DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

REGIONAL

TOO GOOD TO WASTE II: TRANSFORMING WASTEWATER INTO A LOW METHANE AND CIRCULAR ECONOMY OPPORTUNITY IN LAC

(RG-T4826)

PROJECT DOCUMENT

This document was prepared by the project team consisting of: Team Leader: Correal Sarmiento, Magda Carolina (INE/WSA); Alternate Team Leader: Gonzalez Medina, Francisco De Asis (INE/WSA); Attorney: Centeno Lappas, Monica Clara Angelica (LEG/SGO); PSG Coordinator: Moreno Montoya, Nicolas (GPS/GCM); Garcia Cortessi, Leonardo (GPS/REM)Team Members: Aleman, Marco Andres (VPC/FMP); Basani, Marcello (INE/WSA); Crespin Villatoro, Alexandra (INE/WSA); Dunbar, Gregory A (VPC/FMP); Guerrero Rivera, Marilyn Ivette (INE/WSA); Langstroth, Robert Peter (VPS/ESG); Lopez, Liliana M. (INE/WSA); Machado, Kleber B. (INE/WSA); Maria Eugenia De La Pena (INE/WSA); Moreno Moreno, Henry Alberto (INE/WSA); Oyamada Kroug, Jorge Ruben (INE/WSA); Perez Monforte, Sergio (INE/WSA); Piamonte Velez Carolina (INE/WSA); Tapia Alba, Mauricio (VPS/ESG);

REGIONAL
TOO GOOD TO WASTE II: TRANSFORMING WASTEWATER INTO A LOW METHANE AND CIRCULAR ECONOMY OPPORTUNITY IN LAC
RG-T4826

PROJECT SUMMARY	
Operation Type:	Technical Cooperation
Sector:	WATER AND SANITATION
Subsector:	SOLID WASTE
TC Taxonomy:	Client Support
Project Number under the Operational Support Taxonomy:	N/A
Technical Responsible Unit:	INE/WSA-Water & Sanitation
Unit with Disbursement Responsibility (UDR):	INE/WSA-Water & Sanitation
Executing Agency:	Inter-American Development Bank

PROJECT OBJECTIVE

The objective of this Technical Cooperation (TC) is to support the beneficiary countries in the transformation of wastewater sludge and waste management practices by circular economy adoption, enhanced climate resilience and methane emissions.

FINANCIAL INFORMATION

Financing Type	**Fund**	**Amount in US$**
TCN - Nonreimbursable	PSC - Project Specific Contribution Account	712,500
	Total IDB Financing:	**712,500**
	Counterpart Financing:	**0**
	Total Project Budget:	**712,500**

Donors:	Global Methane Hub
Disbursement Period:	36 months
Execution Period:	36 months

ADDITIONAL FINANCIAL INFORMATION

The total cost of the project is US$712,500. The WINDWARD FUND, on behalf of its project GLOBALMETHANE HUB, will contribute US$750,000 to this project, of which US$ 37,500 will be set aside as a 5% administration fee.

N/A

I. JUSTIFICATION AND OBJECTIVE

1.1 **The objective of this Technical Cooperation (TC)** is to support IDB beneficiary countries in transforming wastewater and sludge management practices through the adoption of circular economy principles, enhanced climate resilience and methane emission mitigation. The expected outcome is to mobilize at least US$80M in wastewater sanitation projects led by the IDB, incorporating activities that incentivize sludge recovery and use, reduce or eliminate landfill disposal and lower emissions in alignment with the Global Methane Pledge target of a 30% reduction in methane emissions compared to 2020 levels (WEF, 2024).

1.2 **Wastewater management remains a key challenge in Latin America and the Caribbean (LAC)**. Over half the population in the region lacks safely managed sanitation (IDB, 2023), and 42% of domestic wastewater is untreated. Increasing efforts in LAC are set on accomplishing Sustainable Development Goal 6.3: halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally (UN, 2023). The relevant efforts to expand sanitation coverage and treat wastewater have resulted in an increase in subproducts such as sludge and biosolids, becoming a major challenge in middle income countries (UN-HABITAT, 2008).

