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1. Objective of the Operations Manual.

The objective of this Operations Manual is to provide additional operational detail on some implementation aspects of the IDB-GCF '*The Amazon Bioeconomy Fund – Unlocking private capital by valuing bioeconomy products and services with climate mitigation and adaptation results in the Amazon'* Programme (the "Programme").

The main topics covered by this Manual include the definitions of implementation arrangements (including the IDB's Programming Process that will be followed for allocation of Programme resources across participating Amazon countries) and eligibility criteria for investments and financial intermediaries, among other.

2. Main definitions.

The concept of **bioeconomy** refers to any economic activity based on the use of natural renewable biological resources, from both land and ocean, to obtain food, materials, and energy in a sustainable way without compromising their availability for future generations. It comprises activities related to the invention, development, production, and use of biological products and processes. For the purposes of this proposal, in the Amazon, the bioeconomy aims to be climate and nature-positive, encouraging sustainable land-use practices that lead to reduced emissions, higher carbon stocks, net gains in natural capital, and increased climate resilience of vulnerable populations and ecosystems.

A bio-business is a business that responsibly integrates biodiversity in its core processes, incorporates strategies and tools for climate mitigation and adaptation, strengthens the inclusion of local communities, indigenous peoples and traditional knowledge, and internalizes the costs for the sustainable use and conservation of natural resources. As part of the bioeconomy, bio-businesses represent an opportunity to: (i)Reduce emissions and increase ecosystem carbon stocks by expanding the forest-based economy, and/or; (ii) Support ecosystem protection, regeneration and adaptation, increasing social, climatic and economic resilience, and (iii)Promote and diversify the productive matrix through more efficient and sustainable use of natural resources, channeling private capital to the conservation, restoration and sustainable use of ecosystems, including soil, or (iv) Contribute to a more sustainable and resilient Post-COVID-19 recovery with socio-economic co-benefits for the local population and indigenous peoples and seek the participation of women in all financial components.

A **bio-businesses investment** supports business models and technologies that sustainably use natural capital and forest assets, in the context of the bioeconomy. More specifically, it is directed to strengthen practices such as conservation and preservation of ecosystems, recyclability and/or use of recycled materials, , efficient use of renewable resources, management systems or certifications of such practices (linked to climate change mitigation) and/or location considerations based on country level EbA hotspots, local communities' poverty levels, proportion of natural-vegetation cover, exposure to climate change (linked to climate change adaptation). It is an investment that relies on the sustainable use of biodiversity products, taking into account environmental, social and economic sustainability criteria. For the purpose of this proposal, bio-business investments are broadly categorized as sustainable intensification and/or extensive ecosystem conservation investments in any of seven sectors: perennial agriculture, agroforestry, aquaculture, forestry plantations, non-timber natural forest products, nature tourism and ecosystem services.

3. General description of the Programme: The Amazon Bioeconomy Fund.

The Programme aims to mobilize private investment in bio-business by providing financing, incentives and technical cooperation to promote the value of natural capital and sustainable forest assets in the markets of Brazil, Colombia, Ecuador, Guyana, Peru and Suriname.

The Programme has a regional, multi-stakeholder approach, including investors, banks, project developers, producers and specialized institutions. It has also a dedicated Gender & Diversity Action Plan connecting projects and action plans it has a Multidimensional Stakeholders Inclusion Plan partnering with Indigenous People, Afro-descendants groups, Campesinos, and local traditional communities to assure both meaningful participation and development with identity. From the governance perspective an Advisory Panel integrated by different stakeholders is designed to improve the governance and cohesion of the Amazon initiatives. Focusing and enabling the conditions to increase the flow of funds to bio-businesses that can reduce the impact of climate change, safeguard local livelihoods and promote more inclusive development.

The overall goal of the Programme is to reduce GHG emissions and increase the resilience of targeted value chains and ecosystems in the Amazon region by enabling the conditions to increase the flow of funds to bio-businesses in the bioeconomy of the Amazon.

The Programme will help overcome technical, financial and knowledge barriers faced by bio-businesses, ensuring required financial resources and capacity building to increase the availability of bankable investments.

Targeted financing schemes and channels, such as blended finance, high-risk capital investment, thematic bond issuances and shared-risk models designed to meet bio-business needs can make financiers more willing to serve the sector and developers more willing to invest without risking profitability.

4. Structure of the programme.

The Programme is structured along the following components:

Component I. Financing solutions for bio-business:

Support to private bio-businesses and their supply chains through dedicated financing solutions designed to help overcome the prevailing financing challenges for the sector in each country. GCF resources will be deployed as follows:

Component I.1. Sovereign investment loans ("SIL") and investment grants ("IG") to be provided by IDB to Executing Entities ("EE")[1] will allow them to finance private investments via on-balance earmarked dedicated financing lines and derisking financial solutions, and/or through dedicated Trusts or Special Purpose Vehicles (SPV). Using sovereign loans (both funded with GCF and/or IDB resources) and investment grant resources from GCF, EEs will be able to offer various financial instruments that can provide terms (e.g., tenor, price, amortization profiles, collateral requirements) more adequate to bio-businesses financial and risk profiles, as follows:

a) Sovereign Investment Loans: Using funding from SIL, EE will be able provide lending financing in various modalities (e.g., medium and long-term individual loans for bio-businesses in relevant value chains; associative loans for anchor companies; and factoring products) to beneficiaries directly or via local financial institutions (LFIs) that would extend them to beneficiaries.

b) Investment grants: Using funding from IGs, EEs will be able to structure derisking financial solutions tailored to the needs of LFIs in each country-specific context to help them properly manage incremental risks when -with the objective of enhancing and expanding their credit offer for investments eligible under this Programme- they go beyond their business-as-usual financing terms, market segments and type of businesses they finance. This incremental risk might materialize -among other- in the form of: i) longer tenors / duration of loans; ii) more flexible repayment terms / amortization schemes; iii) longer grace periods (more attuned to the revenue profile of some biobusinesses with long growth periods); iv) alternative or reduced collateral requirements; v) extending credit to companies with a higher risk profile (e.g. earlier stage / less mature companies, with less robust off-take conditions -for value chains still developing and with less consolidated markets-, more vulnerable to climate/agricultural risks, etc.). Derisking instruments capable of helping manage or offsetting these incremental risks, and that EEs will structure and offer with the support of IGs include:
   (1) first or second loss portfolio guarantees to mitigate the higher risk that LFIs would assume when financing bio-businesses; and
   (2) *pari-passu* guarantees that support credits so that potential losses are distributed proportionally between the EE and the LFI, when applicable.

   The role of IGs in this case would normally be to take a first loss position that allows the EE itself (which -as a financial institution- is also subject to risk-taking and economic restrictions) to offer risk-sharing products that can go sufficiently far to enable financing of investments that would otherwise fall beyond the risk/return preferences of LFIs.

   The IGs under this Component I.1 are provided by the GCF as reimbursable grants. Details on eligibility criteria for the use of IGs for the purposes stated under this component is presented in section 6.5.

   Component I.2. Equity investments and innovation grants (in the form of Contingent Recovery Investment Grants, CRIG) to enable risk-capital investment flows to early-stage bio-

[1] If the borrower is not the EE, the SIL agreement would require that the borrower and the EE enter into an agreement for the transfer and use of funds provided under the SIL agreement. If the borrower is not the Sovereign, in accordance with IDB Policy applicable to SIL to Public Sector Development Agencies and other national decentralized bodies, IDB requires the government's joint and several guarantee. This policy does not apply with regard to loans to development banks or agencies that have ample financial capacity to meet the obligations they would assume towards the Bank, *provided* that their charters include the provision that all the operations they enter into as borrowers are covered by a joint and several or subsidiary guarantee of the nation.

businesses in the Amazon region in the form of direct equity, investment fund interests, and other first loss and risk-sharing schemes to complement equity from other funds administered by the IDB (such as IDB Lab)[2] and other co financers. Equity will be used for more developed businesses that have passed the pilot phase (minimum viable product phase), have positive revenues and are looking for gaining market traction. Grants will be needed for more incipient businesses (i.e., those still working on a minimum viable product and due to that still have not achieved a steady flow of revenue).

CRIGs will be used for riskier, earlier stage businesses whereby the EE is transitioning from a non-sustainable business model from a financial perspective to a sustainable one. In other words, it is usually used to support NGOs or businesses that are leaving the pilot phase to start selling a determined product or service. In most cases they don't generate revenues yet or if they do it's not much. CRIG's repayment is usually triggered by a revenue-generating or liquidity event. For example: an NGO accelerates bio businesses for a fee for the first time or lends on to businesses for a fee plus interest. In case collections surpass an expected level, revenues will be used to repay the CRIG. If that doesn't occur, the CRIG will not be paid back. CRIGs usually don't accrue interest, no collateral is required and amounts are usually between USD 250,000 and USD 750,000 per operation.

First loss equity, on the other hand, will be used to finance more mature, less risky businesses (compared to those supported by CRIGs; and only formal businesses, not NGOs); e.g. businesses that are already generating revenues but not necessarily have achieved break-even. First loss equity is very attractive to private sector investors because it guarantees that, in case the investment results in a loss (and only in a loss scenario), the first loss equity portion of the operation is used to cover such loss, benefiting investors through such partial loss protection. If the investments result in no loss, the first loss equity holder receives returns/gains of capital as all other investors of the operation.

Details on eligibility criteria for the use of IGs under this component is presented in section 6.5.

Component I.3. Technical cooperation to support activities under three categories:

a) Bio-business pipeline development and supervision via:
    (i) supporting capacity of potential beneficiaries,
    (ii) supporting capacity of public or private LFIs[3], and
    (iii) supporting bioprospection, knowledge dissemination and R&D.

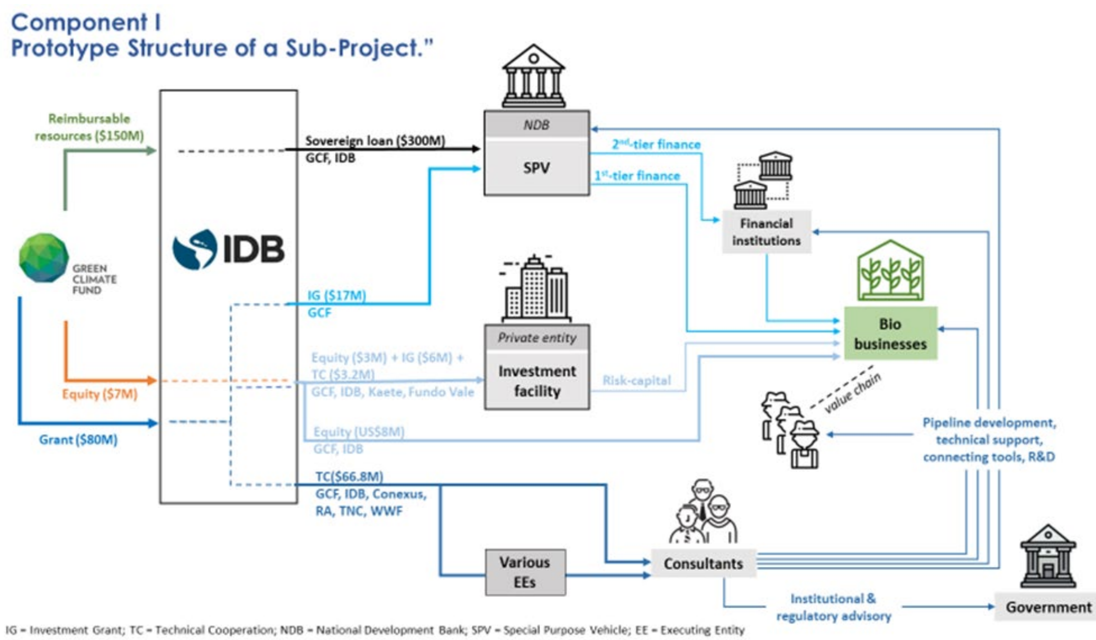
b) Tools for connecting bio-business to stakeholders and markets to help firms in the prototype phase or already operating with a minimum viable product to:
    (i) better connect with stakeholders and match their businesses with investors,

[2] IDB Lab is the innovation laboratory of the IDB Group, responsible for promoting development through the private sector by identifying, supporting, testing and piloting new solutions to development challenges and seeking to create opportunities for the poor and vulnerable populations in LAC. IDB Lab uses flexible tools to test scalable innovations that drive economic and social inclusion. IDB Lab activities are funded with funds under administration by the IDB, principally resources from the Multilateral Investment Fund III.

[3] Annex 7 Climate Risk Management - HeatMapR, provides a geospatial tool that is a framework for physical climate risk screening of investment and loans portfolios and is being used to provide analysis to financial institutions such as large commercial banks and private equity investors. This mechanism can improve the risk identification and management process by FIs.

(ii) greater access to new markets opportunities,
(iii) access incubators/accelerators that support their transformation into scalable businesses, capable of attracting and absorbing funding offered by the Programme, as well as additional private capital, and
(iv) strengthen the presence of women, indigenous, afro-descendant and peasant communities among producers and companies with the possibility of investment, and promote the hiring of women and indigenous people in bio-business.

c) Institutional and regulatory environment. Grants will finance advisory for and/or training of government entities on two main areas:
(i) strengthening of national systems in valuing natural capital/forest assets for streamlining private participation in investments,
(ii) developing and implementing innovative schemes for private participation in the sustainable management of forests and other conservation areas to appropriately frame forest concessions and Public-Private Partnerships (PPP) as efficient policy implementation instruments to deliver sustainable forest management and forest governance plans with local communities.



