IDB Inter-American Development Bank

TERMS OF REFERENCE

Agricultural Production Systems Assessments in the Bay of Parita watersheds

Panama
PN-T1355
Preparation of GEF project: "Reducing coastal pollution in the Parita Bay in Panama".

1. Background and Justification

1.1. Established in 1959, the Inter-American Development Bank ("IDB" or "Bank") is the main source of financing for economic, social, and institutional development in Latin America and the Caribbean. It provides loans, grants, guarantees, policy advice and technical assistance to the public and private sectors in its borrowing countries. To adequately respond to the challenges posed by climate change in the region, the Bank created the Climate Change and Sustainability Division (CSD), which leads, through the Climate Change Division (CCS), this agenda in response to the needs and requirements of member countries. Along these lines, the objective of the IDB's Climate Change Division is (i) to strengthen the Bank's knowledge base; (ii) strengthen the institutions and capacity of the public and private sectors; (iii) develop instruments to mainstream climate change mitigation and adaptation and increase the resilience of Bank-financed activities; (iv) identify and develop loans and technical assistance for climate action in key sectors; and (v) increase investments, address financing gaps, and leverage private sector investments. CSD/CCS carries out these activities with the support of specialized IDB staff, trust fund appointees, assignees, and others.

1.2. The agricultural sector, understood as: agriculture, livestock, hunting, forestry, fishing and related activities, has great social importance in Panama, occupying 14.2%[1] of the country's economically active population. Small-scale agricultural production (more than 200.000 families and 80% of the total number of producers) cultivates areas of less than 10 hectares[2] and is the main occupation and source of income for 40% of the Panamanian population living in rural areas.

1.3. However, the economic, technical and environmental performance of the sector is weak: (i) the participation in the Panamanian economy has decreased consistently during the last decades and today contributes less than 5% in[3] addition, it has a scarce and decreasing contribution to international trade; (ii) most crops demonstrate a productivity gap with yields below the regional average; (iii) in rural areas, where agriculture is the main occupation of the population, poverty reaches 40.8% of the population (reaching 80% among indigenous populations); (iv) agriculture is the main factor of deforestation in the country and generates high soil degradation and pollution due to uncontrolled use of agrochemicals; (v) Panama's levels in the "Forests"

[1] IDIAP. Sustainable and Inclusive Agricultural Innovation Project. 2022
[2] INEC. Basic Final Results, VI National Agricultural Census. 2011
[3] INEC. Gross Domestic Product Third quarter of 2022.

(27.05/100) and "Agriculture" (11.23/100) indicators of Yale University's 2018 Environmental Performance Index (EPI) demonstrate very weak environmental performance in these areas; and (vi) the livestock and crop losses observed during the latest episodes of the El Niño phenomenon that has confronted the country, demonstrate the low climate resilience of the sector, when it is estimated that by 2030, 30% of the territory could lose areas suitable for agriculture as a result of climate change[4].

1.4. Beyond these macro data, there is limited information on the Panamanian agricultural sector. It suggests that low technology adoption, as well as the insufficient implementation of "Best Management Practices", would be a major cause of this weak performance. However, this information is quite general and is supported by scarce, unreliable, and outdated data. In addition, this information is not very analytical about the barriers that producers perceive towards innovative practices and are not well characterized or explained. However, it is suggested that the low adequacy of the proposed technologies, the low coverage of agricultural information dissemination and technology transfer services, the lack of market opportunities, as well as the difficult access to financing could play an important role.

1.5. Analyzing producer demand involves characterizing current agricultural practices, including farm technology implementation. It's crucial to assess the technical, economic, and environmental performance of these practices and technologies, along with understanding the motivations behind them and the barriers to change.

1.6. Similarly, the development of relevant policies and investments requires a good analysis of the "supply", i.e. the adequacy to demand (in quality and availability) of agricultural innovation services. On the part of agricultural public services in general, the Ministry of Agricultural Development (MIDA) is the governing body of the sector, to which several autonomous entities with subsectoral responsibilities are attached, such as the Agricultural Research Institute of Panama (IDIAP), the Institute of Agricultural Marketing (IMA), and the Agricultural Development Bank (BDA), among others.

