DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

MEXICO

INTEGRATED RESTORATION OF PRIORITY RIVER BASINS IN MEXICO

(ME-T1574)

PROJECT DOCUMENT

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PROJECT SUMMARY	
Operation Type:	Technical Cooperation
Sector:	WATER AND SANITATION
Subsector:	INTEGRAL MANAGEMENT OF WATER RESOURCES
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):	CID/CME-Country Office Mexico
Executing Agency:	Inter-American Development Bank

PROJECT OBJECTIVE

The general objective of this TC is to develop a science-based implementation strategy to restore ecological quality and climate resilience in priority micro-basins. By leveraging the HydroBID suite to create a calibrated hydrological framework, the TC will optimize the integrated performance of NBS and gray infrastructure, providing a scalable, data-driven roadmap for long-term restoration. The specific objectives are: (i) develop a dynamic ecohydrological model to quantify the interactions between grey infrastructure, water quality, and NBS; (ii) establish a 20-year strategic roadmap and governance framework to institutionalize resilient sanitation and circular economy policies; and (iii) create a bankable five-year investment pipeline and operational plan to trigger immediate project execution and private sector participation.

FINANCIAL INFORMATION

Financing Type	**Fund**	**Amount in US$**
TCN - Nonreimbursable	STA - United Kingdom Sustainable Infrastructure Program - Technical Assistance Window	325,000
	Total IDB Financing	**325,000**
	Counterpart Financing	**0**
	Total Project Budget	**325,000**
Donors:	N/A	
Disbursement Period:	24 Months	
Execution Period:	24 Months	

ADDITIONAL FINANCIAL INFORMATION

This Technical Cooperation is financed by the United Kingdom Sustainable Infrastructure Program – Technical Assistance Window (UK SIP - STA)

I. JUSTIFICATION AND OBJECTIVE

1.1 **Diagnostics.** Mexico faces a critical gap in wastewater treatment, which directly contributes to river pollution and associated environmental and social impacts. According to the National Water Commission (CONAGUA), in 2017 alone wastewater generated 2 million tons of BOD5,[1] with industries contributing the largest share of organic pollutants, up to 340% more contamination than municipalities. Despite this, 30% of municipal wastewater collected through drainage systems receives no treatment at all, leaving rivers and aquifers exposed to untreated discharges. The result is widespread contamination: in CONAGUA's 2024 Water Quality Indicators results, 48.6% of the monitored water bodies fail to meet established standards for parameters such as biochemical oxygen demand, chemical oxygen demand, toxicity, enterococci, and others. This situation directly translates into significant environmental degradation and human health impacts. Untreated discharges degrade ecosystems, reduce the availability of clean water, and exacerbate public health risks such as gastrointestinal diseases, heavy metal exposure, and long-term illnesses in communities along polluted rivers. Beyond health, this pollution erodes fisheries, agriculture, and recreational uses, fueling social conflict and economic losses. The consequences are profound, particularly on rural communities, women and indigenous peoples, who often depend directly on local water sources and ecosystem services for their livelihoods and cultural practices.

1.2 With an increasing population and the growing effects of climate change (CC), these challenges require urgent attention. Restoring Mexico's polluted waterways would bring significant benefits to public health, the environmental, and the economy. Cleaner rivers would reduce exposure to pathogens, heavy metals, and toxic discharges that currently cause gastrointestinal illnesses, skin infections, and chronic diseases in nearby communities. Improved water quality would also safeguard agriculture and food security as thousands of farmers depend on these rivers for irrigation, while simultaneously reducing the costs of drinking water treatment. Beyond health and food, restored rivers would improve quality of life by reducing odors and the volatilization of polluting particles. They would also facilitate the conditions for undertaking complementary socio-ecological restoration actions, such as creating safe riverside public spaces that revitalize cultural and recreational connections to water. Ecologically, healthier river systems would enhance climate resilience, acting as natural buffers against floods and droughts, and support biodiversity. Nature-based Solutions (NBS) for river restoration contribute directly to CC mitigation by regulating the microclimate with artificial water bodies, improving carbon sequestration in vegetation and riparian soils, and strengthening the adaptive capacity of vulnerable communities. Together, these improvements would make river restoration a driver of equity.

1.3 Mexico submitted its first Nationally Determined Contribution (NDC) to the United

[1] BOD5, or Biochemical Oxygen Demand over five days, measures the amount of oxygen required by aerobic microorganisms to decompose organic matter in a water sample at 20 C° over a five-day period.