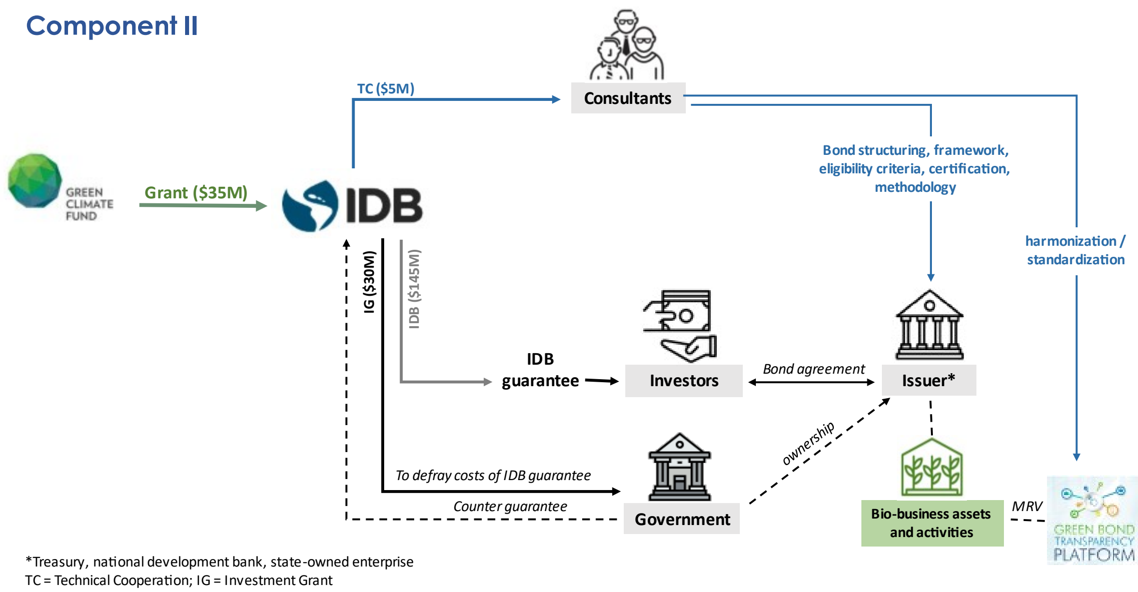
The principal terms and conditions of Component 1 financial products are presented in ***Annex 1.***

Component II: Bond structuring and issuance:

Support to public entities (including national or sub-national governments and NDBs) to leverage capital market financing through the issuance of thematic bonds (those earmarked for specific use of funds, such as green or sustainable bonds) that include bio-businesses. Implementation of Component II will use GCF grant funding in two distinct ways:

Component II.1. Technical cooperation to provide advisory services on how to effectively include bio-businesses in the use-of-proceeds commitments of thematic bond issuances. Activities may include: (i) support for the legal and financial structuring of the bond, including the assessment of credit enhancement options, covered bond structures, co-finance/anchor investment with emerging market bond funds and other guarantee alternatives, (ii) development of the bond framework, including eligibility criteria, (iii) bond certification and methodology, and (iv) harmonization and standardization of bond reporting following international standards, particularly through the IDB Green Bond Transparency Platform (GBTP). The IDB will be the EE for this activity.

Component II.2 Grants for guarantees to deploy credit enhancement instruments for green bonds issued by public entities. IDB will use GCF grants for guarantees proposed under this Component II.2 to address the guarantee cost barrier by reducing the cost of the financial charges of IDB funded guarantees that guaranteed debtors will pay IDB in accordance with IDB policy and as per the guarantee documentation of the guarantee funded with IDB resources. To the extent that IDB receives GCF grant resources for this use, IDB will transfer those resources to assist the guaranteed debtor in reducing the amount of financial charges it has to pay to IDB during the life of the guarantee up to the amount of the grant.



Details on eligibility criteria for the use of IGs with the objectives stated under this component is presented in section 6.5.

Component III. Transversal technical cooperation

This component will accompany the two components above, specifically with activities to support:

a) Inclusion mechanisms for diversity and women in bio-business.

b) Integrated support and strengthening of the ecosystem for Amazonian MSME and local traditional communities and indigenous peoples.
c) Multidimensional Stakeholder Engagement Plan (SEP) to guarantee both the meaningful, regular and timely fashion inclusion of local stakeholders by country, as well as the engagement consistency of all the projects of the Facility vis a vis those local stakeholders (Indigenous People, Afro-descendants, Campesinos, local and traditional communities, etc.).
d) Investment Grants - Small Grants Program (IG-SGP) to leverage and fund bio business led especially by women, Indigenous People, Afro-descendants, and traditional communities to foster economic and social development with the identity of their territories.
e) General advisory services and monitoring and evaluation support.
f) Programme monitoring and evaluation

5. Institutional arrangements for Programme implementation.

5.1. Allocation of GCF resources – IDB's Programming Process

GCF resources under this Programme would be allocated to country-specific IDB projects (Sub-projects) that will be identified and originated in accordance with the regular IDB Programming Process. The Programming Process is the exercise whereby the Bank defines its strategies and programs, including its lending, technical cooperation, small projects, co-financing, and pre-investment activities at the country and subregional level.

The main objective of the programming process is to establish the Bank's strategy vis-à-vis each borrowing member country and subregion and define areas for priority action to foster the economic and social advancement of the country or subregion and to agree with each borrowing member country the bi-annual operational program to be carried out with that country and ensure that such program will contribute effectively and efficiently toward the country's development goals.

The programming process is supported by and complemented with country and regional economic and sector studies. This process requires on the part of the Bank a multidisciplinary approach and ongoing, structured dialogue with its borrowing member countries and subregional agencies on key issues for economic and social development. The country programming process enables an ongoing updating of the Bank's Operational Program ("Pipeline").

The country operations programming must be consistent with 1) the socioeconomic development needs and priorities of the individual countries concerned; 2) the Bank's overall medium-term operational targets, its guidelines, and general strategies for achieving these targets, and its operational policies; 3) forecasts as to funding available; and 4) for the purposes of operations with GCF financing, the terms and conditions of the FAA.

The Programme eligible countries and the Bank will jointly identify and prepare Sub-projects to be incorporated to the Bank's active pipeline. These initiatives will be identified in accordance with the terms and conditions of the meaningful, regular FAA, and through several subsequent important tasks: diagnostic studies, objective formulation, analysis of alternatives, and selection of relevant financial instruments in each case[4].

At each individual Sub-project level (for Sovereign Investment Loans, Investment Grants and Technical Cooperation Operations of more than US$3 million, and IDB funded guarantee operations), the results

[4] At the time of preparation of this Manual the IDB is in active discussion with potential clients to confirm project opportunities that may be incorporated into the Bank's Operational Program under the Programme, and which collectively are expected to represent its backbone. Such potential pipeline is currently reflected in the Funding Proposal.

of these tasks are then, once incorporated into the Bank's Operational Program, developed - into a Project Profile (PP).[5] The PP provides basic information on the Sub-project, including its justification and objectives, the technical aspects and its relevant sector background, the proposed environmental and social safeguards, a fiduciary evaluation, the projected funding amounts, 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 Sub-project operation, its strategy for development, and validates its timeline and resource requirements. Following approval of the PP by the ERM, the Proposal for Operations Development (POD) is drafted. The POD specifies the activities, resources and a timetable that are necessary to prepare and supervise the project.

The POD also includes the Development Effectiveness Matrix (DEM), Monitoring and Evaluation Plan (M&E), and the Economic Rate of Return (ERR). 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.

The Programme will allocate its resources based on confirmed demand and following the individual prioritization agreed with each country under the corresponding Bank's Operational Program. The Programme, however, will actively seek to balance access opportunity for all Programme countries and no individual country should represent more than 60% of the resources approved by the GCF for the Programme. The IDB will work with beneficiary countries to ensure that the Programme benefits all eligible countries, considering the relative size of the economies, weight of the different countries in the Amazon biome, operational capacity, and individual level of ambition.

In the case of activities detailed in component I and III to be executed through IDB Lab, the following considerations are relevant for programing, 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

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5 The processing and approval of technical cooperation operations and investment grants of up to US$ 3 million follow a simplified procedure that concludes with approval of the corresponding Sub-project by IDB Management.

disburse according to the contracts signed with EEs (implementing the project approved in the Donors Memorandum).

5.2. Executing Entities

Executing Entities (EE) refers to any entity that executes, carries out or implements any part of the Programme.

The assessment of the institutional capacity and eligibility of EE will be individually undertaken as part of the preparation process for each Sub-project conducted by IDB, in accordance with its policies and procedures. This assessment includes overall technical capacity, adequacy of information systems, internal and external controls, and recommendations on any fiduciary risks identified.

Only after a Sub-project has been approved by IDB, the IDB may enter into any Subsidiary Agreement with the relevant EE. Each Sub-project will be prepared, assessed and approved as an individual IDB operation financed with GCF resources under this Programme and, if applicable, with IDB resources or other resources administered by the IDB.

Component I.1.

Eligible EEs will be identified jointly with national governments based on the relevance of their public mandate to the Programme activities, experience in finance structuring and fiduciary management, and track record, including with the IDB.

EEs will be responsible for channeling resources provided by the IDB via sovereign investment loans (funded with GCF and/or IDB resources) and investment grants (funded with GCF resources) to private investments through on balance earmarked dedicated financing lines and derisking financial solutions, and/or through dedicated Trusts or SPVs in the form of various financial instruments that can provide terms (e.g., tenor, price, amortization profiles, collateral requirements) more adequate to bio-businesses financial and risk profiles. To this effect, EEs will enter into funding agreements with eligible LFIs and/or final beneficiaries of private investments. When channeling funds through LFIs, those institutions will provide financing to final beneficiaries of private investments.

EEs will be responsible for the full execution of sovereign investment loans and investment grants in accordance with the Subsidiary Agreements. Such agreements would typically require that, prior to the first disbursement, the EE approves Operational Regulations (OR), in terms previously agreed with IDB. OR will detail specific eligibility and other requirements needed to ensure alignment with Sub-project and Programme's requirements.

Annex 2: *"Institutional Capacity Assessment of Executing Entities (EE)"* describes the due diligence process that will be conducted for each EE.

Component I.2.

Fund managers and/or direct investees will be selected by the IDB Lab through a formal due diligence process, including an integrity due diligence (conducted by the Office of Institutional Integrity of IDB) and an Environmental Social and Governance (ESG) consideration (using IDB's ESG policy).

KAETE Investimentos has been selected for Component I.2 and is already executing initiatives to be scaled up by using the Programme resources.

Institutional capacity assessment and integrity requirements for EE responsible for equity management under IDB Lab initiatives, are detailed in ***Annex 2.***

Component II.2

The implementation of the green bond issuance will be the responsibility of the public entity issuer in accordance with the bond documentation. As part of its project preparation cycle, and prior to the approval of the relevant guarantee operation (i.e., Sub-project), the IDB will conduct an institutional capacity assessment of such public entity.

GCF guarantee grant resources will be allocated for reducing the cost of the financial charges of IDB-funded guarantees when deemed needed to enable the credit enhancement of a certain bond issuance. If there is cancellation and/or a call of the guarantee and the charges paid by the guaranteed debtor up to that moment are less than the amount of the grant, a partial refund of the grant must be made.

Components I.3, II.1, and III:

The execution of technical cooperation resources under this Programme will be done under the IDB Technical Cooperation Policy and related operational guidelines. According to the Policy, IDB may be the EE for technical assistance resources, and/or it may enter into technical cooperation agreements with another EE. The definition of whether the EE would be IDB or a third party will depend on the specific country context and beneficiaries' preferences and capacity. IDB will be planning along with government and potential beneficiaries the detailed deployment of specific technical cooperation components and define on the basis of it the best execution option.

The EE will be determined and assessed as part of the preparation of every specific technical cooperation Sub-project, according to ***Annex 2.***

6. Eligibility criteria.

Specific criteria for eligibility of investments, beneficiaries and intermediation channels is presented below. Eligibility will be further determined by the policies and procedures of the EE in each country and with national regulations.

For the purpose of the eligibility criteria:

- 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.

6.1. Eligible Sub-projects and Investments.

Sub-Projects under Component I and Component II may benefit from direct financing from sovereign investment loans, investment grants, non-refundable technical cooperation or financing funded via capital markets, through bonds.

The eligibility criteria for any investments under Sub-projects (in terms of final use of proceeds of the funding provided or mobilized by the Programme) shall be the same regardless of whether the Sub-project that supports such investments belongs to Component I or II. The only exception is the case of projects supported under Component I.2, where equity and investment grants could not only be utilized in direct support of projects meeting the hereby described eligibility criteria, but also of companies that indirectly enable the development of such eligible projects, by offering solutions that help overcome critical barriers for their development (for example, to enhance market access and product off-take for such businesses).

A general diagram of the application of the eligibility criteria of the specific investments to be supported by Sub-Projects can be seen in ***Annex 3***: "Investments Eligibility process flow chart" below.

The flowchart considers the following elements:

- **Step 1:** The Eligibility process flow starts with the IDB/GCF exclusion list (***Annex 4***); the geographic location of the investment, and whether is located in an exclusion risk or not (all Sub-projects must be carried out in the Pan Amazon[6] in any of the target countries).

