

Technical Cooperation (TC) Document

I. Basic Information for TC

▪ Country/Region:	DOMINICAN REPUBLIC
▪ TC Name:	Support for the development of the Dominican Republic's resilient sanitation plan
▪ TC Number:	DR-T1285
▪ Team Leader/Members:	Perez Monforte, Sergio (INE/WSA) Team Leader; Sasaki, Keisuke (INE/WSA) Team Leader; Velasquez Rodriguez, Manuela (INE/WSA) Alternate Team Leader; Catacoli Jimenez, Ruth (VPS/ESG); Gouvea Berto, Maria Eduarda (INE/WSA); Maximer Sabala (CID/CDR); Lugo Moreno, Monica Bibiana (LEG/SGO); Guerrero Rivera, Marilyn Ivette (INE/WSA); Kirkagacli, Romina Emanuela (VPC/FMP); Viteri Burbano, Maria (VPS/ESG); Garza Cortina, Miriam (VPC/FMP)
▪ Taxonomy:	Client Support
▪ Operation Supported by the TC:	.
▪ Date of TC Abstract authorization:	.
▪ Beneficiary:	Dominican Republic
▪ Executing Agency and contact name:	Inter-American Development Bank
▪ Donors providing funding:	Japan Special Fund(JSF)
▪ IDB Funding Requested:	US\$600,000.00
▪ Local counterpart funding, if any:	US\$60,000.00 (In-Kind)
▪ Disbursement period (which includes Execution period):	30 months
▪ Required start date:	July 2024
▪ Types of consultants:	Individual consultants and firms
▪ Prepared by Unit:	INE/WSA-Water & Sanitation
▪ Unit of Disbursement Responsibility:	CID/CDR-Country Off Dominican Republic
▪ TC included in Country Strategy (y/n):	No
▪ TC included in CPD (y/n):	Yes
▪ Alignment to the Update to the Institutional Strategy 2010-2020:	Diversity; Environmental sustainability; Gender equality; Institutional capacity and rule of law; Productivity and innovation; Social inclusion and equality

II. Objectives and Justification of the TC

2.1 The availability of water and sanitation is essential for improving the population's quality of life, health, social and gender inclusion, productivity, environmental sustainability, and economic growth (Howard et al., 2020). Socioeconomic returns on investments in water and sanitation are determined by these impacts (Ag enor, 2013), and it is estimated that each dollar invested in water in Latin America and the Caribbean yields returns of US\$3 in urban areas and US\$8.2 in rural areas. In the case of sanitation, the figures are US\$3.3 for urban areas and US\$8.1 for rural ones (Hutton and Whittington, 2015). The lack of adequate water and sanitation accounts for 60% of episodes of diarrhea, 13% of acute respiratory infections, and 16% of child malnutrition (Pr uss-Ust un et al., 2019). Globally, access to drinking water in the home reduces episodes of diarrhea by 75% (Wolf et al., 2018), while sanitation interventions

with high coverage (above 75% of the community) reduce the risk of diarrhea by 45%. There is also a correlation between the availability of water and sanitation services and productivity and incomes. A lack of water and sanitation leads to lost labor productivity as a consequence of sickness-related absenteeism or a need to care for sick children.

- 2.2 According to the Joint Monitoring Programme (2022), only 45% of the population in Dominican Republic have access to safely managed drinking water, this means, that less than half of the population receives water from an improved water source that is accessible on premises, available when needed and free from fecal and priority chemical contamination. Similarly, only 43% of the population have access to safely managed sanitation facilities, this means population that is using an improved sanitation facility that is not shared with other households and where excreta are safely disposed of in situ or treated off site.
- 2.3 The main aspects to consider in the sector in Dominican Republic are¹: (i) lack of planning, information and monitoring systems; (ii) the accelerated growth of the urban population, derived from the rapid development and growth of the tourism sector in recent years, with limited urban planning and very low levels provision of services; (iii) the variability in demand and consumption of the resident and floating population (tourists); (iv) the high levels of untreated wastewater discharges with pollution and degradation problems that affect beaches, natural resources, biodiversity and/or protected areas and, consequently, impact the growth and development of tourism that generates employment and income to local level; (v) the high participation of the private sector with investments in infrastructure and provision of specific tourist services (hotels, restaurants, airports, etc.); and (vi) the different socioeconomic levels of the local resident population and the tourist population, which, in turn, have different demands and requirements for the provision and quality of services (and different payment capacities). In this sense, coastal and tourist towns present challenges that require specific solutions. The planning challenge in the Dominican Republic is further compounded by its vulnerability to natural disasters such as hurricanes and earthquakes, particularly considering the significant impact earthquakes can have on buried structures, including the majority of sanitation infrastructure. This underscores the critical importance of resilience in planning efforts. In addition to addressing issues like inadequate sector diagnostics, outdated data, and a lack of tools leveraging advancements like georeferenced information, there is a pressing need to prioritize resilience-building measures, especially for buried infrastructure. Investing in resilient sanitation systems, implementing earthquake-resistant designs, and developing robust disaster preparedness and response strategies are essential components of planning for the country's vulnerability to seismic events. This comprehensive approach to planning will help enhance the country's ability to withstand and recover from earthquakes and other natural catastrophes, ensuring a more sustainable and secure future for its citizens.
- 2.4 PLANEG III² indicates that women in rural areas are those who do the most domestic and care work, with a total of almost 34 hours a week. This represents 3.6 hours more than residents of urban areas and 22.8 hours more than men living in rural areas of the country. Moreover, deficiencies in basic services, particularly the lack of access to drinking water and sanitation within homes, significantly increase the amount of time

