

Amazon Bioeconomy Fund

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Table 1 Monitoring Arrangements

Monitoring				
Data/Source	Collection Tool	Frequency	Indicator	Indicative Budget
Fund-level impacts				
Monitoring platform, field surveys, data collection. Data at the project level will need to be declared by the beneficiaries of the loans themselves. When applicable, the EE will be responsible for collecting the information on their portfolios and will report it to IDB.	For consistency with estimations used in the Programme design, the methodology applied is the EX-ACT (EX-Ante C-balance Tool), developed by FAO. In addition to soil type, climate information, and conversion modes of land, the model will need to apply i) the duration of the project (implementation- and capitalization phase), ii) the initial land-use and iii) the final land-use, at the project level.	Annually	M4.1 Tonnes of carbon dioxide equivalent (t CO ₂ eq) reduced or avoided (including increased removals) - forest and land use Sub-indicator captured at investment level tCO ₂ e/ha/annum (project-baseline scenario)	US\$ 70,000
Monitoring platform, field surveys, data collection of bio-businesses supported. Data at the project level will need to be declared by the beneficiaries of the loans themselves. When applicable, the EE will be responsible for collecting the information on their portfolios and will report it to IDB.	Supervision of individual operations / EEs monitoring reports / IDB calculations based on number of bio-businesses supported. The indicator monitors only direct beneficiaries.	Annually	A1.2 Number of males and females benefiting from the adoption of diversified, climate resilient livelihood options (including fisheries, agriculture, tourism, etc.)	US\$ 40,000
Monitoring platform, field surveys, forest statistics, data collection based on supervision of individual operations and EE monitoring	Consistent with the methodology applied for indicator M4.1, this indicator will use the initial land-use	Annually	A4.1 Coverage/scale of ecosystems protected and strengthened in response to climate variability and change	US\$ 50,000

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reports. Data at the project level will need to be declared by the beneficiaries of the loans themselves.	and the final land-use, at the project level.			
Monitoring platform, field surveys, data collection	Supervision of individual operations / EEs monitoring reports / IDB calculations based on number and size of bio-businesses supported.	Annually	New bio-business/ green jobs created	US\$ 40,000
Fund-level outcomes				
Monitoring platform, field surveys, data collection.	Supervision of individual operations / EEs monitoring reports. Consistent with the methodology applied for indicator M4.1, this indicator will use the initial land-use and the final land-use, at the project level.	Annually	M9.1 Hectares of land or forests under improved and effective management that contributes to CO2 emission reductions	US\$ 50,000
Monitoring platform, data collection from reports on Programme activities Publications from competent national authorities.	Supervision of individual operations / EEs monitoring reports. Based on the analysis of country-specific circumstances and progress of activities of the Programme, in particular TC under Components I.3 and II.1, the indicator measures the institutional and regulatory systems that improve incentives for the bioeconomy development in the context of their low-emission planning policies, based on evidence of their effective implementation	Annually	M5.1 Institutional and regulatory systems that improve incentives for low-emission planning and development and their effective implementation	US\$ 30,000
Monitoring platform, data collection from reports on Programme activities Publications from competent national authorities.	Supervision of individual operations / EEs monitoring reports. Based on the analysis of country-specific circumstances and progress of activities of the Programme, in	Annually	A5.1 Institutional and regulatory systems that improve incentives for climate resilience and their effective implementation	US\$ 30,000

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	particular TC under Components I.3 and II.1, the indicator measures the institutional and regulatory systems that improve incentives for the bioeconomy development in the context of their climate-resilience planning policies, based on evidence of their effective implementation			
Monitoring platform, surveys. EEs are required to provide information at the project level.	Supervision of individual operations / EEs monitoring reports.	Annually	A7.1 Use by vulnerable households, communities, businesses and public-sector services of Fund-supported tools instruments, strategies and activities to respond to climate change and variability	US\$ 40,000
Monitoring platform, surveys. EEs are required to provide information at the project level.	Supervision of individual operations approved / EEs monitoring reports / IDB calculations based on number and size of bio-businesses supported.	Annually	A8.1 Number of males and females made aware of climate threats and related appropriate responses	US\$ 40,000
Monitoring platform, surveys. EEs are required to provide information at the project level.	Supervision of individual operations / EEs monitoring reports. When regional initiatives are involved, the IDB will either execute itself or oversee aggregated information to avoid double-counting.	Annually	Number of technologies and innovative solutions transferred or licensed to support low-emission and climate resilient development as a result of GCF support	US\$ 30,000
Project/programme performance indicators				
Monitoring platform, surveys. EEs are required to provide information at the project level.	Surveys of bio-businesses, a representative sample may be used when the number of firms in a portfolio is significant.	Annually	Increase in revenue per job (percentage) differentiated by gender	US\$ 10,000
Monitoring Platform or bio-businesses surveys	Surveys of bio-businesses, a representative sample may be used	Annually	Percentage of beneficiaries who perceived that their knowledge improved as a result of the information received in the training	US\$ 10,000

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	when the number of firms in a portfolio is significant.		sessions/workshops differentiated by gender	
Monitoring Platform or bio-businesses surveys	Surveys of bio-businesses, a representative sample may be used when the number of firms in a portfolio is significant.	Annually	Percentage of bio-businesses that report alignment with international standards and norms (including the adoption of certifications)	US\$ 10,000
Monitoring Platform or bio-businesses surveys	Surveys of bio-businesses, a representative sample may be used when the number of firms in a portfolio is significant.	Annually	Percentage of bio-businesses in priority value chains that report technology upgrading	US\$ 10,000
Reports from financial institutions that participate in the Programme	Supervision of individual operations / EEs monitoring reports. Collection is linked to that of the “Use by vulnerable households, communities, businesses and public-sector services of Fund-supported tools instruments, strategies and activities to respond to climate change and variability” indicator. Thus, the additional budget for proper disaggregation is marginal.	Annually	Number of climate resilient and/or low-emission bio-businesses financed	US\$ 10,000
Monitoring platform, surveys, reports based on own supervision of individual operations and EE monitoring reports. All information is reported by the EE to IDB at the project level.	Supervision of individual operations / EEs monitoring reports. During IDB project-cycle, specific reporting requirements will be established and approved before any disbursements are made to the EE. Depending on the characteristics of the IDB operation at the country level (including specific component arrangement, size of the funding, timeframe for disbursement, etc.), EEs may be required to report biannually. The IDB will supervise	Annually	Total bio-business financing portfolio in LFIs participating in the Programme (US\$ million) Indicator includes financing disbursed or guaranteed by Component I.1, including Programme financing and FIs own resources mobilized.	US\$ 30,000