1.7. On the other hand, to jointly address the challenges of productivity, environmental sustainability, and climate resilience, particularly in the context of smallholdings, specialized agencies such as the FAO recommend the promotion of agroecological production models. Information on agroecological production in Panama is incipient, therefore characterizing this innovative model of agricultural production and analyzing its performance is essential before promoting its adoption as a possible solution to address the challenges of Panama's agricultural sector.

1.8. About the above, in December 2019 the IDB approved a technical cooperation called "Diagnosis of Agricultural Innovation in Panama" that oversaw the Environment, Rural Development and Disaster Risk Management Division (CSD/RND), and whose general objective is to contribute to increasing the productivity and competitiveness of Panamanian agriculture., with particular emphasis on climate change adaptation and environmental sustainability.

1.9. Within the framework of this technical cooperation, seven agricultural assessments were carried out in seven small agricultural regions of Panama during 2021, from which one was carried out

[4] CCAFS. Agriculture in Panama and climate change. 2014

through training with IDIAP technicians. The seven assessments carried out to date have proven their usefulness, in particular, because they will make it possible to territorialize: (i) the selection criteria for the beneficiaries of the Sustainable and Inclusive Agricultural Innovation Project (PIASI); (ii) the agroecological innovation bond options; (iii) technical assistance schedules according to the technical itineraries of each crop; and (iv) participatory action research themes.

1.10. Agricultural assessments consist of identifying the different elements (agroecological, technical, socio-economic, etc.) that condition the choices of producers in a region and the evolution of their production systems. It adopts the systemic approach, and its analyses range from the general to the specific, through increasingly fine scales of analysis.

1.11. In addition to the above, the IDB through its Climate Change Division in Panama, is supporting the formulation of a project proposal for the Global Environment Facility (GEF). This project focuses on the Integrated Program for Clean and Healthy Oceans, which aims to reduce coastal pollution stemming from agricultural runoff, livestock, and untreated wastewater. This pollution increases the risk of soil erosion and water contamination due to the presence of agrochemicals reaching the ocean, causing the phenomenon of hypoxia. Measures will include landscape improvement through agroecological practices, restoration of key areas, and capacity building for key stakeholders in regenerative agriculture concepts, and coastal restoration, among others.

1.12. For all of the above, through this consultancy, the IDB seeks to contract services to support the realization of agricultural assessments that allow describing and analyzing the complexity of agricultural dynamics in the watersheds of the Parita, La Villa and Santa María rivers that flow into Parita Bay, to generate detailed information on the motivations and limitations to agricultural innovation in general and agroecological innovation in particular among producers.

2. Objectives

2.1. The **general objective** of the consultancy is to develop exhaustive and contextualized agricultural assessments in the watersheds of the Parita, La Villa and Santa María rivers that flow into the Bay of Parita to identify and analyze the socioeconomic, environmental, and productive characteristics of the communities in that area, with special emphasis on the use and contamination by agrochemicals as well as their farming systems, land management practices and available resources. This objective seeks to provide detailed and up-to-date information that serves as a basis for the design and implementation of sustainable strategies for agricultural development, and preservation of the natural environment and contributes to informed decision-making in terms of policy options and public investment programs in the Panamanian agricultural sector.

2.2. The **specific objective** is to develop - in each studied basin - intentional sampling on production, cultivation and breeding systems to generate detailed information on: (i) current agricultural practices, including the application and use of agrochemicals for production, and implementation of technologies on farms; (ii) the technical, economic, social and environmental performance of these practices and technologies; and (iii) the motivations and limitations of agricultural innovation in general and agroecological innovation in particular, especially among small

farmers.

