

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

REGIONAL

VALUATION OF THE LAST FLYING RIVER OF THE AMAZON (RG-T4794)

PROJECT DOCUMENT

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PROJECT SUMMARY

Operation Type:	Technical Cooperation
Sector:	ENVIRONMENT AND NATURAL DISASTERS
Subsector:	BIODIVERSITY AND PROTECTED AREAS CONSERVATION
TC Taxonomy:	Research and Dissemination
Project Number under the Operational Support Taxonomy:	N/A
Technical Responsible Unit:	CSD/BNC-Biodiversity and Natural Capital Unit
Unit with Disbursement Responsibility (UDR):	CSD/BNC-Biodiversity and Natural Capital Unit
Executing Agency:	Inter-American Development Bank

PROJECT OBJECTIVE

To develop a pilot-ready valuation and finance architecture for the Last Flying River of the Amazon that quantifies ecosystem service value and risk and enables innovative, high-integrity finance mechanisms—including differential access for Indigenous Peoples—to support long-term forest protection and regeneration.

FINANCIAL INFORMATION

Financing Type	Fund	Amount in US\$
TCN - Nonreimbursable	NCL - France-IDB Natural Capital Lab Fund	1,000,000
Total IDB Financing		1,000,000
Counterpart Financing		0
Total Project Budget		1,000,000
Donors:	N/A	
Disbursement Period:	36 Months	
Execution Period:	36 months	

ADDITIONAL FINANCIAL INFORMATION

N/A

I. JUSTIFICATION AND OBJECTIVE

- 1.1 **Diagnostic.** The northern Amazon hosts the last large, contiguous expanse of non-degraded rainforest. Through massive evapotranspiration and moisture transport, often termed ‘flying rivers’—this biome helps regulate regional rainfall patterns that underpin agriculture, hydropower, and urban water security across South America. Ongoing deforestation and degradation heighten transboundary risks to water supply, disaster resilience, and climate stability.
- 1.2 This Research and Dissemination Technical Cooperation (TC) supports the Amazon Coordination Unit (ACU) and the Amazon Water Security Fund (AWSF) supported also by the Water Sanitation Division (WSA); in convening governments, Indigenous authorities, civil society, and the private sector to co-design innovative, high-integrity financing mechanisms that protect and regenerate forests (key to water security in the Amazon Basin), grounded in an economic valuation of the ‘Last Flying River of the Amazon’. The TC aims to establish a natural-capital asset/credit framework that sustains community-led protection and ensures differential access for Indigenous Peoples. The economic evidence generated by this TC is designed to be instrument-ready and enable further collaborations with IDB Lab & IDB Invest.
- 1.3 The TC adopts a river-basin commons logic, treating the Amazon transboundary watershed as a shared natural asset, creating conditions for South-South cooperation among Amazon countries on nature finance architecture. This is reflected in the multi-country extension design of Component 2.
- 1.4 **Objective.** To develop a pilot-ready valuation and finance architecture for the Last Flying River of the Amazon that quantifies ecosystem service value and risk and enables innovative, high-integrity finance mechanisms—including differential access for Indigenous Peoples—to support long-term forest protection and regeneration.
- 1.5 **Specific Objectives.**
 - i. Support inclusive stakeholder engagement and strategic planning for sustainable management of public and private forest areas.
 - ii. Design an operational model to enable differential access to nature finance for Indigenous Peoples, grounded in FPIC and culturally appropriate governance).
 - iii. Conduct a value-at-risk (VaR) assessment of key ecosystem services and develop a nature credit framework.
 - iv. Package and disseminate results, lessons learned, and policy communications.
- 1.6 **Complementarity.**
- 1.7 **Strategic Alignment.** This TC is consistent with the IDB Group Institutional Strategy and sector priorities, particularly in the areas of **climate action, biodiversity, inclusive development, and regional public goods**. By valuing the Amazon’s flying river as a macro-critical natural asset, the TC supports

climate resilience, water and energy security, and disaster-risk reduction across South America, reinforcing IDB priorities on climate action and regional cooperation. It advances the Natural Capital and Biodiversity Action Plan (2026–2030) by mainstreaming ecosystem service valuation into policy and investment decisions, while embedding rights-based, FPIC-gated mechanisms to ensure Indigenous Peoples’ inclusion and equitable access to emerging nature-finance opportunities.

