Green Finance & Sustainable Agriculture in the Dry Forest Ecoregion of Ecuador and Peru

Part I: Project Information

GEF ID
10852

Project Type
FSP

Type of Trust Fund
GET

CBIT/NGI
CBIT **No**
NGI **Yes**

Project Title
Green Finance & Sustainable Agriculture in the Dry Forest Ecoregion of Ecuador and Peru

Countries
Regional, Ecuador, Peru

Agency(ies)
CAF

Other Executing Partner(s)
CAF, COFIDE, BANECUADOR, FAO, CONSERVATION INTERNATIONAL

Executing Partner Type
Others

GEF Focal Area

Multi Focal Area

Taxonomy

Mainstreaming adaptation, Climate Change Adaptation, Climate Change, Biomes, Tropical Dry Forests, Biodiversity, Focal Areas, Forest, Drylands, Financial and Accounting, Payment for Ecosystem Services, Certification -National Standards, Mainstreaming, Ceritification - International Standards, Agriculture and agrobiodiversity, Land Degradation, Sustainable Land Management, Sustainable Livelihoods, Sustainable Agriculture, Restoration and Rehabilitation of Degraded Lands, Income Generating Activities, Improved Soil and Water Management Techniques, Ecosystem Approach, Integrated and Cross-sectoral approach, Influencing models, Deploy innovative financial instruments, Stakeholders, Type of Engagement, Partnership, Participation, Private Sector, Financial intermediaries and market facilitators, Capital providers, Individuals/Entrepreneurs, SMEs, Non-Grant Pilot, Project Reflow, Communications, Awareness Raising, Behavior change, Beneficiaries, Civil Society, Non-Governmental Organization, Gender Equality, Gender Mainstreaming, Sex-disaggregated indicators, Gender results areas, Participation and leadership, Access to benefits and services, Capacity Development, Integrated Programs, Food Systems, Land Use and Restoration, Smallholder Farming, Landscape Restoration, Sustainable Commodity Production, Deforestation-free Sourcing, Comprehensive Land Use Planning, Food Value Chains, Sustainable Food Systems, Integrated Landscapes, Capacity, Knowledge and Research, Knowledge Generation, Training, Learning, Theory of change, Indicators to measure change, Ecosystem-based Adaptation

Rio Markers

Climate Change Mitigation

Climate Change Mitigation 0

Climate Change Adaptation

Climate Change Adaptation 1

Duration

96 In Months

Agency Fee($)

540,000.00

Submission Date

8/26/2021

A. Indicative Focal/Non-Focal Area Elements

Programming Directions	Trust Fund	GEF Amount($)	Co-Fin Amount($)
LD-1-1	GET	4,652,947.00	58,443,596.00
BD-1-1	GET	1,347,053.00	9,756,404.00
	Total Project Cost ($)	**6,000,000.00**	**68,200,000.00**

B. Indicative Project description summary

Project Objective

Support the conservation of biodiversity in prioritized territories of the Dry Forests in Ecuador and Peru, by financing sustainable agricultural practices (which includes climate smart agriculture), building capacities and transferring technology to small and medium farmers. The financing of sustainable agriculture practices at adequate financial terms and conditions is to be enabled through the issuance of one or more green bonds in Peru and Ecuador that will benefit from guarantees provided by GEF and CAF. The guarantees will act as credit enhancements thereby improving the terms of financing of the issuers, and their on-lending terms for the small holder farmers in that region.

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount($)	Co-Fin Amount($)

Component 1. Protection of priority sites of the Dry Forest	Technical Assistance	**Outcome 1.1**. Development and implementation of a Strategic land use management plan **Outcome 1.2.** Investigations and academic contribution to develop specific indicators to measure restoration and connectivity approach **Outcome 1.3**. Application of strengthening actions in the identified conservation incentive scheme	**Output 1.1.1. .** Mapping of potential restoration areas and identification of productive native species and low value-added crops for conversion into crops that favor the improvement of producer's income and land recovery **Output 1.1.2.** Design, validation, and implementation of priority activities of the land use management plan – including 20% set-aside requirement **Output 1.2.1.** Restoration and connectivity indicators accredited by academy **Output 1.3.1.** Design a mechanism to strengthen a selected incentive scheme for conserving the remnants of dry forest associated with crops	GET	1,400,000.00
Component 2. Strengthening capacities to manage agricultural land in a sustainable way	Technical Assistance	**Outcome 2.1.** Sustainable agricultural practices, including integrated management of natural resources, incorporated in hectares linked to green financing lines.	**Output 2.1.1.** Design of a financial education strategy and training in sustainable agricultural practices, including activities for the integrated management of natural resources **Output 2.1.2**. Identification of Agricultural Field Schools (ECA) and implementation of financial education strategy and train in sustainable agricultural practices.	GET	2,600,000.00

Output 2.1.3. Transfer of skills, capacities, and best available practices to increase crop productivity of local farmers

Output 2.1.4. Training in alternative cultural practices to the burning of post-harvest remnants

Output 2.1.5. Capacity building and awareness of the negative impacts of chemicals and fertilizers on biodiversity and health.

Output 2.1.6. Transfer of skills, capacities and alternatives (low toxicity and organic products) for pest control

Output 2.1.7. Implementation of communication and awareness strategy to conserve the Equatorial Tumbesian Dry Forest

Component 3.Pilot to incentivize sustainable technology adoption in crops	Investment	**Outcome 3.1.** At least one crop selected in each country to be technified and integrated into productive chains for exportation	**Output 3.1.1**. Selection of one crop in each country with the potential to be technified in a sustainable way and integrated into productive chains for exportation	GET		3,000,000.00
		Outcome 3.2. Increased access to international markets for small and medium producers through sustainable certification of crops	**Output 3.2.1.** Adoption of crop sustainability certifications by at least 800 farmers			
		Outcome 3.3. Increased hydric resilience of crops	**Output 3.3.1.** Implementation of sustainable irrigation systems with small and medium producers			
		Outcome 3.4. Reduction of the risk of sustainable technification loans to small and medium producers	**Output 3.4.1**. Identification and selection of anchor companies for each crop			
			Output 3.4.2. Arrangement of purchase agreements for small and medium farmers by anchor companies			
Component 4. Increase in the Availability of Investments in Sustainable Agriculture	Investment	**Outcome 4.1**. Definition of of baselines and formulation of project performance indicators	**Output 4.1.1.** Development of sustainable agriculture plans for farms through a diagnosis of agricultural practices and the state of natural resources in the priority areas	GET	6,000,000.00	60,200,000.00
		Outcome 4.2. Market study and analysis of the demand for financial products from sustainable agriculture in Equatorial & Tumbesian Dry Forests	**Output 4.2.1**. Development of an analysis of the market condition and demand for sustainable			

Outcome 4.3. Mobilization of investment through guarantees to issue green bonds in Ecuador and Peru – though BanEcuador and COFIDE, raising funding from private investors for sustainable agriculture.

Outcome 4.4. Design and implementation of green financing lines for sustainable agriculture aimed at small producers and MSMEs.

Outcome 4.5. Strengthening of banks to adequately monitor developed green lines

Outcome 4.6. At least 10,000 hectares restored with native dry forest species in conservation corridors that allow the recovery of environmental services

Outcome 4.7. At least 170,000 hectares managed under the criteria of agroforestry and silvopastoral projects. This includes 140,000 Hectares under sustainable land management in production systems and 30,000 Hectares of landscape under improved management to benefit biodiversity

agriculture financial products in Equatorial & Tumbesian Dry Forests of Ecuador and Peru

Output 4.3.1. Issuance of one or more green bonds to fund structuring of private credit lines with the proceeds of the Green Bonds to finance the sustainable agriculture portfolios of financial institutions in Ecuador and Peru.

Output 4.3.2. Improved conditions of funding as a result of the CAF and GEF guarantees.

Output 4.3.3: Improved terms of financing for agricultural sustainable practices are 'passed to" smallholder farmers.

Output 4.4.1. Design and implementation of green financing lines for sustainable agriculture in selected IFIs in Ecuador (BanEcuador) and Peru (COFIDE), aimed at small producers and MSMEs – involving Conservation Agreements where possible. 5,670 loans assumed with on-lending of USD 33 million.

Output 4.5.1. Training to BanEcuador and COFIDE in the risk management of sustainable agriculture projects

Output 4.6.1. Conservation and restoration with native dry forest species in areas connecting important biodiversity conservation

			areas and remnant patches of Equatorial and Tumbesian Dry Forests **Output 4.7.1** Incorporation of native species on farm boundaries and crop buffer zones through agroforestry and silvopastoral projects financed through green financing lines – and 20% of farmed land set aside and managed for biodiversity under Conservation Agreements.			
Component 5. Monitoring, Evaluation and Knowledge Management	Technical Assistance	**Outcome 5.1**. Monitoring of administrative and operational aspects **Outcome 5.2**. Monitoring and evaluation of the four technical components of the project	**Output 5.1.1**. Implementation of a Project Coordination Unit (PCU) for administrative and operational aspects of the project **Output 5.2.1.** Design of a Monitoring, Reporting and Verification (MRV) tool with indicators of the project's environmental, social, gender and economic co-benefits **Output 5.2.2.** Monitoring and Evaluation of the project according to the guidelines of the MRV tool, in connection with the reports of the banks involved in Ecuador and Peru **Output 5.2.3.** Certification of the Bond issuance and M&E used to adhere to the Green Bond Principles	GET		900,000.00
			Sub Total ($)		**6,000,000.00**	**68,100,000.00**
Project Management Cost (PMC)						
				GET		100,000.00

Sub Total($)	0.00	100,000.00
Total Project Cost($)	6,000,000.00	68,200,000.00

C. Indicative sources of Co-financing for the Project by name and by type

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount($)
GEF Agency	CAF	Guarantee	Investment mobilized	6,600,000.00
GEF Agency	CAF	Loans	Investment mobilized	8,000,000.00
Donor Agency	French Development Agency (AFD)	Loans	Investment mobilized	12,600,000.00
Private Sector	Private lenders/bond holders – through green bond issued by BanEcuador	Loans	Investment mobilized	25,700,000.00
Private Sector	Private lenders/bond holders – through green bond issued by COFIDE	Loans	Investment mobilized	7,300,000.00
Recipient Country Government	Ministry of Environment in Ecuador	In-kind	Recurrent expenditures	1,500,000.00
Recipient Country Government	Ministry of Environment in Peru	In-kind	Recurrent expenditures	1,000,000.00
Recipient Country Government	Ministry of Agriculture in Ecuador	In-kind	Recurrent expenditures	1,544,000.00
Recipient Country Government	Ministry of Agriculture in Peru	In-kind	Recurrent expenditures	1,544,000.00
Recipient Country Government	Guayas Provincial Government	In-kind	Recurrent expenditures	400,000.00
Donor Agency	Food & Agriculture Organization (FAO)	In-kind	Recurrent expenditures	500,000.00
Other	Global Green Growth Initiative (GGGI)	Grant	Investment mobilized	200,000.00

Civil Society Organization	Water Fund of Guayaquil	In-kind	Recurrent expenditures	312,000.00
Donor Agency	Conservation International	In-kind	Recurrent expenditures	1,000,000.00
			Total Project Cost($)	**68,200,000.00**

Describe how any "Investment Mobilized" was identified

1 It corresponds to the CAF partial guarantee, which would cover a maximum of 20% of a a bond issuances for a total amount of USD 33 MM. The additional first loss guarantee of US$ 6 MM from the GEF, will bring the guaranteed amount to 38% of the bond issuances . CAF will be in charge of managing and structuring the guarantees, paying the GEF the corresponding premium e. It in the event of a call for guarantees (including GEF and CAF amounts), any unrecovered amount will first affect the GEF guarantee (since the GEF's guarantee is subordinate to that of CAF). 2 The guarantees offered by GEF and CAF can support one or more bond issuances by COFIDE and BanEcuador or need be, another issuer (an SPV or other lender). The GEF financing will be structured in the form of guarantees for one or more bond issuances in Ecuador and Peru, to be structured ahead of CEO endorsement If BanEcuador does not issue the bond, CAF will work on finding another issuer. 3 The CAF loan will help to fund the Component 3 pilot study to incentivize the technification of two crops that can be used to inform and be adopted by the green credit lines in Component 4. The CAF Loan will also co-finance component 4. 4 The co-financing for NGI projects only takes into consideration investment mobilized that are not in-kind. The total amount without in-kind is USD 60.2 MM. Total investment mobilized is USD 60.2 million. The additional USD 8 million generated in-kind (that bring total co-financing to US$ 68.2 M)is in form of grants is all technical assistance and is excluded from the 'investment mobilised' sum. The investments mobilized were identified through numerous discussions, meetings and agreements with AFD, COFIDE and BanEcuador. Some of them have already sent co-finance letters, cofinance emails and/or letters of support and are willing to provide us formal cofinance letters ahead of CEO endorsement. The COFIDE and BanEcuador on-lending to small holder farmers will be funded by the guaranteed green bond issuances (ie investments from the private sector). These two financial intermediaries may also provide their own loans under the same green credit line conditions to farmers and producers. This would be updated at the time of the CEO endorsement. The loans from CAF and AFD will also be used for farmers and producers under the same green credit line conditions. The loan from AFD is a refinanced loan already in place with CAF (from Credit Line No. 2658 already signed) and has been agreed with AFD to be used for this project.

D. Indicative Trust Fund Resources Requested by Agency(ies), Country(ies), Focal Area and the Programming of Funds

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount($)	Fee($)	Total($)
CAF	GET	Regional	Multi Focal Area	NGI	6,000,000	540,000	6,540,000.00
				Total GEF Resources($)	**6,000,000.00**	**540,000.00**	**6,540,000.00**

E. Project Preparation Grant (PPG)

PPG Required **true**

PPG Amount ($)	PPG Agency Fee ($)
100,000	9,000

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount($)	Fee($)	Total($)
CAF	GET	Regional	Multi Focal Area	NGI	100,000	9,000	**109,000.00**
				Total Project Costs($)	**100,000.00**	**9,000.00**	**109,000.00**

Core Indicators

Indicator 3 Area of land restored

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
10000.00	0.00	0.00	0.00

Indicator 3.1 Area of degraded agricultural land restored

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Indicator 3.2 Area of Forest and Forest Land restored

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
10,000.00			

Indicator 3.3 Area of natural grass and shrublands restored

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Indicator 3.4 Area of wetlands (incl. estuaries, mangroves) restored

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Indicator 4 Area of landscapes under improved practices (hectares; excluding protected areas)

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
170000.00	0.00	0.00	0.00

Indicator 4.1 Area of landscapes under improved management to benefit biodiversity (hectares, qualitative assessment, non-certified)

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
30,000.00			

Indicator 4.2 Area of landscapes that meets national or international third party certification that incorporates biodiversity considerations (hectares)

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Type/Name of Third Party Certification

Indicator 4.3 Area of landscapes under sustainable land management in production systems

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
140,000.00			

Indicator 4.4 Area of High Conservation Value Forest (HCVF) loss avoided

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Documents (Please upload document(s) that justifies the HCVF)

Title	Submitted

Indicator 9 Reduction, disposal/destruction, phase out, elimination and avoidance of chemicals of global concern and their waste in the environment and in processes, materials and products (metric tons of toxic chemicals reduced)

Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)
0.00	0.00	0.00	0.00

Indicator 9.1 Solid and liquid Persistent Organic Pollutants (POPs) removed or disposed (POPs type)

POPs type	Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)

Indicator 9.2 Quantity of mercury reduced (metric tons)

Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)

Indicator 9.3 Hydrochloroflurocarbons (HCFC) Reduced/Phased out (metric tons)

Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)

Indicator 9.4 Number of countries with legislation and policy implemented to control chemicals and waste (Use this sub-indicator in addition to one of the sub-indicators 9.1, 9.2 and 9.3 if applicable)

Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)

Indicator 9.5 Number of low-chemical/non-chemical systems implemented, particularly in food production, manufacturing and cities (Use this sub-indicator in addition to one of the sub-indicators 9.1, 9.2 and 9.3 if applicable)

Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)

Indicator 9.6 Quantity of POPs/Mercury containing materials and products directly avoided

Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)

Indicator 11 Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment

	Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)
Female	7,000			
Male	17,300			
Total	24300	0	0	0

Provide additional explanation on targets, other methodologies used, and other focal area specifics (i.e., Aichi targets in BD) including justification where core indicator targets are not provided

The targets are explained as follows: - Area of land restored: 10,000 ha is the estimated area containing degraded coastal dry forests due to small and medium-scale agriculture that is to be targeted by the project to be restored as dry forest. 4,000 ha of restoration of dry forests has already been agreed with the Guayas Provincial Government as part of this project. It is assumed that additional sources of financing for carbon sequestration and nature-based solutions can be accessed during the project to help ensure a further 6,000 ha is put in place. This is to be confirmed during the design stage. - Area of landscapes under improved practices: 170,000 ha is the overall estimated area of landscape under improved practices. There will be integrated landscape management including sustainable climate smart agriculture, reforestation and dry forest recovery. It is based on the number of credits that could be placed and the extent of borrowers' land. Of the 170,000 ha estimated area of farmland covered by the improvements, 80% of the land (140,000 ha) would be (Indicator 4.3) 'Area of landscape under sustainable land management in productive systems' and around 20% of this land (30,000 ha) is assumed to be Indicator 4.1 'Area of landscape under improved management for biodiversity'. This is based on a planning component of 20% of the area of farms that apply for microfinance will ensure that they maintain natural vegetation cover and are managed for biodiversity. This will be included in conservation agreements and in credit contract covenants. - Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment: is the estimated number of agriculture producers and landowners located in the indirect area of project's influence or inside the dry forest that could be direct beneficiaries of a sustainable agriculture loan. This number was obtained through interviews with Ministries of Agriculture of both countries, and Caja Piura and BanEcuador local officers in areas of the planned interventions. The typical farmer plot is >1ha &<10ha. Land ownership is diverse. In Ecuador and Peru there are private and "communal" ownership. It will be confirmed more accurately during the design phase, once the socio-economic study results are analyzed. The disaggregation by gender will also be provided at the design stage. - While the project will not monitor and/or establish targets for GHG emissions, there will certainly be significant benefits from restored forest and some of the climate smart agricultural practices, such as improved soil. This will therefore be an unquantified co-benefits. This is something that could be calculated and monitored as the project progresses. The Project's contribution to CBD Aichi Targets is as follows: - Target 1: at least 24,300 local producers/farmers (and their families) in Ecuador and Peru will be aware of biodiversity and the steps they can take to conserve and use it sustainably. - Target 4: national and local governments, private companies and local producers will take steps for sustainable agriculture and the conservation of coastal dry forests in Ecuador and Peru. - Target 5: the rate of loss of coastal dry forests in Ecuador and Peru will be reduced and improved connectivity will reduce degradation. - Target 7: the project priority cited will be under sustainably managed agriculture, ensuring the conservation of biodiversity harbored by the coastal dry forests in Ecuador and Peru. - Target 14: the ecosystem services provided by coastal dry forests in Ecuador and Perú will be restored to secure agriculture, food security and livelihoods of poor and vulnerable communities. - Targets 18 and 19: Increase the science-based knowledge of the local communities about restauration and ecological connectivity with a gender approach - Target 20: Financial mechanism for sustainable agricultural practices and landscape conservation CW INDICATOR 9 WAS ACTIVATED BY MISTAKE. PLEASE DO NOT CONSIDER IT IN YOUR ANALYSIS of core indicators of GEBs. Note: PPG will be used to hire a consultant team that will help to the design of the PRODOC with Peru and Ecuador stakeholders. They will help to make the Gender Action Plan and improve the demand study with small landholders in both countries. In addition, the PPG will be used to discuss with the Rating Agencies the value of the guarantees ahead of the issuance. Information of demand on 2019 (before COVID-19 outbreak) showed a significant demand of agricultural, agroforestry and cattle raising microfinance credits in Ecuador and a smaller demand in Peru. During 2020 we know that those numbers decrease significantly in both countries, but national government plans of both new administrations in Peru and Ecuador prioritize strong investments in agriculture production and microfinance at improved conditions for small producers. The PPG will be used partially to improve the demand studies in order to measure adequately the needs on territory.

Part II. Project Justification

1a. Project Description

1a. Project Description

Project Summary

The Equatorial and Tumbesian Dry Forest extends along the central and south coast of Ecuador and the north coast of Peru. It is home to the largest and most endemic tropical dry forest ecosystem on the planet. However, this ecosystem has been strongly threatened due to anthropogenic actions. The main causes of deforestation have been the land use changes for agricultural activity, in addition to the impacts caused by livestock farming, forestry, and indiscriminate burning – exacerbated by a lack of land use planning. These unsustainable agricultural practices are driven primarily by population growth and the increasing demand for agricultural products locally and from abroad. Furthermore, climate change poses a growing threat to the region, as it causes increasing water insecurity and can exacerbate the devastating extreme weather events of the El Niño phenomenon.

Ecuador and Peru have recently made a step forward in acknowledging the importance of the biodiversity and ecosystem services in the Equatorial dry forest of Tumbes, which is vital in maintaining local livelihoods and ensuring climate resilience. There has also been growing awareness of the negative impacts of the agro-industrial practices that prevail there. Furthermore, there is an adequate institutional, legal and regulatory framework necessary for a transition to sustainable agricultural production in these ecosystems. Actions already carried out have allowed a better understanding of the general characteristics of these ecosystems and the magnitude of impacts caused by human activities, and progressively by climate change. Consequently, a territorial planning approach solely based on combined production and conservation does not appear sufficient.

This project seeks to protect and enhance the endangered and internationally important dry coastal forest in Ecuador and Peru through facilitating sustainable climate smart agriculture and improving access to green credit loans for farmers and small producers. The project will help to enhance land use planning, associated incentives, build capacity and catalyse private finance to transform agricultural practices to be much more sustainable. It will also help to preserve and restore the degraded dry forest.

The financing of sustainable climate smart agriculture practices at adequate financial terms and conditions is to be enabled through the issuance of one or more green bonds in Peru and Ecuador that will benefit from partial credit guarantees provided by GEF and CAF. The guarantees will act as credit enhancements thereby improving the terms of financing of the issuers, and their on-lending terms for the small holder farmers in that region

The key motivations for this project are thus to enhance biodiversity recovery, promote more sustainable agricultural practices (including for example climate smart agriculture - CSA), to improve livelihoods and ultimately to create a positive virtuous cycle in which sustainable agriculture is self-sustained by the creation of a successful and repeatable green financial mechanism.

The green credit lines structured by the bond issuers (BanEcuador and COFIDE) will be lent to smallholder farmers in the identified geographical areas, and will include establishing Conservation Agreements and credit covenants that link the agricultural performance to the loans.