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	biannual data and aggregate for annual reports, if necessary.			
Same as above	Same as above	Annually	<p>Total investment in bio-businesses (US\$ million) leveraged through the financial system, including co-financing from other sources (debt and equity)</p> <p>Indicator includes investments enabled by Components I.1 and I.2, including financing and co-financing from the Programme and leverage from third parties.</p>	US\$ 30,000
Monitoring platform, surveys, reports based on own supervision of individual operations and EE monitoring reports. All information is reported by the EE to IDB at the project level.	Supervision of individual operations / EEs monitoring reports. Consistent with the methodology applied for indicator A1.2, this indicator will use the initial employment and the final employment, at the project level.	Annually	<p>Employment in bio-business and value chains supported (number), that contributes to improve resilience adaptability to climate threats</p> <p>Indicator includes investments enabled by Components I.1 and I.2, including financing and co-financing from the Programme and leverage from third parties.</p>	US\$ 40,000
Monitoring platform, surveys, reports based on own supervision of individual operations approved and EE monitoring reports. IDB will compile information on all activities by country.	Supervision of individual operations / EEs monitoring reports. Based on the analysis of country-specific circumstances and progress of activities of the Programme, in particular TC under Component I.3 (a) and (b)	Annually	<p>Entities participating (number) in bio-business operational and technical tools and trainings, disaggregated by type</p> <p>Indicator aggregates entities supported under activities (a) and (b) under Component I.3.</p> <p>Entities can be classified by type as: LFI (public or private), investor, business, producer or business support organizations (may include</p>	US\$ 30,000

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			trade promotion organizations, chambers of commerce, sector associations and others). Where applicable, an indicator on the share of entities that are women or women-led will be included.	
Monitoring platform, surveys, reports based on own supervision of individual operations approved and EE monitoring reports. IDB will compile information on all activities by country/beneficiary.	Supervision of individual operations / EEs monitoring reports. Based on the analysis of country-specific circumstances and progress of activities of the Programme, in particular TC under Component I.3 (c)	Annually	Public entities (number) participating in trainings for regulation and national systems bio-businesses and forestry concession schemes	US\$ 30,000
Same as above	Same as above	Annually	Regulation (number) for valuing natural capital or forest concessions regimes published/enforced	US\$ 30,000
Same as above	Same as above	Annually	Innovative concession schemes (number) designed and subjected to market consultation	US\$ 20,000
Monitoring platform, surveys, reports based on own supervision of individual operations approved and bond certification	Supervision of individual operations. Based on the analysis of beneficiary-specific circumstances and progress of activities of the Programme, in particular TC under Component II.1	Annually	Bond issuers (number) with improved knowledge on portfolio identification, bond structuring and certification Where applicable, an indicator on the share of bonds that incorporate gender-related eligibility criteria will be included.	US\$ 40,000
Reports from financial institutions that participate in the Programme	Supervision of individual operations / EEs monitoring reports. Collection is linked to that of the "Use by vulnerable households, communities, businesses and	Annually	Number of climate resilient and/or low-emission bio-businesses financed	US\$10,000

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	public-sector services of Fund-supported tools instruments, strategies and activities to respond to climate change and variability” indicator. Thus, the additional budget for proper disaggregation is marginal.			
Monitoring platform, surveys, reports based on own supervision of individual operations approved and bond certification	Supervision of individual operations. Based on the analysis of beneficiary-specific circumstances and progress of activities of the Programme.	Annually	Volume of financing raised (US\$ million) through bond issuances supported that include bio-businesses	US\$ 30,000
Same as above	Same as above	Annually	Share (%) of total value of financing raised through bond issuances enabled by credit enhancement	US\$ 20,000
Total				US\$ 780,000

Evaluation			
Type	Timing	Independent/Self-evaluation	Indicative Budget
<i>Outcome</i>	Mid Term (2024)	Self-Assessment	US\$ 100,000
<i>Ex-poste</i>	Final (2028)	Self-Assessment	US\$ 120,000
Total			US\$ 220,000

Programme interim and final evaluations will be submitted to the GCF by the IDB and will be developed in relation to aggregated data from all approved IDB projects at the country level following IDB’s project-cycle (see sections B.4 and E.7 of the Funding Proposal). Specific methodologies may differ among countries and EEs, and will be defined during IDB’s project cycle depending on viability and availability of relevant data. In all cases, the minimum thoroughness with regards to evaluation methodologies will consider a before-and-after comparison of indicators included in the Programme matrix, complemented with qualitative analysis at the project level. The



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evaluations presented here are IDB-led evaluations,¹ as per GCF requirements. Timelines proposed will need to be agreed in the funded activity agreement (FAA). The interim and final evaluations are considered critical for informing on Programme results and lessons learnt.

The budgeted amounts in the table above consider the entire Programme (all Sub-Projects). Due to the programmatic nature of the proposal, these should be taken as indicative, as the size and timeframe of approval of each Sub-Project may vary and we can only provide estimates at this time. Estimates are based on available information on market rates of consultants considering at least one Sub-Project per country for a total of 6 countries.

¹ It should be noted that EEs executing loans will be required to submit audited financial statements within 120 days after the closing of each fiscal year throughout the execution period, as per standard IDB practice. Financial statements shall be duly audited by an independent firm acceptable to the IDB and in compliance with local regulation (see section G.3 of the Funding Proposal).

1. Introduction

This document illustrates the monitoring and evaluation (M&E) plan of the proposed Programme. The M&E plan aims to accompany the Programme to ensure that over the implementation period the Programme achieves beyond project-level indicators, at the **outcome level**, a climate impact, both reduced emissions, increased resilience, and the creation of enabling environments, and ultimately achieves a **paradigm shift and sustainable development potential** by building on the Programme's outcomes and lessons learnt to scale, replicate, and realise co-benefits in the same jurisdictions and beyond. The remainder of the document is structured as follows: Section 1 explains the IDB process including the M&E design and procedure during the implementation of the Programme. Section 2-5 explain the monitoring and evaluation approach taken in the proposed Programme and the practices it will follow. Figure 2 in section 4.1 provides an Overview of the Programme M&E with references to the Programme's Operational Manual Annex and the Carbon Methodology Description for more details. Table 1 provides an overview of the indicators reported against, as well as collection tools, the frequency and an indicative budget. Annex 11 is fully integrated in the Operational Manual as Annex 6.

For the purpose of this document:

- Programme means the full funding proposal.
- Sub-project means every individual operation (loan, Investment Grant or Technical Cooperation) supported by the Programme.
- Investment means final projects/activities implemented under each Sub-project.

2. IDB Project Cycle Preparation, Approval, Implementation, Completion and Reporting Process Description

In the following, the AE (IDB) project cycle will be explained, with a focus on the development and monitoring of results indicators. The AE project cycle will be conducted after the GCF Board's Programme approval and is required for all of the Programme's country Sub-Projects proposals. The AE Board reviews the Sub-Project proposals after an internal process in which the proposed Sub-Projects are revised by AE technical staff.²

² In the case of activities detailed in component I and III to be executed through IDB Lab, the following considerations are relevant for programming, processing and approval of Sub-projects: IDB Lab follows a very similar process for programming and project development as IDB. IDB Lab is administered by IDB and follows IDB policies and procedures, as appropriate as an off-balance sheet trust fund managed by the IDB; however, timing, governance and people involved are different. At IDB Lab: (i) the aforementioned PP is called a pitch document; (ii) the ERM is an IDEATE meeting; (iii) the POD is called the Donors Memorandum; (iv) the DEM is the Results Matrix; (v) the QRR procedure is the same for IDB Lab grant operations, and a similar meeting is called the Transactions Committee (TC) for review of Investment Grants and Equity operations, with other specialized input. IDB Lab has no equivalent of a OPC review. Once a proposed Donors Memorandum incorporates all comments received from QRR or TC review, the Donors Memo is distributed for consideration to the IDB Lab Donors Committee (equivalent to IDB Board but composed of all donor countries). Once the Donors Committee approves the project in the Donors Memo, the project documentation is drafted, negotiated and executed by the parties. IDB Lab management allocates its resources based on confirmed demand. Individual projects disburse according to the contracts signed with EEs (implementing the project approved in the Donors Memorandum).