3. Scope of Services

3.1. Through this consultancy, the IDB seeks to hire support services to develop agricultural assessments necessary for the analysis of the challenges and opportunities present in three prioritized watersheds of the Bay of Parita; including environmental issues (contamination by agrochemicals), land-use conflicts, technical constraints, and identifying opportunities for the development of regenerative agriculture practices.

3.2. From a technical point of view, the analysis is expected to emphasize the challenges associated with: (i) erosion; (ii) soil fertility management, including the use and consequences of the application of agrochemicals (magnitude of the problem and consequences on the performance of production systems); (iii) implemented practices and technologies used by producers to address challenges; (iv) reasons for the poor implementation of Best Management Practices and technologies related to sustainability, e.g. erosion control, fertility management, food safety, environmental pollution mitigation and biodiversity conservation; (v) potential to encourage the adoption of such practices and technologies in each type of production system.

3.3. Capacity building for government entities (IDIAP, MIDA, MiAMBIENTE), key actors, stakeholders, as well as producers in the study area, and the general population. This will be accomplished through workshops aimed at presenting the methodology of agricultural assessment and the results of the activities conducted within this consultancy.

4. Activity and tasks

During the work period, the contracted firm must perform the following activities.

4.1 Activity 1 – Assessments of production systems in the watersheds of the Parita, La Villa and Santa Maria rivers that flow into Parita Bay.

For each assessment, the scope includes:

- ✓ Agroecological zoning and identification of recent agrarian dynamics, and of the differentiation trajectories of farms and their practices (outline of a typology of crop, breeding, production and transformation systems, differentiation factors).
- ✓ Develop purposive sampling techniques for the selection of study areas that adequately reflect the variability of production, cultivation, and rearing systems in the prioritized watersheds.
- ✓ Identify and describe the primary cultivation and breeding systems, including an assessment of their technical and economic performance. Evaluate their environmental impact and resilience to climate change, particularly focusing on the use of agrochemicals. Additionally, examines soil management practices, chemical usage, water efficiency, biodiversity conservation, producers' attitudes toward wildlife (including birds), integration of trees into

agricultural plots, and the effects of extreme weather events over the past decade.

- ✓ Identify the interests, constraints, and opportunities for each type of production system (from the point of view of the interests of producers), in particular, it is expected to obtain information on the impact of access or lack of access to security of tenure of land, financial services, technical assistance and information services, access to markets, social capital (especially associativity).
- ✓ Formulate proposals for intervention to accompany agricultural transformations and overcome the barriers that prevent improving the technical, economic, and environmental performance of production systems.
- ✓ Workshops to strengthen the technical capacities of government entities and key actors on the methodology of agricultural assessments and presentation of the results of the consultancy.

5. Key Activities

- ✓ Careful review of all available bibliographic material, studies, and other documents relevant to the subject of the consultancy.
- ✓ Interviews with stakeholders and agricultural producers.
- ✓ Presentation of results to the bank and stakeholders in a face-to-face workshop.

6. Methodology

6.1. The consultancy should be based on an integrated vision of assessing both prioritized agrarian systems and watershed areas, harmonizing methodologies ranging from field interviews to the analysis and presentation of final results, including key indicators of environmental, social, and food security performance. It is essential to ensure coherence between the evaluations conducted and the geographic areas assessed, thus guaranteeing the minimum quality of the gathered information.

7. Expected Outcome and Deliverables

7.1. Output 1: Work Plan

- It must contain a proposal for the execution of the consultancy and a detailed work schedule, including technical and methodological inputs.
- The consulting firm is expected to propose specific indicators that will make it possible to measure the relationship between the pollution of marine-coastal zones and the use of agrochemicals in agricultural production, cultivation, and breeding systems.

7.2. Output 2: Preliminary report of the assessments carried out in the three prioritized watersheds.

- It should include a detailed mapping of agroecological zoning, identifying recent

dynamics in the prioritized watersheds. In addition to an outline of typology of cultivation, breeding, production, and transformation systems, highlighting differentiation factors and trajectories of agricultural holdings.