1.3 **Sludge from wastewater treatment plants in LAC are often dumped in landfills.** Based on the Latin American and Caribbean Water and Sanitation Observatory (OLAS) Data platform, a total of 779 wastewater treatment plants has been identified across Latin America and the Caribbean (LAC). Most of the sludges produced in the wastewater treatment are disposed of in landfills. This disposal contributes to the problems of the solid waste sector, according with the Solid Waste and Circular Economy Hub (Hub) the annual generation of 230 million tons of municipal solid waste - expected to increase by 50% by 2050 – and 50% of the solid waste produced is improperly disposed of and increases the methane emissions at the disposal sites.

1.4 **The waste sector accounts for 20% of methane emissions, making it the third-largest source after agriculture and fossil fuels** (RMI)**.** This prominence stems from the widespread disposal of organic-rich materials, including sludges from wastewater treatment and high volumes of organic solid waste, in landfills and open dumpsites where anaerobic conditions accelerate methane generation. Despite its impact, the sector remains under-addressed in climate resilience strategies. Mitigation opportunities—such as transitioning to circular economy models, scaling up biogas recovery, and integrating sanitation and solid waste management—are not only cost-effective but necessary for the sector's improvement. Moreover, the sector faces growing adaptation challenges: rising temperatures and extreme rainfall events increase the risk of landslides and uncontrolled fires in landfills, further compounding environmental and public health risks (EPA, 2023). The impacts of increased methane emissions and extreme weather events affect women and minorities (afro-descendants and indigenous communities) in a bigger proportion associated to food insecurity, displacement, loss of income, and increased domestic burden (UN Women, 2025).

1.5 **Linear wastewater and waste management in LAC negatively impact the health, environment, and economic development.** Poor waste practices contribute to up to 1 million global deaths annually (WEF, 2019). Over 60,000 people in LAC die due to exposure to unmanaged wastewater (UNICEF, 2023). Untreated waste pollutes water, soil, and air, leading to loss of biodiversity and spreading diseases. Lack of sanitation disproportionately impacts women by increasing the risk of violence, infections, limiting economic opportunities and personal hygiene (WaterAid, 2023). Economically, externalities from inadequate solid waste management cost US$45–US$125 per capita each year, with sanitation-related productivity losses reaching up to 2.5% of GDP (UNEP, 2024). For wastewater evidence shows that for each US$1 invested in sanitation creates a return of US$9.1 related to a reduction of health costs, loss in productivity, reduced tourism, amongst others (Van & Nguyen, 2011). Furthermore, studies have highlighted the relevance of monitoring and adequate sludge disposal as contaminants such as heavy metals, pathogens, pharmaceuticals, amongst others have been detected. With frameworks for detection, monitoring and regulations required (Fijalkowski et al, 2017).

1.6 **The IDB is the main lender in the sanitation sector in LAC.** Since 2013, the IDB has approved funds in the water and sanitation sector for an average of US$901 million annually, with a current active loan portfolio of US$8.5 billion. Current loans pipeline accounts for an additional US$2.5 billion in new sanitation projects in the following 3 years. Sanitation makes up about 50 to 60% of this portfolio, with 24 loan operations in 14 countries since 2018 reflecting the need and demand to increase coverage and quality of sanitation services in the region. Including integral projects that have been shaping the sanitation advances in LAC: (i) the Universal Sanitation Programs I (DR-L1158) and II (DR-L1165) in Costal and Tourist Cities in Dominican Republic, (ii) the Sanitation Program for Panama City and Bay with successive loan operations (PN0062/PN-L1053 – already completed; PN-L1109 and PN-L1121 – currently underway) which includes the construction of Juan Diaz wastewater plant which includes energy co-generation and sludge neutralization, and (iii) the sanitation of the Montevideo bay which has been a progressive process since 1980 (BID, 2021). To support the preparation of sanitation projects and building capacities, IDB promotes efficient sanitation solutions tailored to communities' social and geographical contexts in Latin America and the Caribbean, aimed to increase access and quality of sanitation services (BID). On the other hand, IDB's annual average portfolio in solid waste programs has increased from US$28M to US$61M, comparing the period 1998-2008 with 2010-2024, with a vision on circular solutions, resilience and adequate waste management.