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First, and in line with the commitments and objectives in the GCF Programme Proposal, an IDB Project Profile (PP) is developed which provides objectives, justification, technical aspects, proposed environmental and social safeguards, a fiduciary evaluation, projected funding, and a preliminary agenda for the project's execution. The PP is first evaluated at the Eligibility Review Meeting (ERM), which determines the eligibility of the operation, its strategy for development, and validates its timeline and resource requirements.

Second, following comments, requests for edits and clarifications, and subsequent approval of the PP by the Eligibility Review Meeting (ERM), the Proposal for Operations Development (POD) is drafted. The POD includes the Development Effectiveness Matrix (DEM), Monitoring and Evaluation Plan (M&E), and the Economic Rate of Return (ERR).

During preparation of each Sub-Project and prior to IDB's internal approval by the Board, the monitoring and evaluation arrangements and the underlying results matrix are required to be submitted for quality risk and review by IDB's M&E staff in order to ensure compliance with IDB's development effectiveness framework and that strict monitoring criteria are met which are reviewed by the AE Office of Development Effectiveness staff. This team also ensures that indicators are SMART and that the Sub-Project vertical logic is implementable and allows for achieving the objectives of the Sub-Project. In this phase any additional capacity needs of the EE in terms of M&E will be identified, which would be flagged as a risk, which would need to be mitigated. In the case of the proposed programme, some of these steps have been anticipated and the technical assistance resources by the GCF will enable the AE to enhance the capacity of the EE. In general, all indicators to be monitored and recorded by the AE or the EE (where applicable) must be described in the Sub-Project Results Matrix, agreed between the IDB and the EE as part of the preparation of the Sub-Project (for details see Section Proposed GCF Programme).

The POD is evaluated to determine if the institution's resources will be properly used. The POD undergoes further examination in the Quality and Risk Review (QRR). Further adjustments are made if needed, and then a Draft Loan Proposal (DLP) is prepared for the Operations Policy Committee (OPC) for approval. Once the OPC approves the DLP, and after the corresponding legal agreements are negotiated, the project team may proceed to distribute the document for consideration of the Board of Executive Directors of the IDB which is responsible for final approval.

Once the Board approves the corresponding operation, the IDB proceeds to sign the subsidiary agreements for each individual Sub-Project. Once the corresponding contract(s) has been signed, implementation can begin. Implementation of public sector projects includes periodic monitoring of the activities and outcomes through the Progress Monitoring Report (PMR). Implementation also includes supervision and monitoring activities on disbursement, financial management, procurement procedures, risk management, and/or safeguards compliance policy.

Once a project has been executed, evaluations are completed to measure development outcomes for a project. The Project Completion Reports (PCR) contribute to institutional learning within the IDB, as well as the Bank's accountability, because they are a key source of information about a project's performance and outcomes. Under the Development Effectiveness Framework (DEF), the production of PCRs was enhanced and the results are being validated to establish baselines for the data contained in the PCRs. The IDB also produces Impact Evaluations (IEs) and its Office of Evaluation and Oversight (OVE) collects ex-post evaluation data to include in comprehensive reports on broader trends in projects undertaken by the Bank.

4.1 Proposed GCF Programme

In addition, these indicators will be recorded by the IDB in its internal systems, specifically in the IDB's Project Monitoring Report. For any sub-indicators, their descriptions will be included in the M&E arrangements. M&E arrangements include how the assessment of each indicator will be made: by technical support units within the corresponding EE, in coordination with the IDB, or a specialised M&E consultant. The monitoring platform to be created through the technical assistance resources is illustrated in Figure 2.

For each indicator, targets will be established during the preparation of each Sub-Project, and in agreement with the EE. Baseline assessment of specific indicators (where feasible) will also be conducted during Sub-Project preparation. When an EE is involved, data for monitoring progress of indicators will come mainly from information collected and maintained by the EE themselves, including records on the characteristics of the financing granted to final borrowers and external data from local financial institutions who are channelling the funds and other institutions (producer associations and extensionism experts). Information in addition to financial criteria will be specifically required from borrowers as a condition for granting financing with Programme supported credit lines.

Following IDB standards, the evolution of the indicators should be reported periodically throughout the execution of the Sub-Project. The IDB will produce a database for monitoring aggregate values for all countries, and will be ultimately responsible for: setting the standards of the M&E system at the Sub-Project level, providing instruction and support to EE's staff and other partners (including via consultants hired under the TC) for the effective implementation of M&E activities and periodic reports, validating reported data and supervising M&E activities of all entities, integrating data from each Sub-Project progress reports (annually).

Methodologies to conduct M&E will be utilizing best practice including, where applicable, the tools used for the Programme justification (Ex-Act tool for baseline setting (Acai, Cacao, Coffee, Aquaculture) and tailored tools will be used for the other value chains such as timber). These methodologies require the provision of data from different sources including beneficiaries, producer associations, and local research institutes for proxies, where first-hand data is not available.

Definition of investment project categories eligible for financing with GCF funds are developed in coordination with local executing entities and subject to thorough analysis on the specific conditions of each country and target sector, to increase efficiency on the use of funds. These criteria are required to be established in the project documents that are submitted for internal approval by the IDB (Operating Regulations document of each Sub-Project, in the case of loans) and in line with the *Investments eligibility process flow chart* in the Operational Manual (Annex 21). The key eligibility filter are reflected in Figure 2 and are i) IDB/GCF Exclusion List, ii) Geo-Location of investment (targeted habitat), iii) Bio-business criteria, iv) Indicative Positive List of activities (GHG/Resilience Impact), v) Investment Amount and Instrument Type.

4.2 Project Supervision, Monitoring and Evaluation under the Programme

Sub-Projects financed under the Programme umbrella should take into consideration technical capacities that assure Sub-Project support and compliance with climate-related results and ensure that investments

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fulfil the Sub-Project eligibility. Additionally, that ESG requirements are fulfilled and supervised, and that the EE is able to monitor, and report results of the project. The execution of the Programme, including ensuring technical quality supervision, includes the following processes and provisions:

1. In preparation to any operation, IDB will undertake a full assessment of the EE capacity to execute the Programme, including technical capacity to ensure the Programme execution, and that the EE is able to monitor and report results. When gaps are identified IDB will ensure that additional technical support and supervision are structured as part of the Sub-Project execution requirements.
2. Specific responsibilities of EE will be detailed in project documents, in subsidiary agreements, and in the case of financial instruments also through detailed Operating Regulations, that are expected also to specify technical supervision and reporting for each Sub-Project.
3. The EE will be expected to have dedicated unit / group of experts that respond for both financial as well as technical execution. For this Programme, the unit will require expertise on both climate related capacity as well as safeguards, in addition to financial and monitoring and evaluation capacity. Considering that Programme's innovative and technical characteristics the Programme already counts on technical cooperation institutional support needed to be provided to the EE, so that they can ensure having needed human and technical resources for execution and reporting of the Sub-Project's activities.
4. In addition to the institutional support and capacity to the EEs, IDB will also ensure, through technical cooperation that specific tools and means are developed to both assess investments eligibility, as well as to monitor results. Every Sub-Project is expected to have a "digital registry" of investments supported, that will be combined with the systems of EE selves (for instance banking digital systems of NDBs) that should ensure higher transparency and efficiency in assessing investments eligibility and projects results, and support reporting.
5. It should be noted that the Technical Supervision will also be ensured by IDB, which will have a dedicated team of experts both at country as well as headquarters levels supervising and ensuring that all the requirements of a Sub-Project are complied with, including confirming adequacy of application of eligibility criteria, ESG compliance, methods, and approval of reports of results, as well as supervision (including visits) of Sub-Projects and investments.
6. In addition, the Programme will benefit from ongoing / already existing support IDB has been providing to EEs, both in terms of institutional capacity, as well as with regards to tools and registry systems, including:
 - a. Institutional and capacity support of EE NDBs in (see examples and publication at - <https://www.greenfinancelac.org/>):
 - i. Climate Change strategies management (including alignment with Paris Agreement) and developing capacity to classify climate friendly portfolio and assess GHG emissions reductions.
 - ii. Integrating climate risk and vulnerability assessments in their portfolios and piloting of "heatmaps" to develop decision making systems to finance adaptation activities.
 - iii. Developing systems to manage ESG risks, including for direct and indirect financial products.
 - iv. Support in developing ongoing monitoring and evaluation capacity, including using digital means.
 - v. Developing digital means to collect and use data for decision making.

- vi. Structuring green and sustainable bonds and reporting the use of proceeds and KPIs.
- vii. Support to exchange of experiences and lessons learned among NDBs in mainstreaming climate change and channeling climate finance, regionally and internationally.
- b. Technical cooperation for EE operating equity to apply tools to ensure ESG and climate change adaptation / mitigation reporting.
- c. Through IDB Natural Capital Lab (<https://www.iadb.org/en/environment/natural-capital-lab>), leverage of partnerships with global initiatives that convene leaders in technology, science, conservation, and business to develop dialogues on natural capital innovation and develop support to governments in prospecting and assessing the natural capital and bioeconomy and jointly developing natural capital accounting and monitoring systems that can benefit also overall the Programme execution including with studies, networks of experts and tools.

3. Monitoring and Evaluation (M&E): General considerations

Key concepts applied in the framework of this Programme

Monitoring is a continuous process of collecting and analyzing routine information on specific indicators to assess the progress of a Programme's activities vis-à-vis specific goals. This process helps visualize and report how activities and resources are being implemented compared to expectations and whether any corrective action is required. This is an essential process in project implementation because it informs the accredited entity, executing entities, and stakeholders and assists decision-making on project implementation while the project is ongoing.

On the other hand, **Evaluation** determines the project's relevance and pertinence in achieving its initial objectives. The objectives are measured by means of specific indicators, while trying to determine the degree of attribution and causality of the changes in these indicators to the interventions carried out as part of the project. Evaluation can also generate information on lessons learned and policy recommendations for future replications and scaling of the Programme.

This process can be carried out periodically along with monitoring in the form of Process Evaluation. Evaluation differs from monitoring, as it goes beyond establishing whether or not a specific goal was met and determines whether the changes are significant, attributable to the intervention, and sustainable. Usually, an Impact Evaluation is carried out at the end of the project for an independent agency to analyze the difference in the results of interest with and without project implementation.

The evaluation will report on the following criteria³:

- **Relevance:** the extent to which the activity is suited to the priorities and policies of the target group, participant, and donors;
- **Effectiveness:** the extent to which an activity attains its objectives;
- **Efficiency:** the extent to which resources have been used efficiently;
- **Impact:** the positive and negative changes produced by the intervention; and
- **Sustainability:** the extent to which the environment created by the project can continue after completion.

³ Ballard et al., 2010. Monitoring and evaluation toolkit for junior farmer field life schools. FAO.

Monitoring and evaluation perform complementary functions allows measuring the progress and effectiveness of the different phases of project implementation, while identifying each activity's achievements, strengths and weaknesses in accomplishing expected results. The results of setting up the M&E enables a learning process during project implementation, which promotes evidence-based decision-making during the Programme, early warning to alert on challenges, and highlight the need for corrective action.

Monitoring and Evaluation system (M&E)

In this sense, the proposed M&E system allows:

- Identify components, activities and respective outputs that are performing well in terms of goal achievement, detecting challenges during the process, and taking corrective action.
- Generate results that allow informed decision-making regarding activities.
- Ensure the efficient use of resources and contribute to transparency and sharing of lessons among Sub-Projects in the six different implementation countries.
- Evaluate to what extent the results are exclusively attributable to the project and how they can be sustainable and apply a model at Sub-Project level which allows for a credible evaluation.
- Converting project implementation experiences into lessons learned for the future.

Elements of a Monitoring and Evaluation (M&E) system

The following elements have been developed in Table 1:

- ✓ **Indicators:** Quantitative or qualitative variables to measure progress in the M&E stage.
- ✓ **Data source and data collection plan:** Specification on where and how the information will be collected to carry out M&E activities.
- ✓ **Monitoring plan:** Specification how monitoring will be carried out, its periodicity and for which indicators.
- ✓ **Evaluation plan:** Evaluation design that can be used to measure changes, the methodology and detailed information on the impact, outcome, and Sub-Project specific output indicators.
- ✓ **Reports and dissemination methods:** Determine how the information from each of the reports will be analyzed, presented and disseminated.

The following section addresses these elements for the proposed Programme's Monitoring and Evaluation system.

4. Monitoring and Evaluation System (M&E) for Programme performance

4.3 Organizations responsible for implementing M&E activities

The Inter-American Development Bank (IDB) as the AE will supervise the Programme applying the IDB project cycle (described in Section 1). The Programme will create both M&E systems and respective project selection and monitoring tools to be applied by the executing entities⁴ and to be supervised by the IDB.

The AE will support the EEs systemize the data needs, develop, and implement tools, which are used within the EE's M&E and Safeguards process. Figure 2 provides an Overview of the Programme's M&E.