- **Step 2:** Compliance with the bio-business/bio-economy definition criteria (i.e. comply with the "Main definitions" above, including respond to that the activity (i) Reduce emissions and increase ecosystem carbon stocks by expanding the forest-based economy, and/or; (ii) Support ecosystem protection, regeneration and adaptation, increasing social, climatic and economic resilience, and (iii) Promote and diversify the productive matrix through more efficient and sustainable use of natural resources, channeling private capital to the conservation, restoration and sustainable use of ecosystems, including soil, or (iv) Contribute to a more sustainable and resilient Post-COVID-19 recovery with socio-economic co-benefits for the local population and indigenous peoples and seek the participation of women in all financial components);

- **Step 3:** Once the sub-projects have met those initial conditions, they should comply with an indicative positive list of activities (***Annex 5*** - Indicative Positive List of Acticvities, investments and use of resources"). The list of Eligible Sub-projects and related eligible investments that are described for each of the indicative value chains were initially determined based on bioeconomy definitions and their relevance in terms of contribution of mitigation and/or adaptation benefits.

It should be noted that this list is not restrictive; it is dynamic and may evolve as new business opportunities arise that may be considered eligible in each target country. The technical cooperation will support a pre-assessment of the eligibility criteria, determining which activities may be more suitable/feasible for each target country. Incorporation of other activities and uses will be evaluated on the basis of compliance with the definition of biobusiness, their potential to deliver mitigation and/or adaptation impact, and their compliance with any other Programme requirements.

If an EE requires financing with Programme resources that is not on the positive indicative list, it will have to obtain the IDB's non-objection. The non -objection procedures will be detailed in the Operating Regulations of each specific Sub-project and will be provided in accordance with eligibility criteria **(*Annex 3*)** and in compliance with the IDB environmental and social safeguards.

Specific additional eligibility criteria to be applied under each Sub-project will be determined on a country-by-country basis. The relevance of certain sectors and/or specific uses varies based on country-specific needs and circumstances, which may lead to further incorporations, exclusions or prioritization at each individual country level. For example, and depending on each country's conditions, climate-vulnerable areas could be defined and ranked to prioritize investments in higher ranked climate-vulnerable value

[6] As defined by RAISG - Amazon Geo-Referenced Socio-Environmental Information Network.

chains, including projected changes in temperature and precipitation, socio-economic variables and other factors.

6.2. Eligible beneficiaries.

In component I.1 and I.2, the final beneficiaries of individual Sub-Projects approved by the Bank and funded with Programme resources will be private bio-business entities, as defined by the Government of each target country, including natural and legal persons, classified as micro, small, medium and large enterprises operating in the region and conducting eligible investments; beneficiaries may be individual structures, associative structures (cooperatives or similar structures), and 'anchor' companies belonging to bio-business value chains.

The Programme is also expected to indirectly benefit all participants in the value chain, through better articulation and distribution of benefits, and the region's communities as a whole, thanks to the implementation of practices that promote the sustainable use and conservation of biodiversity.

In component I.3, beneficiaries will be LFIs (public or private) that require support in the assessment, management and promotion of bio-business investments. Government entities that require advice and training to strengthen the institutional and regulatory environment will also be beneficiaries.

In component II, direct beneficiaries will be public entities, including national or subnational governments and BND, that require to leverage capital market financing through the issuance of thematic bonds aimed at supporting bio-companies (which will be the final beneficiaries of the issuances).

In component III, direct beneficiaries will be bio-businesses and initiatives led by minorities as Indigenous People, women, Afro-descendants groups and local traditional communities to ensure them better and equitable access to information, technologies, capacity building, ownership over productive factors and empowerment, assuring meaningful participation and local development with identity.

6.3. Eligible Financial intermediaries and other intermediary entities.

Under component I, the EE may channel resources directly or through financial intermediaries (FIs) authorized by the entity in charge of regulating/supervising the financial system in each target country and duly accredited to operate with the EE, in accordance with its internal policies and procedures for evaluation, qualification, and assignment of intermediation lines.

Resources may also be channeled through non-regulated/supervised entities that are relevant in the supply of credit in the region, which the EE must evaluate and assign a risk rating equivalent to that of FIs for intermediation lines.

6.4. Other eligibility requirements.

Category A [7]investments are excluded from eligibility for financial support under this Programme. In addition, investments that will lead to deforestation, that will result in any adverse impacts to indigenous peoples, or that will result in undesired contact with indigenous peoples who are uncontacted, living in voluntary isolation or in initial contact are also excluded from eligibility. Moreover, the EE shall ensure that the socio-environmental impacts and risks associated with the activities, investments financed are adequately managed and supervised, complying with the requirements of socio-environmental safeguards, including IDB's Exclusion List (***Annex 4***).

The Programme will work with the EE and FIs to incorporate a gender and diversity-lens in their portfolio through gender and diversity awareness training, the identification of bottlenecks to integrate gender and diversity in their services and products, and seek to orient and promote credit programs specifically for women, indigenous people and diverse and traditional communities, among others.

The EE shall commit to only finance with resources from this Programme projects that, in addition to complying with the eligibility criteria previously described, comply with all pertinent regulatory requirements of each target country in environmental, social, health, safety and labor matters.

The EE shall instruct FIs and other entities in the knowledge of the Programme requirements and conditions. It must also be ensured, through the corresponding contractual documents, that FIs and other eligible entities comply with all relevant regulatory requirements of each target country.

6.5. Eligibility requirements for uses of Investment Grants

The following eligibility considerations will apply for the uses of investment grants described under the relevant Components in section 4, as follows:

Component I.1. Investment grants to support de-risking solutions described in this component will be considered when:

- LFIs are not capable -in the country, sector and value chains eligible for support under a certain Sub-project- of offering financing terms in line with eligible investments needs, either in terms of pricing (interest rate, other fees), tenor, amortization profile, grace period, collateral requirements, or other relevant parameters.
- Beneficiary biobusinesses are deemed to be bankable. For this, in all cases coverage of the de-risking instrument provided by the EE (combining GCF IG, EE's own capital and/or potentially capital from other sources) will not exceed 80% of the value of the LFI's loan or portfolio of loans, to ensure that risks are effectively shared and that adequate due diligence, structuring and supervision of investments by LFIs is ensured.
- The EE structuring the de-risking solution is not able to provide the required extent and depth of risk coverage fully by itself, and IG funding is needed to achieve such extent or depth (by having the IG funding take a junior or pari passu position relative to the capital of the EE) or to be able to offer such

[7] A project will be classified as Category "A" when it is likely to cause significant negative environmental and associated social and cultural impacts whether direct, indirect, regional or cumulative. This concept applies also to the operation's associated facility. Negative impacts are considered significant when: (i) they extend over a large geographic area; (ii) they are permanent or occur for an extended period of time; and (iii) they are of high intensity and/or high magnitude.

solution at a cost that does not hinder the economic viability of the targeted investments (in the understanding that any de-risking solution required brings an additional cost to the investments).

Component I.2. Investment grants (in the form of Contingent Recovery Investment Grants, CRIGs) will be considered for riskier, early-stage businesses that are not yet in a position to issue equity. These businesses will typically: i) be NGOs or businesses that are leaving the pilot phase to start selling a determined product or service, ii) be still working on a minimum viable product and have not achieved a steady flow of revenue, and iii) be transitioning from a non-sustainable business model, from a financial perspective, to a sustainable one.

Investments considered for this support would have to:

- Present a sound rationale (for AE's non objection) as to why a typical equity investment is not feasible at such stage of the company.
- Present a robust case (for AE's non objection) for how the proposed investment will provide extraordinary innovation with superior potential to enable sustainable development of one or various biobusinesses and value chains, contributing to address one or various key obstacles for their development (e.g. access to markets, adequate off-take, etc.).
- Identify realistic potential revenue-generating or liquidity events based on which the CRIG could be repaid, and define specific conditions for such contingent repayment (for AE's non-objection).

Component II.2. Investment grants to buy down the cost of IDB guarantees will be considered when the costs associated to such guarantees pose a barrier for the adoption and issuance of thematic bonds aimed at supporting biobusinesses. For that purpose, an ex-ante analysis of the expected net financial benefit of the credit enhancement associated to the guarantee will be conducted. A GCF IG to subsidize guarantee costs will be justified if the overall cost of the issuance with the guarantee was higher than without it, or the net improvement of the funding cost was not sufficient for the public issuers to achieve the funding cost reductions required to subsequently reach biobusinesses (through direct or indirect on-lending) with the required financing terms. Such assessment will be made by the AE as part of its Sub-project preparation, evaluation and approval process.

7. Environmental and social plan.

For financial intermediation activities each participating EE and local FI will originate and manage the supported portfolio by applying a specific E&S Management Framework (ESMF) to be approved by the IDB during project preparation. The ESMF will include the Programme's applicable requirements, as follows: - National applicable E&S laws and regulations; - IDB Exclusion List; - Category A high risk projects screening out; - No deforestation policy; and - IDB's September 2020 Environmental and Social Policy Framework (ESPF) as applicable.

In order to do so, IDB review will focus on improving EEs' capacity and ensuring adequate level of safeguards implementation. IDB will review any existing E&S Management System (ESMS) of FIs selected to provide funding to sub-projects under the Programme.

For a complete description of the components of the E&S risk and impacts assessment and management approach, see ***Annex 6a*** *of the Funding Proposal.*

8. Approach and methodologies to ensure transfer of concessionality

Under Component I.1 of the Programme, loans and grants from the GCF will be channeled by the IDB to EEs via sovereign investment loans (loans with sovereign guarantee) and investment grants. EEs will in their turn channel these resources to end beneficiaries, either through on balance earmarked dedicated financing lines and/or through dedicated trusts or Special Purpose Vehicles (SPV) in the form of various financial products (channeling to final beneficiaries can be made directly or via local financial institutions, LFIs). As financing terms currently available in the market are not adequate to biobusinesses financial and risk profiles, the financial products to be offered by EEs to final beneficiaries are expected to address this gap, enabling the development of economically viable biobusiness investments.

The inadequacy of access to finance for this type of businesses is sometimes associated to the high level of interest rates, or to other financing parameters such as tenor, amortization profile, grace period or collateral requirements. In some cases credit is simply unavailable for certain segments of the market. Thus, using loans and grants funded with GCF and/or IDB resources, EEs will be able to offer financial instruments that can provide terms (tenor, price, amortization profiles, collateral requirements) more adequate to bio-businesses financial and risk profiles.

Provision of concessionality through loans

To ensure that bio-businesses (final borrowers) can benefit from the concessional terms provided by the GCF, a methodology to ensure the transfer of this concessionality will be developed for each Sub-project during the preparation phase. Concretely, this methodology will ensure that borrowers effectively benefit from the improved financing conditions –at least one of the terms previously mentioned (i.e., interest rate, tenor, amortization profile, grace period, etc.).

The preparation process of this customized methodology to transfer concessionality will consider local market conditions and the specific context of each Sub-project, so that the concessionality is used to effectively address the most relevant inadequacy of identified available financial terms in each local context. For instance, if the main obstacle for biobusinesses targeted by a certain Sub-project is the level of interest rates, the financial solutions structured and the concessionality transfer approach (and thus the methodology to ensure it) will be focused at supporting access to lower interest rates; if the main challenge is instead related to tenor, the financing solutions and methodology will be focused at supporting access to longer tenors.

An indicative approach to a methodology[8] aimed at ensuring the transfer of concessionality through the enhancement of interest rates and/or tenor, as per the two scenarios exemplified, is presented below. This will be further tailored and expanded, as needed, during each Sub-project preparation process:

[8] Subject to further validation and definition with each EE, at the time of sub-project preparation.

I. To ensure end beneficiaries access concessional **interest rates**:
- Each EE will offer an interest rate lower[9] than that associated to its existing financial products for similar loan recipients (which are themselves normally already more attractive than comparable products in the market in the case of NDBs); and
- LFIs in Tier 2 operations will be required to declare (1) the average interest rates applied to their loan portfolio under similar tenors and with similar uses of funds, and (2) that the bio-businesses financed with GCF resources will be offered a final interest rate lower than said average. This aims to ensure that LFIs apply concessionality relative to similar existing financing lines.

II. With regards to **tenors**, for EEs and LFIs the same logic applies but in this case declared information should be associated to existing average tenors in similar loan portfolios and requirements to provide longer tenors in GCF-funded loans.

The AE will require EEs to report how the concessionality would be passed onto the loan recipients (final borrowers) using the following criteria:

1) For Tier 1 (direct) financing to loan recipients, the difference between EEs financing conditions (interest rate and/or tenor) and: a) financing conditions of GCF-funded loans after blending with co-financing, and b) financing conditions of loans without GCF resources.
2) For Tier 2 (indirect) financing to loan recipients via LFIs, the difference between LFIs' financing conditions (interest rate and/or tenor) and: a) financing conditions of GCF-funded loans, and b) financing conditions of loans without the GCF resources.

Data on the described reports will be sourced from a combination of publicly available data, internal EEs data, and LFIs declarations, as applicable.

Given the above conditions, whenever final borrowers decide to take on a loan from a GCF-supported financing line, the concessionality provided will be deemed adequate. Adequate concessionality is driven by the decisions of the final beneficiary to act in favor or against taking an investment loan, as well as the lack of incentive for the loan provider to offer interest rates lower (or tenors shorter) than required by borrowers, which would go against its own financial interest and profitability. The above described methodology aims to (i) reduce costs and subjectivity for all actors involved, (ii) provide a feasible and implementable application.

Each concessionality methodology will be incorporated in the Operating Regulations (OR) of the Sub-Projects. As such, compliance with the methodology by EEs will be part of the requirements for disbursements of Programme funds. In addition, the EE will have to report periodically and ex post on the application of the methodology of concessionality transfer and how it was ensured throughout a Sub-Project execution.