Nations Framework Convention on Climate Change in 2016, which were updated in 2021 and 2022. Mexico's NDC includes NBS and Ecosystem-based Adaptation (EbA) as transversal adaptation solutions. Moreover, Mexico's National Water Plan 2024–2030 identifies the sanitation and restoration of rivers as a national priority, with a focus on tackling pollution, rehabilitating ecosystems, and improving water quality. The plan calls for the expansion and modernization of wastewater treatment plants (WWTP) and collectors, the closure of illegal discharges, and the promotion of water reuse, while also prioritizing ecological restoration of degraded rivers such as the Tula, Lerma–Santiago and Atoyac. It emphasizes integrating CC adaptation by restoring riparian zones, preventing further contamination, and reviving aquatic ecosystems. The National Water Plan includes the adoption of NBS as a solution that complements gray infrastructure with ecosystem restoration, reduces long-term risks, and generates co-benefits for biodiversity, climate resilience, and communities. The products and activities financed through this Technical Cooperation (TC) will help set up financing schemes and operations, supporting the elaboration of such NBS projects. The Government of Mexico's commitment to NBS has been expressed at the highest level of its Presidency, and confirmed by the relevant sector institutions such as the Ministry for the Environment and Natural Resources (SEMARNAT) and CONAGUA.

1.4 NBS encompasses a wide range of actions, such as protecting and managing natural and semi-natural ecosystems, incorporating green and blue infrastructure in urban areas, and applying ecosystem-based principles to agricultural systems. The concept is grounded in the knowledge that healthy natural and managed ecosystems produce a diverse range of services on which human wellbeing depends, from storing carbon, controlling floods, and stabilizing shorelines and slopes, to provide clean air and water, food, fuel, medicines and genetic resources.

1.5 **Request**. Considering the high priority placed on the issues described above and building on the existing dialogue between the IDB and the Government of Mexico, the Secretariat of the Treasury and Public Credit (Secretaría de Hacienda y Crédito Público, SHCP) in coordination with SEMARNAT requested this non-reimbursable support. Additionally, as part of the annual dialogue between the Bank and IDB borrowing member countries to establish the operational program, the operation has been selected to be processed and approved within the Country Program Document for 2026.

1.6 **Objective.** The general objective of this TC is to develop a science-based implementation strategy to restore ecological quality and climate resilience in priority micro-basins. By leveraging the HydroBID suite to create a calibrated hydrological framework, the TC will optimize the integrated performance of NBS and gray infrastructure, providing a scalable, data-driven roadmap for long-term restoration. The specific objectives are: (i) develop a dynamic ecohydrological model to quantify the interactions between gray infrastructure, water quality, and NBS; (ii) establish a 20-year strategic roadmap and governance framework to institutionalize resilient sanitation and circular economy policies; and (iii) create a bankable five-year investment pipeline and operational plan to trigger immediate project execution and private sector participation.

1.7 **Complementarity.** The Water and Sanitation Division (INE/WSA) has been promoting the development, integration and scaling of NBS in the water and sanitation sector in the region, in alignment with three of the five Lines of Action of the Water and Sanitation Sector Framework Document: (i) promote universal access to quality water and sanitation services with equity, inclusion, and affordability; (ii) design policies and programs incorporating disaster and climate change risk management and promoting water security; and (iii) improve management to ensure efficient, sustainable service delivery and promote private sector participation. The TC represents the natural continuation of the TC "Promoting Improved Climate Change Governance through the Implementation of NBS in Latin America and the Caribbean" (ATN/CN-20213-RG), successfully executed in the region with the aim to strengthen policy frameworks and governance capacity around NBS in Latin America and the Caribbean (LAC). This TC also builds on the lessons learned from the previous TC financed with fund from the United Kingdom Sustainable Infrastructure Program (UKSIP), focused on improving the energy efficiency of water supply and sanitation operators (ME-T1500: Energy Efficiency for water operators in Mexico).

1.8 Within this context, the IDB Water and Sanitation developed HydroBID, a suite of models created specifically for LAC. The models, which have been implemented in 24 of the IDB's 26 borrowing countries and have supported the preparation and execution of 40 investment programs, are capable to carry out detailed hydrological and hydraulic studies to evaluate the behavior of water bodies, as well as existing and planned green and gray infrastructure, for reducing flood risk and improving water quality with a resilience-focused approach. The models' licenses and the technical support are offered free of charge for all the IDB borrowing countries.