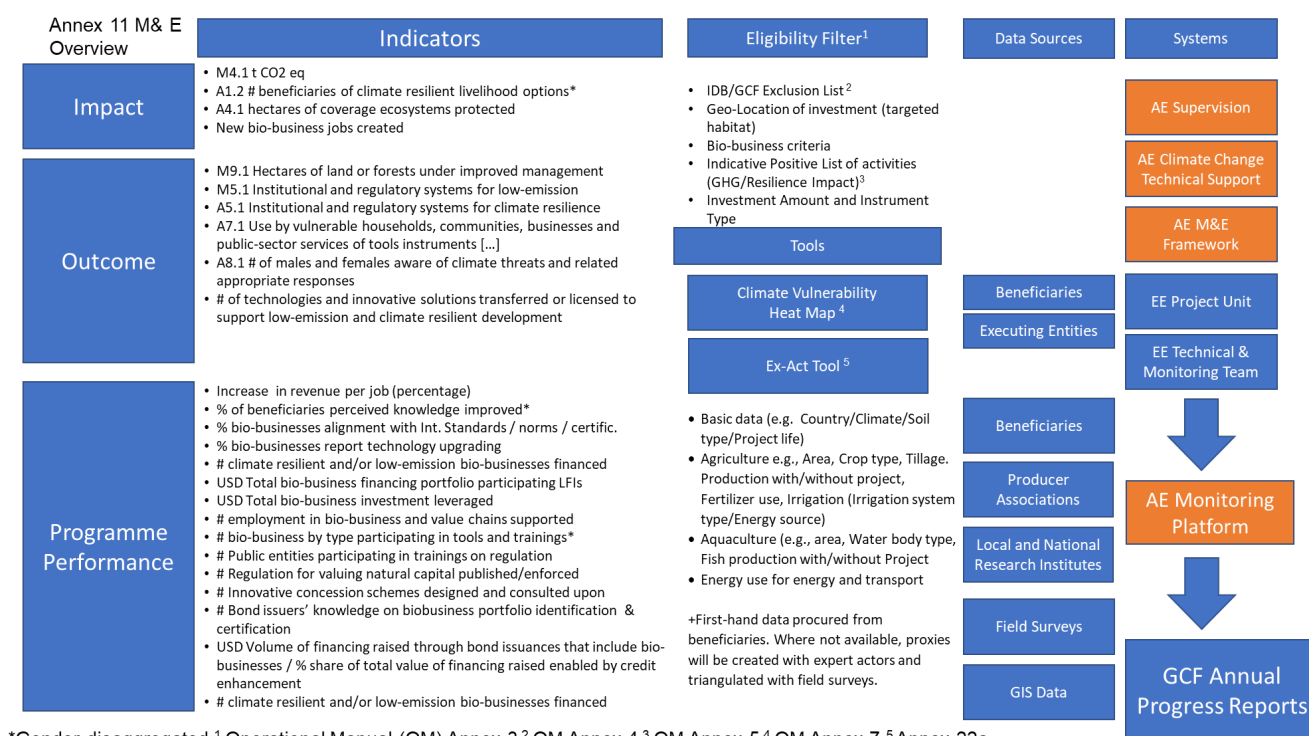
⁴ With technical assistance funds.

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The data baseline availability and gaps will be identified through detailed feasibility studies. For supervision and project selection, the AE will support EEs in strengthening internal capacities for project selection following the Programme's eligibility filters and compiling baseline data from beneficiaries and complementary data sources (see *Eligibility Filters* and *Data sources* in Figure 2). For monitoring, the AE will guide the EEs in compiling the existing data and combining it with external field data and Global Information System (GIS)/Satellite Data so that over time internal EE capacities are built to learn from the respective Sub-Project results.

Figure 2. Overview Programme M&E



*Gender-disaggregated ¹ Operational Manual (OM) Annex 3 ² OM Annex 4 ³ OM Annex 5 ⁴ OM Annex 7 ⁵ Annex 22a

4.4 Information and data collection and maintenance sources

Key data sources: As previously described, the sources of data will include primary and secondary information, depending on the level of the indicators that the Programme intends to report. These include Sub-Project level monitoring platforms from EEs that collect data based on supervision of individual investments, field surveys, and national and sub-national statistics. Data at the investment level will need to be declared by the beneficiaries of the loans themselves. When applicable, the EE will be responsible for collecting the information on their portfolios and will report it to IDB. Some of the key data sources include:

- Direct information collected from final beneficiaries on investments supported by the Programme;
- Information collected and maintained by EE through registries (i.e., NDBs and their network of first tier financial intermediaries, organizations supporting equity investments);

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- National and sub-national statistics and databases on economic activities, environmental and biome data;
- National and sub-national climate change-related data (REDD+ registries and/or forest coverage information maintained by forestry services/ministries of environment and agriculture / sub-national governments, national communications, GHG inventories, emission factors, information on forest coverage);
- Information available from technical extensionists, academia and NGOs collecting and maintaining data relating to value chains, forestry cover, climatic risks, etc.

Data collection: For every Sub-Project implemented by EEs, data will be collected by the EEs from specific investments, as part of the direct supervision of individual operations and investments. This data will be collated in a local internal registry and then shared with the AE. The EE will collect type, amount, maturity and interest rate for each investment loan, the location of the branch or first-tier institution, and the type of borrower. Data procured directly from beneficiaries includes basic data such as the plot size, past-use and future use (crop) of the land as well as soil type and project life. For aquaculture investments data on the area, fish type, current and future production are collected from EEs. Where available directly from beneficiaries, EE will also collect data on fertilizer and irrigation use. As a back-up in case that beneficiaries cannot provide this first-hand data, proxies will be created with expert actors. This information will be updated through continuous monitoring and sampling of investments using fields surveys. Additional means of data collection will be used to complement the data provided by beneficiaries and experts. This data includes using digital technologies (i.e. georeferenced data, climate and forest and land cover data) as well as databases maintained by national and sub-national governments, and NGOs about land use and forestry cover. Furthermore, local groups (local agricultural extension workers, first tier financial intermediates, academic and technical groups and NGOs) will provide additional context-dependent quantitative and qualitative data.

In some cases, participatory monitoring will be applied where civil society and local stakeholders will provide local specific context from their perspective to enrich the quantitative data gathering.⁵

Focus groups will be mainly aimed at providing qualitative evaluations of interactions between people, to feed into and enhance the understanding of quantitative indicators (this methodology is explained in the next section). Additionally, the beneficiary sub-sample data disaggregated by crop will be collected. This initial data (henceforth monitoring pilots) will enable the AE to understand how the activities are progressing and how beneficiaries are engaging with the Sub-Project in general, and to uncover bottlenecks in the information and data transfer between EE and LFI and beneficiaries, and support adaptive management to address challenges in capturing data and revising the clarity of criteria and data templates used.

Along these lines, the following data will be procured to enhance periodic monitoring reports:

- Number of demonstration plots carried out per Sub-project component (loan, guarantee, equity). This information is provided by the producer associations.
- Data collected by the M&E team during baseline, midline and end-line assessments. Also, data collected from the monitoring pilots, which will be carried out at specific times to obtain information on beneficiary sub-samples.

⁵ Participatory monitoring approaches are contemplated in the Stakeholder Engagement Plan under the framework of Alliances.

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- Reports for each component on the activities carried out every six months (for IDB systems) and annually for reporting to the GCF.
- Participation and attendance lists for training courses for extension technicians and/or staff of national development banks, and/or first tier financial institutions/provided by producer associations and those responsible for each component where the activities were carried out.
- Participation and attendance lists for activity sessions to share information and knowledge (internships, demonstration tours and experience exchanges, among others) to beneficiaries (all value chains) and people from the relevant institutions, including executing entities, and intermediaries, involved.
- Participation and attendance lists for education and training activities (workshops, seminars, strengthening academic programs and training for scientists) to beneficiaries (all value chains) and people from the relevant institutions, including executing entities, and intermediaries, involved.