Conservation Agreements were first developed by Conservation International and have been used in more than 17 countries to create incentives for local populations to align their economic-generating agricultural activities and land use practices with conservation goals – thereby enabling sustainable agriculture.

Halting biodiversity loss in the dry forest may thus be harmonised with productive activities by promoting and supporting sustainable climate smart agricultural practices. Key to the project success will be to explain and persuade small farmers and producers to change their approach. Many will be keen as they increasingly realise that climate will be problematic to their current farming approaches. They will need re-assurance of the financial sense and low risk of adopting such approaches – with champions who can share their success stories.

The project encompasses five main components which will be implemented through technical assistance or investments:

1. Protection of priority sites of Tumbesian and Equatorial Dry Forest
2. Strengthening capacities to manage agricultural land in a sustainable way
3. Pilot to incentivize sustainable technology adoption in crops
4. Increase in the Availability of Investments in Sustainable Agriculture .
5. Monitoring, evaluation, and knowledge management

These components will all help to develop and implement the establishment of an inter-linked Conservation Agreement model and Sustainable Green Bond Framework. All components are highly integral and essential for the project to be successful.

The project's outcomes are expected to result in 10,000 hectares restored and 170,000 hectares benefiting from the introduction of sustainable agriculture (including climate smart agricultural practices). This will include the reduction of around 450,000 tons of fertilizer agrochemicals and of 10,000 tons per year of chemical biocides (by the fifth year of the project) as a project co-benefit (not as a GEB). Overall, the project has an estimated 24,300 direct beneficiaries and an estimated 52,200 indirect beneficiaries (including suppliers and family's farmers). Ultimately, the ambition is to emerge, in the medium and long term, into a new, self-sustaining paradigm promoting sustainable agriculture in the ecoregion of the equatorial dry forest of Tumbes.

Summary of the financial structure to achieve Project Objectives:

The green bonds are expected to be issued by BanEcuador and COFIDE (or an SPV or other issuer if necessary) for an expected total amount of up to US$ 33 M. CAF and GEF credit guarantees will represent up to 38% of each bond issuance (20% CAF and 18% GEF). The GEF guarantee will be first loss to the CAF guarantee.

The issuers are expected to achieve improved terms and conditions through this guaranteed bond issuances that will help lengthen tenors and/or reduce interest rates which are necessary to then use these proceeds to on-lend to smallholder farmers for climate smart practices and land restoration activities. The green bonds will follow the ICMA guidelines.

The CAF and AFD are expected to complement the bond financing with additional loans as explained in the co-financing table. BanEcuador and COFIDE may then also provide additional loans using the same green credit lines and conditions.

In total around USD 60.2 million is expected to be provided to smallholder farmers from the proceeds of the bond issuances, CAF and AFD loans. Initial estimates of the split of financing are: USD 45 million in Ecuador and USD 15 million in Peru.

A further USD 8 million will be provided in technical assistance sourced in-kind by various public organizations including government Ministries and civil society organizations such as FAO, the Global Green Growth Institute (GGGI) and Conservation International. This includes various technical, providing educational materials, training.

To ensure uptake of the green credit lines and the long-term success of this project, it is vital that Components 1-4 are implemented in a permanent partnership with local actors/NGOs at the grass-roots level. Furthermore, the progress and outcomes of these components will be constantly monitored, evaluated, and managed by a dedicated Project Coordination Unit (PCU) with the use of a Monitoring, Reporting and Verification (MRV) tool.

A key point in relation to the GEF NGI guarantee is that considerable Technical Assistance resources are focused on Components 1 to 3 and 5. The Components are very much needed to support the successful development and implementation of the Green bonds in Component 4. This because Ecuador and Peru have relatively limited sustainable bond experience, the farmers and producers will need training and educating about agroforestry and green credit lines, and because obtaining relevant information on the dry forest priority areas and farmers to be targeted all require much technical assistance to undertake. The NGI GEF guarantee is needed to support and attract the other mobilized private sector bond issuance co-financing. Component 4 is totally dependent on the successful completion of all the other Components.

Furthermore, this project directly complements the transformational change that the existing GEF grant funded FOLUR/ASL programs have in the region. The private capital mobilized by this project therefore adds significant value-added to these programs which aim to move agricultural to a much more sustainable basis in particular linked to agroforestry and crops such as cacao. These two programs are further explained in detail in the Baseline section of this PIF under 'GEF funded projects'.

1a.1) The global environmental and/or adaptation problems, root causes and barriers that need to be addressed (systems description)

Socioeconomic Context

The main root of the problem is twofold – on the one hand there is continued environmental degradation including extensive loss of dry coastal forest and expansion of damaging agricultural practices (due to population growth, increased agricultural demand, and more severe climate change impacts), and on the other hand, the current incentive structure favours continued damaging short term focussed agricultural practices. The smallholder farmers that represent a majority of the agricultural producers in this geographical area. lack access to adequate terms of financing to pursue sustainable agricultural practices. Current financing available for small farmers and producers through local financial intermediaries focuses on short term deliverables and does not offer longer tenors and softer terms of financing that are needed to transition to sustainable agricultural practices. Farmers are thus currently incentivised to pay back the loans in the short term through undertaking unsustainable intensive agriculture typically using a high degree of fertilizers and pesticides that is also water intensive and damaging to the soil.

Population growth and rural poverty have significantly increased the pressure on natural resources in rural areas of Ecuador and Peru, threatening the remains of the Ecuadorian Tumbes Dry Forest.

In Ecuador, in 2017, the rural area represented the most disadvantaged area in the country, hosting more than half of the poor (58%) and 70% of those classified as extremely poor. Furthermore, rural Ecuador registered an increase in poverty rates of approximately 6% between 2014 and 2017. Poverty rates are higher among households headed by women, which presented rates above the average, especially in the rural zones. 39% of rural female-headed households were poor

compared to 37% of rural male-headed households (The World Bank, 2018).

In Peru, the progress made in terms of steady formal jobs and poverty in rural areas during the 2002 and 2013 period has been negatively impacted due to the economic slowdown the country has experienced in recent years (PERUCAMARAS, 2020). Currently, the urban population in poverty represents 9.3%, while poverty in the rural population represents 62.8% (La Nación, 2020). Additionally, the informal economy represents 95.4% in the rural areas, specifically in the departments of Tumbes, Piura and Lambayeque where the labor informality rate was of 74.3%, 78.1% and 77.2% respectively.

Population growth and demand for agricultural products have significantly increased the pressure on natural resources, especially in rural areas of Ecuador and Peru, however without resulting in any reduction of rural poverty. The degree of poverty is much more marked in the provinces of Loja, Manabí and Santa Elena in Ecuador and the department of Piura in Peru (much higher than the average national poverty rate). Therefore, the strategy of action proposed by the project will enable the promotion of activities, with a focus e marked in the provinces of Loja, Manabí and Santa Elena in Ecuador and the department of Piura in Peru (much higher than the average national poverty rate). Therefore, the strategy of action proposed by the project will enable the promotion of activities, with a focus on improving the productivity and incomes of small farmers in these areas in particular.

Data on poverty

PROVINCES OF ECUADOR AND DEPARTMENTS OF PERU	Poverty (% of population)
Ecuador (average)	**23.2**
Manabí	27.2
Guayas	16.7
Santa Elena	26.2
El Oro	16.8
Loja	29.1
Peru (average)	**19.6**
Piura	28.7
Tumbes	11.8
Lambayeque	18.5
Cajamarca	38

Source: https://incoreperu.pe/portal/index.php/noticias/item/93-cajamarca-la-quinta-region-mas-pobre-de-2020

Environmental context

The Equatorial and Tumbesian Dry Forest extends along the central and south coast of Ecuador and the north coast of Peru. It is home to the largest and most endemic tropical dry forest ecosystem on the planet. The environmental characteristics of the Tumbes-Piura Dry Forest and the Equatorial Dry Forest are extremely similar due to the unique corridors that connect these ecoregions and that contribute to the characteristic endemism of their ecosystems.

The forest includes the provinces of Loja and El Oro located in the south of Ecuador and the departments of Tumbes, Piura, Cajamarca and Lambayeque located in the north of Peru. In total, the area covered by this dry forest is estimated at around 4,634,100 hectares (less than 10% of its original span), the majority being in the Ecuadorian region (Roca, 1996).

On the other hand, the Equatorial Dry Forest covers an area of approximately 2,12,800 hectares and is located on the pacific coast of central Ecuador. This zone includes the south of the Esmeraldas province passing through the provinces of Manabí, Santa Elena, and Guayas.

Currently, less than 5% of dry forests still exist in Peru, making it an international conservation priority (Lo Lau, 2017). The geomorphological, biogeographical and ecological conditions of the forest have created a unique habitat for the species living within this ecoregion. As a result, it has one of the highest concentrations of endemism in the world, placing it among the three most biologically unique areas in the world. They also provide numerous important ecosystem services. It is therefore vital to conserve and restore them as well harmonize the many productive activities in the surrounding areas. Some key statistics on forests in the region are provided below.

Data on forests in the area

Dry forest area by province (Ecuador)

Province	Area (hectares)
Azuay	14,406
El Oro	41,765
Esmeraldas	12,042
Guayas	221,690
Loja	91,795
Los Ríos	138
Manabí	203,043
Santa Elena	71,408
Isla	389
TOTAL	**656,676**

Source: Ministry of Agriculture and Livestock

Dry forest area by department (Peru)

Department	Area (hectares)	Ecosystem
Tumbes, Piura, Lambayeque, La Libertad	1 897 483	Mountain dry forest
Tumbes, Piura, Lambayeque, Libertad, Ica	1 452 576	Dry forest in plains
Tumbes, Piura, Lambayeque, Libertad, Lima, Ica	52 153	Riparian dry forest
Cajamarca	2,294,223	Dry Forest
TOTAL	**3 402 212**	

Source: National Map of Peruvian Ecosystems, approved by RM 440-2018-MINAM

Source: MINAM, 2017, Degraded areas at national level

Degraded forest areas by dry forest type and administrative region

Departments	Area (hectares)
Piura	334,089
Tumbes	6,671
La Libertad	1,615
Lambayeque	62,439
Cajamarca	186,264
TOTAL	**404,814**

Source: MINAM, 2017, Degraded areas at national level

The Equatorial and Tumbesian Dry Forest contains numerous species specially adapted to the arid extreme conditions of the dry seasons; this is part of the evolutionary character that enriches the endemism of the species in this ecoregion. There is a great variety of plants associated with the endemic ceiba tree, which grows to 70m tall, including other endemic trees such as the Pretino (*Cavanillesia platanifolia*) and the guaiac (*Tabebuia billbergii*). Currently 77 endemic bird species can be found, 22 of which are considered species at risk of extinction (Western South America: Along the Pacific coast of Ecuador | Ecoregions | WWF, s. f.). The parrot of Guayaquil (*Ara ambiguus guayaquilensis*), gray headed parakeet cachetigris (*Brotogeris pyrrhopterus*), the black parrot (*Pionus chalcopterus*) and the saffron goldfinch (*Carduelis semiradskii*) are all threatened with extinction or have a limited population. This is also the case for the celestial Parakeet (*Forpus coelestis*), the parakeet of Guayaquil (*Aratinga erythrogenis*) and the white tailed magpie (*Cyanocorax mystacalis*). Additionally, there are two endemic species of reptiles, one of amphibians and a still undetermined number of fish and arthropods.

Despite significant human activities in the region, large species of mammals have been able to survive, but their communities have suffered a massive reduction. This is the case for the Guayaquil squirrel (*Sciurus stramineus*), the puma (*Puma concolor*), the spectacled bear (*Tremarctos ornatus*) and reptiles such as the endemic Barnett's pit viper (*Botrhops barnetti*), the coastal leaf-toed gecko (*Phyllodactylus reissi*), and the only Peruvian populations of American crocodile (*Crocodylus acutus*) in the rivers of Tumbes and Zarumilla.

The project's target region comprises more than 40 Importance Bird Areas (IBA) in Ecuador and more than 20 IBAs in Peru's side (BirdLife International, 2009). Additionally, some of the most threatened forest species – included in the International Union for Conservation of Nature (IUCN) Red List of Threatened Species – are the guayacán (*Tabebbuia billbergii*), the hualtaco (*Loxopterigium husango*) and the palo santo (*Bursera graveolens*) (Southwestern Ecuador and Northwestern Peru | Ecoregions | WWF, s. f.).

Environmental issues in Ecuador and Peru:

The Equatorial and Tumbesian Dry Forest been strongly threatened due to anthropogenic activity, with the main causes of deforestation being the changes in land use for agricultural activity, in addition to the destruction caused by livestock farming, forestry and indiscriminate burning.

In **Ecuador,** the main challenge facing the biodiversity of the Equatorial and Tumbesian Dry Forest is the loss and degradation of habitats, primarily caused by unsustainable agricultural activities and deforestation. It is estimated that 99.4% of the deforested areas between 2000 and 2008 were transformed into agricultural land. Most of the deforestation took place in the 1990s when the annual rate of deforestation reached 129,100 hectares. Recent data indicates that the annual deforestation rate between 2014 and 2016 is over 10% at 94,353 hectares per year (Ministry of the Environment of Ecuador, 2015). The situation in western Ecuador is critical. It is estimated that 35% of western Ecuador was covered by dry forest. Today, less than 1% remains intact and a large number of valleys and mountains have been totally deforested (Dodson & Gentry, 1991).

Additionally, poor industrial and residential waste management seriously threatens the quality of water, which is already at high levels of contamination with the agricultural industry being the largest freshwater consumer (World Bank, 2018). A recent study conducted in Ecuador on the distribution of agricultural pesticides in the freshwater ecosystem in the Guayas River demonstrated the wide presence of these pesticides with detections at 108 sampling sites (60%). A total of 26 pesticide products were identified. The most frequently detected pesticides included cadusafos (62 locations), butachlor (21 locations), and pendimethalin (21 locations) (Deknock et al., 2018). The pesticides detected in this study were found to be positively correlated with ammonium concentrations, supporting the alleged combined application of chemical fertilizers and pesticides in agriculture. These pesticide residues were also associated with one or more agricultural crops, in particular with the banana and rice industries identified as the main sources of contamination.

These issues stem largely from deforestation for agricultural activity. Coffee, banana, mango, corn, and palm oil are key agricultural products with large export sectors in Ecuador, posing a significant threat to the forest. Production has also continued to increase due to export incentives and subsidies granted to companies. In the specific cases of corn and sugarcane, their production has increased strongly due to the increase in the demand for biofuels (Toapanta Gallardo, 2018). In Ecuador, only 6% to 10% of the remains of dry forest are in protected areas (Riofrio, 2018).

According to the General Coordination of the National Agricultural Information Department of Agriculture soil map, the provinces in Ecuador with the most agricultural land are Guayas and Manabi, with 27% and 12% respectively of the total area allocated for agriculture at the national level. As shown in the table below, these two provinces also have the greatest dry forest cover in Ecuador. In provinces of interest to this project, based on a census of 1,332 producer organizations (National Agricultural Plan, 2021), 576 (43%) grow corn, 448 (33%) grow rice, 133 (10%) grow cocoa and 29 (2%) grow coffee.

Similarly, the terrestrial and marine biodiversity of **Peru** is under great pressure as a result of land use change, overexploitation, industrial development, and illegal mining and logging activities. Peruvian coastal dry forests are drastically shrinking in size due to human intervention. Deforestation in Peru is estimated at around 155,000 hectares annually. 95% of this change in land use was destined for agricultural activities and mining, among others (Gesti & Oacute, 2019). Other degradation processes that cause the loss of functional richness, connectivity and density of forests are due to widespread practices such as extensive cattle ranching and use of agrochemical products, affecting about 7% of the remaining forest area.

Despite this degradation, Peru is highly dependent on its natural capital for economic growth and rural livelihoods. The dry forests of the north are home to a population of 5 million people. 20% of this number live in rural areas, and a further 20% are affected by poverty with an average income of less than 1,200 soles per month (USD 300). About 350,000 people in this rural area are farmers, who depend on natural resources to live. Three farming communities are identified as

owning property in La Libertad and Lambayeque, and 32-125 communities own property in Piura. Together, these communities represent approximately 3.1 million hectares of land.

Use of agrochemicals also causes significant pollution to both soil and water in Peru, which is the main reason for food contamination. In addition, there is poor advice, guidance, and supervision in the use of these products by manufacturers or sector authorities. The data considered correspond to those of the evaluation reports of all types of foods of plant and animal origin analysed in the period between 2011 and 2015 by the National Agrarian Health Service (SENASA). For this period, results show that 202 samples of animals and plants did not comply with the established standards. The percentage of samples of foods of animal origin that did not comply with the norms was 12.7% and that corresponding to foods of vegetable origin, 24.9%. In the period studied, an increase of 30.7% of foods that did not comply with the standards was observed, which has even reached 50% of the samples (Delgado-Zegarra et al., 2018).

Not only is there an indiscriminate use of agrochemicals, but the health of farmers is also affected by their mismanagement. The World Health Organization (WHO) estimating that 3 million people are poisoned every year by pesticides, mostly in developing countries. Some 20,000 of these victims are fatal and inevitable victims (FAO, nd). The impact of chemicals on biodiversity is much more difficult to monitor and ascertain, but it is certain that these products directly lead to reduced regeneration, exacerbated by forest degradation and water streams (Creed & Noordwijk, 2000; Pfeiffer & Voeks, 2008).

Finally, extractive activities, such as mining, fishing, and hydrocarbons, accounted for 66% of Peru's exports in 2015, and 68% when including agriculture (World Bank, 2017). Although Peru is a country rich in water, the growing demand for agriculture and the urban population, combined with climate change, requires a concerted effort to better manage this resource. Water is also much scarcer in the northern coastal areas.

In Peru, agriculture has developed due to the high productivity and demand in the region for products such as organic mango, lemon, rice and bananas. In Tumbes, Piura, and Lambayeque, the census gives 338,265 ha of cultivated land, with a strong predominance of rice (88 %) and corn (12 %) (SINAGRI, 2018). One of the agriculture practices that contributes the most to degradation of soil and desertification risks is intensive grazing of cattle and goats. The large animal population (867,000 heads) impacts soil compaction. Poor agricultural practices lead to inappropriate or excessive use of land, with a consequent loss of fertility and, ultimately land erosion. This intensive production leads to inefficient usage of water, which causes increasing demand that consequently affects the groundwater level.

Furthermore, analysis suggests that the majority of degraded dry forest in Peru is located outside protected areas. Unsustainable forest practices, including selective logging and illegal removal of charcoal and firewood are continuing. Between 1949 and 1999, 17% of forests were lost due to the uncontrolled consumption and sale of wood for domestic use. According to Peru's National Strategy for Forests and Climate Change 2016-2030 (ENBCC), the majority (60%) of the timber sold in Lima comes from dry forests and it is used for roast chicken restaurants (around 8.000 of 13.000 in Lima).

Barriers to sustainable agriculture in Ecuador and Peru:

The main barriers to the transition towards achieving a sustainable agricultural model are the financial risks involved, as the process is lengthy and the benefits are slow to deliver. Furthermore, it is often difficult for farmers to obtain credit, and when they can, loans are short-term with high interest rates, and so they are forced to produce a quick turnover.

Small and medium-sized farmers face several challenges when it comes to accessing credit for their activities. Despite the efforts of financial institutions, credit for agricultural activities is very limited which restricts the productivity of farmers. By not owning the land, farmers have no collateral to present to financial institutions in order to repay loans. Additionally, since most small farmers lack a credit history, they do not qualify for business loans. This means that they have to turn to more expensive and informal sources of credit. In turn, this encourages farmers to carry out conventional agricultural practices as they are more affordable. Technical assistance and financing to adopt better agricultural practices is scarce if not non-existent. Thus, small and medium-sized farmers are left outside the safest and most profitable value chains.

In **Ecuador,** only 4.2% of agricultural producers manage to self-finance through loans granted by the public sector or private bank. Although the agricultural sector is a pillar of the production, employment and Ecuador's economy, accounting for 8-10% of GDP, access to credit for people engaged in these activities is limited. According to INEC, in 2020 94.1% of farmers are self-financing. The lack of ownership of more than 50% of rural properties in Ecuador and legal titles to 324,000 small landowners, is a real obstacle to any attempt to finance farmers (BID, 2013). Likewise in Peru, very few small farmers have land titles (Handelman, 1981), and less than 5% are engaged in cooperatives for trade, and/or have contracts with anchor companies. Without acceptable guarantee from financial institutions and without reference credit, they did not meet the conditions for access to commercial loans. This is why they have to resort to more expensive and riskier sources of credit (short-term yields), which leaves them apart from the most profitable and secure value chains.

In **Peru,** community members *(comuneros)* and producers who rely on the dry forest have a very limited access to credit. Free of banking references for guarantees, they have little chance to qualify to standard financial services. A very large portion of Peruvian farmers (85 %) have less than 10 hectares of crops, units of production between 3 and 10 hectares being those which predominate (33 %). Of the 5.7 million rural plots in the country, only one third (1.9 million) are registered into public records. In Ecuador, 15% of agricultural production units in the country concentrate 80% of arable land and 63 % of the water irrigation. Family farming, which produces much of the national food provision, represents 85 % of small and medium units of agricultural production, 20 % of the remaining arable land and uses 37 % of the irrigated water (Moreno Miranda et al., 2020). Financial intermediaries have developed financing schemes through community credit (or collective) to help those with no title deeds.

There is limited information on the impacts that human intervention has had on the Equatorial and Tumbesian Dry Forest, which is necessary to comprehensively analyse the state of its conservation. This is attributed to the lack of support that the dry forest has received from public entities in terms of research and information analysis. Most of the investigations have been conducted by private organizations in restricted and limited locations. This is presented as an obstacle when trying to make a generalized evaluation of the Equatorial and Tumbesian Dry Forest.

Additionally, although the entities of each country have been in charge of establishing forest protection zones. These represent a small percentage of the remnants that must be conserved. In the case of Peru, there is a lack of consistent data to calculate how much there may be dry forest, as well as studies and information on inter-Andean dry forests (Lo Lau, 2017). This shows that despite the growth in efforts to conserve the dry forest; the lack of awareness and information regarding the critical state of the forest continues to be an impediment to the conservation and protection of this ecoregion.

Barriers to green lending:

The barriers to ensuring the supply of green credit lines for sustainable agriculture are manifold, and may be sub-divided into general, demand- and supply-side barriers (Shishlov et al, 2017). General investment and environment barriers typically constitute economic barriers, where the returns for green investments are low due to unstable or absent climate and environmental policies, and financial and legal barriers concerning high upfront costs and (perceived) risks (Shishlov et al, 2017). Supply-side barriers typically involve a lack of access to long-term capital; a low awareness and a lack of institutional capacity to perform the operational steps involving in green lending; the potential prevalence of unsuitable lending practices; the lack of risk management mechanisms; and high up-front costs and risks for developing new business lines in green lending.

