Alternate Team Leader; Agostini, Dorri Michelle (CCB/CTT); Arauz Herrera, Alison (INE/WSA); Brathwaite, Neeca N. (CCB/CTT); Cayetano, Evan Stephen (INE/WSA); Corriols Diaz, Leonor Odilie (VPC/FMP); Dipasquale, Irene Etelvina (INE/WSA); Dunbar, Gregory A (VPC/FMP); Nalesso, Mauro (INE/WSA); Negret Garrido, Cesar Andres (LEG/SGO); Ramsumair-John, Priya Elizabeth (CCB/CTT); Riquelme, Rodrigo (INE/WSA); Salabie, Denise Ann (VPC/FMP); Sasaki, Keisuke (INE/WSA); Suarez Aleman, Ancor (VPC/002)</p> |
| ▪ Taxonomy:                          | Operational Support  |
| ▪ Operation Supported by the TC:     | TT-L1055, TT-T1076. Trinidad and Tobago Water Supply Improvement Program   |
| ▪ Date of TC Abstract authorization: | 22 Oct 2020.   |

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| ▪ Beneficiary:   | The Government of Trinidad and Tobago through the Ministry of Planning and Development   |
| ▪ Executing Agency and contact name:                               | Inter-American Development Bank  |
| ▪ Donors providing funding:  | OC Strategic Development Program for Infrastructure(INF)   |
| ▪ IDB Funding Requested:   | US\$800,000.00   |
| ▪ Local counterpart funding, if any:                               | US\$0  |
| ▪ Disbursement period (which includes Execution period):           | 24 months  |
| ▪ Required start date:   | January 2021   |
| ▪ Types of consultants:  | Firm and Individual Consultants  |
| ▪ Prepared by Unit:  | INE/WSA-Water & Sanitation   |
| ▪ Unit of Disbursement Responsibility:                             | CCB/CTT-Ctry Off Trinidad & Tobago   |
| ▪ TC included in Country Strategy (y/n):                           | Yes  |
| ▪ TC included in CPD (y/n):  | No   |
| ▪ Alignment to the Update to the Institutional Strategy 2010-2020: | Social inclusion and equality; Productivity and innovation; Institutional capacity and rule of law; Environmental sustainability |

## II. Description of the Associated Loan/Guarantee (TT-L1055)

2.1 The Government of Trinidad and Tobago (GoRTT) has signaled its intention to transform the water sector through a report of a Sub-Committee of Cabinet mandated to review the operations of the Water and Sewerage Authority (WASA) and make recommendations for it to achieve its mandate. Significant investment will be required to achieve wider water sector transformation and undertake long-term infrastructural improvements to improve water supply, increase water security, protect watersheds, and water resources, strengthen sector institutions, and support the sector in its planning capacity and execution. A Cabinet Committee has been appointed to oversee the transformation process. The Bank is therefore proposing to provide financing for water sector support through the Conditional Credit Line for Investment Projects (CCLIP) instrument. The CCLIP will allow the GoRTT access to financing through several, phased loan operations that are smaller tranches of commitment and provide greater flexibility to define the individual loan operations.

2.2 The first operation associated with this Technical Cooperation (TC) is the “Trinidad and Tobago National Water Sector Transformation Program” (TT-L1055). The main objectives of TT-L1055 are to: (i) sustainably manage the country’s water resources; and (ii) improve the reliability and resilience of the water supply system to improve operating efficiency and service quality to deliver 24/7. To achieve these objectives, it will be necessary to effectively manage production, transmission and distribution and reduce water losses; and utilise innovative technology, digital transformation and data driven management systems. Achieving these objectives will also contribute to eliminating the need for Government support to meet operational expenditure and reduce reliance on desalinated water.