1.7 **Sludges and biosolids generated in the IDB-financed sanitation operations present a strategic opportunity to advance circular economy practices in LAC (UN-Habitat, 2008)**. While many wastewater treatment plants in the region currently lack the infrastructure for effective sludge management —posing environmental and public health risks, these challenges also highlight areas for transformative investment. Through targeted project financing, the IDB can help upgrade treatment facilities and promote sustainable biosolids reuse, such as in agriculture or energy recovery. Additionally, by supporting member countries in modernizing their regulatory frameworks and introducing incentives for innovation, the Bank can help overcome policy fragmentation and unlock scalable circular economy solutions.

1.8 **The TC continues the momentum created by the IDB's Too good to waste initiative (RG-T4317) expanding support to wastewater projects** and their integration with solid waste management with a vision of circularity and resilience. A 2024 call for proposals received 230 submissions from 20 LAC countries, including 46 major cities, confirming strong demand. RG-T4317 currently supports 15 projects in 10 countries focused on circularity and methane reduction, building a pipeline for IDB financing. It aims to strengthen the WSA pipeline through scalable and bankable solutions.

1.9 **Lessons learned**. This TC enhances lessons learned from RG-T4317 and other regional TC of the relevance of having an integral approach of wastewater and solid waste management to increase demand, institutional capacity, size of the projects and scale of the impact. In that sense, focusing on sludge prevention and reduction of disposal on landfills and methane emissions with a view of solids as an opportunity and not a liability. This TC also continues the good practice of RG-T4317 and previous investments programs (paragraph 1.6) in sanitation by structuring bankable infrastructure projects that can be financed through IDB Group. LAC has examples of successful experiences, such as Sanepar in Brazil, which mixes of wastewater sludge and solid waste to produce biogas, water for reuse, and soil fertilizer (Sanepar, 2021). Also, the TC includes lesson learned from UR-L1195, BO-L1200, CH-L1179 and CH-L1174 of the relevance of enabling policies in circular economy that allow for project implementation. This TC divides components for these two aspects both a vision of pipeline plus of enabling conditions via institutional strengthening and public policies.

1.10 **Institutional alignment.** The TC aligns with New Institutional Strategy BID+ (CA-631) in the core objective of addressing climate change by curbing emissions, particularly methane, produced by the waste and wastewater sector and reducing exposure of infrastructure to extreme weather events. Also, it is aligned with the following operational focus areas**:** i. Biodiversity, natural capital, and climate action by preparing resilient projects to extreme weather events, environmental pollution and methane mitigation via organic disposal prevention and valorization, ii. Institutional capacity, rule of law, and citizen security as the TC will finance enabling policies and strategies to improve Solid Waste Management (SWM) and wastewater institutions, and operational focus areas iii. Sustainable, resilient, and inclusive infrastructure focuses on adapting the sector to weather events, competitiveness, and community engagement.

1.11 **This TC aligns with the Water and Sanitation Sectoral Framework** (GN-2781-13), particularly under the premise that "projects and programs are environmentally and socially sustainable and incorporate climate change and environmental and cultural sustainability considerations." It is also aligned with the Strategy on Sustainable Infrastructure for Competitiveness and Inclusive Growth (GN-2710-5), specifically in the following priority areas for action: (i) promoting access to infrastructure services; (ii) promoting continuous improvements in infrastructure governance; and (iii) supporting the construction and maintenance of environmentally and socially sustainable infrastructure. Working collaboratively with current IDB initiatives and projects, highlighting IDB's innovative program Improving Climate Resilience by Increasing Water Security (US$162.15M of non-reimbursable and reimbursable concessional resources) approved by the Green Climate Fund and by the IDB Board in 2025, which includes waste management solutions in the Amazon Basin.

Aquafund, contributing to facilitating investments in water and sanitation in both rural and urban areas. Source of Innovation to promote the adoption of innovative solutions in the sector. As well as the Water and Sanitation Observatory for Latin America and the Caribbean (OLAS).