Finally, demand-side barriers concern a general lack of awareness and a continued preference for prevailing business practices (Shishlov et al, 2017). This may be particularly relevant for small holder farmers in rural Ecuador and Peru during times of particular hardship, such as those caused by extreme weather events, which pose a significant risk to transition. Furthermore, low rates of land ownership in the region constitute another potential barrier to obtaining (green) credit.

The Cajas- Savings Banks present in these areas, provide agricultural loans that do not match the time and investment required in sustainable agricultural practices; in Ecuador, BanEcuador currently offers loans to small businesses earning less than US$ 100K of 9.8% to 15.3% for loans ranging from US$50 to US$150K,with a repayment period of 15 years for fixed capital and 3 months for working capital. Smallholder farmers also require access to technical assistance and inputs to use sustainable technologies that will help restore the land they work in.

As explained later, COFIDE and BanEcuador have both been working to develop Green Bonds, and both FAO and GGGI have also been providing technical assistance in Peru and Ecuador to help develop green bonds and overcome these barriers.

The importance of climate-resilient agriculture in coastal Ecuador and Peru:

The coastal agro-ecosystems of Ecuador and Peru are also highly vulnerable to the impacts of climate change. It is therefore vital that agricultural production in Ecuador and Peru is resilient to climate change if it is to be viable in the long-term. This approach is termed ‘climate-smart agriculture’ (CSA) and encompasses a range of agricultural practices intended to improve climate resilience.

Some CSA practices include sustainable stocking rate management and silvopastoral systems for cattle and livestock, and terracing or platforming for soil conservation. The below diagram highlights which CSA practices are most suitable for production systems in the region (World Bank, 2014). In Ecuador and Peru, small and medium sized producers of agricultural products such as coffee, cocoa, or fruits, would especially benefit from agroforestry practices to improve the resilience and productivity of their crops.

As an agricultural practice, agroforestry involves the incorporation of trees and shrubs into agro-ecosystems. This presence of trees is intended to replicate the natural ecological benefits of multi-storey forest systems, and may be particularly suitable in regions subjected to deforestation, such as the Equatorial and Tumbesian dry forest. Agroforestry has been carried out globally in regions particularly vulnerable to climate change, due to its ability to improve the climate resilience of agricultural systems.

The primary climate-resilient benefit of agroforestry is that the presence of a tree canopy creates a micro-climate and thus has a strong cooling effect. The shade can also shield crops at the surface level from harmful levels of solar radiation. Furthermore, varying root structures not found in monocultures improve soil structure, water retention, and filtration. This can be beneficial in periods of heavy rainfall to mitigate against flooding and harmful runoff. Soil fertility is also improved through the decomposition of organic matter, and because trees can improve nutrient uptake in the soil. This in turn promotes crop productivity and lessens the need for chemical nitrogen fertilizers. Trees also sequester large amounts of carbon, and so reduce the presence of greenhouse gases in the atmosphere. Finally, agroforestry promotes biodiversity amongst plants, animals, insects, and microorganisms, further improving ecosystem resilience to the adverse impacts of climate change.

A study carried out in Ecuador, 2019, compared the climate resilience of conventional farming systems to agroforestry systems and found that ‘conventional farmers perceived greater exposure to droughts (20%), solar radiation (43%), and pests, weeds, and disease outbreaks (40%) than agro-foresters.’ (Córdova et al, 2019).

There is thus strong evidence that agroforestry, especially when incorporated alongside other CSA practices, has a great potential in improving the climate resilience of Ecuador and Peru’s coastal agro-ecosystems. However, it must be noted that the extent of these benefits is subject to some variation depending on the severity of the climate scenario that will unfold.

1a.2a) Baseline scenario and any associated baseline projects

The governments of Ecuador and Peru, through their various Ministries, increasingly provide the right foundations from which the project will develop. However, the current baseline and existing approaches to landscape management, agricultural practices and financing are still resulting in continued degradation of the dry forest, loss of biodiversity as well as increasing chemical pollution, soil degradation and water shortages (as explained in the context earlier). The barriers outlined

above need to be overcome before the transformation to sustainable agriculture can really take effect. This transformation will be significantly helped by the additional availability of private finance – which is essential to allow the project and its desired outcomes to be delivered at scale, as well as the accompanying proposed technical assistance and capacity building.

Ecuador and Peru have recently made a step forward in acknowledging the importance of biodiversity and ecosystem services of the Equatorial dry forest of Tumbes, including the impact of agro-industrial practices. There is now an adequate institutional, legal and regulatory framework for a transition to sustainable agricultural production in these ecosystems. Importantly, this is now strongly supported by a new initiative in Peru, mandated by the Ministry of Finance – the creation of a sustainable bond framework. This was developed with technical assistance from GGGI, whose experience will now potentially help implement effective green bonds that target sustainable agriculture, and develop an equivalent approach in Ecuador.

Both countries have developed positive experiences based on small farmer's cooperatives and group associations linked to sustainable and social standards like Rainforest Alliance, Fairtrade, Organic and GlobalGAP (bananas, mangoes, cocoa bean, among others), for international markets. In Ecuador, a recent and remarkable goal is the recognition and homologation of the national Good Agriculture Practices (GAP) standard by the private GlobalGAP certification, under the management of AGROCALIDAD (part of MAG), the national authority for sanitary and phytosanitary issues.

CAF considers that the project needs 3 types of baselines, 2 of them are technical with macro and micro scales of detail (for the strategic land management plan and for the CAs at farm level); and a finance baseline for both countries, that will probably will be made by GGGI.

Defining project baselines for the green credits.

Development of sustainable agriculture plans for farms will be developed through an assessment of agricultural practices and the state of natural resources in the priority areas. This assessment will result in a baseline study to generate information regarding the current condition of natural resources in each productive unit, including production trajectory, slash and burn practices, droughts, deforestation risk areas, availability and access to water, quality of soil, and the socio-economic situation. It will also provide information to develop sustainable agriculture plans and Conservation Agreements for farms and guide the identification of biological indicators to assess the impact of the improved agricultural practices. The sustainable agriculture plans will be paid for by each credit beneficiary from the green lines of the financial intermediaries, heavily promoting GEF's guarantee.

In Peru, the new Directorate for Agricultural Development and Agroecology has been created (2021) to support the small holders in these matters, and the Sub directorate of Organic Production of SENASA (same role as AGROCALIDAD) plays an important function as well. SENASA has been also promoting field education (ECA) to transfer Good Agricultural Practices. Besides, both entities are responsible for regulation and control of agrochemical management. Also, the corporate initiative "Campo Limpio" (clean field) offers good technical support.

National funding in Peru for the agricultural sector comes from domestic financial institutions – for which there is little in the way of sustainable agriculture funding.

- 29% municipal savings (e.g., Caja Arequipa, Caja Huancayo, CMAC CUZCO)
- 13% cooperatives (e.g., CREDICOOP)
- 13% national banks (e.g., commercial banks; Mi Banco, Banco de Crédito del Perú)
- 12% rural savings and credit (e.g., CREDICHAVIN, CREDINKA, INKASUR)
- 12% Small and Micro Business Development Entity (EDPYME) (e.g., ALTERNATIVA, RAIZ, CREDIVISION)
- 9% Agrobanco, and 13% other institutions (4% NGOs, 2% lenders, 5% non-financial companies, 2% other)

Credit is invested in the acquisition of production inputs (74%), product marketing (7%), tool purchases (7%), heavy machinery purchases (2%), and other activities (10%). Peru's Guarantee Fund provides catastrophic agricultural insurance for subsistence agriculture. The Fund has access to US$14.4 million, which is administered by COFIDE Bank. From 2010–2011, 442,210 hectares of crops were insured (10% of the cultivated area) in the eight poorest and most climatically vulnerable regions of the country.

While other agriculture insurance schemes exist in Peru, they are not being consistently operationalized. Under the State Modernization and Decentralization policy of 2000, the Government established the National Public Investment System (SNIP) administered by the Ministry of Economy and Finance (MEF).

Existing Bank financing situation:

COFIDE is Peru's development bank and has 50 years of experience committed to the sustainable and inclusive development of the country. They perform under the triple bottom line strategy, which seeks to generate a positive economic, social and environmental impact. COFIDE promotes the development of infrastructure and productive investment through financing and promotes the application of policies that enhance growth from small and medium businesses. The aim of COFIDE is to consolidate a sustainable Peru for the benefit of all. COFIDE identify, promote and provide support to key sectors for national development. For this they design and develop financial products, programs and projects.

In 2019 COFIDE issued its first sustainable bond for 100 millions soles (24 million USD) helped by technical support from the Inter-American Development Bank (IABD). The auction of the bond, made through the Lima Stock Exchange, reached a demand of 140 million soles (34 million USD). Those resources finance climate change mitigation projects such as clean energy. The bonds have not yet been used for sustainable agriculture though.

The sustainable bond included three eligibility criteria that reflected the main environmental, social, economic issues in Peru. The first category was financing micro businesses through the Financial Intermediation area. In its role of supporting microenterprises, COFIDE created a product called Subordinated Credit, through which it seeks to support the expansion of financing to microenterprises in order to promote improvement in their income and employment levels. The second category was financing of alternative vehicles, and the third category is financing for sustainable sewage treatment plants.

COFIDE is also involved in providing microfinance to the agricultural sector, and has created guides, surveys, and training plans necessary for the development of agricultural credit products. COFIDE provides training and technical assistance to MSEs and financial institutions across Peru to support the expansion of rural credit schemes (COFIDE, 2020). Additionally, as a part of their sustainability strategy, COFIDE began the process to become the first bank in Peru accredited from the Green Climate Fund (GCF) in 2020, and they are thus prioritising the development of projects and services that contribute to GCF's objectives (COFIDE, 2020).

BanEcuador is an Ecuadorian development public bank that promotes production, inclusion and enhancement of welfare of micro, small, and medium enterprises, mainly agrobusinesses, commerce and services from the rural sector, with innovative financial products, efficient and sustainable. BanEcuador offers financial and non-financial products to high priority groups throughout Ecuador. BanEcuador currently has 48 service points in the provinces of El Oro, Guayas, Manabí, and Santa Elena, covering 4 out of the 5 provinces that make up the project area in Ecuador. They offer financial products and services to microbusinesses and individuals, including in the agricultural sector. Between 2018 and 2019, BanEcuador financed $93.7 million USD worth of agricultural operations for 11,937 clients and $150 million in livestock operations to 29,943 clients in the provinces of El Oro, Guayas, Manabí, and Santa Elena. However, the majority of these schemes only provide credit for conventional agriculture and do not focus on sustainable agriculture.

These banks are therefore well suited to offering green credit for climate smart agriculture, but have limited experience yet in such finance. It is therefore essential that GGGI helps to provide technical assistance in relation to establishing green bonds and green credit lines for climate smart agriculture such as agro-forestry.

Some of the relevant policies and development plans adopted in both countries are set out below that provide a good basis for the project.

Sustainable agriculture and green bonds in Ecuador and Peru

Ecuador's current agricultural strategy is summarized in their agricultural policy plan of 2015-2025. This plan is designed to reform the agricultural structural model, and aims to reduce poverty and socioeconomic vulnerability of the rural population, improve food and nutrition security, and increase rural and national economic growth. Additionally, the implementation of the Organic Law for the Food Sovereignty Regime catalyzes public agri-food policies to promote the production, conservation, exchange, transformation, commercialization, and consumption of healthy and nutritious foods. This policy is geared towards the small- and medium-holder production of and aims to promote traditional and ancestral knowledge and forms of production as well as agrobiodiversity. Furthermore, the food sovereignty regime follows the principles of equity, solidarity, inclusion, social and environmental sustainability. Ecuador has also established that the resources obtained through the issuance of green bonds should be used for activities that contribute to mitigating climate change, which further aligns with the climate goals of this project.

Ecuador entered the sustainable finance market more recently, with an inaugural green bond issued in 2019 by Banco Pichincha (the largest bank in the country) to finance renewable energy, low carbon buildings, low carbon transportation, waste and industry. According to the Green Bond Transparency Platform (GBTP), this project has led to 1,570 hectares of sustainable cropland being certified, 271,000 m3 of water being saved and 3,830 tonnes of avoided CO2 emission (Green Bonds Transparency Platform, 2021). To date this is the only green bond that has been issued in the country. To further develop the labelled bond market the Quito

stock exchange has developed Green, Social and Sustainable bond guidelines around the issuance process, standards accepted by the stock exchange and the use of external verification. In addition, Ecuador has launched a Sustainable Finance Initiative through public and private institutions with the aim of catalysing the national market (Climate Bonds Initiative, 2021).

In **Peru**, the national agrarian policy aims to support sustainable, competitive, democratic and inclusive agricultural development that benefits farmers and their communities. Issues related to human rights, gender, cultural diversity, sustainable development, and social inclusion are approaches that play important roles in policy implementation. Peru has also created a sustainable bond framework which establishes obligations that the government, through the General Directorate of the Public Treasury, will comply with. Peru prioritizes actions in Land use and forestry use as well as sustainable agriculture.

The agricultural strategies of both Ecuador and Peru are thus well-aligned with the expected outcomes of this project, as they seek to improve sustainable agricultural production, promote rural livelihoods, and protect the region's ecosystems and biodiversity.

Peru's sustainable finance market has increased significantly since its first green bond was issued in 2014, and in 2021 the GSS market had a cumulative value of USD 1.09 billion. Within the GSS market green bonds are by far the most consolidated and represent 92% of debt issuance volume. Financial and energy deals dominate the market and non-financial corporations represent the majority of bond issuers. Energy is the most funded sector in the country via green bonds; all deals except for one have had 100% of the UoP directed towards financing green energy (Climate Bonds Initiative, 2021). According to the Green Bond Transparency Platform (GBTP) (an initiative developed by the Inter-American-Development Bank (IDB) to promote transparency in the green bond market in Latin America and the Caribbean (LAC)), COFIDE is the only development bank to have issued a green bond in Peru (2019) and is intended to finance renewable energy projects (Green Bonds Transparency Platform, 2021).

Theis project and green bond issuances are taking place in a broader context of the LAC Green Bond Market. Within the LAC, Brazil (USD 10.3 billion) and Peru (USD 9.5 billion) dominate the green bond market, with their markets each over twice as large of the third highest (Mexico, USD 4.0 Billion). Peru has the fourth largest green bond market at USD 1.08 billion. Of the 12 LAC countries that have issued green bonds, Ecuador's market is the second smallest (USD 150 million) and exceeds only that of Barbados (USD 8.5 million) (Climate Bonds Initiative, 2021).

Green bonds and sustainable agriculture. There is opportunity for the development of sustainable finance markets around agriculture in the LAC and for future GSS bonds to mobilise funding for sustainable projects and assets. Bond issuance towards agriculture is currently fairly low, despite the fact that agriculture accounts for 5-18% of GDP across 20 LAC countries. There have been 32 bonds issued in the broader category of land-use in LAC, but this is dominated by forestry companies for pulp and paper production (USD 3.4 billion), large food production companies (USD 1.4 billion) and bioenergy companies (600 million). Dedicated agriculture issuers debuted in the green bond market in 2020, and there are currently a few dedicated issuances in Brazil and Mexico. Proceeds have been used to finance various agriculture initiatives, including smart and sustainable agriculture practises such as agroforestry production, irrigation systems, research and development, modern machinery to reduce non-renewable resource consumption, integrated crop livestock (ICL) systems and digital and prediction agriculture technologies (Climate Bonds Initiative, 2021).

Relevant **national policies in Ecuador:**

Ecuador's current agricultural strategy is summarized in their agricultural policy plan of 2015-2025. This plan is designed to reform the agricultural structural model, and aims to promote food security and biodiversity through traditional forms of production. Additionally, the Ministry of Agriculture (MAG) aims to improve water use through improved irrigation coverage for small and medium producers and has launched a project to promote sustainable agriculture in the Ecuadorian Amazon (MAG, 2021).

Furthermore, in 2016, the MAG launched the Climate-Smart Livestock Management, Integrating Reversion of Land Degradation and Reduction of Desertification Risks in Vulnerable Provinces project together with the Ministry of Environment and Water and with the support of the FAO. This project aims to promote climate-smart cocoa production in Ecuador through capacity building, and is enhanced through financing from BanEcuador. Project activities include co-financing with local counterparts, technical assistance, monitoring GHG emissions and the establishment of strategic alliances (FAO, 2021).

● Agricultural policy plan 2015-2025: Its aim is to change the agricultural structural model to progress towards a new model geared to i) reduce poverty and socioeconomic vulnerability of the rural population; ii) increase the contribution of agriculture to food and nutrition security ; and (iii) increase the contribution of agriculture to rural and national economic growth.

● Local development plans: The development and territorial organization plans (PDOT) are local planning tools with a view to sustainable development. Through PDOT, the provinces of Manabi, Guayas and El Oro share a common vision with a focus on agriculture, fisheries and sustainable tourism (Ecuador planning technique secretariat, 2019).

● Ecuadorian Standardization Institute (INEN) : The Ecuadorian Technical Standard 2078 / 2013 regulates the agricultural use of pesticides and related products, and final disposal of containers (Ecuadorian Standards Institute, 2013).

Relevant **national policies in Peru:**

In **Peru**, the national agrarian policy aims to support sustainable, competitive, democratic and inclusive agricultural development that benefits farmers and their communities. Peru has also created a sustainable bond framework which establishes obligations that the government will comply with through the General Directorate of the Public Treasury. Peru prioritizes actions in Land use and forestry use as well as sustainable agriculture.

● National Agricultural Policy: This gives priority to family farming, and has six points i) promotion of innovation ; (ii) strengthening of the distribution of inputs and advisory support services ; iii) dissemination of knowledge through education and training ; iv) improvement of market access ; v) promotion of the land market ; and VI) risk management (Comunicaciones , undated).

● Concerted regional development plan of Tumbes 2017-2030: Its main objective is to ensure balanced and sustainable development. The regional governments of Tumbes, Piura and Lambayeque have established six new regional conservation areas (Tumbes regional government, 2017).

● National Agrarian Sanitation Service (SENASA): The register and control of agricultural pesticides is the responsibility of the agricultural inputs sub-directorate, attached to the agricultural inputs and agro-food safety directorate of SENASA. Its mission is ruled under the National System for Agrochemicals to ensure that the pesticides marketed in the country are efficient and effective and that their risk to human health and the environment are controllable (SENASA, undated).

● The National Forest and Wildlife Policy adopts the principles contained in several other laws relating to: forest governance, intersectoral approach, sustainability in the use of the Forest and Wildlife Heritage of the Nation, ecosystems approach, competitiveness and productivity, equity and social inclusion, interculturality, participation in forest and wildlife management, and gender approach.

● The National Environmental Policy. It defines the priority objectives, guidelines, main content and mandatory national standards. It includes the Natural Protected Area Law and the Master Plan for Natural Protected Areas. Certain matters are also dealt with under the Biodiversity Conservation and Sustainable Use Law and the National Strategy for Biological Diversity.

Binational initiatives

The binational initiatives that subsequent are directly related to the bioregion covered by the project:

● National Dry Forest Reserve of Ecuador: In 2014, the United Nations Educational, Scientific and Cultural Organization (UNESCO) declared the National Dry Forest Reserve of Ecuador to be a biosphere reserve. which expands by some 500,000 hectares the areas already protected in the provinces of Loja and El Oro.

● Forests of Peace: In 2017, UNESCO created the transboundary biosphere reserve " Forests of Peace ", which covers an area of approximately 1,600,000 hectares. It is made up of the Amotapes-Manglares reserve in north western Peru and the Ecuadorian dry forest reserve. This is the first transboundary biosphere reserve of South America. They include dry forests of Ecuador and Peru that form the heart of the endemic region of Tumbes.

● Binational Development Plan for the Border Region: It is intended to facilitate Peruvian and Ecuadorian social infrastructure and environmental aspects in border areas to ensure cross-border economic integration and accelerate its human development, while minimizing the impact on the environment. It is also within this framework that the **Integrated Management Project of the Binational Catamayo-Chira Basin** (AECID) was implemented, which follows an ecosystem approach similar to the one proposed here.

Other ongoing interventions or projects in the sector

Other ongoing projects have been identified in both Ecuador and Peru which deserve to be mentioned here, highlighting the aspects or activities that these initiatives have in common with the proposed project. The idea here is that the project favors an approach which allow a maximization of the outcomes and avoids duplication of efforts.

In Ecuador:

1) National Forest Assessment (ENF) (2009): It allows the collection of forest biophysical, environmental, and socioeconomic data.

2) National forestry and timber marketing statistics system: This tool is based on a Geographic Information System (GIS), a platform used to monitor the management of production forests, and to monitor illegal logging activities. Of trees. He could contribute to the monitoring component of the project.

3) Forest Partner Program (2008): It offers people who depend on the forest an alternative to unsustainable logging and aims to halve deforestation in the country.

4) National Forest Restoration Program (PNRF) (2019-2030): It aims to raise awareness in the community and offer economic alternatives based on the sustainable use of cultural heritage.

5) REDD + Early Movers Program (REM) (2018): This program aims to reduce deforestation and forest degradation, encourage sustainable productive transformations at farm boundaries, and maintain or increase the carbon reserves of forests. This program complements the support provided to local communities involved in forest-partner program and aid to finance the National Restoration Program of Forests (PNFR).

6) Climate-smart livestock project (GCI, 2016): This is a pilot green credit line in favor of sustainable livestock farming.

7) Amazonia Without Fire Program (2017): This program is implemented in the five provinces covered by the proposed project. The main objectives are the protection of the environment and the improvement of the living conditions of rural communities. The development of alternative techniques to avoid residue burning post-harvest, is part of activities in the framework of this project.

8) Galvanising project for inclusive partnerships within value chains (Dinaminga) (2016-2021): It is intended to strengthen the capacities of farmers' organizations in financial, administrative and business management, to facilitate partnerships with businesses private, and to encourage public-private-partnership models producer.

9) Socio-Bosque" Program: In compliance with the National Development Plan, which establishes a target to reduce deforestation of 50% for the country, the government created the Socio Bosque Program (Ministry of Environment and Water of Ecuador, s.f.). The program has made progress in conserving forests and delivering vital economic benefits to communities and households through its system of private conservation agreements. Many of the expected results of REDD + programs have been achieved.