TT-L1055 is in preparation and pending eligibility. This first operation, is expected to be designed as an investment loan. The components associated with the loan will be the following:

2.3 **Component 1: Water Stabilisation and Improvement:** This component will develop a comprehensive program to stabilize the water supply services to prevent further service decline throughout the country and to ensure access to water, sanitation, and hygiene to unserved and underserved households in the face of COVID-19 pandemic. The

subcomponents to be financed include: (i) Installation of new pipelines and replacement of high leakage mains; ii) Well development; iii) Construction/Upgrade of intakes; iv) Water Treatment Plant refurbishment; v) Critical equipment acquisition and repair; vi) Acquisition of production/bulk flow meters and data loggers; vii) Repair of backlog of physical leaks; and viii) Operational systems improvements in the North-West, North-East, Central, South and Tobago operational zones.

**2.4 Component 2: Water Sector Transformation:** This component will finance the short- and medium-term activities that are required to be undertaken to transform WASA, in particular, as directed by the Cabinet Oversight Sub-Committee and the Board of Commissioners of WASA. The Bank's AquaRating International Standard will be used to characterize the performance of WASA and establish a baseline for the Transformation. Specifically, the subcomponents to be financed include: (i) Execution of a Transformation Plan and Organizational Restructuring under the Office of Transformation established within WASA. (It is expected that a number of staff currently employed by WASA will be affected by the restructuring. This item will therefore include the design and funding of an appropriate voluntary separation package to be agreed upon with workers, and will provide incentives for early retirements and retraining); (ii) Institutional strengthening to separate the functions of water resources management from WASA and to implement Integrated Water Resources Management (IWRM) supported by a HydroBID based information system ; (iii) Resilience to Climate Change and Risk management and promulgation throughout WASA; and (iv) Improvement of the Ministry of Public Utilities (MPU)'s technical oversight capacity for coordination of water sector transformation and stabilization.

**2.5 Component 3: Network Optimisation. Under this component** WASA's Water Loss Unit will be tasked to prepare a reliable baseline assessment of water into supply and consumption in the North-West Operational Zone (NWOZ) of Trinidad that will inform the preparation of a baseline, water balance and hydraulic model. A third-party consultant will support the Water Loss Unit and validate the data. On the basis of this information, a schedule of works will be developed and financed to address network modernization and optimization through reduction of commercial and physical losses, implementation of DMAs/PMAs, SCADA, smart water infrastructure tools and information management systems in the NWOZ. Consideration will be given to execute these works through a Co-Management Performance Based Contract. The second subcomponent will finance supporting activities to improve infrastructure sustainability, such as: additional baseline, diagnosis; knowledge and data generation and dissemination; capacity building; energy efficiency; preparation of a detailed 4-year investment program for the other operational zones; and a public communication strategy and plan.

**2.6 Program management and other costs.** This component will finance administrative expenses including, support for Program execution dedicated staff, audits, monitoring and evaluation, communication, and supervision and implementation of Environmental and Social Management Plan (ESMP).

### **III. Objectives and Justification of the TC**

**3.1** The general objective of the TC is to support the Government of Trinidad and Tobago (GoRTT) in its efforts to transform WASA through foundation work to stabilise and improve the water supply in the country and operationalize the transformation process to improve operational efficiency and resilience. The TC resources would be used to acquire baseline data on water production, transmission, and distribution on the Caroni North and South and North Oropouche transmission systems, and validate the projects proposed under a National Water Stabilisation and Improvement Program (NWSIP) which are required to inform the

preparation of the loan operation (TT-L1055). Specifically, the TC aims to assist the GoRTT with WASA's transformation focusing on water delivery improvement through a water audit to rationalize network optimization strategies, and major infrastructure rehabilitation and maintenance. The TC will also finance an independent technical validation exercise of the NWSIP and identify critical areas in need of intervention. The TC will resource the development and execution of a communication strategy to consult stakeholders and socialize wider water sector transformation. The TC will also support additional institutional activities being undertaken by WASA's Board to implement the recommendations of the report of the Sub-Committee of Cabinet on WASA.