- 1.1 **Alignment with the Amazonia Forever (Amazonía Siempre) Regional Program.** The TC is closely aligned with the Amazonía Siempre (Amazonia Forever) Regional Program’s mandate to promote integrated, cross-sectoral, and transboundary approaches to Amazon development. Implemented through the ACU’s stakeholder engagement platform spanning multiple countries, the initiative strengthens regional cooperation around a shared ecological asset while connecting climate, biodiversity, water, energy, and Indigenous livelihoods. Its emphasis on governance, coordination across institutions, and scalable regional frameworks reinforces the Amazonia Forever program’s role as a platform for aligning country actions, knowledge, and financing around Amazon-wide priorities.
- 1.8 This TC complements existing ACU Indigenous TCs ([RG-T4839](#), TFFF, Advisory Panel), by providing the economic valuation and finance architecture to monetize conservation and restoration of ecosystem services, a new layer not covered by those operations.
- 1.9 **Alignment with the Water and Sanitation Division (INE/WSA).** The TC aligns strongly with the Water and Sanitation Division by addressing water security at its source, focusing on the Amazon flying river as a foundational ecological system that regulates rainfall, river flows, and long-term water availability across urban, agricultural, and energy systems. By quantifying the value-at-risk of hydrological disruption and linking forest integrity to downstream water reliability, the TC provides strategic evidence to support integrated water resources management, climate-resilient water planning, and upstream nature-based solutions that reduce long-term costs and risks for water and sanitation services.
- 1.10 **Alignment with the Amazon Water Security Fund (AWSF).** The TC provides a strong analytical and financial backbone to the Amazon Water Security Fund by identifying, valuing, and structuring investments in the natural systems that underpin water security. By translating forest conservation and restoration into quantified water-related benefits and finance-ready instruments, the TC helps expand the Fund’s pipeline beyond traditional infrastructure toward upstream, nature-based water security solutions. The focus on long-term financial sustainability, risk reduction, and benefits for both cities and Indigenous territories complement the Fund’s objective of mobilizing blended finance for resilient and inclusive water outcomes in the Amazon basin.
- 1.11 This TC builds upon the established atmospheric science of flying rivers (Nobre et al., INPE), which has documented the Amazon’s moisture-transport system as a transboundary hydrological service underpinning rainfall, agriculture, energy, and urban water security across South America. Rather than duplicating this scientific foundation, the TC provides the missing economic valuation and finance structuring layer translating biophysical evidence into quantified value-at-

risk estimates and pilot-ready nature credit instruments. This distinction is consistent with the analytical framework advanced by the Taskforce on Nature Markets (Chami, Furtado and Zadek, Finance for Biodiversity, 2022), which identifies the gap between scientific recognition of nature's value and the development of nature-specific revenue streams as the core barrier to purposeful nature markets. The TC addresses this gap directly for a category of ecosystem service transboundary atmospheric moisture transport that has received insufficient attention relative to its macrocritical economic significance. Furthermore, the TC extends the scope of both the atmospheric science and the economic valuation from the Brazilian Amazon to all eight countries of the basin, generating a regional public good in support of South-South cooperation on nature finance architecture.

- 1.12 **The operation also contributes to countries' Nationally Determined Contributions (NDCs) and National Biodiversity Strategies and Action Plans (NBSAPs),** and advances SDG 6 (Clean Water), SDG 13 (Climate Action), and SDG 15 (Life on Land). It supports regional and transboundary cooperation via ACU and aligns with the IDB's Natural Capital and Biodiversity Action Plan 2026–2031.
- 1.13 **Donor.** This TC is also fully **aligned with IDB Natural Capital Lab Fund** (France NCL Fund) in its mission to translate nature into investable, high-integrity asset classes. It exemplifies the Lab's approach by moving from ecological science to economic valuation, value-at-risk analysis, and the design of pilot-ready natural capital credit frameworks with robust MRV, governance, and registry elements. By centering Indigenous-inclusive finance architecture and market integrity from the outset, the TC positions the NCL as a delivery-oriented innovation platform that shapes responsible nature markets and feeds downstream IDB operations, blended finance, and policy influence. Written approval from NCL France Fund has been obtained pursuant to Section 5.1 of the Administrative Agreement, as the operation aligns with Annex A eligibility criteria.