1.12 **The TC is aligned with the Dominican Republic Country Strategy 2025-2028 (GN-3294)**[1] under its third strategic pillar: "Increasing public sector efficiency and resilience." This pillar prioritizes interventions in water and sanitation, climate resilience, and institutional strengthening. It aligns with the preparation of the Universal Sanitation Program in Coastal and Tourist Cities II (DR-L1165) which includes a wastewater treatment plant for US$42M which will explore the opportunity for wastewater and sludge reuse, as well as biogas recovery**.** Additionally, **the TC is aligned with the IDB Strategy in Panamá 2025-2029 (GN-3289)** as it supports several priorities outlined in the documents such as (i) water and sanitation access by improving access to sanitation as a national priority (ii) support investments that reduce Panama's emissions and resilience to weather events raised by the National Climate Change Policy 2050 which encourages mitigation and adaptation measures across sectors.

1.13 **Donor.** This TC is funded by a Project-Specific Grant (PSG) of the Windward Fund, on behalf of its project Global Methane Hub (GMH). This TC aligns with the interest of the donor of tackling methane emissions from the sanitation sector with a view of circularity. Both combining policy and projects, and catalyzing resources for a rapid systemic reduction. As such, the alliance of the IDB with GMH is the first methane mitigation program for waste funded with a multilateral development bank, know-how in investment projects in LAC and catalyzing investments. The growing interest from countries and donors reinforces the relevance and impact of this effort, as well as the partnership between the IDB and the GMH.

1.14 **Beneficiary selection criteria.** All borrowing member countries of the IDB are eligible for this TC. Beneficiaries of this TC can either be national or subnational public institutions as well as public or private wastewater or waste management operators from IDB borrowing member countries, as agreed with the GMH. Selection will prioritize countries from the IDB portfolio and pipeline, and include criteria based on organic waste volumes, existing technologies, project scalability, and alignment with national government and IDB strategies. Letters of request and non-objection will be required from each beneficiary country, in coordination with IDB's Country Office which are required prior to initiating activities. Projects may also include private structuring in synergy with BID Invest and INE/PPP.[2] Initially, based on the request letter received during the preparation of the TC, beneficiaries are the Dominican Republic and Panama.

---

[1] Beneficiaries of the TC are stated in paragraphs 1.14 and 2.6. As such, the Dominican Republic and Panama have sent request letter to the TC.

[2] Letters of request will be required from each beneficiary country before beginning activities of the TC in the country, as non-objection letters will be obtained from the respective liaison entities. This process will be coordinated with the respective Bank Country Office.

II. COMPONENTS

2.1 Component I: Pre investment Studies for Low-Emission Wastewater Treatment and Sludge Management (US$400,000). This component supports technical studies to identify innovative and low-emission solutions in wastewater treatment and sludge management. It aims to prevent sludge disposal in landfills and reduce methane emissions by supporting scalable, market-ready approaches—prioritizing projects already in the IDB pipeline or active portfolio.

2.2 Main activities to be financed: (i) Methane Emissions Assessments by analyzing methane emissions profiles in specific sanitation projects to identify reduction opportunities and baseline performance; (ii) Feasibility Studies for Methane Mitigation Solutions by conducting pre-feasibility and feasibility assessments for low-emission technologies and practices, such as: integration of organic waste in sludge treatment processes, recovery and reuse options for byproducts, market analysis for biogas and other outputs; (iii) Renewable Energy Strategies by designing renewable energy interventions for wastewater treatment plants to further reduce the carbon footprint and operating costs; (iv) Wastewater Treatment Management Planning by developing systems and schemes that reduce or eliminate sludge disposal in landfills and dumpsites, aligning with circular economy principles.

2.3 Main products: Three (3) pre-investment studies for wastewater treatment plants, prioritized within the IDB's current portfolio and project pipeline.

2.4 Component II: Enabling Conditions for Sustainable Wastewater and Sludge Management (US$270,000). This component focuses on creating the necessary conditions for improved wastewater and sludge management, aimed at minimizing landfill disposal and methane emissions. Activities will strengthen enabling environments through enhanced regulatory frameworks, institutional capacity, and innovative financing alternatives.