- Detailed information on the identification and description of the main cultivation and rearing systems, including an estimate of the technical and economic performance of these systems. It should contain comparisons between them and include informed opinions on their environmental performance, considering aspects such as soil management, use of agrochemicals, domestic biodiversity, and their response to extreme weather events.
- Identification and description of relevant production systems in the prioritized watersheds, including an estimate of economic performance.
- Compilation of interests, constraints, and opportunities for each identified system type. It should include the potential impact of access or lack of access to land tenure, financial services, technical information, markets, and social capital (especially associativity) on the identified systems and their prospects for evolution.
- Concrete proposals to accompany agricultural transformations, overcome barriers and improve the technical, economic, and environmental performance of the identified production systems. They must respond to the problems and challenges identified in the previous analyses.

7.3. Output 3: Final report of the assessments carried out in the three prioritized watersheds.

- Report that considers the comments issued by all interested parties, about the points described in output 2 of this consultancy.

7.4. Output 4: Capacity-building workshops and presentation of results

- Technical training workshops for government entities on the agrarian evaluation of production, cultivation and breeding systems, and presentation of results to key actors.

8. Reporting Requirements

8.1. All the information that is used and generated must be organized and delivered as basic information for the development of future studies.

8.2. The delivery of the products and/or by-products by the consulting firm will be carried out in digital format and electronically, at the times agreed in the work schedule.

8.3. The quality requirements for the products and by-products to be delivered are those established under the heading "Acceptance Criteria" of this document. After receiving and evaluating the products and/or by-products delivered together with the IDIAP, the IDB will send the consulting firm a written response, proceeding to validate the product or by-product, or indicating to the contractor the modifications, adjustments or expansion of information that needs to be carried

out by the contractor.

8.4. The execution of the contract will conclude, according to the agreed schedule, with the delivery and approval by the IDB of the products and by-products established in the binding documents of this contract, having satisfactorily provided all the requested services.

8.5. All products delivered will be confidential.

8.6. Reports and materials may not bear the IDB or IDIAP logo before being approved.

Note: *"Final report"* means a version that considers the comments issued: (i) by all interested parties, and (ii) the comments written by the Bank on the draft versions received in Word format.

9. Times

- The consultancy will have an execution period of 3 months.
- Regular coordination meetings will be held with the IDB, where the IDIAP team will participate.

10. Acceptance Criteria

10.1. All products and deliverables that are the object of the provision of the service will be valued according to the following quality requirements:

- **Belonging:** the content of the delivered product corresponds to what is specified in the contracting party's request and meets what can be expected based on the original description of the product.
- **Utility:** the product delivered fulfills the purpose intended by the contracting party, which was previously communicated to the contracting party and understood by it.
- **Inclusive language:** the content of each product will ensure the incorporation of wording in line with gender equality and inclusion.

10.2. Products will be accepted for payment once they have written approval from the IDB team.

10.3. The IDB will have up to two weeks to make written comments/recommendations on the reports submitted by the consulting firm.

10.4. Partial products, or products that are not accepted by the IDB, will not be paid for.

11. Other Requirements

Firm Experience

- The consulting firm should have experience in the fields required for the implementation of the project. Details about academic qualifications, field of competence, and technical/practical experience of similar jobs or consultancies should be submitted on signed resumes. Resumes submitted by the consulting team should not exceed 5 pages.

- To carry out the activities of the study, the consulting firm shall have at least:
  - ✓ Ten (10) years of experience in the comprehensive assessment of the agricultural sector, including the conduct of detailed agricultural assessment, the agroecological zoning of relevant areas, and the ability to identify and analyze local and regional agrarian dynamics. This involves the ability to collect and analyze relevant data on the ground, as well as the ability to generate conclusions and strategic recommendations to improve agricultural production, environmental sustainability, and rural development in different agrarian contexts.
  - ✓ At least one member of the team must have proven knowledge of the agricultural sector in Panama.
  - ✓ Excellent understanding in interpretation of Panama's current and future needs in terms of regenerative agriculture, agroecology, adaptation to climate change and functioning of the institutional framework related to the agricultural sector and climate change.
  - ✓ The consulting team must be able to communicate in Spanish (required).