- 3.2 According to the WHO/UNICEF Joint Monitoring Program (2017), 97% of the population in Trinidad and Tobago had access to an improved drinking water source in 2015 while sewerage coverage was reported as 30% in 2018. Data from the Water and Sewerage Authority (WASA) indicates that during the dry season it produced 217 Imperial Million Gallons per Day (IMGD) in 2018 which is greater than the 163 IMGD estimated customer consumption, but this production is not sufficient to satisfy the aggregate demand consisting of high Non-Revenue Water (NRW) and high customer consumption. Despite the high-water supply coverage, WASA faces a myriad of operational, financial, managerial, and climate change related challenges that contribute to its low operating efficiency and low quality of water service.
- 3.3 Specifically, these challenges include: (i) more than 50% of the population receive an irregular water supply; (ii) antiquated distribution network with little to no measurement of water leaving the production facilities and reaching the customer; (iii) lack of technology to modernise and enhance accountability in WASA's water supply system; (iv) water shortages resulting from operational deficiencies and inadequate supplies as well as low infrastructure resilience to climate change and climate variability; (v) overreliance on expensive desalination plants instead of abundant groundwater to secure water supply; (vi) almost nonexistent management of water demand with 2.9% of WASA's domestic customers metered and overall only 4% of customers are metered, (CASTALIA 2019) with little incentives to curb consumption and wastage; (vii) suggested high levels of water loss that have been estimated to be between 40% to 50% of water supplied into the network (IFC 2018, Castalia 2019); and (viii) sector governance deficiencies coupled with a lack of oversight of WASA's performance which has resulted in inefficient management at the utility. These have all contributed to substandard water supply service, resulting in 53% of WASA's customers receiving 24 hours 7 days per week service in the wet season and 31% in the dry season.
- 3.4 In that context, the GoRTT, through the Minister of Planning and Development, has requested support from the Bank through a Technical Cooperation (TC) to support in the preparation of TT-L1055, which aims to stabilize water services in the country to prevent the further decline of service levels and respond to the COVID-19 pandemic; improve operational efficiency, quality and resilience of water service provision; and institutional strengthening of the sector and WASA's governance and management. This will be achieved through a NWSIP that focuses on infrastructural improvements to increase water production, repair, and rehabilitate inefficient assets, repair backlog of physical leaks, measure water at the production facilities and along the transmission and distribution points, improved network connectivity, critical equipment replacement and repair in the North-West, North-East, Central, South and Tobago operational zones and network optimization in the North-West Operational Zone. Overall, under the CCLIP, it is expected that through the NWSIP, reducing water losses, and addressing WASA's transformation needs and governance improvements,

the population will begin to receive 24/7 supply and WASA will be on a more sustainable path.

- 3.5 The TC is consistent with the Second Update to the Institutional Strategy (UIS) 2020-2023 (AB-3190-2) and it is aligned with the development challenges of Social Inclusion and Equality by improving access to quality water supply services, and Productivity and Innovation by using innovative technologies and management information systems to reduce water losses, improve WASA's management, and operational efficiency. Further, the TC is also aligned with the crosscutting themes of Institutional Capacity and the Rule of Law by improving WASA's governance, management, and efficiency, including innovative systems for commercial and operational management and considers the use of performance-based contracts; and Climate Change and Environmental Sustainability by including adaptation measures to manage possible flood hazards, to reduce excessive consumption, wastage, and physical water losses.
- 3.6 In addition, the TC will contribute to the Corporate Results Framework 2020-2023 (GN-2727-12) through the product, "Households with access to new or improved water services", and they are aligned with the Sustainable Infrastructure Strategy for Competitiveness and Inclusive Development (GN-2710-5), particularly with the priority area of "Supporting the construction and maintenance of social and environmentally sustainable infrastructure to contribute to increasing the quality of life". The TC is aligned with the strategic objectives of the Infrastructure Results Framework (GN-2819-1 paragraph 3.24) "strengthen the management capacity of small and vulnerable countries" given that: the TC contemplates the contracting of consultants to conduct field studies, water audit and flow monitoring and validation of the NWSIP to inform, guide and prioritize the infrastructural and network optimization investments to be undertaken under the loan operation. This will enhance the capacity of WASA in effective data gathering to inform investment decision making. This TC is consistent with the Water and Sanitation Sector Framework's Dimensions of Success (GN-2781-8) for universal access and improved service and social and environmental sustainability. Finally, the TC is also aligned with the IDB Country Strategy with Trinidad and Tobago 2016 – 2020, under the objective of "3.4 - Improve Water and Sanitation Services" since the outputs of the TC will contribute to supporting the preparation of the National Water Sector Transformation Programme that seeks to sustainably manage the country's water resources; improve the reliability and resilience of the water supply system to improve operating efficiency and service quality to deliver 24/7 water supply; improve operating performance, reliability and resilience of the water supply service; improve WASA's governance and management through institutional strengthening; and ensure access to water, sanitation, and hygiene for vulnerable populations in T&T in the face of the COVID-19 pandemic through infrastructure repair and rehabilitation and network optimization.