1.9 **Strategic Alignment**. . This TC aligns with the IDB Group's Institutional Strategy "Transformation for Greater Scale and Impact" 2024-2030 (CA-631), contributing directly to the objectives of Addressing Climate Change and Bolstering Sustainable Growth. By integrating NBS with sanitation infrastructure to restore river systems and improve water quality, the TC advances climate adaptation, ecosystem resilience, and nature-positive infrastructure, consistent with the IDB Group's Paris-alignment commitment and focus on scaling adaptation and biodiversity outcomes. The TC also reflects the strategy's emphasis on scale, impact, and the public–private continuum, moving from data-driven diagnostics to investment-ready solutions. Through using the HydroBID suite and the preparation of a bankable five-year project pipeline, the operation promotes replicability, institutional strengthening, and early alignment with sovereign and private-sector financing pathways, including IDB Invest, supporting the mobilization of private capital for resilient water and sanitation infrastructure. Besides being fully aligned with the national priority, as highlighted above, the operation is also consistent with the IDB Country Strategy for Mexico 2026-2031 (GN-2982), that in its second pillar aims to increase safely managed water and sanitation services, to ensure equitable access and environmental resilience. This TC and its activities are also fully aligned with the objectives and operational guidelines of the United Kingdom Sustainable Infrastructure Program (UKSIP) as a single-donor trust fund, ensuring consistency with its strategic purpose and eligible sectors. The TC supports the

partnership with the IDB Group by embedding resilience, adaptation and nature considerations into infrastructure-related financial innovation and facilitating the mobilization of private investment.

1.10 **Donor.** Across Latin America, NBS have the potential to drive fair and sustainable development. They present a strategic investment avenue for governments at all levels, infrastructure operators, development finance institutions, and the private sector. The United Kingdom (UK), through initiatives such as UKSIP, has become a global reference in promoting sustainable, climate-resilient infrastructure and NBS. The UK has played a pioneering role in embedding NBS into climate adaptation and disaster risk reduction strategies, supporting projects that restore watersheds, reduce flood risks, and enhance biodiversity. More broadly, the UK has shown leadership in mobilizing green finance, setting ambitious carbon reduction targets, and advancing policies that integrate nature into economic planning. The UK in particular is helping governments across Latin America and beyond designing bankable NBS projects, align them with national priorities, and unlock investment from both development banks and private finance. These efforts illustrate the UK's capacity not only to shape international agendas on sustainability but also to provide practical, on-the-ground support to strengthen Mexico's ecosystems and improve community resilience.

II. COMPONENTS

2.1 **Component 1: HydroBID-Driven Diagnostic and Baseline Modeling (US$175,000)**. The objective of this component is to move beyond a static description of a selected micro-basin and create a dynamic, calibrated model based on the HydroBID suite that quantifies the interaction between water quantity, quality, and infrastructure. It will finance individual consultants to work on: (i) Hydrological and Pollutant Baseline: a multi-source simulation of point and non-point pollution (including industrial, municipal, livestock, and agricultural runoff) to map concentrations and evaluate the impact of solid waste and leachate on the river's ecological health; (ii) Gray Infrastructure Performance Analysis: a technical assessment of existing assets (WWTP, collectors, and drainage) to identify efficiency and maintenance gaps and their impact on both sanitation and flood risk; (iii) Simulation of NBS and Circular Based Solutions (CBS) Scenarios: modeling of NBS and Community-Based Solutions (e.g., riparian buffers, wetland restoration) to quantify their potential to reduce hydraulic loads on gray infrastructure and restore ecohydrological functions. Depending on data availability, the simulation shall include a Blue Spot analysis, to facilitate the identification of areas susceptible to floods; (iv) Legal, Governance, and Land-Use Framework: an analysis of the regulatory environment for water and integrated waste management, specifically focusing on Circular Economy (CE) opportunities such as sludge reuse and the development of land-use planning to manage industrial and population growth; and (v) Technical Capacity and Prioritization through participatory workshops for technology transfer to CONAGUA, SEMARNAT, and local operators, utilizing specific criteria—such as technical readiness, stakeholder engagement, and scalability—to prioritize intervention areas with the highest potential for replication and urgent ecological restoration. The expected result will be a dynamic ecohydrological model able to quantify the interactions between gray infrastructure, water quality, and NBS.

2.2 **Component 2: Strategic Roadmap and Institutional Framework (US$70,000).** This component translates the HydroBID simulations and technical baselines into a comprehensive 20-year strategic vision, serving as both an operational roadmap and a policy guide for sustainable river sanitation. It will finance the contracting of a consulting firm to focus on four critical pillars: (i) Policy and Regulatory Reform: defining long-term objectives for ecohydrological resilience and sustainable sanitation, while identifying the legal reforms necessary to institutionalize NBS and CBS alongside existing gray infrastructure; (ii) Integrated Operational Roadmap: establishing short (2-year), medium (5-year), and long-term (20-year) milestones with specific indicators (e.g., BOD5 reduction and baseflow optimization) to guide basin restoration; (iii) Governance and Institutional Strengthening: designing inclusive governance models and cross-sectoral coordination mechanisms -from the community to the federal level- that integrate land-use planning, waste management, and long-term operation & maintenance instruments; and (iv) Investment and Sustainability Strategy: developing a preliminary financial plan that prioritizes high-impact NBS and gray infrastructure rehabilitation, while exploring models for private sector participation to ensure the economic viability and durability of the proposed interventions. The expected result will be a 20-year strategic roadmap and governance framework to institutionalize resilient sanitation and circular economy policies.