[9] The objective of such lower interest rate is to induce the uptake of eligible investments under the FAA, and changes current behavior by all stakeholders involved. The lower interest rate or longer tenor thus needs to make a significant contribution to the cash-flow profile of the investments, to be deemed to provide financial additionality. NDBs' policy mandate is to provide long-term concessional finance and thereby to crowd-in private investments. NDBs' role is to address the lower risk appetite of LFIs by financing sectors with economic and societal benefits which currently do not attract LFI financing due to higher perception of risk for these types of activities. NDBs already utilizes longer than market tenors and concessional interest rates in its traditional operations. The GCF-financed line will allow NDBs to increase both its tenors as well as its concessional interest rate beyond its own existing financing conditions and extend that benefit to final-end beneficiaries.

Provision of concessionality through investment grants

In the cases where IGs are used, the extent of the concessional benefit will be determined by the size of the grant provided. Provisions related to the sizing of IGs under each component are presented below:

Component I.1

I. Specific size of IG to be allocated to each eligible Sub-project will be determined by the AE during each Sub-project preparation phase, based on assessment of type and extent of risk to be covered, and level of de-risking/risk sharing required by the EE and LFIs to reach eligible investments with adequate conditions. The size of the IG will be determined as the minimum amount needed to achieve such objective.

II. There will be a maximum amount per de-risking structure of a Program's sub-project commensurate with the share of each loan component per country.

Component I.2

The size of the IG proposed for any eligible investment will be assessed by the EE and the AE, and determined as the minimum amount of Contingent Recovery Investment Grant needed to:

- achieve the early-stage business development and investment goals relevant in each case.
- serve the specific financial engineering needs to address the investment/financing gap identified that cannot be covered with other non-grant instruments (e.g. equity, debt, guarantees) available, either from the EE or other investors/lenders proven to be accessible to the investee under consideration.

Component II.2

I. Specific size of IG to be allocated to each eligible Sub-project will be determined by the AE during each Sub-project preparation phase, based on:
   - the maximum funding costs (and other financial terms) required by the bond issuer in order to use the proceeds in eligible biobusinesses (directly or indirectly) under adequate financing conditions.
   - an ex-ante analysis of the expected costs and net financial benefits of the credit enhancement (IDB guarantee) of the bond issuance.

II. IGs allocated to any Sub-project will be sized not to exceed:
   - the aggregated grant amount required to provide -throughout the tenor of the IDB guarantee- the lowest of:
     a. a 90% reduction of the IDB guarantee fee
     b. a cap of 100bps per annum on the guaranteed capital
   - a maximum of eighteen million US Dollars (USD 18,000,000) per issuance.

The principle of minimum concessionality will be observed in all cases, so the determination of the amount of IGs allocated to any Sub-project will not be driven by the above-mentioned caps (they will be limited by them instead), but on the assessment referred to point (i) above.

9. Monitoring and evaluation.

Taking into account that the Programme design includes various countries, components, EEs and disbursement schemes, the IDB will monitor, compile and register information on all IDB operations approved and financed –totally or partially– with resources from this Programme, and will be responsible for aggregating and updating information on the Programme as a whole for periodical reporting to the GCF.

Monitoring and evaluation of each IDB operation approved with funding from the Programme will follow standard IDB policy, and are described in ***Annex 6:*** *"Monitoring and Evaluation Plan"*.

Agreements between the IDB and EEs will establish monitoring and periodical reporting obligations during execution. In coordination with the IDB, EEs will compile and maintain all information necessary.

EEs are required to inform the IDB on the performance of the programs under their execution at least on an annual basis. Annual reports generally include an in-depth examination on the performance of activities relating to: i) disbursements (amounts, dates, co-financing including local counterpart and other sources, when applicable), eligible expenses financed, and the remaining amount of funds; (ii) compliance on the eligibility and concessionality requirements; and (iii) evolution of indicators on the results framework, at the project and/or program level.

In addition to the annual reports, a final assessment of each operation funded by the Programme will be carried out by the IDB once the funds are fully justified. This report shall contain all relevant information to evaluate the fulfillment of objectives as per targets established ex ante, and is normally submitted to the IDB within six months after the last disbursement to the EE.

10. Modifications to the Operations Manual

This Manual may be modified by IDB during the implementation phase of the Programme as deemed necessary by IDB to best achieve the Programme's stated objectives, as long as any requirements and restrictions established in the FAA continue to be observed.

Annex 1. Principal terms and conditions of Financial Products

IDB, in its capacity as Accredited Entity, shall include the following terms and conditions, as applicable, in the corresponding Subsidiary Agreements for IDB approved Sub-projects to be financed with GCF resources:

A. For Sovereign Investment Loans (SIL):

The Accredited Entity shall use the GCF Reimbursable Funds to enter into Sovereign Investment Loan Agreements, pursuant to the following key financial terms and conditions:

Description	Terms
Loan currency	USD
Total amount for all Sovereign Investment Loans	One hundred and fifty (150) million
Tenor of each SIL	Twenty (20) years as of the date of effectiveness of each Sovereign Loan Agreement.
Disbursement period of each SIL	Five (5) years as of the date of effectiveness of each Sovereign Loan Agreement.
Grace period of each SIL	Five (5) years and six (6) months counted as of the date of effectiveness of each Sovereign Loan Agreement.
Use of the funds in the Revolving Account	During the tenor of each Sovereign Loan Agreement, any repayment received by Borrowers from the LFIs (in the case of 2nd tier lending/risk coverage) or beneficiary companies (in the case of 1st tier lending/risk coverage), after deduction of the amounts paid or scheduled to be paid by Borrowers to the Accredited Entity in accordance with each Sovereign Loan Agreement, may be used by Borrowers to finance further sub-loans.
Annual principal repayment years of each SIL	After the end of the Grace Period to year twenty.
Repayment of principal of each SIL	After the end of the grace period, semi-annually, on December 15 and June 15 of each calendar year.
Amount of principal repayment of each SIL	One thirtieth (1/30) of the total amount disbursed to the Host Country during the disbursement period of the Sovereign Loan Agreement.
Interest type of each SIL	Fixed
Interest rate of each SIL	Seventy-five (75) basis points (0.75%) per annum.
Interest accrual in each SIL	Interest shall be accrued semi-annually as of the date of each disbursement by the Accredited Entity to the [NDB] under the Sovereign Loan Agreement and shall be calculated over the outstanding principal amount of the loan.

Payment of interest of each SIL	Interest shall be paid semi-annually on December 15 and June15 of each calendar year.
Commitment fee of each SIL	Fifty (50) basis points (O.50%) per annum.
Payment of commitment fee in each SIL	The commitment fee shall be paid semi-annually, together with the payment of interest, and shall be calculated over the amount of reimbursable funds not yet disbursed by the Accredited Entity to each Host Country. The commitment fee shall start accruing from the day which falls after the sixtieth (60^{th}) day after the execution date of each Sovereign Loan Agreement.
Service fee of each SIL	Fifty (50) basis points (0.50%) per annum.
Payment of service fee in each SIL	The service fee shall be paid semi-annually, together with the interest payment, over the outstanding principal amount of the loan. The service fee shall apply from the date of each disbursement made by the Accredited Entity to each Host Country under each Sovereign Loan Agreement.
Final payments of each SIL	At the termination of each Sovereign Loan Agreement, the outstanding amount of principal, interest and fees shall be immediately paid to the Accredited Entity.

B. For Equity Investments:

Each Equity Investment provided by the Accredited Entity to an Executing Entity of the GCF Reimbursable Funds ("GCF Equity Portion") shall meet the terms and conditions set forth below:

Description	Terms
Amount	Up to five million US Dollars (USD 5,000,000) per Equity Investment; provided that the maximum amount of the GCF Equity Portion, on a per-investment basis, will be neither the largest nor the sole investment. The Accredited Entity will disburse the GCF Equity Portion and disburse its participation on a pari passu basis (other than pricing and volume) with regard to contribution commitments from other members of the IDB Group and other investors, whenever capital is called by fund managers or directly by investees. Portions of disbursements made by the Accredited Entity may be used to cover management fees of the relevant investment fund.
Currency:	All Equity Investments will be made in United States Dollars (USD) and may be denominated in local currencies if required by local law.
Tenor:	Up to ten (10) years, retiring at least one year before the end of the FAA Tenor.
Type of Investments:	- Direct Equity Investment, or - Limited partner under a limited partnership agreement for a Facility-oriented investment fund; or, - Anchor shareholder of a Facility-oriented new venture.

<table>
<tr><td>Best practices:</td><td colspan="2">In case of investments related to investment funds, the Accredited Entity follows the Institutional Limited Partners Association ("ILPA") private equity principles as universal guidance. In addition, the Accredited Entity applies a case by case analysis and lessons learned from previous 82+ equity funds invested by the Accredited Entity in Latin America and the Caribbean and its direct equity experience in investees with specific focus on venture capital and Micro, Small & Medium Enterprises (MSMEs).</td></tr>
<tr><td>Governance and reporting:</td><td colspan="2">In all cases, GCF will receive semi-annual reports on financial and social/environmental performance of the investment. Reporting requirements customary for a transaction of this nature and satisfactory to IDB Lab, including without limitation:
a) Unaudited financial statements within thirty (30) days following the end of each quarter;
b) Audited financial statements with in ninety (90) days following the end of each fiscal year;
c) Periodic progress reporting through IDB Lab's Project Status Update (PSU); and
d) Notification of any material event.
e) In case of an investment in a regional/global fund, equity resources will follow ILPA's or other relevant private equity principles. Appropriate provisions for direct investments and fund participations will be analyzed and defined case by case on the following key issues, as applicable depending on the investee structure and jurisdiction: board or limited partners advisory committee, investment committee, key person, conflict of interest sub-committee, forbidden investments, portfolio supervision, portfolio valuation, independent auditors, financial and portfolio reporting, management fee, success fee, etc.</td></tr>
<tr><td>Covenants</td><td colspan="2">Requirements customary for a transaction of each nature and satisfactory to IDB Lab, including compliance of the IDB policies and associated default effects upon breach.</td></tr>
<tr><td>Assignment:</td><td colspan="2">Equity Investments (including GCF Equity Portion) may be transferred by the Accredited Entity, provided the ratio between the GCF Equity Portion and the participation from members of the IDB Group remains unchanged. Net proceeds from the transfer of the GCF Equity Portion shall be treated as Reflowed Funds. The Accredited Entity shall inform the GCF on a quarterly basis regarding the transfer of any Equity Investment.</td></tr>
<tr><td rowspan="2">Equity Investment criteria on expected return applicable to the GCF Equity Portion:</td><td>Front end fee/s:</td><td>No front end fee/s will be charged by the relevant general partner/fund manager.</td></tr>
<tr><td>Rate of Return (ROE)</td><td>Estimated 10% gross or 8% net in case of equity resources.
Estimated 7% net for new ventures.</td></tr>
</table>

C. For Investment Grants under Component I.1

Each Investment Grant (IG) provided by the Accredited Entity to an Executing Entity of the GCF Reimbursable Funds allocated to Component I.1 shall meet the terms and conditions set forth below:

Description	Terms
Use of Proceeds:	First or second loss tranche in individual guarantees, portfolio guarantees or other risk sharing schemes aimed at de-risking eligible biobusiness investments financed by EEs, LFIs and/or other investors to be mobilized by the Programme.
Amount	• Specific size of IG to be allocated to each eligible Sub-project will be determined by AE during each Sub-project preparation phase, based on assessment of type and extent of risk to be covered, and level of de-risking/risk sharing required by EE and LFIs to reach eligible investments with adequate conditions. The size of the IG will be determined as the <u>minimum amount needed to achieve such objective</u>. • Maximum of ten million US Dollars (USD 10,000,000) of IG per de-risking structure of a Sub-project.
Tenor:	Up to twenty (20) years as of the date of effectiveness of each Investment Grant Agreement.
Maximum coverage	Coverage provided by the IG would not be higher than 50% of total value of underlying beneficiary loans.
Co-financing / leverage	The maximum 50% coverage of underlying loans implies a minimum co-financing / leverage ratio of 1:1 (GCF to EE/LFI funding)
Seniority	IG capital could be subordinated or pari passu with capital of EEs or LFIs participating in the financing or risk sharing structure.
Disbursement period of each IG	Five (5) years from the date of effectiveness of each Investment Grant Agreement.
Reflows to the GCF / Revolving Use	IGs provided under this component will be **reimbursable** to the GCF at the end of the tenor of each Investment Grant Agreement, to the extent that IG funding is returned by EEs to the AE, as a result of IG proceeds i) not being disbursed to covered beneficiaries (i.e. when there were no losses to be covered) or ii) being disbursed and recovered as a result of collection efforts. During the tenor of each Investment Grant Agreement, any IG capital not disbursed (after expiration or cancellation of the original coverage period) or recovered from LFIs or beneficiary companies may be used by EEs to provide new risk coverage until the end of the tenor of each Investment Grant Agreement.
Eligibility	The following criteria will apply for the evaluation of suitability and implementation of IGs under this Component I.1: i) Conditions to be evaluated and confirmed during each Sub-project preparation process to assess suitability of use of the IG: • LFIs are not capable -in the country, sector and value chains eligible for support under a certain Sub-project- of offering financing terms in line with

	eligible investments needs, either in terms of pricing, tenor, amortization profile, grace period, collateral requirements, or other relevant parameters. • The EE structuring the de-risking solution is not able to provide the required extent and depth of risk coverage fully by itself, and IG funding is needed to achieve such extent or depth (by having the IG funding take a junior or pari passu position relative to the capital of the EE) or to be able to offer such solution at a cost that does not hinder the economic viability of the targeted investments (in the understanding that any de-risking solution required brings an additional cost to the investments). ii) Conditions to be applied in the implementation of de-risking solutions supported by the IG: • Beneficiary biobusinesses to be supported by such de-risking solutions are expected to be bankable. For this, in all cases coverage of the de-risking instrument provided by the EE (combining GCF IG, EE's own capital and/or potentially capital from other sources) will not exceed 80% of the LFI's loan or portfolio of loans, to ensure risks are effectively shared and that adequate due diligence, structuring and supervision of investments by LFIs is ensured.