#### **IV. Description of activities/components and budget**

##### **4.1 Component 1. Support for the Preparation of TT-L1055.** This component will finance:

- (i). **Subcomponent 1:** Specialized consultancy service to conduct water audits (volumes and pressure) along the Caroni North and South and North Oropouche transmission systems. The consultant would be required to undertake the water audits using two approaches:
- a. Procure and install permanent production/bulk meters to measure flows leaving the production facilities, flowing through the transmission mains, and leaving the distribution offtakes through the North Oropouche transmission system, and strategic points along the Caroni North/South system.

- b. Utilize the permanently installed meters and portable meters for the sites without meters to conduct a water audit along the Caroni North and South, and North Oropouche transmission systems.

The audit would identify the volumes and pressure of water at the source, transmission, and distribution points. The consultant will monitor, quantify and model any losses in the measured points, and cross-reference against estimated demand in the respective distribution area. The findings of the water audit would ascertain/validate specifics of the operational challenges within the systems and enable a more targeted approach to network stabilization and optimization. The Caroni and North Oropouche systems were selected based on the number of customers these plants serve and the numerous customer complaints with supply as a result of extensive operational issues that affect service level. In addition, the Caroni South system is relevant to the Point Lisas desalination plant and the GoRTT's need to reduce reliance on desalinated water.

- (ii). **Subcomponent 2:** Consultancy service to carry out field surveys and expert validation of the NWSIP through the following activities:
  - a. Review WASA's information on critical crisis areas receiving 24/2 or less (and no) water supply, water sources and revise/prioritize the list of operational zones and communities for urgent intervention.
  - b. Perform an asset condition survey on the assets referenced in the NWSIP that considers the usefulness and efficiency from production to customer.
  - c. Make other recommendations for broader focus that may include strategic technological improvements, digital transformation, data and information management, and source water protection issues.

4.2 **Component 2. Support for WASA Transformation.** An Office of Transformation would be setup in WASA to plan, programme and execute the transformation activities. A performance baseline will be prepared through an AquaRating characterization. The TC will support the following in preparation for the transformation:

- (i). **Subcomponent 1:** Consultancy services integral to transformation for which the Office Transformation will need external assistance specifically with: risk management, finance, technology, and engineering.
- (ii). **Subcomponent 2:** Consultancy services for the development and execution of a communication strategy that includes market sounding, consultations with other GoRTT agencies and the general population and beneficiary groups with due consideration to social inclusion, equality, and gender perspective.

4.3 The total estimated cost of the TC is US\$800,000 to be financed by the Bank's Ordinary Capital Strategic Development Program for Infrastructure (INF). There will be no local counterpart financing.