¹ National Infrastructure Plan, among others.

² National Plan for Equality and Gender Equity 2018-2030

women and girls spend on domestic and caregiving duties, as it leads to health problems for family members³. This deepens gender inequalities by taking away time for study, productive work, and rest. An IDB publication (2019)⁴ indicates that in the Dominican Republic, at the sectoral and occupational level, the largest gender gaps occur in the electricity, gas, and water sectors (40.6%). Although there is no specific data on women's participation in the water and sanitation sector in the Dominican Republic, numerous publications and official documents of the country related to gender equality, human rights, and water use, recognize the importance of the role that women and girls have in the use and management of the resource⁵.

- 2.5 The digital agenda has become a priority for the Dominican government and in the institutions of the water and sanitation sector there is an important gap. The gaps range from facilitating the payment of water bills to the creation of cadasters of drinking water and sanitation networks.
- 2.6 **SaniHUB**. Originally created by the IADB to address the need for a software for designing condominium sewer networks (SaniBID), it has since evolved into a versatile platform for both condominium and traditional sanitation systems (SaniHUB). Operating on the QGIS platform, it boasts a large and diverse user community, which has helped design over 1,000 kilometers of sewerage systems and to develop continuous improvements in key aspects of the design. This platform offers the following advantages: (i) Developed with a focus on Latin American and Caribbean (LAC) urban settings, including informal settlements; (ii) Modular format for adaptability to the requirements of various institutions and smaller water utilities; and (iii) Compatibility with other tools for managing urban water resources such as SWWM⁶ or QGISRED⁷ SaniHUB's ongoing development includes modules for: (i) Designing both conventional and condominial (also known as unconventional) sewerage networks; (ii) Designing decentralized treatment facilities, notably in collaboration with the Inter-American Development Bank (IDB) and the Federal University of Bahia (Brazil); (iii) Advanced stages of development for wastewater pumping stations and condominial branch design, with the latter utilizing a new QGIS module for field data collection via mobile devices, expediting cadastral surveys; and (iv) utilizing an Artificial Intelligence module for sewerage network optimization using genetic algorithms, promising reduced design times and investment costs, soon to complement existing modules. In summary, SaniHUB is a versatile platform with

³ Fuente: ONU Mujeres (2018). *Hacer las Promesas Realidad: La Igualdad de Género en la Agenda 2030 para el Desarrollo Sostenible*. Nueva York: Autor

⁴ IDB (2019). *Desigualdades de género en República Dominicana 2018 - 2020*. División de Género y Diversidad. NOTA TÉCNICA N° IDB-TN-1632.

⁵ MINMUJER (2018) *Plan Nacional de Igualdad y Equidad de Género PLANEG III*. CEG-INTEC; Gobierno de la República Dominicana (2021) *Informe temático de Cooperación Internacional, Sector Agua*. Economía, Planificación y Desarrollo; BID y INAPA (2016) *República Dominicana: Segundo Informe de Monitoreo de los Avances de País en Agua Potable y Saneamiento Mapas II*; among others.

⁶ Developed by EPA in open source for sewer network modeling.

⁷ Developed by the Universidad Politecnica del Valencia on the QGIS platform for the modeling of drinking water networks.

several modules, designed to meet the specific needs of urban sanitation works in the LAC region, with a commitment to ongoing development and innovation⁸.