Team experience. The team can be made up of any number of members if they have at least the following professional profiles:

- **Main coordinator of the project:** Professional in engineering, agricultural, environmental, climatic, or related sciences, with at least 8 years of proven professional experience in coordinating or carrying out agricultural studies and training or intervention projects in agricultural development. Experience in Latin America and managing projects with development agencies. Postgraduate degree related to job functions.
- **Agronomist:** professional in agricultural sciences, with at least 5 years of proven professional experience in agricultural development, preferably in Latin America. Experience in the management of geographic information systems (GIS) and their application in territorial and environmental management is required. It is desirable to have a postgraduate degree related to the functions of the job.
- **Junior consultant:** professional in agricultural, environmental, or related sciences, with desirable experience in the implementation of a methodology for the assessment of production systems, assistance in fieldwork and information gathering.

Gender-diverse teams will be valued.

Additional Equipment: The firm may propose other support specialists.

Availability: Specialists must be available for the entire duration of the consultancy.

Confidentiality: All information shared with the firm will be considered confidential. The firm may not disclose to third parties any product of this consultancy, without the express written consent of the IDB.

12. Supervision and Reporting

12.1. Supervision will be carried out by: Esperanza Gonzalez (CSD/CCS) specialist in Climate Change and Sustainable Development (rosago@iadb.org), and Marion Le Pommellec (CSD/RND) a specialist in Environment and Rural Development (marionlp@iadb.org), both are based at the IDB Representation in Panama.

13. Schedule of Payments

Payment Schedule	
Deliverable	**%**
Output 1: Work Plan	15%
Output 2: Preliminary report of the assessments developed in the three prioritized watersheds.	30%
Output 3: Final report of the assessments carried out in the three prioritized watersheds	35%
Output 4: Capacity-building workshops and presentation of results	20%
TOTAL	**100%**

IDB Inter-American Development Bank

TERMS OF REFERENCE

Consulting to support the Climate Change and Sustainability Division in Panama
Post of Duty: Panama

The IDB Group is a community of diverse, versatile, and passionate people who come together on a journey to improve lives in Latin America and the Caribbean. Our people find purpose and do what they love in an inclusive, collaborative, agile, and rewarding environment.

About this position

We are looking for a Climate Change Consultant. As a Climate Change consultant, you will support the Climate Change Division of the IDB Panama office in technical-administrative aspects required for the design and preparation of the Preparation of GEF project: "Reducing coastal pollution in the Parita Bay in Panama" which is a Child project under the Global Environment Facility's (GEF) integrated program of clean and healthy oceans (CHO-IP).

You will work for the Climate Change Division (CSD/CCS), part of the Climate Change and Sustainability (CSD) department. This team is responsible for advising the IDB's management and developing policies, strategies, operational guidelines, and programs on issues pertinent to the sector and related areas. CSD also conducts relevant sector research, analytical work, sectoral practices, and case studies on climate change and sustainability. In addition, it provides support in (i) the mainstreaming of climate change in the actions and operations of the IDB group and (ii) the mainstreaming of climate change in the regional countries of the IDB group through support to the ministries of environment, planning, and economy and finance of the region. Both axes share the objective of strengthening climate policy at subnational, national, and regional levels.

What you'll do:

- Support the design and preparation of the Preparation of GEF project: "Reducing coastal pollution in the Parita Bay in Panama" which is a Child project under the Global Environment Facility's (GEF) integrated program of clean and healthy oceans (CHO-IP).
- Collection of data and relevant information to set the project's baseline, including information on geography, biodiversity, and human activities in the area.
- Consultations with stakeholders (local authorities, non-governmental organizations, and residents) to improve understanding the challenges and opportunities associated with coastal pollution reduction, as well as the identification of possible solutions and approaches to address the problem.