In Peru:

1) Guide for Forest Zoning (2016): This tool is used to support the implementation of forest zoning (ZF), a basis for issuing management permits and promoting sustainable crops.
2) National Strategy for Forests and Climate Change (ENBCC) (2021): Its main objective is to reduce greenhouse gas emissions related to land use, change in land use and forestry (UTC UTS) and improve forest landscapes and the resilience of the population that depends on it, focusing particularly on indigenous peoples and farmers.
3) Green label for agriculture: It promotes farmers' access to the most demanding international markets, on the basis of a manual of sustainable agricultural practices.
4) NAMA Café (2021): This initiative aims to mobilize the coffee sector to achieve a zero deforestation, to increase yields sustainably and to reduce the local environmental impact and emissions of methane, in particular through the treatment of wastewater.

The Ministries of Environment of Ecuador and Peru have also taken specific measures for the protection of the Equatorial and Tumbesian Dry Forest by developing their National Systems of Protected Areas.

In Ecuador, the conservation units of the system that protect parts of the forest include the Machalilla National Park, the Cerro Blanco Protective Forest, the Molleturo Protective Forest and the Arenillas Military Reserve. Machalilla National Park is the main conservation unit in western Ecuador, protecting the remnants of dry forests where endemic plants and animals abound.

In Peru, there are currently several areas that are part of the National System of Natural Protected Areas by the State (SINANPE), and contain a representative sample of the biodiversity of the Equatorial and Tumbesian Dry Forest.

Defining project baselines for the green credits lines.

Development of sustainable agriculture plans for farms will be developed through an assessment of agricultural practices and the state of natural resources in the priority areas. This assessment will result in a baseline study to generate information regarding the current condition of natural resources in each productive unit, including production trajectory, slash and burn practices, droughts, deforestation risk areas, availability and access to water, quality of soil, and the socio-economic situation. It will also provide information to develop sustainable agriculture plans and Conservation Agreements for farms and guide the identification of biological indicators to assess the impact of the improved agricultural practices. The sustainable agriculture plans will be paid for by each credit beneficiary from the green lines of the financial intermediaries, heavily promoting GEF's guarantee.

1a.3) Proposed Alternative Scenario

The alternative scenario summarized below is based on the following considerations: i) an assessment of the threats and root causes affecting biodiversity conservation and sustainable forest and land use in the Ecuador and Peru coastal Dry Forests as explained in the first section of the document; ii) an appraisal of the principal barriers limiting conservation-oriented productive activities in these ecosystems, including the efficient use of its natural resource asset; iii) a supportive baseline well implemented to benefit from the project's incremental funding to achieve global conservation benefits; and iv) consistency with environment and agriculture sector plans, national and local development plans, as well as conservation priorities as established in the Biodiversity National Strategies.

The project objective is to support the conservation of biodiversity in prioritized territories of the Dry Forests in Ecuador and Peru, by financing sustainable agricultural practices (which includes climate smart agriculture), building capacities and transferring technology to small and medium farmers. The financing of sustainable agriculture practices at adequate financial terms and conditions is to be enabled through the issuance of one or more green bonds in Peru and Ecuador that will benefit from guarantees provided by GEF and CAF. The guarantees will act as credit enhancements thereby improving the terms of financing of the issuers, and their on-lending terms for the small holder farmers in that region.

The green bonds are expected to be issued by BanEcuador and COFIDE (or other issuer if these entities cannot issue in the capital market for an expected total amount of up to US$ 33 M. CAF and GEF partial credit guarantees will represent up to 38% of the bond issuance (20% CAF[1] and 18% GEF). The GEF guarantee will be first loss to the CAF guarantee.

The green bonds will follow the ICMA guidelines and the use of proceeds for sustainable agriculture will need to be certified by a third party.

The CAF and AFD are expected to complement the bond financing with additional loans as explained in the co-financing table. BanEcuador and COFIDE may then also provide additional loans using the same green credit lines and conditions.

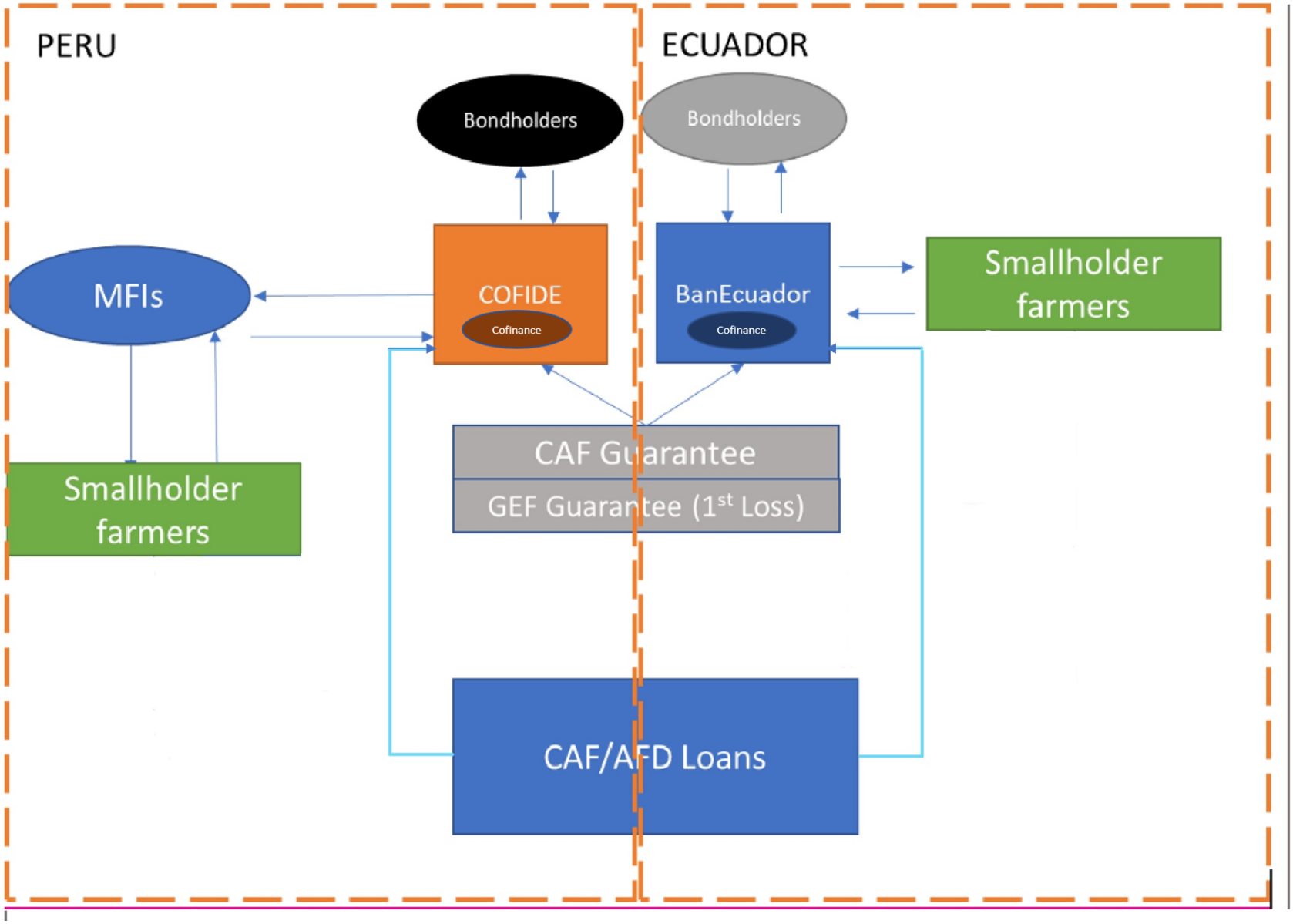
In total, around USD 60.2 million is expected to be provided to smallholder farmers from the proceeds of the bond issuances, CAF and AFD loans. Initial estimates of the split of financing are: USD 45 million in Ecuador and USD 15 million in Peru.

The green credit lines structured by the bond Issuers (BanEcuador and COFIDE) together with CAF and AFD loans are to be lent to smallholder farmers in the identified geographical including Conservation Agreements and credit covenants that link the agricultural performance to the loans.

The proceeds of the green lines will focus on developing sustainable agriculture practices (including climate smart agricultural practices)in priority sites of the aforementioned ecoregions. For example, this will include the promotion of agroforestry, biodigesters, vermicomposting, permaculture, crop rotation, integrated nutrient and pest management, organic and conservation agriculture etc. This will be implemented by the Ministry of Environment and Agriculture in both countries, with technical support provided by FAO.

The Bond Guarantees are provided by a third party (in this case CAF and GEF) to cover the costs of defaults of a given Issuer on their liabilities or obligations with the Bondholders. In this situation, GEF will provide a first loss guarantee of 18%, with CAF providing a second loss guarantee of a further 20%. This means that the first loss will be covered by GEF as the subordinated guarantor, and then any other unpaid debts will be covered by CAF. Beyond that, any additional default will be covered by the investors in the green bond themselves. The issuance could be carried out by a special vehicle (SPV) in order to optimize financial terms. If necessary, another issuer may substitute COFIDE or BanEcuador as long as the green bond proceeds will finance the same Project Objectives as described in this document. The total project cost is estimated at USD 68 million.

The guarantee structure is shown in the Figure below – which shows the national split for Ecuador and Peru.



[1] CAF is prohibited from providing more than a 20% guarantee.

Through allowing lower interest rates, a 38% guarantee and potentially longer loan periods, this will have a catalytic effect in attracting additional financing from national and international, private and public sources through the establishment of i) a Conservation Agreement model between producers, private companies and public partnerships and local farmers, and ii) a sustainable green bond issuance from BanEcuador and COFIDE.

One of the key challenges in leveraging microfinance for smallholder farmers is mitigating the perception of high risk to financial institutions. Credit loan guarantees are often used to encourage financial institutions to extend credit to higher risk market segments. There is some empirical evidence suggesting that this can reduce lending interest rates and create better financial terms for borrowers in the agriculture sector.

For example, the Alliance for the Green Revolution in Africa used a US$17 million loan guarantee fund to leverage US$160 million in investment through four major lending programmes. This included a $US 10 million line of credit that the National Microfinance Bank in Tanzania agreed to lend to agro-dealers at an interest rate of 18% compared to the usual rate of 46% charged by MFI's (IFAD, 2014). In another case the Bank of Tanzania developed a credit guarantee scheme for SME's/farmers to strengthen access to financial services and expand value chain linkages in the Tanzanian economy. Some banks reduced their interest rates from an average of 18% to 14.5% with significantly reduced collateral requirements (FAO, 2013).

Both the bond issuers and the smallholder farmers will receive technical assistance as part of the loan agreements. An additional amount of USD 8 million will be provided in technical assistance sourced in-kind by various public organizations including government Ministries and civil society organizations such as FAO, the Global Green Growth Institute (GGGI) and Conservation International. This includes various technical, providing educational materials, training. This includes various technical, providing educational materials, training[1]. The in-kind co-financing will cover the needs of the project implementation.

[1] A time table & main milestones of the project are provided as annex.

The Project will be implemented through five project components. GEF's guarantee helps to support the overall project, including all of its goals and Components, because without the guarantee the project is not feasible. However, the GEF guarantee only directly contributes to Components 3 and 4 as it is a non-grant instrument. All the components are integrally linked and effectively support each other. The 5 Components are:

1. Protection of priority sites of the Dry Forest
2. Strengthening capacities to manage agricultural land in a sustainable way
3. Pilot to incentivize sustainable technology adoption in crops
4. Increase in the availability of investments and green credit lines in sustainable agriculture funded by the issuance of green bonds GEF funding will serve as a credit guarantee to improve the funding terms, take up and likely success of the project.
5. Monitoring, evaluation and knowledge management

These project components are explained in more detail further below, together with an outline of their main expected outputs and outcomes. But first, the Conservation Agreement, Green Bond and Guarantee approach are briefly described.

The **Conservation Agreement (CA) model** has been promoted by Conservation International in more than 17 countries to create incentives for local populations to align their economic-generating activities and land use practices with conservation goals. As part of this project, CAs will be signed with farmers living in the Dry Forest Ecoregion of Ecuador and Peru, transforming them from a direct deforestation threat to a partner in its conservation. CAs can give the structure and funds required to implement this idea. A series of steps are followed to design, implement, and monitor the CA. These conditions can be linked with the green credit lines financed through the sustainable green bonds outlined below.

First (step 1), a feasibility analysis is conducted to determine viable strategies for the design and implementation of Cas. This includes a cost-benefit analysis to understand foregone benefits of conservation actions that should allow to estimate the benefits or incentives to be offered.

Second, the local population is engaged to ensure their understanding of Cas and it should occur in more than just one workshop, making sure everyone is involved and leaving ample time for them to resolve issues internally and clarify questions with the technical team[1].

Afterwards (step 3) the commitments and benefits of CA are discussed and negotiated. The design of Cas allows for the negotiation process of conservation actions and incentives to be decided locally in a participatory manner, allowing to adapt to local environmental and social conditions.

Once the CAs have been signed, communities implement conservation actions and NGOs and governments (or private sector in some cases) distributes benefits and monitors the compliance of commitments taken on-the-ground (step 4). These efforts are paired with monitoring to ensure the delivery of benefits and compliance of CAs. Additionally, independent groups overseen by the CI, conduct socioeconomic and biological monitoring to measure the impacts of the initiative. Based on the implementation and monitoring reports, the CAs are renegotiated with the community.

Finally, (step 5), financial and management sustainability strategies are implemented to ensure that Cas are implemented in the long term.

---

[1] ECAS will help to demonstrate sustainable agricultural practices in different communities at the step 2 of the Cas, helping them to better understand the feasibility of the conservation efforts linked to improved agricultural production.

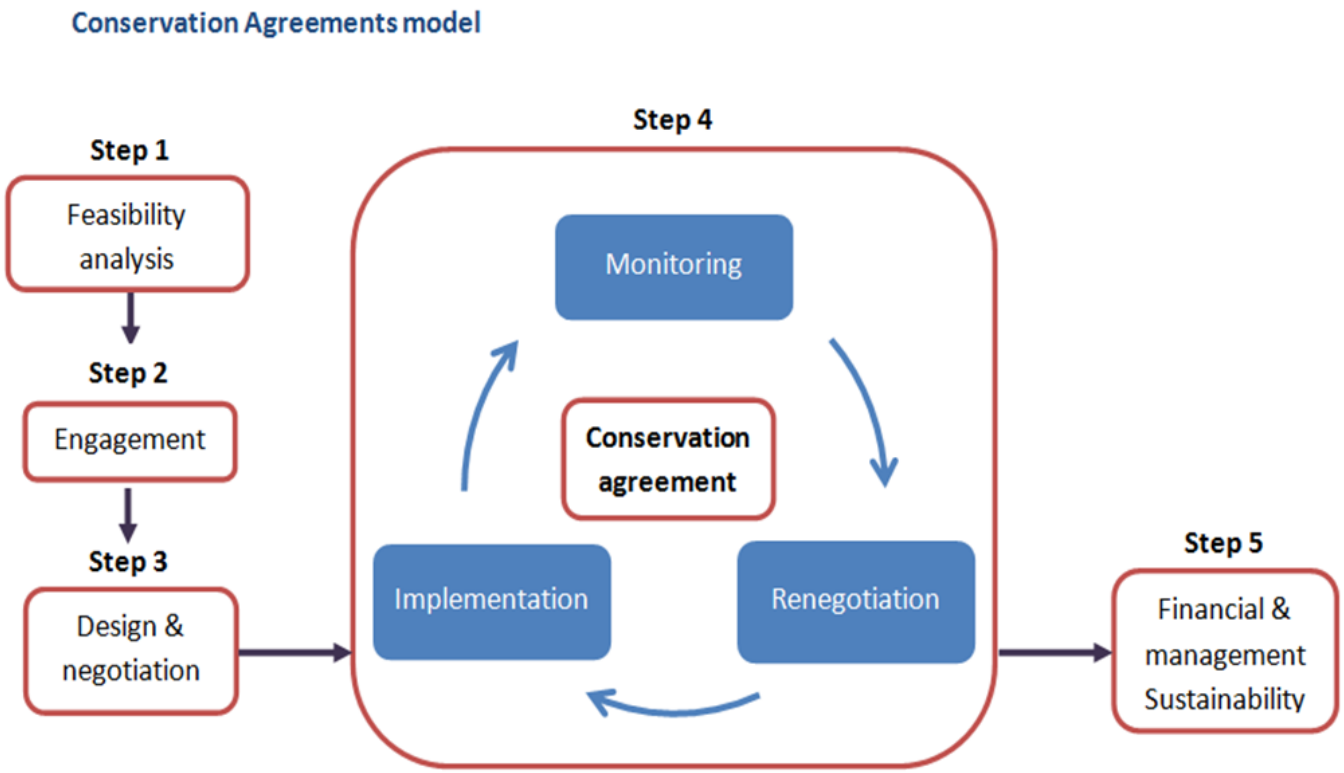


Figure: Conservation Agreement Model

In 2005 CI formalised the conservation agreement approach with the Conservation Stewards Programme (CSP). The CSP model offers direct incentives for conservation by offering benefits to local communities in return for obligatory conservation actions. Thus, linking conservation funders to local communities who are lacking an alternative economic opportunity to unsustainable extraction (Conservation International, 2020). Given the popularity of this model with private sector partners, CI launched the Conservation Agreements Private Partnership Platform (CAPPP) in 2015 to catalyse private sector support for biodiversity conservation and ecosystem service maintenance in globally important sites. With support from the GEF Earth Fund and United Nations Environment Programme as an implementing agency, the CAPPP sought to forge mutually beneficial links between the private sector and local communities who commit to achieve biodiversity conservation, reduce land degradation, support climate regulation efforts and promote sustainable resource management (Conservation International a, 2020).

Over the past 15 years CI, has worked with communities and NGO partners worldwide to sign more than 3,000 community and individual Conservation Agreement in 20 countries across 5 continents— benefiting a total of 90,000 people and leading to the protection of 3 million hectares of key habitat. To date, CSP has committed $7 million in grants, with an additional $10.3 million leveraged by those grants. The CAPPP concluded as a program in June 2020, and at closure consisted of 10 conservation agreement projects in nine countries (Conservation International a, 2020).

In various CAPPP projects across South America, the conservation agreement approach has a demonstrated track record of positive economic, social and environmental outcomes. For instance, in 2013 CI worked with indigenous communities in Peru's Alto Mayo basin- one of Peru's most deforested areas- to implement a community-based approach to forest development to mitigate the harmful effects of chemical agriculture and renting lands for logging. As part of the project, local communities agreed to end forest rental practises, deforestation, and the use of agrochemicals to promote the recovery and reforestation of degraded areas through agroforestry and riverside defences. In return, communities received technical assistance and supplies to establish 50 cacao plots, with workshops and training offered alongside support for medical campaigns. 64 families have benefited from the project to date; 45 acres of sustainable cacao, coffee and banana farms have been planted and sustainably managed (producing over 11,000kg of coffee), and 5000+ trees have been planted for shading and biodiversity support. In addition, workshops have promoted the empowerment of local communities who take a leadership role in sustainable management (Conservation International Peru, 2020).

Green Bonds are a form of Sustainable Bond which are debt instruments issued by an entity in the fixed income market to finance or refinance eligible projects known as "green projects". They require a special framework and certification system attesting to the full allocation of resources to sustainable activities. In this particular project, sustainable bonds will be issued for the structuring of green financing through new lines of credit linked to sustainable agriculture.

With technical support from the Global Green Growth Institute (GGGI), the government of Peru has recently developed a Sustainable Bond Framework following the highest market standards. The categories and expenditures are aligned with ICMA Green Bond Principles 2021, Social Bond Principles 2021, Sustainability Bond Guidelines 2021 and the United Nations Sustainable Development Goals. This Sustainable Bond Framework is based on the economic, social, and environmental challenges, as well as the framework of political commitments, in the National Accord and the Paris Agreement and aims to finance environmental and social projects to achieve the principles of a dignified and productive society with sustainable management of natural resources.

In line with the ICMA Sustainability Bond Guidelines, the Framework has the following key pillars:

1. Use of proceeds
2. Process for Project Evaluation and Selection
3. Management of Proceeds
4. Reporting and External Review

The Sustainable Bond Frameworks establishes the obligations that the government, through the General Directorate of the Public Treasury, will comply as the bond issuer.

Similar standards established in the ICMA Green Bond framework will be developed and applied in Ecuador with BanEcuador, as part of this project through the technical support of GGGI.

The general process for developing the Green Bond Frameworks includes working within the relevant Ministries involved, reviewing corresponding strategy and strategic areas of work in relation to sustainable agriculture; international agreements from Peru and Ecuador in relation to climate change, deforestation; any other environmental aspect in relation to supporting the accomplishment of NDCs; and also monitoring SDG alignment. This 4th component seeks to comply with specific regulations for each country and identify relevant social and environmental gaps that fit under the Green Bond Frameworks.

Developing procedures in line with ICMA will involve the following activities. Firstly, developing an exclusion list, defining activities associated with the excluded activities, this will apply to both the Green Bond Framework and credit lines for microfinance institutions. Secondly developing specific operational procedures for the overall governance and issuance process. This will entail defining the process and methodology for project selection, monitoring and reporting indicators and developing a capacity building program for the entities involved: Ministries, COFIDE, BanEcuador and microfinance institutions.

The governance structure is fundamental to the sustainability and replicability of the fundraising strategy and it is explained in section 6. The governance structure must be institutionalized for future bond issuances and internal processes; GGGI will assist BanEcuador and COFIDE to attain this goal. For reporting practices, social and environmental impact indicators focused on mobilizing affordable long-term financial resources earmarked to green investments, and also GESI (Gender Equity and Social Inclusion) KPIs should also be included. It is important to point out that a specific portfolio of credits needs to be identified for the first bond issuance in accordance with COFIDE and BanEcuador standards.

GGGI will also be closely involved in helping to design the green credit line enabled using the proceeds of the green bonds. This will involve supporting COFIDE and BanEcuador to strengthen their credit policies, regulatory frameworks and institutional capacities to focus specifically on financing sustainable agriculture growth through microfinance institutions providing direct funding to small holder farmers. It is also expected to catalyze and accelerate access to green credits in specific geographic areas and involve designing general guidelines for credits conditions, such as, for example: interest rates, credit periods, farmer credit profiles, guarantees and insurances required. This process will also include establishing eligibility criteria for supporting microfinance institutions.

The underlying sustainable agriculture model

To solve the problem of dry forest degradation as well as soil degradation, water loss and pollution, it is essential to have a holistic understanding of the forests and the underlying causes of the problems.