- 2.7 **The objective** of this Technical Cooperation (TC) is to strengthen the planning capacity of the government of the Dominican Republic on the design and implementation of sanitation infrastructure investments, with a focus on resilience, social considerations, quality of the infrastructure and digitalization and optimization through the SaniHUB platform.
- 2.8 This TC is consistent with the IDB Group Second Update of the Institutional Strategy (UIS): Transformation for Greater Scale and Impact (CA-631) and is aligned with the objectives of: (i) reducing poverty and inequality developing planning tools that will contribute to increase sanitation coverage and improving the quality of W&S services for population with unsatisfied basic needs and low levels of access to quality public services; and (ii) address climate change by promoting studies and design parameters which include aspects of mitigation and adaptation to climate change and reduction of pollution from untreated wastewater. The TC also aligns with the following operational focus areas: (i) gender equality and diversity inclusion by promoting the inclusion of gender requirements in the strategies and planning documents; (ii) institutional capacity, rule of law and citizen security since INAPA's⁹ capacities will be strengthened in the development of national sanitation strategic plan; and (iii) sustainable, resilient and inclusive infrastructure by developing a plan that will increase water and sanitation coverage, and strengthening sectoral actors and, by promoting studies and design parameters which include aspects of mitigation and adaptation to climate change and reduction of pollution from untreated wastewater. Likewise, it is aligned with the Water and Sanitation Sector Framework Document (GN-2781-13), with the premise that “the projects and programs are environmentally and socially sustainable and incorporate considerations of CC and environmental and cultural sustainability”. The TC is also aligned with the donors funding guidelines and criteria.

III. Description of activities/components and budget

- 3.1 This TC is structured in two components:
- 3.2 **Component 1. Strengthen the planning capacity of the sector.** Under this component, the following products will be financed, among others: (i) investment national plan for the water and sanitation sector including resilience, social and quality infrastructure considerations; (ii) socioeconomic studies aimed at identifying and quantifying the impacts of lack of sanitation services on tourist and coastal areas, with a gender perspective; (iii) Development of a specific methodology for the calculation

⁸ The Bank has directly tested, promoted, and implemented SaniHUB tools when conducting sector studies and analyses in Haiti, Uruguay, the Dominican Republic, and Costa Rica. More than 6,000 manuals have been downloaded, and experts worldwide have participated in and shown interest in using the platform during SaniHUB webinars.

⁹ The National Institute of Drinking Water and Sewage is a department created by Law 5994, in 1962, with the purpose of fully satisfying the needs and demands of the urban, peri-urban and rural population of the country located in its area of operational jurisdiction. The main functions performed by INAPA include: 1) direct and monitor the provision of a drinking water service, as well as the disposal and treatment of wastewater, determining the priority of the construction, expansion, operation and administration of drinking water and sewage systems; 2) maintain and operate drinking water, sanitary and storm sewage services, with consultation being mandatory and compliance with their obligations being inexcusable; 3) prepare or approve plans for public and/or private hydraulic works, related to drinking water and sewage systems; and 4) to use and monitor all waters of the public domain, in the demarcations under the jurisdiction of INAPA, according to the law that regulates it.

of GHG emissions from individual solutions to measure the impact of sanitation investments on mitigation of GHG emissions more accurately; (iv) Development of a methodology based on quantitative and qualitative aspects for the prioritization of sanitation investments; and (v) support for the development of manual for the design of treatment plants and submarine outfalls. It will also include the application of the AQUARATING tool in one of the public water companies and a workshop on its use in the water sector in the Dominican Republic. Special attention will be given to the application of the gender module¹⁰, which will serve as support for carrying out an institutional diagnosis of gender and diversity in the company. Only consulting and related logistics services will be financed under this component.