D. For Investment Grants under Component I.2

Each Investment Grant provided by the Accredited Entity to an Executing Entity under component I.2 shall meet the terms and conditions set forth below:

Description	Terms
Amount	Up to four million US Dollars (USD 4,000,000) per contingent recovery investment grant; provided that the maximum amount of the GCF Portion, on a per-investment basis, will be neither the largest nor the sole investment. The Accredited Entity will disburse the GCF Portion and disburse its participation on a pari passu basis (other than pricing and volume) about contribution commitments from other members of the IDB Group. Portions of disbursements made by the Accredited Entity are usually used to finance acceleration, incubation, or investment activities. The size of the IG for any eligible investment will be assessed by the EE and the AE, and determined as the minimum amount of grant needed to: • achieve the early-stage business development and investment goals relevant in each case. • serve the specific financial engineering need in each case, covering the investment/financing gap identified that cannot be covered with other non-grant instruments (e.g. equity, debt, guarantees) available from the EE or other investors/lenders effectively available to the company under consideration.
Currency:	All IG Investments will be made in United States Dollars (USD) and may be denominated in local currencies if required by local law.
Tenor:	Up to five (5) years
Type of Investments:	- Direct Investment grant, or - Anchor shareholder of a Facility-oriented new venture.

Eligibility	IGs under this Component I.2, in the form of Contingent Recovery Investment Grants (CRIGs) will be considered for riskier, early-stage businesses that are not yet in a position to issue equity. These businesses will typically -albeit not exclusively-: i) be NGOs or businesses that are leaving the pilot phase to start selling a determined product or service, ii) be still working on a minimum viable product and have not achieved a steady flow of revenue, and iii) be transitioning from a non-sustainable business model, from a financial perspective, to a sustainable one. Investments considered for support with this IG instrument would have to: • Present a sound rationale (for AE's non objection) as to why a typical equity investment is not feasible at such stage of the company. • Present a robust case (for AE's non objection) for how the proposed investment will provide extraordinary innovation with superior potential to enable sustainable development of one or various biobusinesses and value chains, contributing to address one or various key obstacles for their development (e.g. access to markets, adequate off-take, etc.). • Identify realistic potential revenue-generating or liquidity events based on which the CRIG could be repaid, and define specific conditions for such contingent repayment (for AE's non-objection).
Best practices:	In case of investment grants, the Accredited Entity follows the conditions of the contract to be signed with the IDB that include IDBG's policies, exclusion lists, principles. In addition, the Accredited Entity applies a case by case analysis and lessons learned from previous 82+ equity funds invested by the Accredited Entity in Latin America and the Caribbean and its direct experience in similar operations with specific focus on venture capital and Micro, Small & Medium Enterprises (MSMEs).
Governance and reporting:	In all cases, GCF will receive semi-annual reports on financial and social/environmental performance of the operations. Reporting requirements customary for a transaction of this nature and satisfactory to IDB Lab, including without limitation: a) Unaudited financial statements within thirty (30) days following the end of each quarter; b) Audited financial statements with in ninety (90) days following the end of each fiscal year; c) Periodic progress reporting through IDB Lab's Project Status Report (PSR); and d) Notification of any material event.
Covenants	Requirements customary for a transaction of each nature and satisfactory to IDB Lab, including compliance of the IDB policies and associated default effects upon breach.
Reflows to the GCF	IGs provided under this component will be **reimbursable** to the GCF by the end of the tenor of each Investment Grant Agreement, but only in the cases where the recovery mechanism is triggered and to the extent that IG funding is returned by EEs to the AE.

	Whenever reflows originated by the activity financed by IDB Lab with the CRIG achieve a certain amount (to be determined in agreement with the EE) the recovery mechanism is triggered, obligating EE to pay back to IDB Lab a pro rata amount of such payment. This mechanism continues until the total reimbursed amount to IDB Lab reaches the total financed by IDB Lab with IG funding.
Seniority	The Investment Grant will be Senior or equal in ranking to the other existing senior debt obligations of the EE. In the event of any liquidation or winding up of the Borrower, the IDB/IDB Lab will be entitled to receive the full amounts due under the IG prior to any shareholder or holders of the Borrower's equity securities, and at least pro rata with any other senior lenders (but only in the case the repayments are triggered in this latter case).
Default Interest	Default interest shall accrue on all overdue amounts at a rate of X% (usually up to 2%) per annum as a surcharge until the effective payment in full of such overdue amounts.

E. For Investment Grants under Component II.2

Each Investment Grant (IG) provided by the Accredited Entity to an Executing Entity from Component II.2 shall meet the terms and conditions set forth below:

Description	Terms
Use of Proceeds:	GCF grants for guarantees proposed under this Component II.2 will be used to address the guarantee cost barrier by reducing the cost of the financial charges of IDB funded guarantees that guaranteed debtors will pay IDB in accordance with IDB policy and as per the guarantee documentation of the guarantee funded with IDB resources.
Amount	1. Specific size of IG to be allocated to each eligible Sub-project will be determined by AE during each Sub-project preparation phase, based on: o the funding costs (and other financial terms) that the public bond issuer needs to achieve in order to reach eligible biobusinesses (directly or indirectly) with adequate financing conditions. o an ex-ante analysis of the expected costs and net financial benefits from the credit enhancement of the bond issuance to be provided by the IDB guarantee. 2. IGs allocated <u>to any Sub-project</u> will be sized <u>not to exceed</u>: o the aggregated grant amount required to provide -throughout the tenor of the IDB guarantee- the lowest of: I. a 90% reduction of the IDB guarantee fee II. a cap of 100bps per annum on the guaranteed capital o a maximum of eighteen million US Dollars (USD 18,000,000) per issuance. The principle of minimum concessionality will be observed <u>in all cases</u>, so the determination of the amount of IGs allocated to any Sub-project will not be

	driven by the above-mentioned caps (they will be limited by them instead), but on the assessment referred to in #1 above.
Co-financing / leverage	IDB guarantees will be provided for a minimum of 4.8 times the size of the IG allocated to each Sub-project.
Tenor:	Maximum tenor of IDB guarantees is twenty five (25) years; IGs could therefore be utilized to reduce guarantee fees throughout that same period.
Disbursement period of each IG	Five (5) years from the date of effectiveness of each Investment Grant Agreement. IGs would be disbursed in one tranche following effectiveness of the IDB guarantee.
Eligibility	The following criteria will apply for the evaluation of suitability and implementation of IGs under this Component II.2: IGs to reduce the cost of IDB guarantees will be considered when the costs associated to such guarantees pose a barrier for the adoption and issuance of thematic bonds aimed at supporting biobusinesses. For that purpose, an ex-ante analysis of the expected net financial benefit of the credit enhancement associated to the guarantee will be conducted. A GCF IG to subsidize guarantee costs will be justified if the overall cost of the issuance with the guarantee resulted higher than without it, or the net improvement of the funding cost was not sufficient for the public issuers to achieve the funding cost reductions required to subsequently reach biobusinesses (through direct or indirect on-lending) with the required financing terms. Such assessment will be made by the AE as part of its Sub-project preparation, evaluation and approval process.

Annex 2. Institutional Assessment and Definition of Executing Entities (EE)

This annex describes the capacity assessment process that will be conducted under the Programme "The Amazon Bioeconomy Fund: Unlocking private capital by valuing bioeconomy products and services with climate mitigation and adaptation results in the Amazon" for each Executing Entity (EE).

- **Component I.1. Institutional capacity assessment of EE:**

IDB will assess the institutional capacity of EEs during the preparation of the relevant Sub-project. The institutional capacity assessment at the IDB consists of evaluating the capacity of an EE to manage an IDB-financed project. This process is carried out through an "**Institutional Capacity Assessment Platform (PACI-ICAP)**." The inputs generated by this tool are essential to correctly design the Sub-project's governance system and thus increase its chances of success during the execution stage.

The **PACI/ICAP** is a tool for risk management and, as such, is an integral part of the Project Risk Management Framework of the IDB. The platform also facilitates the identification of risks related to the capacity of the executing agency.

The institutional capacity assessment concludes with a gap analysis. The gap analysis involves comparing the current situation in the EE with that required for effective management of the Sub-project. This requires, firstly, understanding what the necessary capacities are for managing a Sub-project and, secondly, identifying the points of contact between the Sub-project and the organization's regular operations.

Institutional Capacity Analysis Platform (PACI/ICAP)

The PACI/ICAP is a tool that organizes, systematizes, and simplifies the process of collecting and analyzing information on the capacity of a Sub-project's EE. The platform is composed of questionnaires and thematic modules that assess different functions that the EE will need to perform during the implementation of the Sub-project, such as management of technical quality, human resources, and financial management. These functions vary depending on the type of operation, which is why the platform offers a menu of thematic modules that can be selected based on the needs of each operation. To facilitate this selection, the modules are grouped into three major questionnaires: the standard questionnaire, the questionnaire for global credit operations, and the simplified questionnaire for Conditional Credit Lines for Investment Projects (CCLIPs). The global credit operations questionnaire would be particularly relevant for Sub-projects under Component I.1.

The PACI/ICAP produces a diagnosis of the strengths and weaknesses of the EE in diverse areas related to the management of the Sub-project. This diagnosis is an essential input for the design of the Sub-project's system of governance, that is, the set of agreements that determines who takes project decisions (responsibilities), how those decisions are reached (the decision flow), and what collaboration mechanisms are established (stakeholder management).

A good PACI/ICAP diagnosis allows a project team to design an optimal system of governance that takes advantage of the strengths of the executing agency and minimizes or corrects its weaknesses in project management. This increases the likelihood that the project will be managed in line with the interests of all stakeholders and will achieve its expected results.

ICAP – Global Credit Operations (GCO)

The ICAP/GCO is the instrument that the IDB uses to evaluate the Capacity of Executing Global Credit Operations. The instrument comprises six questionnaires, or modules, each of which addresses a different theme. Each module covers a key function to be performed by the EE during the execution of the Sub-project, as follows:

1. **Project Coordination** – Evaluates 14 Conditions: 1. If the institution has recent experience managing credit lines for development using international development funding, 2. If can provide recent evidence demonstrating the satisfactory execution of its development credit lines, 3. If can provide evidence demonstrating that recently executed credit lines have achieved the development objectives for which they were designed, 4. If the Responsibilities for managing the credit line are formally assigned within the institution, 5. If the institution has skilled staff available to perform general coordination tasks for the IDB-financed credit line, 6.If the institution has all of the goods and services necessary to support project execution, 7. If has a department responsible for performing due diligence on direct sub-borrowers, 8. If has procedures for performing due diligence on direct sub-borrowers, 9. If has effective mechanisms for supervising compliance with the contractual clauses agreed with direct sub-borrowers, 10. If has a department responsible for verifying sub-borrowers' capacity to perform due diligence on their end clients, 11. if has procedures for verifying sub-borrowers' capacity to perform due diligence on their end clients, 12. If has effective mechanisms for verifying sub-borrowers' capacity to supervise their contractual agreements with end clients, as well as compliance with the contractual conditions agreed with the IDB, 13. If has a satisfactory filing system for managing documentation for the credit line and 14. if has robust integrity standards and mechanisms to ensure their enforcement.
2. **Financial Management** – Evaluates 6 Conditions: 1. If the department responsible for financial management of the IDB-financed credit line has defined responsibility for this function, 2. If the institution has sufficient skilled staff to undertake financial management functions for the credit line, 3. If the institution has satisfactory procedures for financial management of the project, 4. If the institution's past financial management performance in its credit lines has been satisfactory, 5. If the institution's accounting system includes the functionalities needed for financial management of the credit line, and 6. If the institution has an internal audit department with a work plan that includes the evaluation of internal controls for the IDB credit line.
3. **Technical Quality Supervision** – Evaluates 4 Conditions: 1. If the institution's technical departments have sufficient knowledge to supervise the technical quality of all outputs from the subprojects they will be responsible for under the IDB credit line, 2. If the technical staff that will be involved in the project have sufficient time and experience to supervise quality management, 3. If the institution finds it easy to find and attract the technical staff necessary for technical supervision of the subprojects financed under the IDB credit line, and 4. IF the institution has defined procedures for supervising management of the technical quality of outputs in the subprojects financed by the IDB credit line.
4. **Environmental, Social and Occupational Health and Safety Impacts Supervision (ESHS)** – Evaluates 6 conditions, 1. if the institution has a policy establishing its commitment to managing any environmental, social, or occupational health and safety impacts resulting from the subprojects that it finances, 2. If the department responsible for supervising ESHS impacts in the subprojects financed through the IDB project/credit line has defined responsibilities for this function, 3. If the institution has sufficient skilled staff and resources for supervising the management of environmental, social, and occupational health and safety impacts in the subprojects, 4. If the position of ESHS impact management supervision specialist can be filled easily, 5 if the institution has formal procedures for supervising the management of ESHS impacts in the subprojects that it finances, and 6. If the institution can provide evidence demonstrating satisfactory performance in the supervision of ESHS impact management in the subprojects that it finances
5. **Procurement Supervision** – Evaluates 3 Conditions, 1. If the department responsible for supervising procurement in the subprojects financed under the IDB credit line has defined responsibilities for this function, 2. If the institution has sufficient skilled staff to undertake the supervision of project procurement and 3. If the institution has satisfactory procedures for supervising procurement in the subprojects.
6. **Financial Supervision** – Evaluates 3 Conditions, 1. if the department responsible for supervising financial management in the subprojects financed through the IDB credit line has defined responsibilities for this function, 2. If the institution has sufficient skilled staff to supervise financial management in the subprojects that it finances and 3. If the institution has satisfactory procedures for supervising financial management in the subprojects.