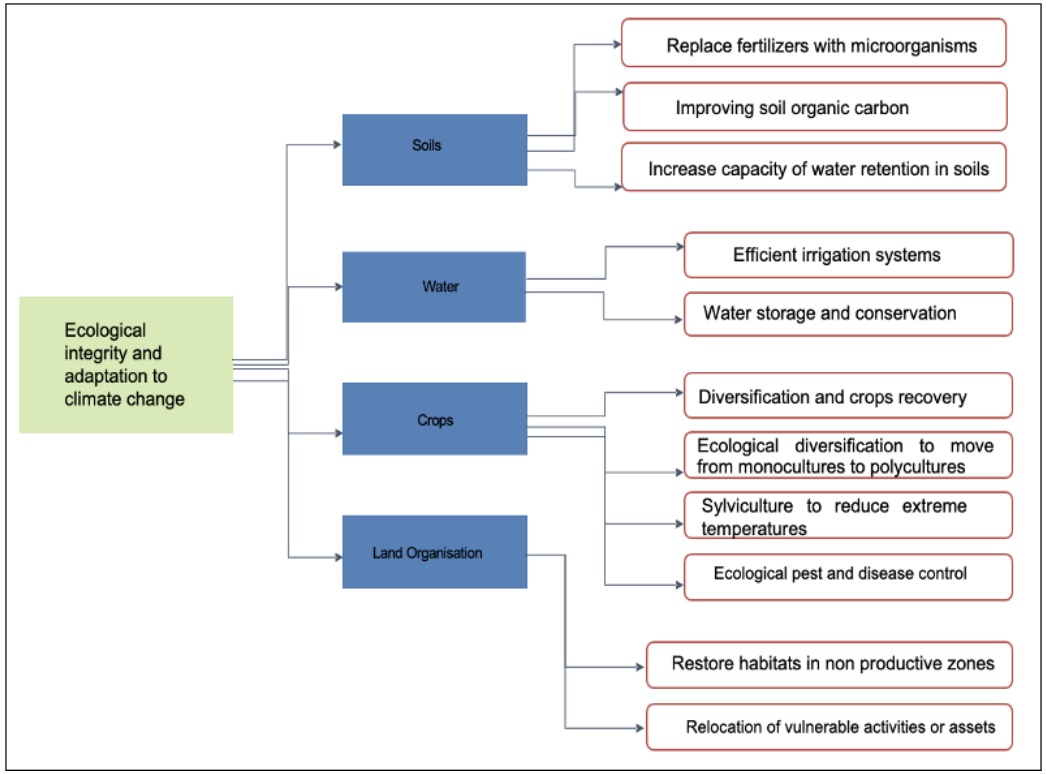
Below is the agronomic model that the project seeks to promote, focusing on four main areas, namely: soil, water, crops, and improved land management. In each of these areas, different interventions are possible, all with the common purpose of promoting a paradigm shift towards a sustainable agricultural model with promotes biodiversity and restores natural habitats. As is explained later, a key focus will be made on climate smart agriculture too. The GEB Core indicators 4.1 and 4.2 will arise from item iv while the other items will provide important unquantified co-benefits.

i) In relation to soils, eligible activities are related to the structural improvement of soils through the substitution of agrochemical products;

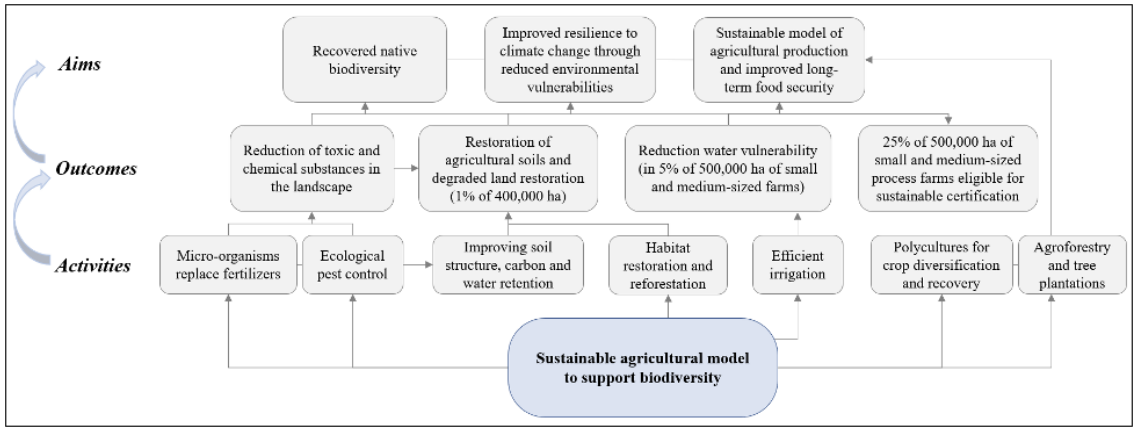
ii) In relation to water, eligible investments are directed to more efficient use of this resource, as well as its storage and operational retention;

iii) In relation to crops, diversification and replacement of agrochemicals will be supported by natural solutions.

Finally, in relation to sustainable land management, operations of recovery and improvement will be facilitated (either for sustainable agriculture or forest restoration) as well as the structural integrity of the production unit.



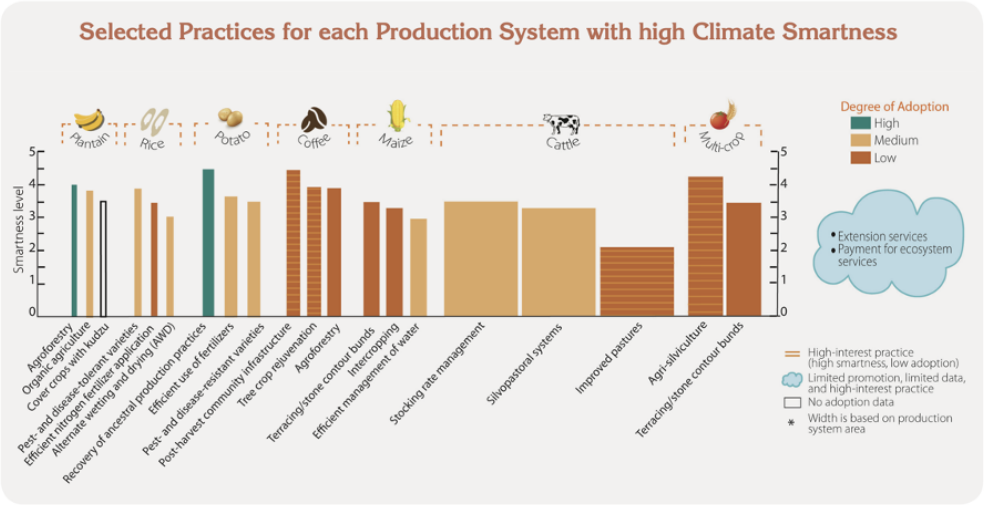
Ultimately, changes are needed at a landscape level throughout the equatorial dry forest of Tumbes. The objective of agrochemical reduction and restoration of degra agricultural soils degraded in marginal zones through providing helping to ensure sustainable production while also reducing vulnerability to drought will be achieved on sufficient number of producers adopt these approaches. Based on communication and information from the Ministries of the Agriculture and Environment of both count it is estimated that at least 5% of all small and medium producers will be trained and converted to sustainable agriculture during the project implementation. This parac shift will allow small and medium producers to improve their conditions of production in both normal and difficult (drought) water periods. An overview of the activ necessary to create this paradigm shift is provided in the figure below.



Many of the sustainable agricultural practices will also be 'climate smart' The figure below displays the type of climate smart practices that could be implemented, as indicated in the World Bank (2014) climate smart agriculture study for Peru. The main focus will be on agro-forestry, but other practices could be included too.

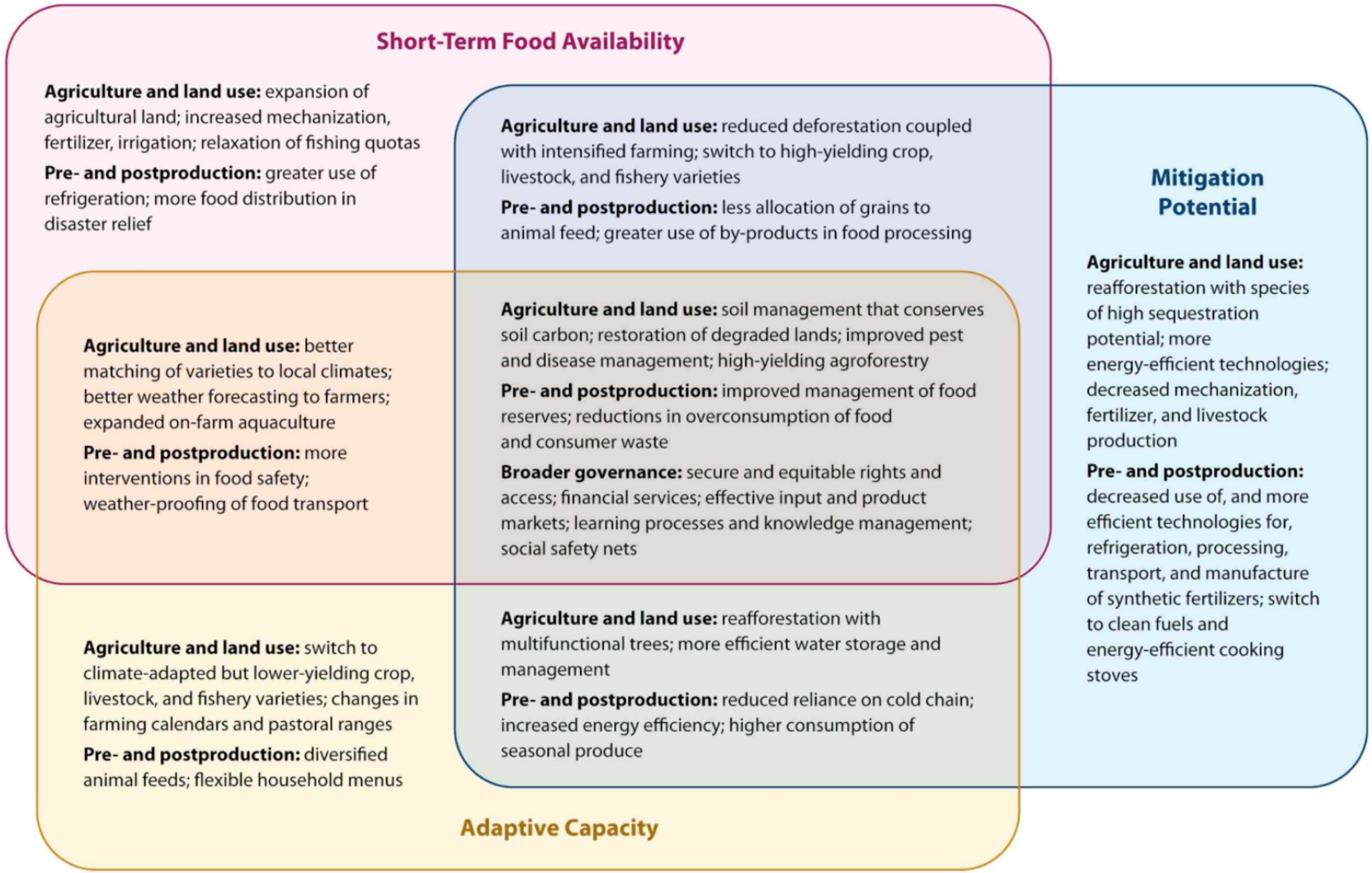
In general, climate smart practices have low-to-medium adoption rates. These practices have a high potential for productivity, adaptation, and mitigation co-benefits if barriers to adoption can be overcome. For example, efficient water management in rice production can increase productivity, reduce methane emissions, and reduce the risk of soil salinization. Improved pastures (planted with legumes) increase food security and improve the quality of livestock feed and soil. The recovery of ancestral practices in crops, such as potato landraces, maintains genetic diversity and contributes to soil and water conservation.

Intercropping also helps reduce climate risks, uses water and soil nutrients efficiently, and diversifies livelihoods. Low and medium adoption rates for these practices are linked with institutional and financial challenges facing farmers and producers associations. Sporadic and unsystematic promotion of policies, regulatory frameworks, and institutions that deliver services, such as climate information systems, R&D, extension services, and financial incentives, contributes to low adoption.



Source: World Bank; CIAT; CATIE. 2014. Climate-Smart Agriculture in Peru. CSA Country Profiles for Latin America Series. Washington D.C.: The World Bank Group.

The type of climate smart activities that could be invested in include any of the activities that occur in two or more of the boxes below. The most appropriate options will be investigated and agreed during Components 1 and 2 with the support of FAO and Conservation International.



Source: Vermeulen (2012) from https://csa.guide/csa/what-is-climate-smart-agriculture

Biodiversity benefits of Agroforestry

Further to investigations during the early stages of the project, a target of around 20% land set-aside for native vegetation/forest conservation will be set as part of the Conservation Agreements linked to the green credit. The Conservation Agreements will be a core aspect of the green credit lines and will be negotiated with each farmer or producer – although a generic agreement or set of standards terms will also be developed that can be adapted as necessary for each situation.

The figure of 20% protection aligns with literature recommending that habitat cover should remain at around 10-30% to prevent species decline associated with critical thresholds of ecological functioning (Swift and Hannon., 2010). It also aligns with recommendations in studies assessing the trade-offs associated with biodiversity conservation and agricultural production (Mastrangelo and Laterra (2015); Bicknell et al., (2021) and Fastre et al., (2020)). A preliminary figure of 20% affiliates closely with these studies and will be further evaluated in consideration of location-specific conservation targets.

The mechanisms through which agroforestry systems contribute to conserving biodiversity are broad and have been examined by various authors. In general, Agroforestry can play five major roles in biodiversity conservation. These are that agroforestry: 1) provides tree cover and a forest understory that provide habitat services, food sources, and refuges for species; 2) helps preserve germplasm of sensitive species; (3) helps reduce the rates of conversion of natural habitat by providing a more productive, sustainable alternative to traditional agricultural systems; (4) provides connectivity by creating corridors between habitat remnants that can help protect the integrity of sensitive floral and faunal species, preserve genetic diversity, reduce wildlife conflicts and reduce the pressures of extractive land use on natural habitat; and 5) helps conserve biological diversity by providing other ecosystem services such as erosion control and water discharge, thereby preventing the degradation of surrounding habitat.

The specific effects of agroforestry on biodiversity have been widely established in academic studies. For instance, Harvey and Villalobos (2007) found that diverse cacao agroforestry systems in Costa Rica harbour bat and bird assemblages that are as (or more) species-rich, abundant, and diverse as forests, contain the same basic suite of dominant species, and also contain more nectarivorous bats. The species richness, abundance and diversity of bats and birds was dramatically higher in Cacao agroforests than regular plantation monocultures. In another study, Moço et al. (2010) compared the distribution of meso and macrofaunal communities in soil and litter under cacao agroforestry systems and in a natural forest in Brazil. They concluded that these agroforestry systems had beneficial effects on the soil and litter faunal communities, such that cacao agroforestry could be considered as a suitable conservation strategy for soil fauna. Crucially, healthy soil biodiversity better regulates pest control, ecosystem resilience and can improve the general species richness and diversity of assemblages across higher trophic levels. Ferreira et al., (2020) found that traditional cacao agroforests retain mammal conservation value, even in landscapes that are heavily dominated by this land use, whilst an increasing intensity of agriculture is clearly associated with a lower diversity of mammal species.

Potential Biodiversity Metrics

Various different metrics can be used to establish the biodiversity effects of agroforestry ecosystems. These will be further considered in the project. For example, World Agroforestry have proposed a general set of indicators that can be adopted to monitor the contribution of trees to biodiversity on farms, based around 3 general specific sub-indicators of i) in-situ conservation (cumulative area, species richness, species of conservation concern), ii) landscape connectivity (tree cover, intactness index and trends in habitat connectivity) and iii) ecosystem services (above ground biomass, use diversity of trees and species, insect abundance and soil health) (World Agroforestry, 2002). The adoption of these metrics can be used to track biodiversity progress in specific agroforestry settings, support national monitoring and reporting, and inform outcome-based policy-making for mainstreaming the contribution of trees on farms in biodiversity conservation. **However, in relation to the GEBs, the study will only track hectares of agricultural and improved and hectares of improved biodiversity.**

The Theory of Change:

The main issues that the project aims to address are the deforestation and degradation of Tumbes Equatorial dry forest's ecosystem, as well as the resulting biodiversity loss. The main underlying drivers of this ongoing deforestation is the lack of integrated land use planning, poor institutional arrangements for ecosystem management and prevalence of a short-term agricultural production paradigm, which is consolidated by financial insecurity, rural poverty, and an increasing demand for key agricultural products and charcoal.

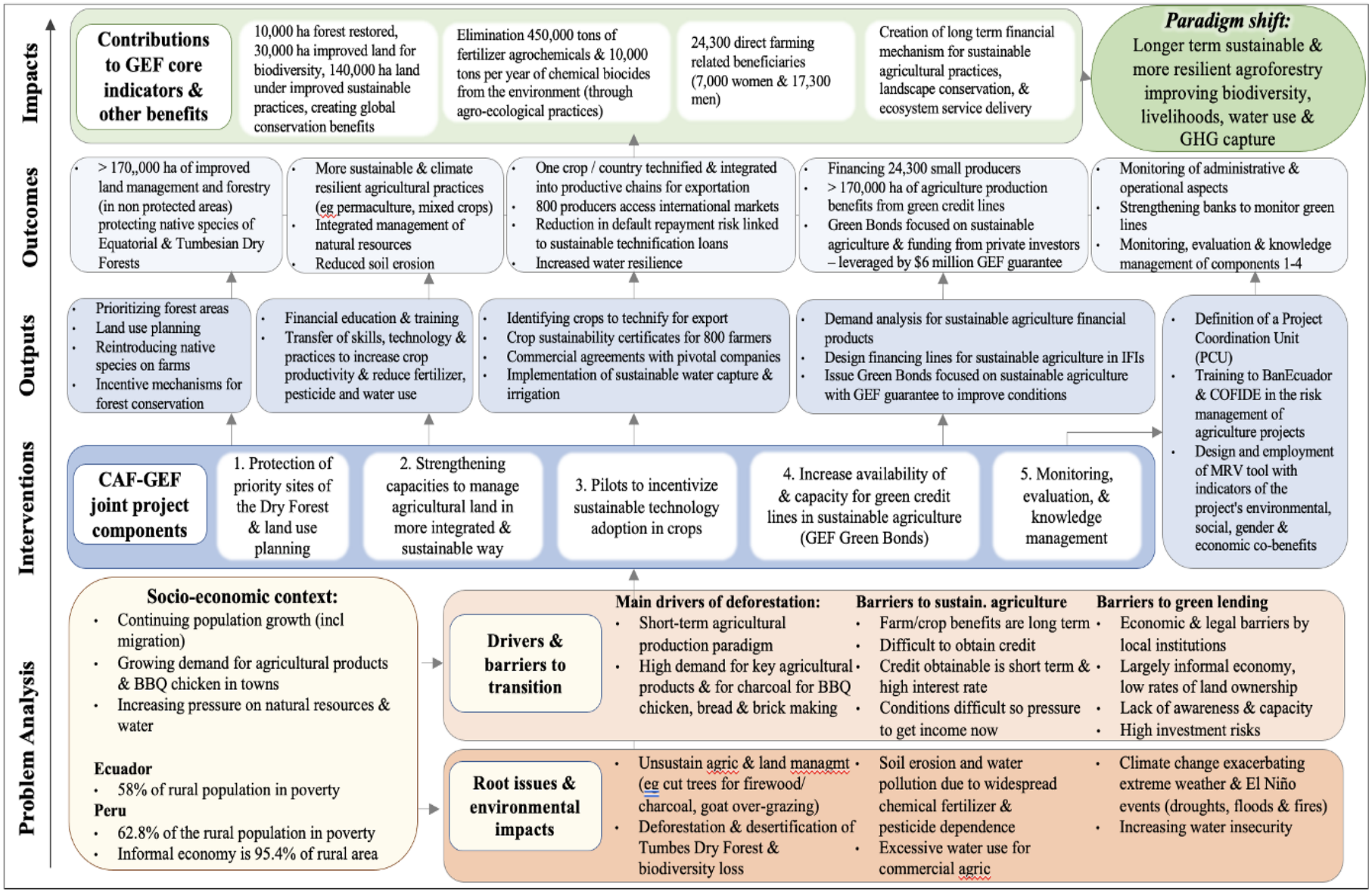
The GEF guarantees will allow for the improvement of the terms of funding for BanEcuador and COFIDE, which will then be used to finance the transition to longer-term sustainable agriculture including agro-forestry and climate smart agricultural practices. Together, the financing and technical assistance will build capacities to overcome the current major problems of deforestation and unsustainable agricultural production. The enhanced financing terms for smallholder farmers are expected to improving the long-term profit margins of farmers through reduced operational costs, increased income, and risk mitigation. Furthermore, the project will reinforce the capacity of farm units to safeguard biodiversity and connectivity of ecosystems and to avoid the degradation or deforestation of the dry forests that remain in or near their perimeters.

The key to the success of this intervention is twofold. Firstly, it must be shown through technical assistance that an alternative, sustainable, and climate resilient approach is possible, and secondly, it must facilitate access to the financing and loans necessary for this transition to occur and remain self-sustaining in the long-term.

This intervention will be based on findings from studying the dry forest areas most in need, the current market and demand for such green credit lines with Conservation Agreements, and the associated capacity building and adaptative management required through continued monitoring and verification.

An overview of this theory of change is provided in the diagram below, along with a brief summary of its main points. The outline is then detailed in full below.

Overview of the Theory of Change:



Impacts and global benefits of the project:

This will result in a total of 10,000 hectares of dry forest restored, 170,00 hectares benefiting from the introduction of sustainable farming practices – including 30,000 hectares of protected native vegetation – with improved biodiversity management as part of the conservation agreements (reported as core indicator 4.1). It will also have co-benefits of a reduction of fertilizer agrochemical and of chemical biocides. Overall, the project concerns 24,300 direct beneficiaries and an estimated 52,200 indirect beneficiaries (including suppliers and family's farmers).

Additionally, this project aims to create a long-term and self-sustaining financial mechanism that enables sustainable agricultural practices, landscape conservation, and ecosystem service delivery.

This will ultimately lead to a paradigm shift from an unsustainable short-term agricultural system to a longer-term, climate-resilient agroforestry system which improves biodiversity, water use, carbon sequestration, and peoples' livelihoods.