- 3.3 **Component 2. Increasing the digitalization of the sector.** Under this component, some of the studies that would be financed are: (i) Strategy to enhance INAPA's management of the digital sanitation information, such as the technical registry and customer data for sewage systems. This strategy involves integrating advanced technologies to refine data collection, processing, and analysis, aiming to transform traditional practices into more efficient, accurate, and accessible systems. Key areas like the technical cadastre and customer databases for sewerage will see significant improvements, aligning with contemporary needs for data accuracy and service optimization. Wherever possible, social data will be collected with gender disaggregation; (ii) At the heart of the digital strategy is the upgrading of the SaniHUB platform. This enhancement focuses on existing modules, particularly those for designing and managing sewage networks and wastewater pumping stations. These platform improvements are critical to ensuring a unified approach to upgrading infrastructure and services in line with the digitalization strategy; and (iii) Capacity Building and Training for Stakeholders: Essential to the success of these advancements is the capacity building and training of stakeholders. Workshops conducted through SaniHUB will target a varied audience, including universities, sector-specific firms, INAPA, and CORAAS. The goal is to equip participants with the necessary skills and knowledge to effectively use the enhanced SaniHUB platform, thereby facilitating a collaborative and innovative environment for the sector's digital evolution. Only consulting and related logistics services will be financed under this component.
- 3.4 **Budget.** The total budget of this TC is US\$660,000, including US\$60,000 as counterpart funding.

Indicative Budget

Activity/Component	IDB/Fund Funding	Counterpart Funding	Total Funding
Component 1	400,000	50,000	450,000
Component 2	200,000	10,000	210,000
Total	600,000	60,000	660,000

IV. Executing agency and execution structure

- 4.1 At the request of the Government of the Dominican Republic, the Bank, through the Water and Sanitation Division (INE/WSA), will be the Executing Agency of the project.

¹⁰ Link: <http://dx.doi.org/10.18235/0005505>

This execution arrangement is justified under OP-619-4 Annex 2 due to: (i) that the processes of contracting consulting studies with local regulations may take time that would delay the achievement of the results and products of the TC; (ii) the Bank's experience in the implementation of technical support in the areas of W&S management in urban communities will contribute more effectively to the achievement of TC objectives in a timely manner, the Bank and the beneficiary agree that the contracting on the part of the Bank would improve national coordination and independence based on impartiality criteria, as various stakeholders could have different interests in the interventions; and (iii) execution by the Bank contributes to ensuring that the lessons learned from the activities carried out are adequately disseminated in the region.

- 4.2 The disbursement period will be 36 months. Contracting will be carried out in accordance with the provisions of the IDB's applicable procurement policies. All activities to be executed under this TC have been included in the Procurement Plan (Annex IV) and will be contracted in accordance with Bank policies as follows: (a) AM-650 for Individual consultants; (b) GN-2765-4 and Guidelines OP-1155-4 for Consulting Firms for services of an intellectual nature and; (c) GN-2303-28 for logistics and other related services; as amended from time to time. Please note that Policy GN-2303-33, approved by the Board of Executive Directors on November 22, 2023, will become effective on July 1, 2024. It replaces the Corporate Procurement Policy (document GN-2303-28) and the Policy for the Selection and Contracting of Consulting Firms for Bank-executed Operational Work (document GN-2765-4) by updating and consolidating them into a single policy. After July 1, 2024, all procurement for Services provided by firms shall be conducted under this new Policy GN-2303-33 and its associated Guidelines.

V. Major issues

- 5.1 The following important risks have been identified that could affect execution of the TC: (i) lack of coordination between the entities involved by including both INAPA and the water companies (WC)¹¹; and (ii) lack of appropriation of the strategies and tools developed. To minimize these risks, the Bank team will organize periodic coordination meetings with the different government entities (INAPA and CORAAS). Additionally, components being financed will guarantee and strengthen the institutional articulation and technical support that will ensure quality products are timely developed. Another potential risk is the limited planification and resources available in sector institutions. This will be mitigated by increasing and ensuring the direct participation of sector technicians as counterparts in the preparation of the investment plan.

VI. Exceptions to Bank policy

- 6.1 This TC does not present any exceptions to Bank policies.

VII. Environmental and Social Aspects

¹¹ Water and sanitation services in Dominican Republic are provided by INAPA in 24 provinces and by CORAAS (Corporaciones de Agua y Saneamiento) in the rest of the country (eg. the Santo Domingo Aqueduct and Sewer Corporation – CAASD, the Santiago Aqueduct and Sewer Corporation – CORAASAN, the Puerto Plata Aqueduct and Sewer Corporation – CORAAPPLATA, La Romana Aqueduct and Sewer Corporation – COAAROM, etc). All of them are usually referenced as “the CORAAs”. In other cities and towns, services are provided by INAPA. In rural areas, community water boards provide these services.

7.1 This TC is intended to support the development of a sanitation investment plan; therefore, the terms of reference and products of this TC will be consistent with the applicable requirements of the Bank's Environmental and Social Policy Framework (ESPF).

Required Annexes:

[Procurement Plan_25379.pdf](#)