- **<u>Component I.2. Institutional capacity and integrity assessment of EE:</u>**

A. Institutional capacity assessment:

The IDB Lab will assess the institutional capacity of EEs during the preparation of the relevant Sub-project. The following are the requirements reviewed for assessment of due diligence of EE for equity management under IDB Lab initiatives:

1. **Management Team and CEO**
   a. History / "bio"
   b. Mission and vision
   c. CEO skills and expertise
   d. Team dedication and roles
   e. Competitive position in the industry
   f. Company's legal and governance structure
2. **The company's operation**
   a. Business model
   b. Basic numbers: number and types of products, # of clients, types of contracts, average contract size per product, new clients vs. existing clients, outstanding receivables, target ownership, targeted growth in terms of assets/receivables, exposure per client/geography
   c. COVID-19 risks: operations/ employees/geography/receivables/financing
   d. Method for deal sourcing (prospection, funnel, criteria, team roles, etc.)
   e. Method for value creation (how mentorship is structured, team roles, approaches, cases)
   f. Revenue collection: timing, method, arrears management
3. **Financial model**
   a. Capitalization table
   b. Financial model of the company: a concise financial model highlighting the economics of the company, with a base case (realistic), an optimistic scenario and a pessimistic scenario– in excel or equivalent
   c. Previous debt, any pending debt, any additional foreseen sources of financing? Debt or equity? Including terms.
   d. What are the key risks for the company's performance/growth?
   e. Monitoring and data analytics: what indicators does the company currently monitor, what is the process for monitoring data? What data at the client companies' levels are available?

4. **Investment Terms**
   a. Review of term sheet to be provided by IDB Lab (type of investment, currency, investment period, exits and maturity, use of proceeds, mandatory put events, covenants, etc.)
   b. Latest status of fund raising and timeline.
5. **Additionality, impact and compliance**
   a. IDB Lab financial and non-financial additionality (how would IDB add value)
   b. What is the company's contribution to the innovation/entrepreneurship ecosystem?
   c. Impact
      i. Basic impact numbers of previous funds/investments (focusing, to the extent possible, on the final beneficiaries, detailing – where possible – vulnerable populations)
      ii. Cases of client companies and their value chains
      iii. Projected Impact for the operation
      iv. Results Matrix (to be explained by IDB and defined during analysis mission)
   d. Compliance
      i. EEs provide three references for the CEO: supervisor or boss, subordinate, and peer colleague. The idea is to send data from colleagues who know them well and can talk about their professional work and character.
      ii. EEs complete 3 different integrity forms
      iii. EEs provide any other compliance-related documents of the company itself (ethics code, environmental code – if any)

iv. 15-min meetings organized with 1-2 previous client companies, 1-2 current client companies, 1-2 current investors, 1-2 potentially new investors (with or without the CEO in those meetings).

In addition to full due diligence on the criteria above, IDB Lab's EEs also have to pass through a detailed diagnostic on their institutional capacity using a tool called DNA – diagnostic of agency needs, that covers:

- Procurement practices and policy
- Financial and accounting controls and capabilities
- Technical and monitoring capacity
- Knowledge dissemination and communications capacity.

B. Integrity assessment:

The integrity due diligence scans the integrity background of all shareholders of the potential investee, and also covers the following issues, via a questionnaire that has to be completed and signed by the authorized parties for the potential investee:

1. Client

a. EEs must provide the following information about the entity to receive financing or other IDB Group resources (the "Client"):
   i. Legal name:
   ii. Mailing address:
   iii. Physical address:
   iv. Place of incorporation/ establishment:
   v. Type of entity: (e.g., limited partnership, state-owned company, publicly held corporation):
   vi. Website:
   vii. The name of any stock exchange where the Client is listed:

b. List the Client's major types of business activity:

c. Has the Client previously applied for or received financing or other IDB Group resources from any of the following IDB Group entities:
   i. The Structured and Corporate Financing Department ("SCF")? ☐Yes ☐No
   ii. The Opportunities for the Majority Sector ("OMJ")? ☐Yes ☐No
   iii. The Office of the Multilateral Investment Fund ("MIF")? ☐Yes ☐No
   iv. The Inter-American Investment Corporation ("IIC")? ☐Yes ☐No

If Yes to any of the above, please identify the project for which the Client applied for financing/resources, and whether the Client received the financing/resources.

2. Corporate Structure

a. In the Legal Entities Table in Appendix 1, please provide the names and the place of incorporation/establishment for:
   i. Any parent company or affiliate companies of the Client
   ii. Any subsidiaries or branches of the Client
   iii. Any joint ventures in which the Client is a partner.

Please provide an organization chart, if available.

a. List any countries outside of the project host country where the Client has operations:

3. Key Persons

b. In the Key Persons Table in Appendix 1, please list the name, title and nationality of:
   i. each member of the Client's Board of Directors or equivalent.
   ii. all senior management[10] of the Client; and
   iii. any employee or employees of the Client responsible for management or implementation of the project (a "Key Employee")

[10] Because titles of management differ among companies and across borders, specific titles for "senior management" are not provided. As a guide, this concept should include the equivalents of the following: Chief Executive Officer, Chief Financial Officer, Chief Operations Officer, Chief Compliance Officer, President, Secretary and Treasurer. If the Client is a Fund, senior management will consist of the Manager/CEO and staff fulfilling the equivalents of these roles (i.e., CEO, CFO, etc.).

4. Beneficial Ownership

a. In the Beneficial Owners Table in Appendix 1, please list the name, nationality, and percentage of ownership of all Beneficial Owners[11] of the Client.

If any Beneficial Owner of the Client is publicly traded, list only those owners of the publicly traded company that hold a 10% or greater interest in the publicly traded company.

5. Litigation/ Investigations

a. In the Litigation/Investigation Table in Appendix 1, please describe:
   i. Any current litigation (whether civil or criminal,) or regulatory proceedings in which the Client or any board member, senior manager or Key Employee of Client is alleged to have engaged in:
      1. serious criminal conduct[12];
      2. serious financial or ethical misconduct[13]; or
      3. violations of regulations applicable to the Client.

b. Any current investigation(s), that Client is aware of, to assess whether the Client or any board member, senior manager or Key Employee of Client may have engaged in:
   i. serious criminal conduct;
   ii. serious financial or ethical misconduct; or
   iii. violations of regulations applicable to the Client.

c. Any past criminal, civil or regulatory proceeding that resulted in findings of or sanctions for:
   i. serious criminal conduct by the Client or any board member, senior manager or Key Employee of Client;
   ii. serious fin or ethical misconduct by the Client or any board member, senior manager or Key Employee of Client;

d. Any declaration of bankruptcy or insolvency by the Client

6. Relationships with IDB Employees

a. Does any board member, senior manager or Key Employee of Client have a relative[14] who is an employee of the IDB Group? ☐Yes ☐No

If yes, please identify the IDB Group employee and describe the relationship.

- **<u>Components I.3, II.1 and III:</u>**

The EEs must be legally established entities. This includes national and subnational institutions from borrowing member countries of the IDB with legal capacity to enter into agreements with the IDB; (ii) regional and subregional agencies established by the same countries; (iii) private companies eligible to receive loans from the IDB; and (iv) not-for-profit institutions, including civil society associations.

When the IDB is not the EE, IDB will enter into technical cooperation agreements with eligible EE. Eligible EE will be required to use applicable IDB's procurement policies for their use of GCF funds.

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[11] A "Beneficial Owner" is a natural person or legal entity that ultimately owns or controls a legal entity. Determining beneficial ownership requires that ownership be traced back through all intermediate corporate owners, until ownership is determined to reside in either an individual or a publicly traded company.

[12] What constitutes a serious crime may vary according to local law. However, the Financial Action Task Force requires that countries consider, as a minimum, the following offences (and, potentially, related predicate offences) to be serious: participation in an organized criminal group and racketeering; terrorism, including terrorist financing; trafficking in human beings and migrant smuggling; sexual exploitation, including sexual exploitation of children; illicit trafficking in narcotic drugs and psychotropic substances; illicit arms trafficking; illicit trafficking in stolen and other goods; corruption and bribery; fraud; counterfeiting currency; counterfeiting and piracy of products; environmental crime; murder, grievous bodily injury; kidnapping, illegal restraint and hostage-taking; robbery or theft; smuggling; extortion; forgery; piracy; and insider trading and market manipulation. In case of doubt regarding whether a crime "serious", please disclose.

[13] For example: bid rigging, money laundering, price fixing, fraud, tax evasion, manufacturing or selling banned products.

[14] A "relative" is as an individual related to an employee up to the third degree of relationship by blood or by adoption, or up to the second degree of relationship by marriage or domestic partnership.

According to IDB procedures, a formal diagnosis of the EE is required to assess the level of development of the institutional capacity, fiduciary management, eventual execution risks and identify and implement mitigation measures. Four basic areas are evaluated: (i) Management of Contracting of Services and Procurement of Goods; (ii) Administrative, Financial and Accounting Management; (iii) Technical and Monitoring Capacity; and (iv) Knowledge Management and Strategic Communication Capacity. It should be noted that this analysis is comprehensive as it also identifies institutional characteristics and capacities associated with the management of resources from national and international donors, good practices, experience, and use of systems to strengthen these, with a view to an efficient and transparent project execution.

Annex 3: Investments eligibility process flow chart

Annex 4: IDB Environmental and Social Exclusion List

The IDB will not knowingly finance, directly, or indirectly through FIs, investments involved in the production, trade, or use of the products, substances, or activities listed below. Additional exclusions may apply in the context of a specific operation.

1. PROHIBITED ACTIVITIES

a. Activities that are illegal under host country laws, regulations or ratified international conventions and agreements, or subject to international phase out or bans, such as:

(i) Polychlorinated biphenyl compounds (PCBs).
(ii) Pharmaceuticals, pesticides/herbicides, and other hazardous substances subject to international phaseouts or bans.[15]
(iii) Persistent Organic Pollutants (POPs).[16]
(iv) Ozone-depleting substances subject to international phase-out.[17]
(v) Wildlife or wildlife products regulated under Convention on International Trade in Endangered Species of Wild Fauna and Flora.[18]
(vi) Transboundary trade in waste or waste products,[19] except for nonhazardous waste destined for recycling.
(vii) Lead paint or coatings in the construction of structures and roads.[20]

b. Activities that are illegal under host country laws, regulations, or ratified international conventions and agreements relating to the protection of biodiversity resources or cultural heritage.

2. OTHER ACTIVITIES

a. Activities that, although consistent with a country's legal and/or regulatory framework, may generate particularly significant adverse impacts on people and/or the environment, such as:

i. Weapons, ammunitions, and other military goods/technology.

ii. Tobacco.[21]

iii. Gambling, casinos, and equivalent enterprises.[22]

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15 Reference documents are: Council Regulation (EEC) No 2455/92 of 23 July 1992 Concerning the Export and Import of Certain Dangerous Chemicals, as amended from time to time; United Nations Consolidated List of Products whose Consumption and/or Sale have been Banned, Withdrawn, Severely Restricted or not Approved by Governments; Convention on the Prior Informed Consent Procedures for Certain Hazardous Chemicals and Pesticides in International Trade (Rotterdam Convention); Stockholm Convention on Persistent Organic Pollutants; World Health Organization Recommended Classification of Pesticides by Hazard, World Health Organization Pharmaceuticals: Restrictions in Use and Availability

16 Stockholm Convention on Persistent Organic Pollutants as amended in 2009

17 Ozone-depleting substances (ODSs) are chemical compounds which react with and deplete stratospheric ozone, resulting in the widely publicized 'ozone holes.' The Montreal Protocol lists ODSs and their target reduction and phase- out dates. The chemical compounds regulated by the Montreal Protocol include aerosols, refrigerants, foam-blowing agents, solvents, and fire protection agents. (https://ozone.unep.org/treaties/montreal-protocol)

18 www.cites.org

19 As defined by the Basel Convention (www.basel.int).

20 Paints or coatings with a total lead concentration great than 90 ppm or the concentration limit set by the host country, whichever is lower.

21 This does not apply to investments whose primary objective is not related to the production, trade, or use of tobacco.

22 This does not apply to investments whose primary objective is not related to the construction and operation of gambling, casinos, and equivalent enterprises.

iv. Radioactive materials.[23]

v. Unbonded asbestos fibers or asbestos containing products.

vi. Drift net fishing in the marine environment using nets in excess of 2.5 km. in length.

b. Activities that are inconsistent with the IDB's commitments to address the challenges of climate change and promote environmental and social sustainability, such as:

i. Thermal coal mining or coal-fired power generation and associated facilities.[24]

ii. Upstream oil exploration and development projects.[25]

iii. Upstream gas exploration and development projects.[26] Under exceptional circumstances and on a case-by-case basis, consideration will be given to financing upstream gas infrastructure where there is a clear benefit in terms of energy access for the poor and where GHG emissions are minimized, projects are consistent with national goals on climate change, and risks of stranded assets are properly analyzed.