II. COMPONENTS

- 2.1 This TC is structured in a way that Component 1 delivers governance/co-design inputs; Component 2 builds the VaR, MRV, offtaker landscape, and credit framework; Component 3 disseminates.
- 2.2 **Component 1. Stakeholder Engagement and Co-Governance (USD\$350,000).** This component aims to strengthen Indigenous and local leadership in natural-asset governance and enable participatory design of financing mechanisms and co-governance models aligned with Indigenous life plans.
- Stakeholder engagement with Indigenous authorities, civil society, government entities and private sector actors through ACU Indigenous dialogue platforms.

- Participatory design of innovative financial instruments and governance models (including interface with existing mechanisms such as TFFF).
- Community training and monitoring systems that respect and integrate traditional knowledge.
- Indigenous and stakeholder-led co-design of a results-based finance instrument prototype (ie. Nature Outcomes Bond) for the protection of the flying river, including participatory definition of outcome metrics, actor roles and fund flows, and a repayment architecture linked to verified conservation outcomes—structured as an expression of Indigenous territorial governance over the flying river as a shared natural asset.
- Operational design for differential access to nature finance for Indigenous Peoples (rights-based, FPIC-gated, FPIC obligations: engagement should remain at organizational/authority level; community-level activities triggering FPIC obligations should be avoided without separate authorization).

2.3 **Key outputs:** (i) strategic plan using [RG-T4839](#) as a coordination point.; (ii) documented engagement process and shared governance principles (no contractual Bank commitments implied); (iii) co-governance design inputs for pilot mechanisms; (iv) documenting IP governance structures relevant to the nature credit mechanism; (v) identifying co-benefit indicators reflecting IP priorities; (vi) designing the differential access model; (vii) toolkit. (viii) Nature Outcomes Bond prototype document, comprising: (a) a participatory outcome metric framework co-designed with Indigenous authorities and aligned with biocultural indicators developed under Component 2; (b) a conceptual actor-role and fund-flow architecture identifying outcome payers, capital providers, community beneficiaries, and independent verifiers; (c) a repayment architecture linking outcome payments to verified thresholds of forest cover, hydrological integrity, and Indigenous governance indicators; and (d) a term-sheet skeleton suitable for engagement with prospective investors and outcome payers; (ix) stakeholder validation report documenting the co-design process, governance agreements reached, and recommended next steps for full instrument structuring and launch.

2.4 **Component 2. Economic Valuation (VaR) and Natural Capital Credit Framework (USD\$400,000).** This component aims to quantify the value-at-risk from losing the Last Flying River and develop a scalable natural capital credit system linked to verified indicators of ecosystem integrity, carbon, water security, and co-benefits.

- Moisture-transport attribution and precipitation-change estimation under deforestation/restoration scenarios.
- Sector valuation with initial focus on agriculture and hydropower in Brazil, with planned extension to additional Amazon basin countries (pre-identified candidates include Colombia, Peru, Bolivia, Ecuador, Venezuela, Guyana, and Suriname), selected based on data availability, NDC/NBSAP alignment, and institutional capacity to generate comparable results. Extension scope will be confirmed during the first year of execution.
- Integrated carbon and biodiversity valuation and assessment of additionality under enhancement scenarios.