The Proposed Intervention:

PROJECT OBJECTIVE: Support the conservation of biodiversity in prioritized territories of the Dry Forests in Ecuador and Peru, by financing of climate smart sustainable agricultural practices, building capacities and transferring technology to small and medium farmers. The financing of sustainable agriculture practices at adequate financial terms and conditions is to be enabled through the issuance of one or more green bonds in Peru and Ecuador that will benefit from guarantees provided by GEF and CAF. The guarantees will act as credit enhancements thereby improving the terms of financing of the issuers, and their on-lending terms for the small holder farmers in that region.

The five Project Components

Component 1. Protection of priority sites of Equatorial and Tumbesian Dry Forest

The objective of Component 1 is to protect priority sites of the Equatorial & Tumbesian Dry Forest through restoration and conservation activities, implemented through land use management plans, agro-silvo-pastoral projects and incentive schemes for forest conservation. These will be implemented by the provincial government of Guayas, the Water fund of Guayaquil, Ministries of environment in both Ecuador and Peru, the FAO, and Conservation International (CI). CAF and the partners will continue to seek financing to increase the protection of larger areas of forest.

The outcomes are outlined below with a description of their respective outputs.

Outcome 1.1. Development and implementation of priority activities as part of a strategic land use management plan.

Output 1.1.1. Mapping of potential restoration areas and identification of productive native species and low value-added crops for conversion into crops that favour income, market access and land recovery. The activity will be made together by binational representatives.

Output 1.1.2. Design, validation and implementation of priority activities of the land use management plan, developed in a gender-based and participatory process with local governments, civil society organizations and other relevant stakeholders.

Outcome 1.2. Investigations and academic contributions to develop specific indicators to measure restoration and connectivity approaches.

Output 1.2.1. A proxy of restoration and connectivity indicators accredited by academies in Ecuador and Peru and with the active collaboration of the school of forestry and biology of an international university in association with local academia and research centres.

Outcome 1.3. Application of strengthening actions in the identified conservation incentive scheme.

Output 1.3.1. Design of a mechanism to strengthen the identified scheme for conserving the remnants of dry forest associated with crops: The Water Fund of Guayaquil has an important tool called "Daule River Basin Conservation Plan" developed through a study funded by CAF. The study was developed with a horizon to 2030, and prioritized actions for the restoration of the Daule River Basin[1], including: i) restoration of remnants of Dry Forest, and ii) application of good agricultural and livestock practices.

Component 2. Strengthening capacities to manage agricultural land in a sustainable way, by providing technical assistance to support the investments financed under Components 3 and 4. These activities will be implemented in coordination with FAO and CI alongside specialized consultants, local institutions, and both Ministries of Agriculture. For these outputs to be successful in creating permanent behavioural change, they must be locally developed at the grass roots level, in partnership with trusted local authorities, farmers, and cooperatives.

Outcome 2.1. Sustainable agricultural practices, including integrated management of natural resources, linked to green financing lines.

Output 2.1.1. Design of a financial education strategy and training in “green” business, with a typology of agricultural practices and activities that can be financed with the sustainable bonds. Training in sustainable agricultural practices will be implemented, creating a certification course which will allow farmers to access microcredit from BanEcuador, COFIDE, and other financial intermediaries under Component 4.

Output 2.1.2. Identification of Agricultural Field Schools (ECA) and implementation of a financial education strategy and training in sustainable agricultural practices. This will include the preparation of capacity building programs and educational material for at least 10 Agricultural schools in the Dry Forest of Ecuador and Peru. GGGI will lead on this with support from other partners on the technical side.

The project will therefore use the existing installed capacity of ECAS (Agricultural field schools) in order to maximize impacts of national, regional and local activities of Ministries of Agriculture, Local Governments, FAO, and other specialized organizations that work in sustainable agriculture initiatives such as Bosques y Fincas, Organic agriculture, and others. For instance in Ecuador, the National Integrated Fire Management Program has ECAS in buffer zones of Protected Areas (many of them in the Tumbesian Dry Forest eco-region), and these will be used in several activities of this project. The beneficiaries of the project will mainly be farmers from Ecuador and Peru, belonging to various associations and communities, in the list provided in 1.b.

Output 2.1.3. Transfer of skills, capacities, technology and best available practices to increase crop productivity. The project will seek to train producers in practices to increase yields without damaging the environment. GGGI will provide input with other partners on the technical side.

Output 2.1.4. Training in sustainable agriculture and climate smart agricultural techniques including alternatives to slash and burn farming, including methods to slash and incorporate vegetation material into soil, supporting the recovery of organic matter and soil fertility. This activity will seek close coordination with the CAF’s *Amazonia Sin Fuego* Program.

Output 2.1.5. Capacity building and creating awareness of the negative impacts of toxic chemicals (e.g. pesticides) and persistent organic pollutants (POPs) on health, production and the environment. This will be unquantified co-benefits of the project. Farmers will also be trained on the best available practices for managing chemicals in crops and hazardous waste – including triple washing, collection, and final disposal of agrochemical containers. These activities will be led in coordination with the FAO.

Output 2.1.6. Transfer of skills, capacities and alternatives for sustainable agriculture and pest control to recover soil nutrients and functions.

Output 2.1.7. Implementation of a communication and awareness strategy to conserve the Equatorial Tumbesian Dry Forest, designed and adapted according to the different needs and types of audiences, through different formats such as videos, interviews, workshops, or thematic discussions.

Component 3. Pilot to incentivize sustainable technology adoption in crops, to be implemented for at least one crop type per country (e.g. cocoa in Ecuador and mango in Peru). This scheme should involve large farms and agro-export companies that may play a key role in the supply chain market to support small and medium-sized producers. To accompany the introduction of technologies and the acquisition of certifications of sustainable agricultural techniques, technical assistance and concessional financing will be offered. If this program is successful, it can be extended to other crops in the region.

A CAF and AFD loan will fund this component. The activities will be coordinated by the project steering committee, in liaison with agricultural communities and cooperatives (in Ecuador and Peru, around 35 have expressed their interest) as well as the selected companies.

Companies will be selected according to the following criteria: a) to have an environmental responsibility policy and environmental and social risk analysis system related to their activities; b) exercise their activities in areas where land use is appropriate; c) work in one of the priority intervention areas of the project; d) be financially sound and viable.

Outcome 3.1. At least one crop selected in each country to be technified and integrated into productive chains for exportation

Output 3.1.1. Selection of at least one crop in each country to be sustainably technified and integrated into productive chains for exportation. At this stage of the project, cocoa has been identified as a possible and adequate crop in Ecuador. This crop has a relevant production volume in the provinces of interest. Only one international buyer (e.g. ECOM) purchases around US $60 million of cocoa per year, being more than half of this production in the project's target region.

Outcome 3.2. Enhance access to international markets for at least 800 small and medium producers through sustainable certification of crops

Output 3.2.1. Adoption of crop sustainability certifications targeting at least 800 farmers. We will seek that more producers in the area obtain certifications of good sustainable practices or labels (organic or "green") in their respective crops or national or international organic certifications. The costs that farmers could incur can be covered with resources from Component 4. Through certification, farmers will be able to better market their products and repay their loans.

Outcome 3.3. Improved water resilience of crops

Output 3.3.1. Implementation of sustainable irrigation systems with small and medium producers. This involves water capture and storage, and the development of efficient irrigation systems. Farmers would thus be able to mitigate soil erosion, stabilize water supply and reduce reliance on other more energy consuming water sources. Collected rainwater could be used for micro and small-scale irrigation in arid and semi-arid regions.

Outcome 3.4. Reduction of default repayment risk linked to the sustainable technification loans to small and medium producers.

Output 3.4.1. Identification and selection of pivotal companies for each crop. To reduce the risks involved, we will look for pivotal companies that are interested in both Ecuadorian cocoa and Peruvian mango. Some companies identified thus far are ECOM in Ecuador and Camposol in Peru.

Output 3.4.2. Facilitating commercial agreements between small and medium farmers with pivotal companies. Farmers will be required to meet quality and sustainability standards through capacity building activities covered in Component 2.

Component 4. Increase investments capacity in sustainable agriculture

This component is focused on the design, organization / implementation and supply of sustainable agriculture loans supporting the conservation of the Tumbes equatorial dry forest. The finance will be raised through the issuance of green bonds in Ecuador and Peru targeting sustainable agriculture in the relevant geographic areas. The GEF and CAF credit enhancement guarantees will specifically be used to attract investors purchasing the green bonds.

To inform this investment approach, the aim will be to first evaluate and map the market to quantify the financial needs of small and medium-sized farmers to engage in more sustainable agriculture. So far, our estimates come to around USD 35 million on the Ecuadorian side and USD 10 million on the Peruvian side. These amounts can change ahead or CEO endorsement and were calculated based on the following: i) the potential technicization of farmers in both countries (in the harvest of cocoa and mango); and ii) the current agricultural loan portfolio[2], with a conservative percentage of 25% to 30% of potential credit to engage in sustainable agriculture practices.

As part of the preparation of this proposal, two development banks were shortlisted in both countries, as they can implement this component and channel resources to small and medium farmers in the target area. In Ecuador, BanEcuador which is a so-called 'first' and 'second level' bank (direct customers and intermediary for financial institutions) and, in Peru, COFIDE (an intermediary bank) in collaboration with the Municipal Fund of Piura (first level bank). This component aims to integrate private investments into operation, which will be achieved through green bonds and lines of credit from private lenders.

To demonstrate the feasibility of the project, a private organization has already been approached, EcoBusiness Fund, which is involved in sustainable agriculture in the region and eager to invest. CAF, on its side, is exploring other possibilities for obtaining financial instruments other than incentives ("Non-Grant") from other organizations in order to carry out this operation with concessional financing and to offer attractive conditions to producers. CAF also received confirmation of the two development banks interest with which it maintains ongoing operations within the implementation phase: 40 million USD from BanEcuador and 50 million USD from COFIDE. These operations have enabled progress through the institutional preparation as well as the staff training on tools such as SARAS and the design of green financial products.

Outcome 4.1. Definition of baselines and individual farm-based performance indicators and outline Conservation Agreements

Output 4.1.1. Development of sustainable agriculture plans and outline Conservation Agreements for farms through an assessment of agricultural practices and the state of natural resources in the priority area. This assessment will result in a baseline study to generate information regarding the current condition of natural resources in each productive unit, including production trajectory, slash and burn practices, droughts, deforestation risk areas, availability and access to water, quality of soil, and the socio-economic situation. It will also provide information to develop sustainable agriculture plans and outline Conservation Agreements for farms and guide the identification of biological indicators to assess the impact of the improved agricultural practices. The sustainable agriculture plans will be paid for by each credit beneficiary from the green lines of the financial intermediaries, heavily promoting GEF's guarantee.

Outcome 4.2. Market study and analysis of the demand for financial products from sustainable agriculture. This will be undertaken prior to issuing the bond to inform the demand and financial conditions of the loans that will be on-lent by the use of proceeds of the green bonds.

Output 4.2.1. An analysis report on the market condition and demand for sustainable agriculture financial products in Ecuador and Peru. This study will be conducted on the provinces of: El Oro, Manabí, Guayas, Santa Elena, Loja, Tumbes, Piura and Lambayeque. The analysis will determine the different conditions and requirements that the financial product must meet to raise the demand from farmers, in particular with the view to change their behavior towards more sustainable practices.

Outcome 4.3. Creation and issuance of green bonds in Ecuador and Peru focused on sustainable agriculture and associated fund raising from private investors – leveraging the USD 6 million GEF guarantee.

Output 4.3.1. New green bonds issued in Ecuador and Peru focused on sustainable agriculture. Structuring of green credit lines to finance sustainable agriculture linked portfolios of financial institutions in Ecuador and Peru. Funds endorsed as co-financing by BanEcuador and COFIDE are expected to be raised through the issuance of green GGGI will support CAF, BanEcuador and COFIDE to achieve this. The funds will then be loaned to small farmers through micro-finance institutions working with the banks.

Output 4.3.2. Improved conditions of the green bonds as a result of the GEF guarantee. The GEF guarantee will enable the BanEcuador and COFIDE to offer much better loan conditions to the green credit lines borrowers, including lower interest rates and longer loan periods. This will help ensure more farmers and producers take up the loans.

Output 4.3.3. Improved terms of financing for agricultural sustainable practices are 'passed to' smallholder farmers.

Outcome 4.4 Design and implementation of green lines for sustainable agriculture including Conservation Agreements for about 24,300 small producers and MSMEs. Up to 170,000 hectares of agriculture production will benefit from green credit lines.

Output 4.4.1. Design and implementation of financing lines for sustainable agriculture in selected IFIs in Ecuador and Peru, targeting small producers and MSMEs. The design will accurately specify the terms, amounts and potential uses of the funds of these financing lines. The terms and conditions will be aligned with the results of the market study previously described and will be linked to the Conservation Agreements made (i.e. linked to credit covenants). This task will be led by GGGI working closely with CAF, BanEcuador and COFIDE.

Outcome 4.5. Strengthening of banks to adequately monitor developed green lines.

Output 4.5.1. Facilitating training for BanEcuador and COFIDE on the risk management of agriculture projects, and to monitor sustainable agriculture credit lines to strengthen their skills and systematize their knowledge about the project.

Outcome 4.6. At least 10,000 hectares restored with native species of Equatorial & Tumbesian Dry Forests, in conservation corridors that allow the recovery of ecosystem services and 30,000 hectares .

Output 4.6.1. Restoration and conservation of targeted coastal dry forest and set aside of 20% of habitat for native species in areas surrounding farms and vulnerable agricultural plantation sites (Carlos Manchego, et. al., 2018), connecting forest remnants and establishing conservation corridors. Restored habitat will be enriched with key native species and rehabilitated.

Outcome 4.7. Up to 170,000 hectares managed under the criteria of agroforestry and silvo-pastoral projects with 140,000 hectares of land under sustainable land management in productive systems (Core indicator 4.3) and 30,000 hectares of landscape under improved management to benefit biodiversity (Core indicator 4.1).

Output 4.7.1. Reintroduction of native species on farm boundaries and crop buffer zones through agroforestry and silvopastoral projects to enhance positive interactions between agriculture, livestock, forestry and the physical environment - financed through green financing lines – and 20% of farmed land set aside and managed for biodiversity under Conservation Agreements.

Component 5. Monitoring, Evaluation and Knowledge Management

Monitoring and evaluation of the success of the project will be essential to ensure it meets the intended outcomes, and to make adjustments where necessary. The project will build on the existing monitoring and evaluation processes that BanEcuador and COFIDE have in place – and as developed as part of the green bond procedures.

BanEcuador has a tool base to achieve its credit assessments, which includes an analysis of climate risk based on historical data, and that allows it to monitor, forecast, and update to the matrix of risks sector. The agro-climatic risk is run concurrently with the Ministry of Agriculture (MAG), which approves the model of intervention to develop in each area where BanEcuador works, according to the typology of producers and agronomic suitability. BanEcuador and the MAG offer the beneficiaries training and technical assistance for monitoring the implementation of good practices.

COFIDE manages risks through a manual that incorporates similar instruments such as: a) a list of exclusions; b) an environmental and social risk assessment form; and (c) an economic activity categorization form. In addition, COFIDE has a system of internal monitoring, enabling it to receive alerts of any disputes or events that may jeopardize its environmental or institutional responsibility, and also to operate a control of its reputation or credit of eligible projects. But for this project, high level of socio-environmental risk projects will not be eligible.

Outcome 5.1. Monitoring of administrative and operational aspects

Output 5.1.1. Definition of a Project Coordination Unit (PCU) for administrative and operational aspects of the project, integrating requirements from the annual plan of operations, financial and technical reports, financial allocations, as well as independent evaluations to ensure appropriate feedback from project activities.

Outcome 5.2. Monitoring, Evaluation and Knowledge Management of the four main technical components of the project

Output 5.2.1. Design of a Monitoring, Reporting and Verification (MRV) tool with indicators of the project's environmental, social, gender and economic co-benefits for Components 1-4. For the monitoring and assessment of each aspect, specific and measurable impact indicators will be established and incorporated as part of the project’s results.

Output 5.2.2. Monitoring and Evaluation of the project according to the MRV tool and with the reports of the banks in Ecuador and Peru. This will consider knowledge management and interchange lessons learned between both countries, to share them with a targeted audience, and to facilitate the scaling-up of the project in the ecoregion and other areas facing similar issues.

1a.4). Alignment with GEF focal area and/or Impact Program strategies

Specifically, the project will be aligned with the indicated Program Priorities and Impact Programs as follows:

Biodiversity Focal Area: this project will make an effort to mainstream biodiversity in priority sectors, particularly by improving production agricultural practices to be more biodiversity-positive through technical capacity building and implementation of financial mechanisms (certifications, payment for environmental services, green loans and others) that incentivize actors to change current practices that may be degrading biodiversity. An outstanding contribution of the project will be the forest restoration of 10.000 ha of dry forest restored (Core Indicator 3.2) and 30,000 under sustainable biodiversity management practices in land set-asides as part of the conservation agreements (Core Indicator 4.1) that will improve the biodiversity status of the targeted project area.

Land Degradation Focal Area: the project will be working in a mixed-use landscape within Ecuador and Peru, in which protected areas and dry forests without protection harboring globally important biodiversity and generating environmental services are overlapped with agriculture and other productive activities. The project will seek to change and improve the current production practices in this particular landscape by: i) implementing innovative agriculture practices, associated to improve productivity and adapted to the context of the dry forest; ii) integrating good agriculture practices to the sustainable management of natural resources, optimizing the use of water and recovering soil properties; iii) transferring technology to improve crop productivity, through the provision of certified seeds and better production systems; v) mobilizing financing from sources such as the bi-lateral and multilateral international cooperation, private sector and national financial institutions to establish a sustainable financing mechanisms; and vi) providing access to financing by local producers and landholders to change the current agriculture model to a more sustainable scheme that avoids land degradation on around 140,000 hectares (Core Indicator 4.3).

Furthermore, the project will complement the following recently approved projects for GEF funding: i) Food Systems, Land Use and Restoration (FOLUR) Impact Program; ii) The Amazon Sustainable Landscapes Program (ASL); iii) IDB-GEF Climate-Smart Agriculture Fund for Latin America and the Caribbean iv) LDN Target-Setting and Restoration of Degraded Landscapes in Western Andes and Coastal areas and v) Sustainable management and restoration of the Dry Forest of the Northern Coast of Peru . The latter three are part of the GEF-7 replenishment program.

The FOLUR Impact Programme is designed to promote sustainable, integrated landscapes and efficient food value and supply chains at a global scale. In Peru, most of the country's deforestation (78 percent) occurs in land uses for crop expansion such as coffee and cocoa. The FOLUR project improves commodity value chains for coffee, cocoa and palm to avoid deforestation and degradation in important economic-ecological jurisdictions by increasing production and recovering degraded areas. The project will address improved land use planning and enforcement capacity, mobilize technology and finance, increase capacity of small holders and their associations, introduce profitable sustainable production models in partnership with the private sector, improve access to credit, and improve monitoring of sourcing and traceability standards. There is thus, a close synergy between potential bond issuance and the FOLUR project in relation to intentions to fund sustainable agricultural practises- of which agroforestry may significantly improve commodity value chains for regional crops (including cocoa).

The ASL Impact Program aims to protect globally significant biodiversity and implement policies to foster sustainable land use and restoration of native vegetation cover in the Amazon regions of Brazil, Colombia, and Peru. The ASL Component 2 on Integrated Landscape Management, aims to finance actions around sustainable land-use and natural resource management practices that contribute to the restoration of vegetation, reduce pressure on forests and advance the livelihoods of local communities.

Specifically, the Sustainable Productive Landscapes project in the Peruvian Amazon supports the implementation of Peru's National Strategy for Forests and Climate Change, contributing to the reduction of deforestation and the recovery of forests in targeted production landscapes. The goal is to support natural resource management and production systems that incorporate environmental sustainability considerations through an integrated landscape management approach that recognizes the complexity of local livelihoods and the drivers of landscape-wide deforestation. This project's integrated land management and green bond approach will strongly complement the ASL project'

integrative landscape management and the recovery of forests in Peru.

The Dry Forest of the Northern Coast of Peru GEF project is also highly complementary in that that project focusses on protected areas, while this project focuses on non-protected areas.

1a.5) Incremental/additional cost reasoning and expected contributions from the baseline, the GEFTF, LDCF, SCCF, and co-financing

The proposed project will build on the previously described baseline, which has been considered a supportive framework to develop the additional/incremental activities.

- Scenario without the GEF investment:

The Governments of Ecuador and Peru and national and international NGOs, through GEF projects, REDD+ mechanisms and other international, bilateral and multilateral financial and technical assistance, will continue supporting sustainable productive initiatives oriented to the conservation of natural habitats and biodiversity. As indicated in the baseline activities, historically, most of such assistance has been concentrated in tropical rainforests, with particular attention in the Amazon Region, which expands over an important extension of territory in both countries. Much less investments have been channelled to dry forest ecoregions, where, as indicated before, are also highly endangered and need urgent attention. It is expected that with the establishment of protected areas, including the binational biosphere reserve, new financing will be brought into the region, however in the past, this has not always been the case in other regions equally important for conservation.

On the other hand, there is not yet any program to change finance and business models oriented to improved crop productivity based on sustainable practices in order to contribute to the protection of forests and the inclusion of smallholders and forest communities in the economy for a long period of time. This means that without the GEF investment, financial institutions and private companies will continue to consider investing in small holders as a risky business. Without the project's intervention, services and capacities in targeted regions will continue to be very scarce and limited. Finally, the private sector will not be guided properly to assume the responsibility and play an active role in financing economic development and sustainable growth based on biodiversity and Equatorial and Tumbesian Dry Forests conservation.

Scenario with the GEF Investment:

The GEF guarantee is a critical piece of this overall project in that it will help overcome the significant barrier of limited access to finance with generous terms for small farmers and producers. Each of the other components is required to ensure the knowledge and capacity is in place to help ensure the overall project will be successful. The GEF funding will effectively potentially unlock USD 60 million of sustainable finance that may otherwise not be forthcoming. Without the GEF guarantee the project will be much smaller in terms of Bond issuance and farmer take up of green credit lines.

The overall set of components of this project are designed to provide opportunities for communities dependent on Equatorial & Tumbesian Dry Forests and associated natural landscapes for their livelihoods to shift toward the sustainable use of its natural resources under net-zero deforestation productive activities. These opportunities include investments to increase productivity and agricultural commercialization, the latter will help to bring producers together through their organizations and link them to value chains that support sustainable management. It also includes direct investments in sustainable management practices, in capacity building and in technical assistance. The integration of all these investments through the project should generate greater scope for producers, through their organizations, to develop sustainable productive activities.