#### Indicative Budget (US\$)

| Activity/Component | IDB/Fund Funding | Counterpart Funding | Total Funding |
|--------------------|------------------|---------------------|---------------|
|--------------------|------------------|---------------------|---------------|

|   |                |          |                |
|---|----------------|----------|----------------|
| <b>Component 1.</b> Support for the Preparation of TT-L1055   |                |          |                |
| <b>Subcomponent 1:</b> Specialized consultancy service to conduct water audits along the Caroni North and South and North Oropouche transmission systems.   | 500,000*       | -        | 500,000        |
| <b>Subcomponent 2:</b> Consultancy services to carry out independent field surveys and expert validation of the NWSIP by identifying areas in need of urgent intervention, assessment of efficiency and usefulness of existing assets and recommendations of additional broader, strategic interventions. | 70,000         | -        | 70,000         |
| <b>Component 2.</b> Review and update studies, designs and tender package for the RSSP Water Supply Reservoir.  | 230,000        | -        | 230,000        |
| <b>Subcomponent 1:</b> Consultancy support in specific areas of risk management, finance, technology, and engineering.  | 130,000        |          | 130,000        |
| <b>Subcomponent 2:</b> Development and execution of a communication strategy and implementation plan.   | 100,000        |          | 100,000        |
| <b>TOTAL</b>  | <b>800,000</b> | <b>-</b> | <b>800,000</b> |

- Complemented by US\$200,000 from the "Facility to Support Public Private Partnerships in Infrastructure" (RG-T2998)

- 4.4 Supervision of this TC will be the responsibility of the Project Team Leader assigned by INE/WSA in collaboration with staff from VPC/PPP. The Bank Country Offices' staff where project activities are undertaken, will liaise with and monitor the progress of the consultants with IDB HQ. Monitoring of the TC will be carried out by the project team.

## V. Executing agency and execution structure

- 5.1 The TC will be executed by the Inter-American Development Bank through the Water and Sanitation Division (INE/WSA) as indicated by the beneficiary in the Letter of Request. The Government of TT has requested that the IDB execute the TC operation in order to expedite and facilitate the procurement process, especially the procurement of the Transaction Advisor. Contracting by the IDB would also enhance the independence of the studies in accordance with paragraph d) of Annex 10 of GN-2629. CCB/CTT in coordination with INE/WSA will be responsible for contracting all the required consultants.
- 5.2 The activities to be implemented are included in the procurement Plan (Annex) and will be executed in accordance with Bank procurement policies, as follows: The Bank may: (i) contracting of individual consultants in accordance with the guidelines set out in the AM-650; (ii) contracting of consulting firms of intellectual nature will follow the Bank's Policy for the Selection and Contracting of Consulting Firms for Bank-executed Operational Work (GN-2765-4) and related Operational Guidelines (OP-1155-4); and (iii) contracting of logistical services and other services different from consulting services in accordance with GN-2303-28.
- 5.3 Financial Management Policy and audit arrangements should also be specified, including the foreign exchange rate that will apply in respect of expenses incurred in local currency, and the frequency and timing of the financial reports that are required, based on risk. If an audit is required, frequency and type of audits, and whether these will be carried out by an independent audit firm or governmental entity.

## **VI. Major issues**

- 6.1 The recommendations of the Cabinet Sub-Committee report on WASA have been aligned with the scope of services of the technical cooperation. The IDB has met and discussed with the GoRTT, its new priorities and policy direction emanating from the Cabinet Sub-Committee that is providing oversight in WASA's transformation. At the request of the GoRTT the IDB has aligned the changes in the activities of the TC with the original objective of the operation approved by the Bank. The travel and social restrictions imposed due to the COVID-19 pandemic will affect field work and data gathering on the ground by the consultants. In this case, meetings will be held virtually and when conditions permit, the field work can be done by local consultants.

## **VII. Exceptions to Bank policy**

- 7.1. This TC does not contemplate any exception to Bank policy.

## **VIII. Environmental and Social Strategy**

- 8.1. In accordance with the Bank's Safeguards Policy (OP-703), this operation is classified as Category "C".

### **Required Annexes:**

Results Matrix - TT-T1108

Terms of Reference - TT-T1108

Procurement Plan - TT-T1108