- Design package for a Natural Capital Credit Framework: indicators, MRV, governance protocols, and registry specifications aligned with high-integrity guidance.
 - Incorporation of Indigenous territorial governance as an MRV variable, including additionality modeling that recognizes socio-ecological system integrity (not only avoided deforestation baseline). Scenario modeling should include a baseline deforestation pressure scenario and a protected Indigenous territories scenario.
 - Communication products and policy/investor notes for pilot mobilization.
- 2.5 **Key outputs:** (i) VaR assessment; (ii) total valuation logic; (iii) additionality modeling (including Indigenous territories baseline scenario); (iv) Natural Capital Credit and Finance Architecture (credit framework, registry specifications, off taker/buyer landscape, blended finance structuring options, interface with TFFF and AWSF); and (v) dissemination materials.
- 2.6 **Component 3. Communication and Dissemination (USD\$250,000).** This component will focus on communicating technical products and lessons learned to policymakers, analysts, academia, donor countries and the public:
- Typesetting, editing and translation of publications from Components 1 and 2.
 - Support to nature credits work in alignment with IAPB & BCA.
 - Guidelines and good practices for Indigenous-inclusive & Indigenous-led nature finance mechanism design, drawing on lessons from the flying river pilot and existing IDB instruments (e.g., Amazon bond guidelines).
 - Social media and dissemination campaigns.
 - Participation of experts, government officials and IDB staff in dissemination events
- 2.7 **Expected Outcomes & Results.**
- 2.8 **Component 1 (Outcome):** Indigenous Peoples, local communities, and key public and private stakeholders are empowered to co-govern the Last Flying River as a shared natural asset, with pilot-ready, rights-based governance and finance mechanisms aligned with Indigenous life plans and international safeguards.
- 2.9 **Results include:**
- a. Inclusive, FPIC-compliant stakeholder engagement processes are established and implemented, resulting in formal participation agreements and shared governance principles among Indigenous authorities, governments, civil society, and private actors.
 - b. A strategic, Indigenous-informed management and financing plan for the Last Flying River is co-developed, articulating priorities, safeguards, and pathways for sustainable forest protection and regeneration.

- c. Mapping of Nature Positive and Indigenous centered financial instruments.
- d. Co-governance design inputs are produced to enable Indigenous and community participation in existing and emerging financing mechanisms (including interfaces with instruments such as the TFFF).
- e. A rights-based, operational “differential access to nature finance” model is designed and documented, including eligibility criteria, FPIC-gating procedures, governance structures, and monitoring approaches that respect Indigenous knowledge systems and data sovereignty.

2.10 **Component 2 (Outcome):** The economic value and systemic risk associated with the degradation of the Last Flying River are quantified and translated into a scalable, high integrity natural capital credit framework that supports conservation finance, policy action, and responsible market participation.

2.11 Results include:

- a. Robust scientific and economic evidence is generated that quantifies the value at risk of flying river disruption under deforestation and restoration scenarios, including impacts on precipitation patterns and downstream economic sectors.
- b. Sector specific valuation results (initially for agriculture and hydropower in at least 3 countries beyond Brazil) are produced, providing decision relevant estimates that can be extended to other sectors and countries as data allow data availability, NDC alignment, and institutional capacity. Preliminary country candidates (e.g., Colombia, Peru, Bolivia, Venezuela, Ecuador, Guyana, Suriname).
- c. Integrated carbon and biodiversity valuation outputs, including additionality and enhancement scenarios, are developed to support credible and defensible nature-based finance instruments.
- d. A pilot ready Natural Capital Credit Framework is designed, including indicators, MRV systems, governance arrangements, and registry specifications aligned with high integrity biodiversity and nature credit guidance.
- e. Policy and investor-oriented communication products are delivered to support pilot mobilization, public decision making, and future scaling of flying river finance mechanisms.

2.12 **Component 3 (Outcome):** Knowledge generated under the TC is effectively disseminated and taken up by policymakers, practitioners, investors, and the public, positioning the Last Flying River valuation and finance architecture as a regional and global reference for nature-based water and climate solutions.

2.13 Results Include:

- a. High-quality, accessible publications from Components 1 and 2 are edited, designed, translated, and published to reach technical, policy, and non-technical audiences.
- b. Strategic alignment and visibility are ensured with global nature-credit initiatives (including IAPB and BCA), reinforcing consistency with emerging international standards and discussions.
- c. Targeted dissemination campaigns, including digital and social-media outreach, expand awareness and understanding of flying-river economics and finance.
- d. Knowledge-sharing and dissemination events are organized with participation from experts, government officials, Indigenous representatives, and IDB staff, fostering dialogue, validation, and pathways for replication and scale-up.