The green bonds are expected to be issued by BanEcuador and COFIDE (or an SPV or other issuer if one or both issuers cannot issue in the capital markets) for an expected total amount of up to US$ 33 M. CAF and GEF credit guarantees will represent up to 38% of each bond issuance (20% CAF and 18% GEF). The GEF guarantee will be first loss to the CAF guarantee.

The issuers are expected to achieve improved terms and conditions through this guaranteed bond issuances that will help lengthen tenors and/or reduce interest rates which are necessary to then use these proceeds to on-lend to smallholder farmers for climate smart practices and land restoration activities. The green bonds will follow the ICMA guidelines.

The green credit lines structured by the bond issuers (BanEcuador and COFIDE) will be lent to smallholder farmers in the identified geographical areas including Conservation Agreements and credit covenants that link the agricultural performance to the loans

The CAF and AFD are expected to complement the bond financing with additional loans as explained in the co-financing table. BanEcuador and COFIDE may then also provide additional loans using the same green credit lines and conditions.

In total around USD 60.2 million is expected to be provided to smallholder farmers from the proceeds of the bond issuances, CAF and AFD loans. Initial estimates of the split of financing are: USD 45 million in Ecuador and USD 15 million in Peru.

A further USD 8 million will be provided in technical assistance sourced in-kind by various public organizations including government Ministries and civil society organizations such as FAO, the Global Green Growth Institute (GGGI) and Conservation International. This includes various technical, providing educational materials, training.

The incremental benefits would be derived within the project's geographical areas through the incorporation of sustainability criteria, hopefully embedding into local and national territorial planning. This activity would have large incremental environmental, social, and economic impacts on future projects designed for productive operations in the area. Through the Conservation Agreements and public-private-producers alliances, the value added to territorial outcomes would be maximized compared to the baseline scenario in which these sectors still act separately. The value of these activities cannot be quantified, yet the incrementality with the project is clear when compared to a scenario of uncoordinated action by different governmental agencies, producer groups, producers, and other entities operating in each area.

1a.6). Global environmental benefits (GEFTF) and/or adaptation benefits (LDCF/SCCF)

The global environmental benefits of the GEF investment and co-financing include:

In Ecuador:

- 7,800 hectares of restored dry forest – protecting numerous rare and endangered endemic species;
- 23,400 hectares of preserved forest – improved biodiversity – protecting numerous rare and endangered endemic species – through set-asides and conservation agreements.
- 109,200 hectares benefiting from sustainable agricultural practices through technical assistance and financing:

In Peru:

- 2,200 hectares of restored dry forest – protecting numerous rare and endangered endemic species;
- 6,600 hectares of preserved forest – improved biodiversity – protecting numerous rare and endangered endemic species – through set-asides and conservation agreements.
- 30,800 hectares benefiting from sustainable agricultural practices through technical assistance and financing:

This will result in a total of 10,000 hectares of dry forest restored (Core Indicator 3.2), 30,000 hectares of native dry forest created or preserved (Core Indicator 4.1) as part of set-asides through conservation agreements, and 140,000 additional hectares benefiting from the introduction of sustainable farming practices (Core Indicator 4.3) – with an unquantified co-benefit reduction of fertilizer agrochemical and chemical biocides. Overall, the project concerns 24,300 direct beneficiaries whereas the number of indirect beneficiaries is estimated at 52,200 (including suppliers and family's farmers).

The 10.000 hectares of restored dry forest is based on other in-kind assistance that has been promised (e.g. from Guayas Provincial Government) plus other potential dry forest restoration areas that could be funded through leverage of the project and potential climate smart funds. The 170,000 hectares of overall agricultural improvement (140,00 Ha) and biodiversity improvement (30,000 Ha) is based on an assumed overall investment of USD 60 million and an assumed USD 355 cost per hectare. This is an indicative cost estimate only based on a range of other studies including:

- USD 200/ha for 8 years for agroforestry systems with hedgerows in smallholder maize-bean production systems in the Guatemalan dry forests. Sain et al, (2017).
- USD 230/ha for 8 years for maize based agroforestry in Africa. FAO (2020).
- USD 363/ ha for Climate-smart livestock and grassland restoration in Ecuador GEF PIF project estimate. GEF (2013).
- USD 1,240/ha in Peru for Cacao Alliance climate smart/agroforestry cacao project with USAID funding. FAO (2016).

1a.7). Innovation, Sustainability and Potential for Scaling-up

Innovation

The project is highly innovative in that it combines a green bond approach and conservation agreements to help finance small producers to implement sustainable practices and technologies in important yet highly threatened dry forest areas. The project includes a co-financing mechanism linking national banks in both Ecuador and Perú and builds upon extensive technical expertise developed by FAO, GGGI and CI in the areas of sustainable finance and sustainable agriculture. The banks will issue a green bond which will attract investments through both the GEF and CAF guarantees. Furthermore, the banks will develop alliances with, and support, a number of microfinance institutions that will help provide the green credit lines to the farmers.

The development of sustainable agriculture through investments by regional and national development banks and other financial and microfinance institutions represents an exemplary milestone for investors, banks and funds in Latin America. This will seek new ways to finance projects focused on the conservation and protection of biodiversity through sustainable productive activities and land restauration carried out by local communities, which improve their living conditions (access to financing, new markets and achieving higher income for their families). Additionally, this project, through its financial approach to the protection and conservation of biodiversity, encourages the different sectors to cooperate. The synergy between non-governmental organizations, state institutions and private companies throughout the process will remain a successful precedent for collaboration to solve a problem that can be conflictive in many cases.

Sustainability

To achieve long term economic and financial sustainability after the project within the credit lines, concessions will be stipulated that serve as an additional incentive for farmers to take the initiative to change their conventional agricultural practices and embrace sustainable agriculture activities. It will ultimately become more profitable to farm sustainably rather than conventionally. For the development of the project we have involved BanEcuador and COFIDE. BanEcuador has previously worked in rural localities and has a proven client portfolio of whom they are aware of their risk and payment profiles. In Peru, besides COFIDE, the participation of municipal banks (first-tier) are of utmost importance due to its location and close experience with farmers in the area. Taking these factors into account, the project seeks to develop the necessary conditions and work with the appropriate actors so that the proposed activities are independently maintained in the long term.

Even after GEF's contribution ends, it is likely that given the impact of climate change on the less resilient existing agricultural practices, and the growing international value chain demand for sustainable produce, this green bond approach will continue to be adopted much more widely. There is already considerable focus on how to make agriculture system more sustainable, and this project should act as a powerful case study to show others that it can be successful and is achievable. It is envisaged that it will become an internationally recognised successful case study for green bond issuance related to sustainable agriculture.

By incorporating sustainable practices in the agricultural sector that aim to conserve and protect land and native biodiversity, the aim is to get small and medium farmers to disengage from conventional harmful practices. By substituting negative impact practices on the environment with positive impact practices, we can ensure the environmental and social sustainability of the forest ecosystems and the project itself. However, the stipulated economic incentives and financial

conditions have to be maintained so that commitments to farmers are preserved and a return to unsustainable conventional practices does not emerge. Additionally, the implementation of legal frameworks by regional and national institutions is essential to respect the production borders that will prevent further loss and degradation of the Equatorial and Tumbesian Dry Forest.

Scaling up

The proposed financing scheme for small and medium-sized farmers, conditioned on modifying their agricultural practices to more sustainable ones, is an approach that can be readily replicated in other threatened landscapes in Ecuador and Peru, as well as within other countries within Latin America and the Caribbean and beyond. If this mechanism is proven successful, it could be a way to encourage vast numbers of farmers and producers to be more sustainable, and many national banks and associated micro-finance institutions to offer such investment opportunities and loans.

The extensive technical assistance in Components 1 and 2 will provide an invaluable set of information that can be used in other locations too. It is a complex set up because it is tapping into a range of different expertise that is highly complementary. This structure is necessary in this case as to be a first case which needs extensive technical assistance but it is likely to be reduced in subsequent rounds of bond issuance due to the precedent set, any new accompanying legislation emanating, and in particular from the knowledge management materials and lessons learned associated with this project.

The success and lessons learned from the green bonds and green credit lines will be highly replicable elsewhere. The pilots in Component 3 that seek to make at least two crops more technologically advanced and promote national and international certifications, may also eventually expand to other crops in these countries and elsewhere.

It is considered likely that numerous micro-finance institutions will benefit from initially linking with the two national banks, and that many other will benefit by learning from and adopting this approach to green bonds for sustainable agriculture both within the same area and in other regions in Ecuador, Peru and beyond. As mentioned above, given climate impacts and the interest in sustainable produce, it should prove to be an excellent case study for others to follow globally – thereby scaling up its impacts significantly.

---

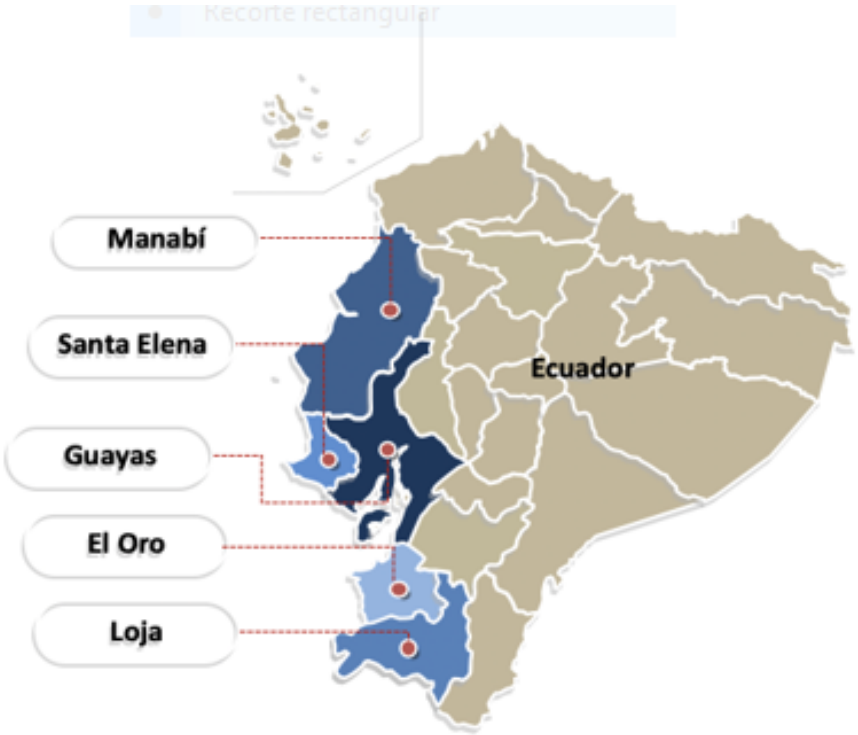
[1] http://fondagua.org/que-hacemos/

[2] Tne agricultural loan portfolio in the specific area of the project.

1b. Project Map and Coordinates

Please provide geo-referenced information and map where the project interventions will take place.

As noted in the maps below, the project will take place in the following provinces of Ecuador: Manabí, Santa Elena, Guayas, El Oro and Loja; and in Peru: Tumbes, Piura, Lambayeque and Cajamarca. Cajamarca has been included because there are synergies with the FAO-GEF dry forest of Peru project.



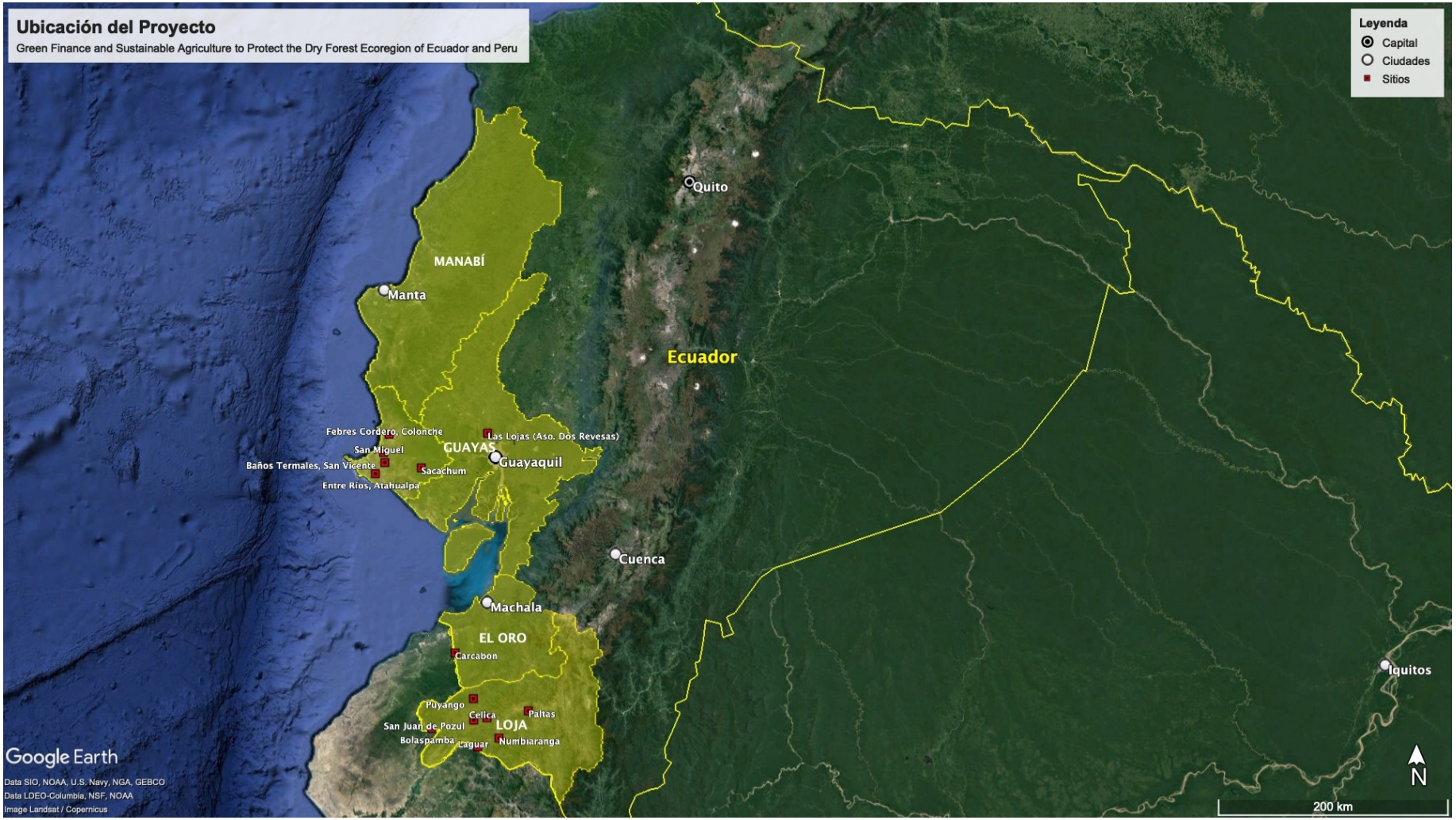
As mentioned in the Alternative Scenario – Component Output 2.1.2, the focused areas will be close to intervention zones of ECAS (Farmer Field Schools) in Peru and Ecuador. In addition, we will use criteria to prioritize working with small landholders' farms in or around Protected Areas Buffer zones. The project will therefore use the existing installed capacity of ECAS (Agricultural field schools) in order to maximize impacts of national, regional and local activities of Ministries of Agriculture, Local Governments, FAO, and other specialized organizations that work in sustainable agriculture initiatives such as Bosques y Fincas, Organic agriculture, and others. For instance, in Ecuador, the National Integrated Fire Management Program has ECAS in buffer zones of Protected Areas (many of them in the Tumbesian Dry Forest eco-region), and these will be used in several activities of this project. The beneficiaries of the project will mainly be farmers from Ecuador and Peru, belonging to various associations and communities, in the following list:

Table of project beneficiaries:

Country	PROVINCE	Community/Sector
Équateur	EL ORO	CARCABON
		ASOCIACION DE PRODUCTORES AGROPECUARIOS 31 DE JULI

	GUAYAS	O
	GUAYAS	ASOCIACION DE PRODUCTORES AGROPECUARIOS SAN PEDRO DE VILLAO
	GUAYAS	GRUPO INDEPENDIENTE BELLAVISTA
	GUAYAS	ASOCIACION AGRICOLA PROYECTO 2000
	GUAYAS	CENTRO AGROARTESANAL NUESTRA SEÑORA DE LAS MERCEDES CAAM
	GUAYAS	ASOCIACION DE PRODUCTORES AGROPECUARIOS LAS TRES MARIAS
	GUAYAS	DOS REVESAS
	GUAYAS	ASOAVANZA 2
	GUAYAS	PREDIO LA FORTUNA
	SANTA ELENA	Comuna San Miguel
	SANTA ELENA	Comuna Febres Cordero
	SANTA ELENA	Comuna Baños Termales
	SANTA ELENA	Comuna Entre Rios
	SANTA ELENA	Comuna Sacachum
	LOJA	Bolaspamba
	LOJA	Paltahuaico
	LOJA	Naranjito
	LOJA	03 de Septiembre de Numbiaranga
	LOJA	Laguar
	LOJA	Coorporación Impulso Agropecuario San Juan de Pozul_Barrio San Vicente
	LOJA	Coorporación Impulso Agropecuario San Juan de Pozul_Barrio Minas
	LOJA	Coorporación Impulso Agropecuario San Juan de Pozul_Barrio Naranjito
	LOJA	Coorporación Impulso Agropecuario San Juan de Pozul_Barrio Pueblo Nuevo
	LOJA	Comunidad Ganadera de Celica
	LOJA	Comunidad Ganadera Puyango
	LOJA	Productores Agroecológicos de Puyango
	LOJA	Comunidad de aprendizaje Valle Nuevo
	LOJA	Comunidad de Aprendizaje Reina del Cisne
	LOJA	Desarrollo Agropecuario de Paltas
	LOJA	ASOAGROPISA
Pérez	LAMBAYEQUE	ASPROPOS

Perú	LAMBAYEQUE	ASPROBOS
	PIURA	CECOBOSQUE
	TUMBES	Consorcio de Manglares del Noroeste de Perú
	LAMBAYEQUE	Comunidad campesina MUCHIK Santa Catalina
	CAJAMARCA	TO BE DETERMINED



2. Stakeholders

Select the stakeholders that have participated in consultations during the project identification phase:

Indigenous Peoples and Local Communities

Civil Society Organizations Yes

Private Sector Entities Yes

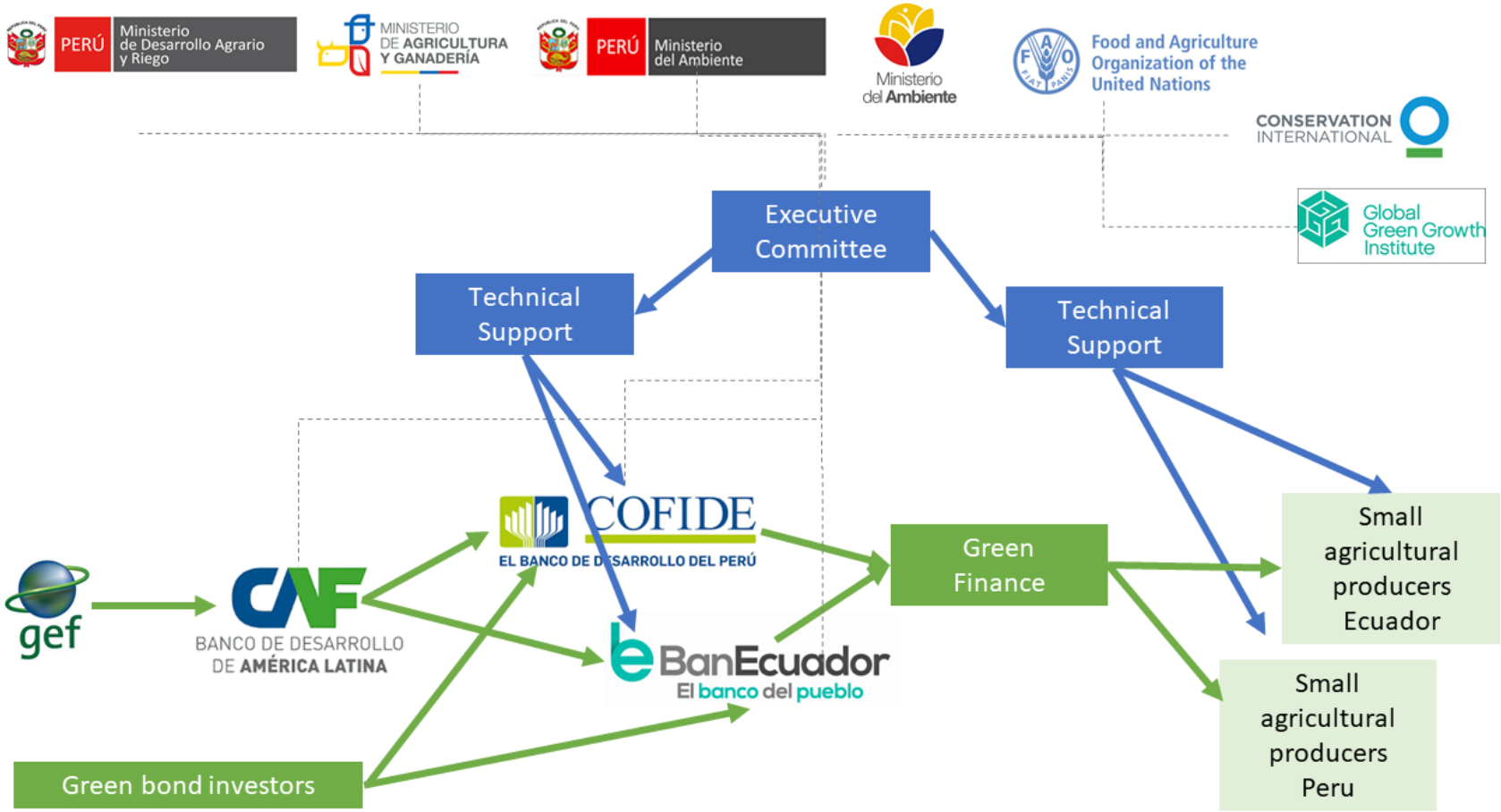
If none of the above, please explain why:

Civil Society Organizations and Private Sector Entities have participated in various consultations during the project identification phase. For the concept of this project, we have held more than ten virtual meetings with different stakeholders including CSOs and Private Sector Entities. We are interested in involving CSOs in various activities of Component 1 and 2 regarding training to farmers, reforestation, incentives schemes for conservation, and more. In the case of private entities, we foresee their participation as anchor companies that could ensure the purchase of produce from farmers of certain crops that improve their agricultural practices. Also, if BanEcuador and COFIDE have access to capital markets, they could fund these credit lines with private funding. In the table below, there is more information on other stakeholders, their interests and role within the project. Further information on each organisation is provided beneath the table.