Annex 5: Indicative positive list of activities, investments and use of resources

ACTIVITY 1: SUSTAINABLE AGROFORESTRY (COFFEE, CACAO & PALM BASED SYSTEMS)

Investment	***Example uses of resources***
Plant material	Investment in reproductive technologies for climate resilient native genetic material. In vitro propagation of material, superior clone development.
Sowing, plant material	Purchase of native plant material (seedlings, seeds).
Establishment and management	Purchase of fertilizers / bio-inputs (bio-fungicides, bio-pesticides, biofertilizers). Purchase of equipment and materials that enable climate mitigation and adaptation during establishment.
Certification, seals, sustainable forestry practices	Acquisition sustainable and climate compatibility certifications.
Operation/Production	Purchase of equipment for an eco-efficient production of resources; low energy consumption, low water consumption, low input consumption. Purchase of equipment and materials that enable climate mitigation and adaptation during production
Merchandising	Investment in branding, technology and human resources for marketing and commercialization.
Transportation	Investment in low-emission transport.
Technology	Investment in monitoring systems.
Training and Business skills	Sustainable agroforestry practices.

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23 This does not apply to the purchase of medical equipment, quality control (measurement) equipment, or any equipment where it can be demonstrated that the radioactive source is trivial and/or adequately shielded.

24 This applies only to associated facilities which primary objective is related to the production, trade, or use of coal for power generation or to the transmission of energy generated by a coal-fired power plant (e.g., a dedicated transmission line).

25 Upstream oil and gas exploration and development refer to all the steps involved from the preliminary exploration through the extraction of the resource.

26 Idem.

	Climate adaptation and mitigation practices. Good business practices.

ACTIVITY 2: SUSTAINABLE PERMANENT AGRICULTURE (CACAO, PALMS AND OTHER NATIVE SPECIES)

Investment	***Example uses of resources***
Plant material	Investment in reproductive technologies for climate resilient native genetic material. In vitro propagation of material.
Sowing, plant material	Purchase of native plant material (seedlings, seeds); resistant varieties to pests and diseases
Establishment and management	Purchase of fertilizers / Bio-inputs (bio-fungicides, bio-pesticides, bio-fertilizers); integrated pest management, phytosanitary measures Purchase of a compost bin to make organic fertilizer
Certification, seals, processes in sustainable agricultural and/or organic practices	Acquisition of seals, green certifications, organic, ecological, clean, sustainable cultivation.
Production & Harvest	Purchase of light, mobile harvesting equipment: Soil management (towards higher soil carbon Purchase of bags, baskets (recycled, reused, biodegradable). Purchase of equipment and materials that enable climate mitigation and adaptation during production; Low energy consumption, Low water consumption, Low input consumption. Acquisition of equipment to meet national or international environmental standards.
Efficient use of resources	Environmentally friendly storage center: low energy consumption, use of rainwater, natural lighting, cross ventilation, improved waste management.
Transformation	Purchase of a baler with biodegradable, recycled materials. Acquisition of biocatalysts for product transformation.
Merchandising	Investment in technology for merchandising and commercialization.
Transportation	Investment in clean vehicles.
Training and Business skills	Sustainable agricultural practices. Climate adaptation and mitigation practices. Good business practices.

ACTIVITY 3: NON-TIMBER FOREST PRODUCTS (NTFP)

Investment	***Example uses of resources***
Operation/ Transformation	Eco-efficient oil press machine. Equipment: fermentation -Fermenters with low electric consumption. Eco-efficient threshing machine. Acquisition of equipment for eco-efficient production/operation of resources; low energy consumption, low water consumption, low input consumption.
Merchandising	Investment in branding, technology for merchandising and commercialization.
Transportation	Investment in low emission transport (fluvial and terrestrial).
Establishment and management	Purchase of equipment and materials that enable climate mitigation and adaptation during establishment

	Purchase of fertilizers / bio-inputs (bio-fungicides, bio-pesticides, bio-fertilizers).
Certification, seals, processes in sustainable agricultural and/or organic practices.	Acquisition of seals, green certifications, organic, ecological, clean, sustainable cultivation.
Operations & Harvest	Purchase of light, mobile harvesting equipment: Soil management towards increased soil carbon Purchase of bags, baskets (recycled, reused, biodegradable). Purchase of equipment and materials that enable climate mitigation and adaptation during operations.
Collecting	Environmentally friendly collection center: low energy consumption, use of rainwater, natural lighting, cross ventilation, waste management.
Transformation	Purchase of biodegradable and recycled packaging materials. Purchase of biocatalysts for product transformation.
Training and Business skills	Sustainable NTFP practices Climate adaptation and mitigation practices. Good business practices.

ACTIVITY 4: NATIVE SPECIES AQUACULTURE

Investment	***Example uses of resources***
Establishment	Acquisition of native fry.
	Purchase of high-quality feed.
Harvest	Purchase of low impact equipment for fish harvesting.
Expansion of Aquaculture Farm native species	Construction/implementation of the farm.
Collecting	Cold Room / Refrigerators - Clean Energy.
Transformation	Acquisition of eco-efficient processing equipment (low energy, water consumption) for washing, filleting. Acquisition of clean packaging machinery. Acquisition of equipment for clean and low waste operation.
Merchandising	Investment in technology for merchandising and commercialization.
Transportation	Investment in clean vehicles.
Training and Business skills	Sustainable aquaculture practices. Good business practices.

ACTIVITY 5: FORESTRY PLANTATIONS OF NATIVE SPECIES

Investment	***Example uses of resources***
Plant material	Investment in reproductive technologies for climate resilient native genetic material. In vitro propagation, cloning.
Sowing, plant material	Purchase of native plant material (seedlings, seeds).
Establishment and management	Purchase of equipment and materials that enable climate mitigation and adaptation during establishment Purchase of fertilizers / bio-inputs (bio-fungicides, bio-pesticides, biofertilizers).
Certification, seals, sustainable forestry practices process	Acquisition sustainable and climate compatibility certifications.

Operation/Production	Purchase of equipment and materials that enable climate mitigation and adaptation during production, including equipment for low energy consumption, low water consumption, low input consumption.
Merchandising	Investment in branding and technology for marketing and commercialization.
Transportation	Investment in clean vehicles.
Technology	Investment in monitoring systems.
Training and Business skills	Sustainable agroforestry practices. Climate adaptation and mitigation practices. Good business practices.

ACTIVITY 6: NATURE LED COMMUNITY TOURISM

Investment	***Example uses of resources***
Green infrastructure	Adequacy of eco-efficient/green/sustainable infrastructure in facilities.
Operation	Solar water heaters. Acquisition of photovoltaic panels. Acquisition of eco-efficient equipment in energy, water, and supplies.
Certification, seals, processes in sustainable practices in nature tourism	Acquisition sustainable and climate compatibility certifications.
Transportation	Investment in clean transport (fluvial and terrestrial).
Merchandising	Investment in branding and technology for merchandising and commercialization.
Training and Business skills	Staff training in nature tourism (ecotourism, bird watching, etc.). Climate adaptation and mitigation practices. Good business practices.

ACTIVITY 7: RESTORATION AND REGULATION ECOSYSTEM SERVICES

Investment	***Example uses of resources***
Design and policy progress	Scenarios, scoping and detailed design studies Support to public-private policy process
Development and Operation	Project development analysis and process. Field equipment and supplies. Field operations materials and inputs
Certification and processes	Acquisition sustainable and climate compatibility certifications.
Transportation	Investment in clean transport (fluvial and terrestrial).
Merchandising	Investment in branding and technology for merchandising and commercialization.
Training and Business skills	Staff training in ecosystem services (hydrologic, climatic, soil). Climate adaptation and mitigation practices. Good business practices.

Annex 6. Monitoring and Evaluation Plan.

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 CO2 eq) reduced or avoided (including increased removals) - forest and land use Sub-indicator captured at investment level tCO2e/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 reports. Data at the project level will need to be declared by the beneficiaries of the loans themselves.	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	A4.1 Coverage/scale of ecosystems protected and strengthened in response to climate variability and change	US$ 50,000

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 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	Annually	A5.1 Institutional and regulatory systems that improve incentives for climate resilience and their effective implementation	US$ 30,000

	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 when the number of firms in a portfolio is significant.	Annually	Percentage of beneficiaries who perceived that their knowledge improved as a result of the information received in the training sessions/workshops differentiated by gender	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 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	Annually	Percentage of bio-businesses in priority value chains that report technology upgrading	US$ 10,000

	number of firms in a portfolio is significant.			
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 propoer 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 biannual data and aggregate for annual reports, if necessary.	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
Same as above	Same as above	Annually	Total investment in bio-businesses (US$ million) leveraged through the financial system, including co-financing from other sources (debt and equity) Indicator includes investments enabled by Components I.1 and I.2, including financing and co-financing from the Programme and leverage from third parties.	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	Employment in bio-business and value chains supported (number), that contributes to improve resilience adaptability to climate threats Indicator includes investments enabled by Components I.1 and I.2, including financing and co-financing from the Programme and leverage from third parties.	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	Entities participating (number) in bio-business operational and technical tools and trainings, disaggregated by type Indicator aggregates entities supported under activities (a) and (b) under Component I.3. Entities can be classified by type as: LFI (public or private), investor, business, producer or business support organizations (may include 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.	US$ 30,000
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/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 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$10,000
Monitoring platform, surveys, reports based on own supervision of individual operations approved and bond certification	Supervision of individual operations. Based on the analysis of beneficiary-specific circumstances and progress of activities of the Programme.	Annually	Volume of financing raised (US$ 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
Outcome	Mid Term (2024)	Self-Assessment	US$ 100,000
Ex-poste	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 evaluations presented here are IDB-led evaluations,[27] 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.

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 Operations 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 Operations 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.

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

[27] 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).

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.[28]
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)

[28] In the case of activities detailed in component I and III to be executed through IDB Lab, the following considerations are relevant for programing, 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).

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.

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 Operations 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.

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 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.

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 criteria[29]:

- **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.

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.

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

- ✓ **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.

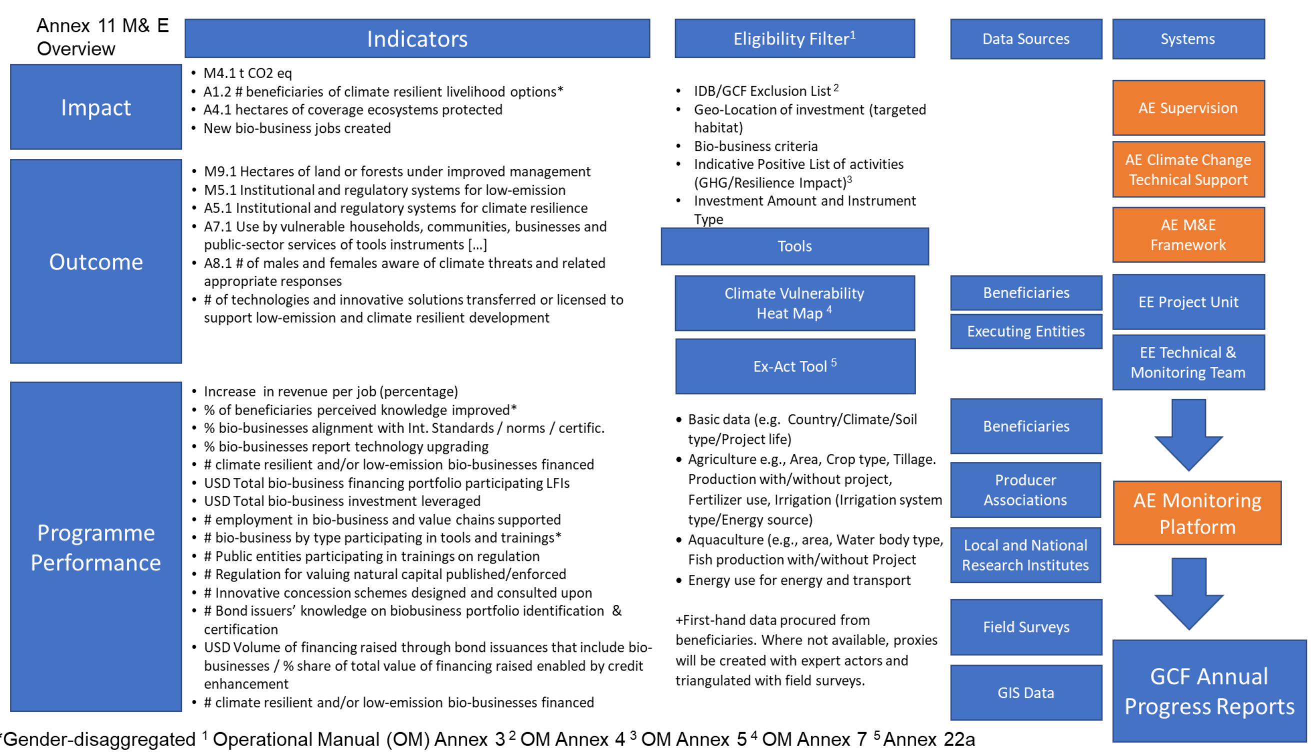
Monitoring and Evaluation System (M&E) for Programme performance

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 entities[30] 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. 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

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[30] With technical assistance funds.

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);
- 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.[31]

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 LFIs and beneficiaries, and support adaptive management to address challenges in capturing data and revising the clarity of criteria and data templates used.

[31] Participatory monitoring approaches are contemplated in the Stakeholder Engagement Plan under the framework of Alliances.