Deliverables and Payments Timeline:

For each deliverable under this contract, the consultant and supervisor will agree on the effort required to deliver the product, expressed in days; and any travel requirements to ensure the quality of the products. Once the respective assignments have been finalized and approved by the supervisor, payments will be made based on the number of days required to complete work and the presentation of invoice. If travel is required, all travel and per diem expenses will be pre-approved by the supervisor and covered by the Bank by its policies and procedures.

What you'll need

- **Education:** master's and bachelor's degree in engineering field or natural resources management.

- **Experience:** Between 3 and 5 years of progressive experience in research and natural resources management.
- **Languages:** Proficiency in English and one of the other Bank official languages (Spanish, French or Portuguese) is required.

Key skills:

- Learn continuously.
- Collaborate and share knowledge.
- Focus on clients.
- Communicate and influence.
- Innovate and try new things.

Requirements:

- **Citizenship:** You are either a citizen of Panama or a citizen of one of our 48-member countries eligible to obtain a valid residency or legal permit to work in Panama without the need for sponsorship by the IDB.
- **Consanguinity**: You have no family members (up to the fourth degree of consanguinity and second degree of affinity, including spouse) working at the IDB, IDB Invest, or IDB Lab.

Type of contract and duration:

- **Type of contract:** Products and External Services Consultant (PEC), Retainer.
- **Length of contract:** 120 days in a period of 10 months
- **Work Location:** Panama.

What we offer

The IDB group provides benefits that respond to the different needs and moments of an employee's life. These benefits include:

- A **competitive compensation** package.
- A flexible way of working. You will be evaluated by deliverable.

Our culture

At the IDB Group we work so everyone brings their best and authentic selves to work, willing to try new approaches without fear, and where they are accountable and rewarded for their actions.
Diversity, Equity, Inclusion and Belonging (DEIB) are at the center of our organization. We celebrate all dimensions of diversity and encourage women, LGBTQ+ people, persons with disabilities, Afro-descendants, and Indigenous people to apply.
We will ensure that individuals with disabilities are provided reasonable accommodation to participate in the job interview process. If you are a qualified candidate with a disability, please e-mail us at diversity@iadb.org to request reasonable accommodation to complete this application.
Our Human Resources Team reviews carefully every application.

About the IDB Group

The IDB Group, composed of the Inter-American Development Bank (IDB), IDB Invest, and the IDB Lab offers flexible financing solutions to its member countries to finance economic and social development through lending and grants to public and private entities in Latin America and the Caribbean.

About IDB

We work to improve lives in Latin America and the Caribbean. Through financial and technical support for countries working to reduce poverty and inequality, we help improve health and education and advance infrastructure. Our aim is to achieve development in a sustainable, climate-friendly way. With a history dating back to 1959, today we are the leading source of development financing for Latin America and the Caribbean. We provide loans, grants, and technical assistance; and we conduct extensive research. We maintain a strong commitment to achieving measurable results and the highest standards of integrity, transparency, and accountability.

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About IDB Lab

Is the innovation laboratory of the IDB Group. We mobilize financing, knowledge, and connections to drive innovation for inclusion in Latin America and the Caribbean. We believe innovation is a powerful tool that can transform our region, providing today unprecedented opportunities to populations that are vulnerable due to economic, social, or environmental factors. IDB Lab has a commitment to gender quality and diversity as part of its development mandate. The Strategy and Impact unit supports IDB Lab in the development of strategy, connections and knowledge, and impact measurement and reporting.

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About IDB Invest

IDB Invest, a member of the IDB Group, is a multilateral development bank committed to promoting the economic development of its member countries in Latin America and the Caribbean through the private sector. IDB Invest finances sustainable companies and projects to achieve financial results and maximize economic, social, and environmental development in the region. With a portfolio of $14.1 billion in asset management and 325 clients in 25 countries, IDB Invest provides innovative financial solutions and advisory services that meet the needs of its clients in a variety of industries.

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