2.5 Main activities to be financed: (i) Policy and Planning Development by supporting the enhancement of public policy frameworks and strategic planning processes to promote biosolids use, methane mitigation, pollutants monitoring and reduce disposal of sludge in landfills; (ii) Cross-Sectoral Analysis by assessing interdependencies between the sanitation sector and other GHG-emitting sectors to support integrated mitigation strategies and policy development; (iii) Climate Alignment of Sector Targets by reviewing and promoting wastewater-specific goals and actions that align with the country's Nationally Determined Contributions and Long-Term Strategies, where applicable; (iv) Guideline Design and Knowledge Dissemination by developing practical guidelines for implementing mitigation measures and treatment technologies and providing training and knowledge-sharing through platforms such as the ECAM, METLAC Community of Practice (CoP) and connections between OLAS Data, WasteMAP and other potential collaborations under Too Good to Waste and LOW-M, including gender impacts and relevance for methane mitigation and circularity; (v) Capacity Building and Monitoring Systems by delivering targeted training in data management and sector monitoring to improve technical capacity for emissions and pollutants tracking and decision-making. Activities will promote inclusive participation in capacity-building efforts, ensuring women, minorities such as indigenous and afro-descendants and people with disabilities are represented.

2.6 Main products: Two (2) policy frameworks, guidelines, publications, or tools that directly enable methane emissions reduction from wastewater, sludge management practices and cross-sectional aspects such as data, gender, ethnicity, and governance. Beneficiaries' integration will be promoted in this component, as such, products will promote the inclusion of more than one beneficiary to achieve regional integration, synergies, and collaboration.

2.7 Beneficiary request was received by the Dominican Republic Instituto Nacional de Aguas Potables y Alcantarillados INAPA and by the Health Ministry of Panamá. Both countries are working with INE/WSA through investments to improve their sanitation coverage and treatment, for instance, through the Integrated universal sanitation projects in Punta Cana-Bávaro Area (DR-L1172). Highlighting, that in the Dominican Republic 71% of households have no proper sludge treatment affecting health and limiting tourism. Also, In Panamá a CCLIP line for access to sanitation services is under preparation with focus in wastewater treatment plants and sustainable access to sanitation services (PN-O0016). In Panama, in the Panama and San Miguelito districts only 66% have access to sanitary sewerage. As new investments are being prepared, this TC will complement with the circular strategy to manage sludge and include next treatment.

2.8 The TC will produce 3 pre-investment studies in component I and 2 policy frameworks in component II, that can be developed in any of the beneficiary countries based on the demand request.

2.9 Component III: Project management (US$42,500) The project management of the TC includes financing consultant services to support the preparation, execution, and supervision of the activities of TC.

III. BUDGET

3.1 **Budget.** The total cost of the project is US$712,500. The WINDWARD FUND, on behalf of its project GLOBALMETHANE HUB, will contribute US$750,000 to this project, of which US$ 37,500 will be set aside as a 5% administration fee. The IDB will administer these funds through a Project-Specific Grant (PSG). The remaining contribution of US$712,500 corresponds to the project amount indicated in the Financial Information section. A PSG is administered by the Bank according to the "Report on COFABS, Ad-Hocs and CLFGS and a Proposal to Unify Them as Project Specific Grants (PSG's)" document SC-114. As contemplated in these procedures, commitment by the donor will be established through a separate Administration Agreement. Under such an agreement, the resources for this project will be administered by the Bank.

Components	PSG GMH	Total
Component 1: Pre investment Studies for Low-Emission Wastewater Treatment and Sludge Management	US$400,000	US$400,000

Component 2: Enabling Conditions for Sustainable Wastewater and Sludge Management	US$270,000	US$270,000
Component 3: Project Management	US$42,500	US$42,500
Total Project Cost	**US$712,500**	**US$712,500**

3.2 This TC is part of the INE/WSA Too Good to Waste initiative which has other sources of financing and TC's: (i) RG-T4317 (US$3.5M from the WINDWARD FUND, on behalf of its project GLOBALMETHANE HUB, and US$0.5M from IDB's Aquafund) and (ii) EC-T1615 (under preparation) with US$0.25M from Aquafund and US$0.25M from IDB's Ordinary Capital. There is no local counterpart. The TC is open to additional contributions from external donors in the form of Project Specific Grant (PSG) or in increase of current budgets, providing that the donors accept the conditions of this project document.