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.
- 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.[32]

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

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[32] 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

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.

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.

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.

- **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.

- **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.

- **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.

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.

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.

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.

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.

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 7. Climate Risk Management – HeatMapR

Physical climate risk is hereby defined here as the occurrence of either chronic and gradual changes to precipitation, temperature and other climate variables, or of extreme events. Including but not limited to droughts, flooding, storms and hurricanes. Physical climate risk is managed by geospatial analysis in order to identify specific areas of operations of financial institutions affected by particularly high levels of physical climate risk.

HeatMapR – it is a geospatial tool that provides a framework for physical climate risk screening of investment and loans portfolios and is being used today to provide analysis to financial institution such as commercial banks and private equity investors. The tool incorporates a physical risk heatmapping module that allows individual investments or portfolios to be rapidly screened based on their sector/sub-sector and geography/ies.

The geographical scales can operate from a country-scale down to municipality or city level. The underlying hazard data underpinning the tool analytics is at a high resolution, and can be aggregated up to several spatial scales to meet the needs of our clients.

The final output of the module is a detailed heatmap which describes the expected relative risk of climate change for individual investments and/or a portfolio consisting of different assets across a range of sectors and sub-sectors. The heatmap's physical risk scores (represented in different colors / shades) incorporate both the direct and indirect potential impacts of climate change. For example, in terms of direct potential impacts, the risk scoring captures direct damage to an investment's physical infrastructure and physical assets caused by severe floods, or chronic impacts of desertification on agriculture productivity. In terms of indirect impacts, the risk scoring captures climate-driven changes in market demand for goods and services, disruptions to businesses and supply chains and other factors. All risk scores are normalized ranging in value between 0 (lower risk) and 1 (higher risk) and are relative to the portfolio being assessed. This provides the great advantage of being able to identify hot spots within each specific portfolio. Figure 1 presents an illustrative example of a physical risk heatmap that is generated by the tool.

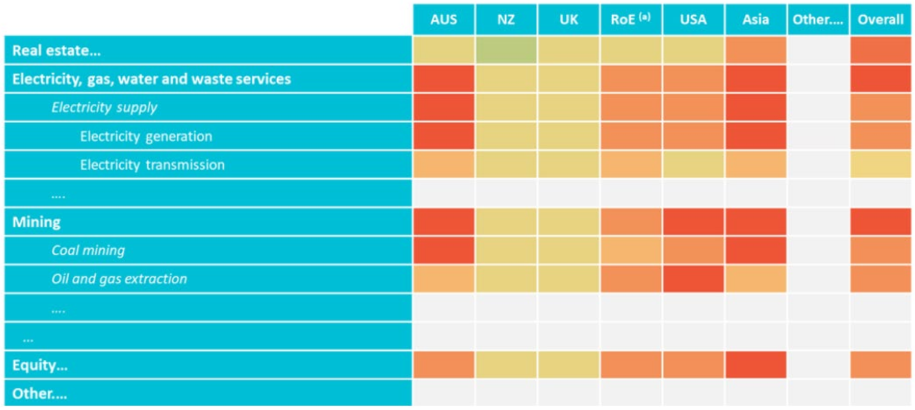


Figure 1. Illustrative physical risk scores by sector and geography, under a 4°C scenario for 2040s (source: Willis Towers Watson)

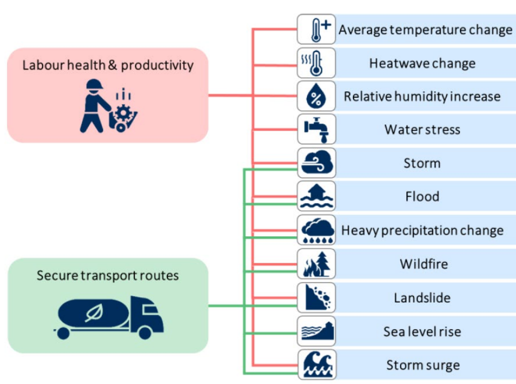
The module analyses and assesses the vulnerability of investment sectors / sub-sectors to direct and indirect impacts associated with a range of climate and climate-related hazards and across multiple geographies.

Vulnerability indicators - Analysis of the vulnerability to climate change of a sub-sector is undertaken within a framework of the following 8 indicators:

- reliance on natural resources,
- need for secure energy supply,
- reliance on climate sensitive supplies,
- reliance on secure transport routes,
- reliance on efficient operation of assets and processes,
- climate sensitivity of market demand,
- potential for environmental and social impact,
- reliance on labour health and productivity.

The vulnerability indicator approach is designed to address both direct and indirect impacts, accounting for chronic (incremental) changes as well as extreme events. In HeatMapR, vulnerability indicators are linked within the framework to relevant climate variables & climate-related hazards. Figure 2 provides an illustrative example of this relationship.

Figure 2.



Each sub-sector is assigned a vulnerability indicator weighting score (High, Medium, or Low) within the modelling framework, according to the relative importance of the indicator to a particular sub-sector within our default listings. This score represents the extent to which that vulnerability indicator will affect the value of any holding in that sub-sector when subject to a specific combination of hazards.

Hazard data and vulnerability indicators are overlaid to assess physical risks facing individual sub-sectors. Risks are assessed across all the vulnerability indicators that have been pre-weighted for their relative importance to a specific sub-sector, and including underlying hazard datasets that are relevant to the sub-sector. The sets of relevant climate/weather data (e.g., temperature or rainfall), and climate/weather-related hazard data (e.g., landslide or wildfire) are linked to each vulnerability indicator. The underlying hazard data are also assigned a score (which can be binary: True (1) / False (0), or a scalar (1-3) depending on the dataset and its original units of measurement).

The data analytics underpinning our proposed heatmapping module is based on peer reviewed, science-based hazard data. Specifically, hazard data from past observations are directly sourced from archives of the US National Oceanic and Atmospheric Administration (NOAA), US National Aeronautics and Space Administration (NASA), and European Centre for Medium-Range Weather Forecast (ECMWF). Weather/climate projections are directly obtained from the Coupled Model Inter-comparison Project (CMIP) and from the Coordinated Regional Climate Downscaling Experiment (CORDEX). Original climate model datasets are then subject to bias-correction against observations in order to reduce the random model errors. The bias-correction is carried out in-house by the CRH applying the Equidistant Cumulative Distribution Function matching method2, one of the most sophisticated and widely used methodologies.

The fact that we are able to work with the full set of original hazard data in-house enables us to generate datasets for hazard variables that are specifically tailored to the needs of the client. Unlike most climate physical risk tools available commercially, the tool developed by the CRH does not depend on third parties (i.e., government agencies, other consultancies) for pre-processing of hazard data, and therefore affords us considerable flexibility to tailor the hazard variables to specific sector and sub-sectors and geographical locations. For instance, the number of days and thresholds used to define heat waves can be different for the agriculture and the automobile sectors, or the snow depth used to identify severe snow storms differs from Canada to southern regions of the United States.

Within the heatmapping module, the climate hazard data cover a full set of time horizons (2020s, 2030s, …, 2090s) and climate scenarios associated with three RCPs (RCP2.6, RCP4.5 and RCP8.5) representing a wide range of future greenhouse gas emissions trajectories. Details on our hazard datasets are provided in Table 1.

Table 1 Physical hazard datasets (source: Willis Towers Watson)

Variable	Spatial horizontal resolution
Chronic (incremental)	
Average annual / seasonal precipitation	CMIP5 100 km CORDEX* 50 km Statistically downscaled in-house at 25 km
Average annual / seasonal temperature	CMIP5 100 km CORDEX* 50 km Statistically downscaled in-house at 25 km
Sea level rise	25 km
Acute (extreme)	
Heavy precipitation (1-day/5-day maximum)	CMIP5 100 km CORDEX* 50 km Statistically downscaled in-house at 25 km
Riverine Flood	Down to 1 km
Heatwave (number of days with temperature above threshold)	CMIP5 100 km CORDEX* 50 km Statistically downscaled in-house at 25 km
Drought	CMIP5 100 km CORDEX* 50 km Statistically downscaled in-house at 25 km
Windstorms	CMIP5 100 km CORDEX* 50 km Statistically downscaled in-house at 25 km
Snow storms	CMIP5 100 km CORDEX* 50 km RCM* from 1-50 km Statistically downscaled in-house at 25 km
Storm surge	Down to 1 km
Climate-related	
Water stress	Hydrological sub-basin
Seasonal water variability	Hydrological sub-basin
Water supply	Hydrological sub-basin
Water demand /withdrawals	Hydrological sub-basin
Wildfire	0.25 km
Landslide	5km
* Not available for all global locations	

Once the team has collected the relevant information on the banks' portfolios, the latter will be analyzed by running the HeatMapR tool. As presented under HeatMapR's description, physical climate risk heatmaps applied to the NDBs' selected sectors/ sub-sectors, geographies as well as time horizon and scenario will be generated.
Prior to producing the results, the climate hazard data that underpins the analysis is statistically downscaled to a high spatial resolution for the countries where each NDB operates.

The team will then compile the tool's results and produce a methodological report and a report with these results applied to each pilot NDBs' portfolios.

We will use and process the outputs from the HeatMapR tool to clearly scope out the identified NDBs' physical climate risk results for segments and regions. Using HeatMapR's results, we will define transmission channels for the top hazards (risk drivers) and most-at-risk sectors per pilot NDB. The vulnerability indicators developed in HeatMapR and described above capture a wide range of impact channels through which climate hazards can affect holdings in a sub-sector. To demonstrate the richness of this approach, a collection of sample impact channels and relevant climate hazards for vulnerability indicators is provided in Table 2. The indicators are designed to provide comprehensive coverage of potential risk areas, and enable the client to gain a full picture of the physical climate-related factors that might affect the value of an asset or portfolio. The consulting team will discuss with the banks the level of detail and complexity of this product.

As a result of the climate impact transmission channels and opportunities identification, the team will deliver a conceptual model tool that summarizes the key climate risks and resilience opportunities for the pilot NDBs' portfolios. This tool will capture all of the information enabling the banks' management level personnel, to support their understanding and integration of adequate physical climate risk management practices. It is intended to inform future strategic and day-by-day decision-making so that physical climate risks and opportunities are fully integrated.

The conceptual model tool will be delivered as bow tie diagrams that illustrate, for the most at-risk sectors, the relationship between the hazard, the potential climate impacts on each sector and potential resilient solutions. This technique is a highly effective communication tool that can support NDB's strategic thinking, as it can uncover potential holes in risk management practices. Moreover, it offers a clear overview of different but plausible scenarios that illustrate how the avoidance, reduction and management of potential risks can be turned into investable opportunities. Using the bow tie method also allows to illustrate how technological trends, as well as changes in legislation and in supply and demand, may positively influence or prevent opportunities from materializing in future.

In accordance with the results stemming from the HeatMapR analysis, the consultant team in collaboration with IDB will decide how many bow tie diagrams should be developed for each of the NDBs. Figure 3 below illustrates the format under which these bow tie diagrams will be generated. We propose to use Microsoft Visio to deliver the bow tie diagrams in a visually appealing and easy-to-understand format.

Figure 3.

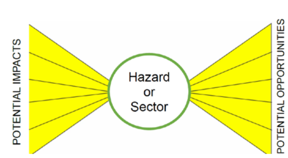


Table 2 Example channels through which vulnerability affects sub-sector performance and associated climate hazards

Example potential impacts' receptors	Example relevant climate hazards/drivers	Example channels through which vulnerability affects sub-sectors
Natural resources	• Sea level rise • Flooding • Drought – frequency, duration, magnitude	• **Tourism** businesses can be affected by the loss of beach or other recreational land due to coastal erosion and sea level rise. • The **hospitability** sector can be affected by disruptions in water supply caused by drought and/or severe flooding-related water contamination.
Energy supply	• Flooding • Windstorms • Heatwave	• Functioning of **ICT** equipment and facilities can be affected by disruption to power supply resulting from storms or severe flooding. • Productivity of **manufacturing** businesses is vulnerable to downtime caused by disruptions of energy supply from extreme weather events such as heatwave, flooding, storms.
Climate sensitive supplies	• Heavy precipitation (1-day or 5-day maximum rainfall) • Average annual / seasonal precipitation • Average annual / seasonal temperature • Drought – frequency, duration, magnitude • Windstorms	• Primary production in **agriculture** and **forestry** is affected by multiple climate variables including temperature, precipitation, droughts, windstorms. • Sub-sectors dependent on supplies of agriculture and forestry inputs (e.g. **agribusiness, retail, construction**) will experience changes in input availability, price and quality.
Transport routes	• Average annual/seasonal temperature • Average annual/seasonal precipitation • Storms • Flooding • Landslides • Heatwave	• **Agribusiness** is highly dependent on reliable transport routes as a vital part of its value chain. It could be severely affected by disruptions to transport links caused by severe weather conditions damaging transport infrastructure. • **Services** sub-sectors such as **retail** and **hospitality** can be adversely affected through the unavailability of staff who are unable to travel to work due to climate/weather-related conditions disrupting transport links.
Assets & processes	• Average annual/seasonal temperature • Average annual/seasonal precipitation • Heatwave • Humidity • Wind speed • Storms • Flooding	• Productivity of solar **power** plants are affected by a reduction in power generation efficiency with rising temperatures. • **Utilities** businesses with large physical infrastructure stocks could be adversely affected by increasing maintenance and repair costs as a result of more frequent and intense weather events such as strong winds, heatwaves, storms and flooding.
Market demand	• Average annual/seasonal temperature	• **Clothing manufacturers** are vulnerable to changes in market demand due to rising temperatures.