Depending on the periodicity of the report, all available and necessary information will be collected and processed by the AE monitoring team. Executing entities are responsible to send the investment specific data. Data will be handled to ensure confidentiality and privacy. Once the information is available, it will be reviewed and cleaned as necessary before analyzing it. The information will then be analyzed and organized according to the indicators proposed in Table 1.

Data maintenance registries / local monitoring platforms

As part of component III.3, each Sub-Project will develop a standardized data templates to create local registries (local monitoring platforms) which will enable the EEs to report to the AE the information related to activities implemented and also support the monitoring of the results.

Local registries will be designed based on the components and focus areas and will include different modules. These registries will be used to centralize the information that will aid the M&E process. It will store data during the Sub-Project implementation, which will be used for further analysis and collect lessons learned. Every Sub-Project will have EE focal points to maintain and update information in the registries. The development of registries will benefit from technical cooperation from the Programme and will be developed closely with support and supervision of the AE.⁶

The AE will aggregate all reports by local registries for its reporting in the GCF for Annual (APR) reporting.

⁶ The IDB has existing experience with supporting National Development Banks in enhancing their monitoring capacity. Please see IDB, 2019 [Diagnosis of the situation of monitoring and evaluation in public development banks in Latin America and the Caribbean] [Diagnóstico de la situación del monitoreo y evaluación en la banca pública de desarrollo en América Latina y el Caribe](#) ; IDB, 2020. [Conceptualization of a development measurement system for development finance institutions] ; [Conceptualización de un sistema de medición del desarrollo para instituciones financieras de desarrollo](#) ; IDB 2020. [Liquidity or Capital?: The Impacts of Easing Credit Constraints in Rural Mexico \(iadb.org\)](#) ; IDB, 2016. [The Impact of the Lending Program for the Productive Development and Employment Generation of the San Juan Province](#) ; IDB, 2016. [Risk management in value chains: A guide to program design] [Gestión de riesgos en cadenas de valor: Guía para el diseño de programas](#) ; IDB, 2017 [Financing of the agri-food sector and rural development] [Financiamiento del sector agroalimentario y desarrollo rural](#) ; IDB 2014. [Managing Environmental and Social Risks A Roadmap for National Development Banks in Latin America and the Caribbean](#)

4.5 Monitoring reporting system

Annual reports

These reports will be accompanied by semi-annual monitoring and will focus on assessing the activities carried out in the year while complementing the information with other outcome indicators. Furthermore, annual reports will include year-long lessons learned based on the monitoring process and will highlight activities deemed as achievements by each component. This document will be very valuable for decision-making processes.

These reports will have a specific template and will provide concise and useful information. The reports will be presented by executing entities to the AE for semi-annual reports and to the GCF for Annual (APR) reporting.

Final report

An end-of-Programme report will be developed and will include achieved outcomes vis-à-vis planned outcomes. This information will be disaggregated by crops and by gender where appropriate.

5. Process Evaluation

Process evaluation differs from periodical monitoring processes that focus on some indicators mainly related to Sub-Project development. Typically, monitoring focuses on inputs, activities, and outputs, although it can sometimes consider outcomes, for example, when it assesses the progress of Programme objectives. In the case of this Programme, the process evaluation will be under the responsibility of the AE M&E Unit and conducted at Sub-Project level. The AE passes on the M&E requirement to the EE and supports in enhancing of existing capacities.

4.6 Methods

In this context, it is suggested that the process evaluation be carried out at three levels: (a) micro or household level (producers and their households); (b) at the meso or organizational level with a focus on producer associations (under the technical cooperation); and (c) at the macro level, in terms of influence on policies related to climate change.

3.1.1 Micro level. In the evaluation at the producer and household level, the basic question is: What is the impact of the Programme intervention on the results identified? This implies comparing a person with and without the intervention (the other characteristics/variables must remain constant). However, as this is not possible, methodologies have been developed to establish a valid control group. According to the GCF, an independent agency will carry out an external impact evaluation at the end of the Sub-Project. It will use the data collected in the baseline, med term, and endline. However, the Sub-Project M&E team will use the data to estimate the indicators for the monitoring and evaluation process.

3.1.2 Meso level. (Strengthening producer associations on climate change) uses a qualitative and quantitative analysis based on semi-structured interviews with key actors and discussion groups in each of the producer associations involved. Representative surveys will also be applied to producer associations' technicians regarding their perception of the information received and its use.

3.1.3 Macro level. It includes the Sub-Project's possible analysis on changes in government climate change policies, at different national, departmental or local levels. A review will be carried out to assess the policies designed at the different levels and this evidence will be supplemented with information generated by key informants.

4.7 Data collection

In general, data collection is often the most expensive part of an evaluation, regardless of whether the field work is outsourced or done in-house. The collection of quantitative data will be outsourced, to mitigate any bias caused by conflicts of interest. The Programme's AE M&E team will be responsible for designing the collection methods and conducting training. Data collection will be done through devices, and will feed the Programme's monitoring platform. Independent firms will be hired to collect baseline, midline and end-line data.

5 Monitoring, Reporting and Verification of GHG emissions reduction

Monitoring, Reporting and Verification (MRV) is a reliable and useful planning tool for countries that need reliable information on their emissions and actions, both locally and nationally.

An MRV system allows standardizing and verifying processes for measuring, monitoring, collecting and managing data, and reporting on climate change related information. This information is necessary to demonstrate compliance with national and international goals, and to ensure the quality and consistency of data reported. The MRV system must monitor GHG emissions and the implementation of mitigation measures and their impact on reduction. Furthermore, the MRV must monitor climate change management financing. Likewise, this system must follow up on the adaptation measures undertaken by the country, and also monitor, report and evaluate the implementation and impact of these measures.

In the context of the proposed Programme, the objective of the MRV system (monitoring platform) is to monitor progress and results of mitigation actions that will be implemented in several biobusiness value chains following certain eligibility criteria (Figure 2 under Eligibility Filter).

The guiding principles for a transparent MRV framework are also useful, among others, for the preparation of the National Inventory of Greenhouse Gases (INGEI), national communications, the BUR and other reports generated as part of each participating countries MRV. These guiding principles are reliability, comparability, consistency, accuracy, completeness, comprehensiveness, relevance, and transparency, in addition to avoiding double counting. Detailed descriptions are listed in the table below.

5.1 Data collection

The general objective of MRV is to identify and evaluate the impact of the adoption of low-carbon technologies in the agricultural sector, by:

- Generating primary information on emissions in conventional production systems and sustainable systems in the main producing regions of each biobusiness crop and activity in the country.
- Improving and ensuring quality information on GHG emissions and reductions associated with the implementation of mitigation actions in the Sub-Project implementation areas.
- Providing timely information to monitor the progress of the different commitments regarding mitigation.

- Improving transparency and accountability to build trust between donors and recipients and increase the effectiveness of mitigation actions.
- Increasing the visibility of efforts and reporting to different actors on the impact of mitigation measures.