IV. EXECUTION STRUCTURE

4.1 **Executing Agency.** The TC will be executed by the Inter-American Development Bank, based on request by the beneficiaries, in accordance with the Bank's Technical Cooperation Policy (GN-2470-2) and the Procedures for Processing of Technical Cooperation Operations and Related Matters (OP-619-4), through the unit INE/WSA.

4.2 The request that the IDB executes this TC is also consistent with Appendix 10 in the Operational Guidelines for Technical Cooperations (as modified Annex 2 of OP-619-4) under the justification i. Institutional capacity in which the requesting entity foes not have the necessary technical, operational or institutional capacity to duly and timely execute the activities provided in the respective project. In this project, the IDB identifies the need for a strong institutional, operational, and technical capacity for the execution of the activities contemplated in this TC. Also, the multiple beneficiary institutions involved call for strong coordination mechanisms, which can be provided by the IDB Division. Bank coordination will enhance the TC's financial sustainability by generating synergies between beneficiaries' needs, enabling economies of scale in contracting consulting services. The IDB direct execution also ensures technical expertise to manage selection and independence while hiring consultants, ensuring quality and consistency. Nonetheless, the planification of the activities will be deployed in strong coordination with national and local country authorities. Considering the experience the Bank has in successfully executing regional TCs of this type, such as TC RG-T3298, RG-T3410, and RG-T4317. The Bank will contract individual consultants, consulting firms and non-consulting services according to current Bank procurement policies.

4.3 **Reporting.** The project team from INE/WSA will be responsible for the preparation and submission to the donor of the project reporting, in compliance with the stipulations of the Administration Agreement.

4.4 **Procurement.** All procurement under this TC have been included in the Procurement Plan (Annex IV) and will be contracted in accordance with the applicable policies and regulations of the Bank as follows: (a) Hiring of individual consultants, as established

in the Complementary Workforce Standard (AM-650), and (b) Hiring of services provided by consulting firms in accordance with the Institutional Procurement Policy (GN-2303-33) and its Guidelines. The Terms of Reference for the consultancies will include, when applicable, requirements to consult with civil society and/or user groups to ensure that the deliverables are aligned with their needs.

4.5 The beneficiaries will provide technical input to the terms of reference and consultants' reports, but the Bank will have autonomy to approve these documents and act as the Executing Agency of the TC. Likewise, Bank staff will provide specialized technical knowledge in the activities to be implemented under the components.

4.6 **Execution and disbursement period.** The execution and disbursement period will be 36 months. The period aligns with the arrangement for the release of donor funds in the PSG Agreement, especially if releases are triggered based on reporting requirements.

4.7 **Origination and reporting to donors.** The project team will be responsible for the preparation and submission, to the donor of the project reporting, in compliance with the stipulations of the Administration Agreement.

V. POTENTIAL RISKS

5.1 Limited awareness and political will, and low prioritization of methane emission mitigation efforts in the sector will be addressed through the Bank's leadership, knowledge dissemination, and strategic partnerships. Also, to ensure the financial sustainability of proposed initiatives, the project will incorporate cost-recovery strategies, promote integrated or regional solutions, and facilitate access to investment. Finally, institutional capacity gaps will be mitigated by supporting beneficiaries in project preparation, leveraging the expertise of relevant institutions.

5.2 **Intellectual Property.** The knowledge products from this technical cooperation will be Bank property and may be made available to the public under creative commons license. However, at the request of the beneficiary country, in accordance with the Regulation AM-331, the intellectual property may also be licensed to one or more beneficiaries through specific contractual commitments that shall be prepared with the advice of the Legal Department. Furthermore, all publication and socializing material must obey the IDB's institutional image and if any personal data is gathered must follow the IDB guidelines to the personal data privacy policy.

VI. EXCEPTIONS TO BANK POLICIES

6.1 This project does not include exceptions to the Bank Policy.

VII. ENVIRONMENTAL AND SOCIAL ASPECTS

7.1 This Technical Cooperation is intended to finance pre-feasibility or feasibility studies of specific investment projects and the environmental and social studies associated with them; 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).

7.2 For adequate management of the environmental and social aspects the ESG team will support and advise the current TC.

REQUIRED ANNEXES:

- Annex I: Request from Client
- Annex II: Results Matrix
- Annex III: Terms of Reference
- Annex IV: Procurement Plan