2.3 **Component 3: Five-Year Implementation and Investment Pipeline (US$80,000).** This final component focuses on the immediate operationalization and "bankability" of the strategic vision developed in Component 2. It will finance the contracting of a consulting firm to deliver: (i) Detailed 5-Year Activity Matrix: a granular execution plan for years 1–5, specifically aligning the timing of NBS with the rehabilitation of critical gray infrastructure; (ii) Technical Justification and Prioritization: studies to identify priority regions for sanitation at the community, municipal, and state levels, including the necessary protocols for integrated gray-green operations; (iii) Project Portfolio and Financing Strategy: a "ready-to-go" investment pipeline with estimated costs, expected returns, and identified funding gaps, clearly distinguishing between NBS assets and essential infrastructure upgrades; (iv) Private Sector and Investment Models: feasibility assessments for private participation, including joint ventures and performance-based contracts for the integrated operation and maintenance of water treatment and NBS assets; and (v) Institutional Strength and Community Ownership: targeted capacity-building actions to empower local operators and a robust stakeholder engagement strategy to ensure long-term intersectoral coordination and community-led sustainability. The expected results will be a bankable five-year investment pipeline and operational plan, to trigger immediate project execution and private sector participation.

2.4 **Expected Results**. It is expected that the products and the knowledge generated through this operation will be incorporated in strategic and planning documents within SEMARNAT and CONAGUA.

2.5 **Beneficiaries**. This TC will directly benefit SEMARNAT and CONAGUA, and will indirectly benefit households and users of water, sanitation, and solid waste services within the target areas of analysis.

III. BUDGET

3.1 The total cost of this TC is US$325,000 which will be financed by the United Kingdom Sustainable Infrastructure Program – Technical Assistance Window (STA). The resources will be used to finance the hiring of firms and/or individual consultants against the presentation of verifiable products, as well as the costs of mobilization expenses related to the performance of their duties and other non-consulting services.

Budget in US$		
Components	**UKSIP STA**	**Total**
Component 1. HydroBID-Driven Diagnostic and Baseline Modeling	175,000	175,000
Component 2. Strategic Roadmap and Institutional Framework	70,000	70.000
Component 3: Five-Year Implementation and Investment Pipeline	80,000	80,000
Total	**325,000**	**325,000**

IV. EXECUTION STRUCTURE

4.1 The TC will be executed by the Inter-American Development Bank (IDB), based on a request by the Mexican Government, in accordance with the Bank's Technical Cooperation Policy (GN-2470-2) and the Procedures for the Processing of Technical Cooperation Operations and Related Matters (OP-619-4), through the Water and Sanitation Division (WSA)'s specialists in the Mexico Country Office. The request that the IDB executes this TC is consistent with Appendix 10 in the Operational Guidelines for Technical Cooperations (as modified Annex 2 of OP-619-4), which 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 country specialists. Finally, the IDB direct execution will ensure greater agility and efficiency with the procurement processes. That said, the scope and the Terms of Reference for all activities will be defined in coordination with the institutions involved with the sector (and in particular with SEMARNAT and CONAGUA).

4.2 **Procurement.** All procurement to be executed under this Technical Cooperation have been included in the Procurement Plan (Annex IV) and will be hired in compliance with the applicable Bank policies and regulations as follows: (a) Hiring of individual consultants, as established in the regulation on Complementary Workforce (AM-650) and (b) Contracting of services provided by consulting firms in accordance with the Corporate procurement Policy (GN-2303-33) and its Guidelines.

4.3 **Execution and Disbursement Period**. The execution and disbursement period calculated for the project is 24 months, as reflected in the Results Matrix and in the Procurement Plan.

4.4 **Monitoring and Evaluation.** The monitoring of execution will be carried out through: (i) technical working meetings between the water and sanitation IDB's team in Mexico and the consultants; (ii) IDB's review (and eventually the beneficiaries' entities) of the technical reports to be presented by the consultants; and (iii) coordination meetings. From the date of the signing of the first consultancy contract, at the end of each year, and after the closing date, the IDB team will address all relevant CT reporting and evaluation requirements, including at least: (i) description of progress; (ii) relevant technical aspects to highlight; and (iii) execution problems and pending issues.

V. POTENTIAL RISKS

5.1 The major risk during the execution of this TC is the potential delay in execution of the consulting services due to a lack of coordination between the Bank, as the Executing Agency, and Mexican sector institutions. To mitigate this risk, the Bank's team will hold regular meetings with such institutions. WSA has significant experience executing TCs in the water, sanitation and solid waste sector that requires close coordination with the counterparts, and the division has very solid capacity locally in the Country Office of Mexico.

VI. EXCEPTIONS TO BANK POLICIES

6.1 There are no exceptions to Bank policies.

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).