5.2 Activities

Since investment activities largely consider community behavior change, the MRV system establishes a monitoring mechanism that will include:

- The generation of emission factors: prior to the massive implementation of mitigation technologies, pilot plots will be implemented according to productive typology, prioritized region, cultivation and prioritized mitigation practice, in order to evaluate the performance of the mitigation potential of the practices compared to conventional production systems.
- Survey and counting protocol: once the massive technology implementation process begins, survey and counting process will be carried out annually. The surveys will enable identifying the productive typology of each intervened producer and the activity data of each property in order to generate the inventory of emissions by intervention.
- Protocol for the evaluation of technology performance: the protocol includes technical sample visits to producers to collect information related to inputs used, performance, areas, among other parameters.

The monitoring mechanism will define measures to monitor:

- Management and progress of project activities and strategies.
- Reduction of GHG emissions.
- The contribution to the sector's sustainable development.

5.3 Scope

According to the proposed guidelines for the MRV System, the MRV of the proposed Programme will focus on measuring emission reductions according to the emissions baseline scenario. The AE will report data on emissions savings as well as methodologies, coverage and activities, and all quantitative and qualitative information reported for mitigation measures will be verified. The base data will come from beneficiaries and proxies where first-hand data is not available. Annex 1 on the Ex-Act Tool provides an overview of how the inputs for activities have been assessed as follows and are here replicated as examples on what data would be required to assess the avoided/sequestered t CO₂ indicator.

Annex 1 Ex-Act Tool Example of Activities and their Carbon Impact calculation

1. Acai (EX-ACT) 6.1 tCO₂e/ha/annum net sequestered/avoided in project scenario.
 - Intervention: Poorly managed Acai systems are to be intensified and improved (irrigation). This leads to a higher carbon stock in biomass and soil carbon stocks.
 - Carbon Monitoring: height of palms and stand density should be monitored in intervals of 1-5 years
 - Baseline: It is assumed that the baseline is a suboptimal Acai system with slightly degraded soil carbon stocks of 35 tC/ha and reduced growth of 0.5 tC/ha/annum. This will be the benchmark and is thus considered a zero-baseline → baseline sequestration rate: 0 tCO₂e/ha/annum
 - Investment: This Acai system is converted to a productive Acai system, improving soil beyond the average up to 52.5 tC/ha. Tillage and input factors were assumed at 1 and a biomass growth rate of 0.91 tC/ha/annum is used for biomass growth, which is a standard agroforestry factor used in the 4th national inventory report by Brazil → Investment sequestration rate 6.1 tCO₂e/ha/annum
 - a. Implementation phase: 3 years, capitalization phase: 17 years
2. Aquaculture: an initial modelling of aquaculture-related GHG emission reductions was done to develop an indicative sense for the range and order of magnitude of potential mitigation benefits associated to this value chain. Based on such modelling, a net abatement factor of 14.4 tCO₂e/ha/annum was estimated for the Investment scenario, where improved productivity and expansion of aquaculture production is expected to result in some degree of reduced beef production. To be conservative and in spite of the modelling work conducted, no GHG emission reductions are counted towards projected economic benefits of the Programme from the share of investments estimated to support the aquaculture value chain. During the implementation stage AE will continue to monitor developments around international validation of related methodologies; and in case adequate methodologies become available it will consider them for assessing mitigation benefits of aquaculture projects.
3. Cacao improved (EX-ACT): 4.3 tCO₂e/ha/annum net sequestered/avoided in project scenario.
 - Intervention: Low productivity cacao is improved towards a productive cacao system. This leads to a higher carbon stock in biomass and soil carbon stocks. As a proxy land use the option "Agro-forestry" was selected to reflect Cocoa agroforestry.
 - Carbon Monitoring: Tree diameter, height, and stand density should be monitored in intervals of 1-5 years
 - Baseline: It is assumed that low productivity cacao with low C inputs is the baseline land use: Tillage factor 1, input factor 0.92. The aboveground and belowground biomass growth is assumed to be 20% below the IPCC default due to suboptimal management → baseline sequestration rate: 7.2 tCO₂e/ha/annum
 - Project: Through improved inputs and better soil management the system moves towards more productive cacao with higher biomass (similar to IPCC default). Tillage factor 1.1, input factor 1 → project sequestration rate 11.5 tCO₂e/ha/annum
 - Implementation phase: 3 years, capitalization phase: 17 years.

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4. Cacao on degraded land (EX-ACT): 15.2 tCO₂e/ha/annum net sequestered/avoided in project scenario.
 - Intervention: Cacao plantations are established on degraded land. This increases the carbon stock in biomass and soil.
 - Carbon Monitoring: Area of established plantation, survival rate, tree diameter, height, and stand density should be monitored in intervals of 1-5 years
 - Baseline: It is assumed that the baseline scenario is degraded land according to IPCC definition with a soil carbon stock of 17.2 tC/ha and biomass growth of 1 tC/ha/annum. This will be the benchmark and is thus considered a zero-baseline → baseline sequestration rate: 0 tCO₂e/ha/annum
 - Project: As a proxy land use the option "Agro-forestry" was selected to reflect cacao agroforestry with a growth of 2.6 tC/ha/annum and a final soil carbon stock of 52.5tC. Trees are not harvested. Tillage and input factors were assumed to be 1. → project sequestration rate 15.2 tCO₂e/ha/annum
 - Implementation phase: 3 years, capitalization phase: 17 years.
5. Coffee improved (EX-ACT): 4.3 tCO₂e/ha/annum net sequestered/avoided in the project scenario.
 - Intervention: Low productivity coffee is improved towards a productive coffee system. This leads to a higher carbon stock in biomass and soil carbon stocks. As a proxy land use the option "Agro-forestry" was selected to reflect Coffee agroforestry.
 - Carbon Monitoring: Tree diameter, height, and stand density should be monitored in intervals of 1-5 years
 - Baseline: It is assumed that low productivity coffee with low C inputs is the baseline land use: Tillage factor 1, input factor 0.92. The aboveground and belowground biomass growth is assumed to be 20% below the IPCC default due to suboptimal management → baseline sequestration rate: 7.2 tCO₂e/ha/annum
 - Project: Through improved inputs and better soil management the system moves towards more productive coffee with higher biomass (similar to IPCC default). Tillage factor 1.1, input factor 1 → project sequestration rate 11.5 tCO₂e/ha/annum
 - Implementation phase: 5 years, capitalization phase: 15 years.
6. Coffee on degraded land (EX-ACT): 15.2 tCO₂e/ha/annum net sequestered/avoided in project scenario.
 - Intervention: Cacao plantations are established on degraded land. This increases the carbon stock in biomass and soil.
 - Carbon Monitoring: Area of established plantation, survival rate, tree diameter, height, and stand density should be monitored in intervals of 1-5 years
 - Baseline: It is assumed that the baseline scenario is degraded land according to IPCC definition with a soil carbon stock of 17.2 tC/ha and biomass growth of 1 tC/ha/annum. This will be the benchmark and is thus considered a zero-baseline → baseline sequestration rate: 0 tCO₂e/ha/annum
 - Project: As a proxy land use the option "Agro-forestry" was selected to reflect cacao agroforestry with a growth of 2.6 tC/ha/annum and a final carbon stock of 52.5tC. Tillage and input factors were assumed to be 1. → project sequestration rate 15.2 tCO₂e/ha/annum

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- Implementation phase: 3 years, capitalization phase: 17 years.