2.14 **Beneficiaries.** The primary beneficiaries of this Technical Cooperation are **Indigenous Peoples and local forest-dependent communities** in the Amazon basin, who will gain strengthened leadership roles, rights-based co-governance mechanisms, and improved, differential access to sustainable nature-finance opportunities aligned with their life plans and cultural values. **National and subnational governments** across the Amazon region benefit from robust, science-based valuation and risk information to inform public policy, climate and biodiversity commitments (NDCs and NBSAPs), and strategic investment decisions related to water security, energy, and land use. **Downstream economic sectors and urban populations**, particularly those reliant on rainfall and hydropower, benefit indirectly from improved protection of the flying river and reduced climate and water-related risks. **Private-sector actors, investors, and financial institutions** gain access to credible, high-integrity natural capital credit frameworks and data that lower market, reputational, and regulatory risks. Finally, **regional institutions, researchers, and the global community** benefit from generated knowledge, methodologies, and pilot-ready models that can be replicated to support climate stability, biodiversity conservation, and nature-positive development worldwide.

III. BUDGET

3.1 **Budget.** The total cost of the TC is US\$1,000,000.00, funded by the France-IDB Natural Capital Lab Fund - NCL (US\$1,000,000),

Components	NCL	Total
Component 1:	350,000	350,000
Component 2:	400,000	400,000
Component 3:	250,000	250,000
Total	1,000,000	1,000,000

IV. EXECUTION STRUCTURE

- 4.1 **The IDB as Executing Agency.** This Research and Dissemination TC will be executed by the Inter-American Development Bank (IDB). The Biodiversity and Natural Capital Unit team, within the Climate and Sustainable Development Department (CSD/BNC), will lead the operation and be responsible for overall quality control, in alignment with Bank policies and framework documents for the sector. The Amazon Coordination Unit (CSC/ACU) and the Water and Sanitation will co-lead the operation and share the responsibility for the approval and the overall quality of the deliverables, and for ensuring alignment with Amazonia Forever Regional Program. Coordination roles, reporting cadences, and decision-making responsibilities among CSD/BNC, CSC/ACU, INE/WSA, and country offices will be formalized in the TC’s operational guidelines at the start of execution. No binding agreements with Indigenous communities or governments will be entered into under this TC; engagement with those actors will follow established Bank protocols and be coordinated with existing ACU dialogue platforms, including [RG-T4839](#) and the Amazon Civil Society Dialogue process, to avoid duplication.
- 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 TC will be executed in 36 months, and this timeframe is consistent with the implementation periods considered in the Results Matrix and Procurement Plan for this operation.
- 4.4 **Monitoring, Reporting, and Supervision.** Arrangements for TC monitoring and supervision will be coordinated through CSD/BNC and Country Offices, whenever required, and through BNC’s sector specialist responsible for leading the execution, supervision and monitoring of the activities included in the operation. The Sector Specialist leading the operation is also responsible for the TC Monitoring and Reporting System (TCM). In accordance with the Administrative Agreement with the France-IDB Natural Capital Lab Fund (NCL),

the Bank will provide NCL with annual progress reports and annual unaudited financial statements no later than June 30 of each year, and audited financial statements no later than June 30 of every third year of execution.

V. POTENTIAL RISKS

- 5.1 The following risks have been identified regarding the general execution of this TC: (i) Multi-stakeholder coordination across jurisdictions; these risks can be mitigated through clear roles, reporting cadence and ACTO-led coordination; (ii) Political/institutional changes can be mitigated through pre-agreed validation processes, technical oversight, and continuity via ACU; (iii) Data/model uncertainty can be mitigated via transparent assumptions registry, sensitivity analyses, and peer review where feasible; (iv) Market integrity/reputational risk for nature credits, can be mitigated by aligning with high-integrity principles and robust MRV/registry design; and (v) Social risks (e.g., exclusion/dispossession pressures), can be mitigated with FPIC-gated processes, rights-based safeguards, and Indigenous data sovereignty.
- 5.2 **Intellectual Property.** This is an operation executed by the Bank and all the knowledge products generated from Bank-executed activities within this technical cooperation will be the property of the Bank and may be made available to the public under a creative commons license. However, at the request of the beneficiary, in accordance with the provisions of AM-331, the intellectual property of said products may also be licensed through specific contractual commitments that shall be prepared with the advice of the Legal Department.

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 not intended to finance pre-feasibility or feasibility studies of specific investment projects or environmental and social studies associated with them; therefore, this TC does not have applicable requirements of the Bank's Environmental and Social Policy Framework (ESPF).

REQUIRED ANNEXES:

Annex I: [Results Matrix](#)

Annex II: [Terms of Reference](#)

Annex III: [Procurement Plan](#)