For the activity 7, a timber growth model and a long-term average approach was used to calculate the emission reductions.

7. Timber-Parica: 6.5 tCO₂e/ha/annum net sequestered/avoided in project scenario.

- Intervention: Afforestation of degraded land leading to higher carbon stocks in biomass and soil
- Monitoring: Typical forest monitoring of area of afforestation, survival rate, tree diameter, height, stand density, etc.
- Baseline: It is assumed that low productivity degraded land is the baseline scenario. This will be the benchmark and is thus considered a zero-baseline → baseline sequestration rate: 0 tCO₂e/ha/annum
- Project: planting of timber plantation with mean annual increment of 20 m³/ha/a, with 3 thinnings and rotation of 20 years, afforestation of non-forest land and a growth in soil carbon stock of 1.7 tCO₂/ha/annum. Conservatively, there is no accounting of harvested wood products. → project sequestration rate 6.5 tCO₂e/ha/annum
- Implementation phase: 7 years, capitalization phase: 13 years.

Activity 8 on NTFP used an example of similar interventions in Peru as certified in a voluntary carbon project (<https://registry.verra.org/app/projectDetail/VCS/868>) to derive a GHG estimate.

8. NTFP (Brazil nut): 1.4 tCO₂e/ha/annum net sequestered/avoided in project scenario.

- Intervention: Protection of forest through intensification of forest-based NTFP value chain utilizing Brazil nut enrichment and other measures. This shall provide an income from forest and address drivers of deforestation (cattle, charcoal, etc.)
- Monitoring: Should be linked to NFMS and utilize typical REDD+ monitoring approaches
- Baseline: Degradation or underutilization of NTFP value chain leads to long-term deforestation. Based on the example project in Peru, this leads to net emissions of 2.87 tCO₂e/ha/annum. As shown in figure 3 below on Benchmarks for AUDD this lies within a credible range. For conservativeness, we apply a margin of safety of ca. 50% → baseline emission rate 1.4 tCO₂e/ha/annum
- Project: Through enrichment planting and NTFP intensification deforestation can be prevented. Note: This is a simplified demonstration. Normally, deforestation can only be reduced but not prevented. However, this is already considered in the net value. On top, the feasibility study indicated in its modelling depending on already existing degradation the intervention could lead to a sequestration of 5tCO₂e/ha/annum. This will be conservatively excluded to also account for intervention areas with lesser degradation levels → project emission rate 0 tCO₂e/ha/annum

Abatement of value chain 9 (community tourism) was estimated based on reducing deforestation at the rate of a reference carbon forestry project. The project team compared this reference project to a global benchmark (see Figure 3). The value used in the calculations for the GCF proposal (1.87 tCO₂e/ha/annum) are conservative compared to global benchmarks (2.4 tCO₂e/ha/annum). A quick summary of the

reference project applied can be found in Table 1. The monitoring should be linked to the particular NFMS similar to the approach used in the reference project.

REDD+ PROJECTS

Benchmarks

Global benchmarks – carbon potential	Based on assessment of VCS project database
<ul style="list-style-type: none"> • 2-4 tCO₂ ha⁻¹ year⁻¹ • Economically viable area: 10,000 ha • Peatland conversion: 18, 37, and 73 tCO₂ ha⁻¹ year⁻¹ for boreal, temperate and (sub)tropical peatlands 	<ul style="list-style-type: none"> • Verified rate: APD 39.2 (2-247) tCO₂ ha⁻¹ year⁻¹; AUDD 2.6 (0.1 -19) tCO₂ ha⁻¹ year⁻¹ • Av areas: APD 4,745 ha; AUDD 97,817 ha (< 100 – 1.4 Mio ha) • +5% (AUDD) and -3% (APD) verified credits compared to ex-ante • 12% and 19% risk buffer for AUDD and APD

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Figure 3: Global benchmarks for REDD+ project

9. Community tourism: 1.87 tCO₂/ha/annum net sequestered/avoided in project scenario.

- Assumption that community tourism is reducing deforestation.
- Based on verified credits generated by CIMA reference project in Peru.⁷

Box 1 – Summary of reference project used for value chain⁹

CIMA Project – Key parameters

- Developed in the Cordillera Azul National Park extends into the Peruvian Amazon, in the northeast of Peru, in the Amazonian regions of Loreto, San Martín, Huánuco and Ucayali.
- Deforestation is driven by subsistence farming (grassland and agriculture).
- The project area is 1,351,963 hectares.
- The park's buffer zone was officially recognized by the Peruvian government in a Supreme Decree establishing the park. In 2007 the buffer zone was expanded by legislation, resulting in an area of 2,301,117 hectares.
- Under VCS, the project is using VM0007 REDD Methodology Modules (REDD-MF) for unplanned frontier deforestation for carbon stock and avoided emissions

⁷ Centro de Conservación, Investigación y Manejo de Areas Naturales – Cordillera Azul. CORDILLERA AZUL NATIONAL PARK REDD PROJECT. Lima, Peru..

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assessment. The signing of the 20-year management contract in 2008 served as the start of the carbon project.

- The project's primary objective is to prevent deforestation in PNCAZ by protecting the park, capacity building for sustainable land use, strengthening relationships with local, regional and national government agencies.
- This project is a conservation project designed to maintain the project area's High Conservation Values (HCVs). The project falls within the Un-planned Deforestation, as the baseline contemplates the conversion of forest land to non-forest land primarily for Agriculture and Pasture, due to unauthorized actions by external agents.
- The ex-ante projections assume that no deforestation, or other sources of emissions, occurs in the project in the with-project case, i.e. that park protection activities are successful in preventing land clearing within the park boundary. Park protection and border patrolling, as well as community awareness programs, are key components to the project implementation. CIMA has a proven track record from 2003 to 2008, of effective protection work and conflict resolution.
- The activities to be implemented are designed to combat the greatest driver of deforestation in the project zone which is the advancement of the agricultural frontier.
- The estimates of the areas of Unplanned Deforestation derived from the analysis of remotely sensed data.
- Carbon pools included: above and below-ground and deadwood. Litter is not included due to its generally not significant contribution to total carbon stocks; and soil organic carbon not included – it is a conservative approach since under the baseline the emissions from soil are expected to be larger (reduction of soil carbon stock from conversion of forests to agriculture, in particular).

II) GHG calculation approach

Utilizing the per hectare abatement factors estimated in the previous section, GHG emission reduction are calculated in the Economic Model (Annex 3) utilizing the following general approach:

1. Allocation of Programme Capex investment resources (i.e. GCF plus additional investment resources mobilized for CAPEX investment; total of USD 751M) is generally made pro rata with market financial demand, as evaluated in the Feasibility Study (Annex 2).
2. Taking such allocations per value chain, the number of hectares supported by the Programme is calculated for each of them based on average investment per hectare values, based on data gathered in the Feasibility Study.
3. GHG abatement is subsequently calculated by multiplying -for each value chain and type of investment- the relevant number of hectares, the per-hectare/year abatement value and the asset lifetime (years) of each investment.

Annex 22b summarizes these calculations and results, for each value chain.