Organization	Interest	Role/Activity within the project
CAF	Protect the remnants of the Equatorial & Tumbesian Dry Forests and preserve its endemic biodiversity and support sustainable agriculture	· Promote sustainable development and regional integration · Mobilize resources to offer financial advice and support · Develop sustainable agriculture credit lines with COFIDE and BanEcuador · Hire and supervise the project executing organizations
Ministry of the Environment: Ecuador (MAE) Peru (MINAM)	Protect the endemic biodiversity of the Equatorial & Tumbesian Dry Forests Control and management of environmental quality	· Technical assistance to small and medium farmers regarding the sustainable management of natural resources · Conservation and environmental restoration · Coordination with other national and international initiatives, projects and programs in progress · Quality control of water, climate, air and soil as well as prevention of ecosystem degradation through the participation on environmental management
Ministry of Agriculture:	Promote sustainable agricultural practices	· Technical assistance to small and medium-sized farmers on sustainable agriculture techniques, land and agrochemical management · Coordination with other national and international initiatives, projects and programs in progress

Ecuador (MAG) Peru (MINAGRI)		
BanEcuador / COFIDE	Promote sustainable economic development	· Implement and oversee sustainability/green bonds · Grant sustainable agriculture credits to small and medium farmers in Ecuador and Peru. · Supervise the application of sustainable agriculture practices by its clients. · Integrate biodiversity risk assessment processes to reduce the negative impacts of investments on their portfolios.
Amazonía Sin Fuego	Reduce forest fires by promoting sustainable agricultural practices	· Technical assistance to train farmers in alternatives to the use of fire as an agricultural practice.
Food and Agriculture organization of the United Nations (FAO)	Leads international efforts to defeat hunger and improve nutrition and food security.	· Provide appropriate training for small and medium farmers to switch their traditional practices to more sustainable ones · Transfer of skills, capacities and technology to implement best available practices for the management of chemicals in crops and hazardous waste
Global Green Growth Institute (GGGI)	Promote a growth paradigm that is characterized by a balance of economic growth and environmental sustainability.	· Support Peru´s and Ecuador´s national development banks to design and issue green bonds to raise capital earmarked to the conservation of the Tumbes-Piura Equatorial Dry Forest ecosystem. · Help to develop sustainable finance guidebooks and training to build capacity ion sustainable agriculture and work with agriculture schools to distribute them.
Conservation International (CI)	Spotlight and secure the critical benefits that nature provides to humanity, such as food, fresh water, livelihoods and a stable climate	· Implement land use management plans, agro-silvo-pastoral projects and incentive schemes for the protection of priority sites of Equatorial and Tumbesian Dry forests · Develop the studies and training outlined in this project
ECAS	Offer training to small farmers to develop sustainable agricultural practices.	· The farm educational colleges will be involved in helping to roll out the guidebooks and training in sustainable agriculture and green credit lines.

A steering committee whose main function will be to supervise the overall execution of the project, to provide technical advice and to coordinate the instrumentalization of activities will be set up. This committee, and its operating mechanisms, will be established during the formulation phase (Prodoc), according to the policies of CAF. The figures below highlight the main structure and flow of finance and technical knowledge for the project, with a brief description of each members provided below.



In addition, provide indicative information on how stakeholders, including civil society and indigenous peoples, will be engaged in the project preparation, and their respective roles and means of engagement

The Ministry of Environment and Water (MAE) of Ecuador is the focal point of the GEF and the national authority responsible for environmental matters. One of the MAE programs is executed by the under-secretariat in charge of natural heritage and its staff will be able to support one of the components of this project. The environmental quality undersecretary's office, attached to the MAE, is responsible for preventing and combating pollution, as well as preventing the degradation of ecosystems through deconcentrated, decentralized, and participatory environmental management.

The Ministry of the Environment (MINAM) of Peru is the sector's governing body, responsible for the development, conduct, supervision, and implementation of the national environmental policy. Its functions include: i) promote the conservation and sustainable use of natural resources, biological diversity and protected natural areas; and (ii) promote effective management of the quality of air, water, soil, as well as solid wastes and chemicals. Its efforts are aimed at achieving the goals of neutrality in land degradation, in full synergy with the 2030 Sustainable Development Goals and national commitments under the Paris Agreement.

The Ministry of Agriculture and Livestock (MAG) of Ecuador is the entity responsible for the regulation, facilitation, control, and evaluation of the management of agricultural and animal production in the country. It promotes actions allowing rural development and promoting sustainable growth in production and productivity in the sector, by encouraging the development of farms - especially of-family farming (strongly present throughout the territory), while applying incentive measures of all types to support the productive sector in general. It has much information available that could be taken into account to create a baseline, as well as evaluating the project's performance.

The Peruvian Ministry of Development for Agriculture and Irrigation (MIDAGRI) is notably responsible for : a) strengthening producer organizations and promoting their integration, according to basin management approaches and the logic of production ; (b) encourage technological innovation and training in the management of agricultural enterprises, by offering technical assistance ; c) facilitate the articulated engagement of small farmers in the market economy, through policies promoting an appropriate use of natural resources.

The Ministry of Production of Peru (PRODUCE) The institution is responsible for national development policies and plans regarding the fishing and industrial subsectors, including, among others, supporting the development of small and medium-sized enterprises and cooperatives. They would have an advisory role on the Project Executive Committee.

The Ministry of Foreign Trade and Tourism of Peru (MINCETUR) Responsible for foreign trade and tourism policy, and among others, it promotes the development of tourism and artisan activities, as well as the bio axis. This ministry would have an advisory role on the Executive Committee of the project.

-

The National Service of Natural Areas Protected by the State (SERNANP) is a Specialized Technical Public Agency attached to the Ministry of the Environment, in charge of directing and establishing the technical and administrative criteria for the Conservation of the Natural Protected Areas - ANP, and to guard the maintenance of biological diversity. SERNANP is the guiding entity of the National System of Natural Areas Protected by the State - SINANPE, and in its capacity as technical-normative authority it carries out its work in coordination with regional governments, local and landowners recognized as areas of private conservation.

-

The National Forest and Wildlife Service (SERFOR) is a specialized technical body attached to the Ministry of Agriculture and Irrigation that has been designed and implemented since October 2013 to be the country's national forest and wildlife authority and an institution with world-class standards that can lead a sustainable, inclusive and competitive forest and wildlife management, which allows us to rise to the challenges generated by climate change and the pressure exerted on the world's forests.

BanEcuador is a public development bank that promotes inclusion, partnership and improvement of the quality of life of medium, small and micro- entrepreneurs, mainly in the agro - industry, trade and services sectors. In rural areas and also in popular urban areas; it also targets disadvantaged segments of the population, offering innovative, efficient, sustainable and socially oriented financial services. It is present throughout Ecuador, through 170 offices nationwide, spread across 24 provinces, and 146 cantons. In the provinces of El Oro, Guayas, Manabí and Santa-Elena, BanEcuador BP has 48 reception centres, 36 of which are branches or agencies receiving and processing credit applications; the rest are specialized offices or counters. CAF has already successfully provided a USD 40MM credit line to Banecuador for agricultural value chains improvement.

COFIDE is a development bank that supports sustainable and inclusive development in Peru. It finances infrastructure and productive investments as a first and second level financial institution, also playing the role of fiduciary agent for development policies and support for micro-enterprises and SMEs. It is actively involved in financial education actions in certain vulnerable areas of Peru and supports and advises the creation of dynamic businesses or start-ups and supports their growth. This bank pursues a three-component strategy, seeking to produce positive impacts on both the economic, social and environmental levels, with a vision for the future for the country and the idea of a “sustainable Peru”.

FAO FAO has experts in countless fields, including: economy, agronomy, agricultural development, crop and livestock development, natural resource management, forestry, irrigation and drainage, development of territory and water, land tenure, agribusiness and chain of development value, monitoring-evaluation etc.

FAO also has a division called the Investment Center (IC), whose purpose is to support countries to make more and better investments in agriculture to reduce poverty and hunger, improve rural livelihoods and protect the environment. The Centre plays a strategic role in promoting a conducive environment for private investment by providing targeted technical assistance and advisory services to blend finance operations and impact funds. Their investment support draws on FAO’s technical knowledge, expertise, normative work, convening power, innovative approaches and strong policy, analytical and capacity development capabilities.

The IC provides 4 main investment support services:

i) Investment Programme Support - Supporting countries to design, implement and evaluate investment projects and programmes.

ii) Investment Policy Support - Facilitating multistakeholder policy dialogue to create an enabling environment for public and private investment.

iii) Capacity Development - Building capacities in investment design and implementation, including economic, social and financial analysis.

iv) Knowledge and Innovation - Developing analytical and sector studies and guidance materials and hosting knowledge networks and events.

In addition, FAO Ecuador is implementing the Hand in Hand initiative, an effort that seeks to reduce poverty and food insecurity in prioritized territories through the mobilization of investment. According to the analyses carried out within the framework of the initiative, several cantons in the province of Loja and other coastal cantons of dry forest are territories with high potential for agricultural development with potentially the implementation of new projects in these areas.

The Global Green Growth Institute (GGGI) is an intergovernmental organization, based on treaty, promoting green economic growth and, simultaneously, address the poverty reduction, job creation, social inclusion and environmental sustainability. GGGI provides technical assistance to the private sector and the national and subnational governments of 40 member countries to originate, design, structure and market low-carbon investment projects in developing and emerging economies. In 2020, the GGGI teams managed the development and implementation of more than 140 investment projects and policies globally. In addition, in the same period, GGGI teams conducted over 200 capacity building activities and trained more than 42,000 participants, including government officials and industry in the private sector.

GGGI has extensive international experience in the implementation of technical assistance programs to public and private organizations for the structuring and issuance of thematic bonds (e.g. supporting the development of Peru's Sustainable Bond Framework). As such, in this project they will be involved in supporting both Peru´s and Ecuador´s national development banks to issue green bonds to raise capital earmarked to the conservation of the Tumbes-Piura Equatorial Dry Forest ecosystem. More specifically, they will assist BanEcuador and COFIDE in i) defining the process and methodology for project selection and bond issuance under the Green Bond Framework; ii) the development of green credit lines; iii) provide financial trainings and guidebooks to smallholder farmers.

Conservation International is an NGO dedicated to the conservation of the environment, whose interest in the protection of the equatorial dry forest (Ecuador and Peru) began back to 2002. It actively participates in the Partnership for crucial Ecosystems (CEPF) and follows the methodology of conservation agreements: in fact, their results show that ' there are three times less deforestation in areas where such agreements have been in place for more than five years.

CI is a strong partner of the project. CI will be involved in the design and monitoring of the Conservation Agreements made among the small farmers and BanEcuador, COFIDE & Caja Piura. CI will focus on restoration activities in close coordination with FAO, whose activities will be more oriented towards climate smart agriculture and improvements in productivity. CI Ecuador and CI Perú will coordinate project actions inside the Technical Advisory Group with CAF, FAO and other notable technical and academic institutions in the project influence area. CAF and CI will sign an Agreement stablishing all the activities as executor agency of the Project and in case it is needed, we will explore together different sources of additional TA resources in order to guarantee the success of the project.

Among the other entities that may play a role in the committee piloting the project, it should include the Ministry of Production (PRODUCE) and the Ministry of external trade and Tourism (MINCETUR) of Peru , their counterparts in Ecuador, regional governments / provincial and regional Piura (as well as the local municipal fund Piura), Tumbes, Lambayeque, El Oro, Santa Elena, Loja, Manabi and Guayas, are able if required, to raise specific and relevant funds to contribute to the objectives of the project.

The CAF team will work with the staff of management of environmental and social management BanEcuador and coordination team of the Environmental and Social Management of COFIDE, and when necessary, with the team competent in this area of the CMAC of Piura. Local teams BanEcuador and COFIDE will be supported by specialists for external environmental and social supervision of the project and as previously indicated, a qualified external outside body to carry out auditing (monitoring and evaluation) will be hired for the period of execution of this CAF-GEF project. All reports from the above-mentioned stakeholders will be integrated into the project's monitoring, reporting and verification (MRV) system.

3. Gender Equality and Women's Empowerment

Briefly include below any gender dimensions relevant to the project, and any plans to address gender in project design (e.g. gender analysis).

Gender equality and women's empowerment will be considered in the project's activities. In rural areas in Ecuador and Peru, a very common situation is that when natural resources degradation makes them insufficient to support the livelihoods of the population, drastic measures result, such as men's or women's migration. Men's migration leaves women to assume men's traditional roles and responsibilities, increasing their work burden, but leaving them without equal or direct access to financial, social, and technological resources. Improved productivity practices may have a profound gender implication, depending on who is doing the intensified work, how salaries are paid equally or unequally to men and women doing the same job, how working hours will shift or not, and how family life and obligations would be impacted.

Although equal participation in community-based decision making remains a complex and difficult goal to achieve, especially in the contexts of highly unequal gender relations, the project will adopt a people-centered approach that places at the center the agricultural livelihoods of rural women and men and the natural resources management strategies they adopt. Within the small holder engagement process, a balanced engagement among male and female landowners and land workers will be targeted. During the project execution, impacts on gender equality will be considered and both men and women will be targeted for support, considering the social context on the ground. The project's results framework will include gender-sensitive indicators in order to do gender analysis, this will be further defined in the design phase. As a preliminary idea, the project will aim to increase access to microcredit for women in Ecuador and Peru, at least 35% of operations being channelled to women who develop agricultural projects in the Equatorial and Tumbesian Dry Forests.

In **Ecuador**, smallholder agricultural activities are often led by rural women, and generate more than 60% of food production through diversification and crops rotation. Furthermore, women are the ones who mainly drive agroecology initiatives in Ecuador. In this context, the Ministry of Agriculture and Cattle developed the National Agropecuary strategy for rural women. Its objective is to highlight and promote women's contributions to the agricultural sector, with a gendered perspective.

In **Peru**, women make up approximately 75.3% of the farming population in the regions of Lambayeque, Piura, and Tumbes (INEI, 2017) and 30% of agricultural activities in the entire country are conducted by women. Female agricultural producers thus play a vital role in the management and maintenance of production and food systems, as well as in the preservation and transfer of knowledge of agricultural practices and the conservation of the environment.

According to the UNDP's Gender Inequality Index, an increase in the proportion of women accessing microfinance services by just 15% could potentially reduce gender inequality by half in the average developing nation (Zhang & Posso, 2017). Furthermore, there is extensive evidence demonstrating that female clients generate lower risks in microfinance than men across the globe (D'Espallier et al, 2011). In light of this, this project will aim to reduce gender equality in Ecuador and Peru by providing access to microfinance services to women.

Considering the significant role that women play in agricultural production in rural Ecuador and Peru, the employment of a gendered approach throughout the implementation of this project will therefore aim to empower women and enhance their livelihoods as agricultural producers. This will create more equitable and just relationships for women in the sector, and improve the project's success in implementing sustainable agricultural practices in the region.

Does the project expect to include any gender-responsive measures to address gender gaps or promote gender equality and women empowerment? Yes

closing gender gaps in access to and control over natural resources; Yes

improving women's participation and decision-making; and/or

generating socio-economic benefits or services for women. Yes

Will the project's results framework or logical framework include gender-sensitive indicators?

Yes

4. Private sector engagement

Will there be private sector engagement in the project?

Yes

Please briefly explain the rationale behind your answer.

The Project includes extensive participation of the private sector. In particular it involves the participation of two development banks. BanEcuador, a public development Bank located in Ecuador that promotes inclusion, partnership and improvement of the quality of life of medium, small and micro- entrepreneurs. This is mainly in the agro - industry, trade and services sectors, both in rural areas and also in popular urban areas. And COFIDE, a development bank that supports sustainable and inclusive development in Peru. It finances infrastructure and productive investments as a first and second level financial institution, also playing the role of fiduciary agent for development policies and support for micro-enterprises and SMEs.

Both banks will work closely with a number of micro-finance institutions to help deliver the green credit lines. Other micro-finance institutions will also benefit from the development as an approach that they can adopt elsewhere in Ecuador, Peru and in numerous other countries.

Potential microfinance organisations that could be involved either directly now or be inspired by the approach and be involved in green credit lines for sustainable agriculture include the following:

In Peru

- Asociación de Instituciones de Microfinanzas del Perú (Association of Microfinance Institutions of Peru) http://www.asomifperu.com/web/
- MiBanco: www.mibanco.com.pe
- Caja Rural Sipán: www.cajacentro.com.pe
- Edpyme Alternativa: www.alternativa.com.pe
- Caja Centro: www.cajacentro.com.pe
- Caja Metropolitana: http://www.cajametropolitan
- Caja Municipal Trujillo: http://www.cajatrujillo.com.p
- Caja Municipal Piura: www.cajapiura.pe
- Caja Rural Raíz: www.raiz.com.pe
- Caja Rural Los Andes: www.cajarurallosandes.com
- Caja Rural Prymera: www.prymera.com.pe
- Edpyme Credivisión: www.credivisionperu.com.
- Edpyme Inversiones La Cruz: www.inversioneslacruz.com
- Edpyme acceso: www.acceso.com.pe
- Edpyme Santander Consumer: www.santanderconsumer.com.
- Financiera Compartamos: www.compartamos.com.pe
- Financiera Confianza: www.confianza.pe
- Financiera Credinka: www.credinka.com
- Financiera Proempresa: www.proempresa.pe

- Financiera Qapaq: www.qapaq.pe
- Financiera Efectiva: www.efectiva.com.pe
- FOGAPI – Fundación Fondo de Garantía para Préstamos a la Pequeña Industria: www.fogapi.com.pe

In Ecuador

- Asociación de Instituciones de Microfinanzas del Ecuador (Association of Microfinance Institutions of Ecuador) https://asomifecuador.com/
- Banco de Desarrollo del Ecuador: https://bde.fin.ec/
- Banco Finca: https://finca.ec/
- Banco D-Miro: https://www.d-miro.com/
- Banco Codesarrollo: https://www.bancodesarrollo.fin.ec/
- Banco Pichincha: https://www.pichincha.com/portal/principal/microempresarios/creditos
- Banco Vision Fund Ecuador: https://www.visionfund.ec/
- Solidario Conmigo: https://www.banco-solidario.com/
- Insotec: https://www.insotec-ec.com/
- Faces microfinanzas: https://faces.org.ec/
- Fundación espoir: http://www.espoir.org.ec/

Microfinance is an important mean to increase liquidity for micro-producers and promote agricultural development. In light of this, microfinance institutions have plenty of experience working closely with farmers in financing agricultural projects. By reducing the financial risk, the microfinance institutions can deliver green credit lines to numerous private sector farmers and producers to implement more sustainable agricultural practices and technologies and enhance their resilience to climate change impacts.

For the pilots of the two selected crops in Ecuador and Peru, anchor companies will be directly involved to ensure the purchase of the product and reduce the risk of the producers' credits. The credit may be used to introduce sustainable irrigation mechanisms or to pursue certifications that will allow better access to international markets. These will include for example:

1. ECOM: the leading global commodity merchant and sustainable supply chain management company. ECOM works closely with farmers to help them to improve yields, quality and, in turn, their income. With training, access to markets, inputs and technology, farmers can produce more and better products. . ECOM provides training to attain certification (to UTZ Certified and Rainforest Alliance Certified™ standards, for example) and helping them to trade into higher value markets. ECOM provides growers with access to information—from better farming practices to market data to innovations—so they can produce more, better, and more profitable.

2. Camposol: leading agro-industrial company in Peru which offers highly consistent products and services by complying with the quality, traceability and delivery time commitments under a sustainable and socially responsible model.

3. Netafim: a global leading company in precision irrigation solutions for sustainable agriculture that allows farmers to create more yields and with a higher quality, with less resources. Precision irrigation increases the water productivity and the efficiency of fertilizers.

4. Ecobusiness Fund (EF): It is an impact fund very active in Latin America region bringing finance to agriculture, forestry, and other sustainable activities in places where biodiversity hotspots are vulnerable not only to the effects of climate change but also face an ever-increasing pressure through unsustainable practices and irresponsible use of resources, such as deforestation. EF has a Development Facility that supports technological developments in projects to improve agricultural practices as well as environmental and social risk assessment. Increasingly, digital agriculture solutions are being used to promote efficiency in collecting and analysing information, monitoring clients' environmental performance, and guiding financial institutions' and producers' decision-making processes

5. Risks to Achieving Project Objectives

Indicate risks, including climate change, potential social and environmental risks that might prevent the Project objectives from being achieved, and, if possible, propose measures that address these risks to be further developed during the Project design (table format acceptable)

Some of the main potential risks identified are detailed in the table below:

Risk	Level of Impact	Mitigation Actions
Local and regional governments in both countries do not commit and assign the necessary resources for the implementation of the territorial/land use management plans, hampering the incorporation of biodiversity conservation strategies.	Medium	Integrate local and regional governments at the early stages of project preparation and implementation, in order to influence local policies and change the production schemes toward sustainable net-zero deforestation practices.
One or more issuer cannot issue in the local capital markets	Moderate	CAF will be responsible for finding another issuer of the bond or structuring the bond through an SPV
Funds will not be invested according to the allocation criteria and objectives.	Low	The use of proceeds of the Green Bond will be adequately structured and following ICMA directions, which require certification of use of proceeds; hence limiting this risk. A sound monitoring system will be put in place to assess the performance of the projects and use of funds.
Market risk	High	Most of the bond issuance avoid the market risk following these practices. **Pre-launch.** The issuer considers preliminary issues and decides what type of bonds to issue and how to structure the issue. The issuer assigns a principal administrator (see below) and both instruct their lawyers. **Launch and roadshow.** The principal manager publicly announces the issuance of bonds and promotes the transaction among potential investors, inviting them to buy the bonds once issued. The roadshow helps to measure the appetite of the market. The mitigation measure includes all the above activities, including meetings with all actors, and the preparation of market surveys in both countries
Women will not have access to finance of sustainable agricultural projects	High	The access to microcredit for women in Ecuador and Peru will be increased, including a goal of at least 35% of operations being channelled to women who develop agricultural projects in the Equatorial and Tumbesian Dry Forests.

Increase in crop productivity and revenues to local farmers may incentivize the expansion of agricultural frontier, having an undesired detrimental effect on Equatorial & Tumbesian Dry Forests.	Medium	The financing conditions and requirements will be clearly established in the financing contracts and the eligibility criteria will be developed on the basis of solid technical criteria. The productivity goals will be directly linked to the Conservation Agreements and associated credit coveneants (e.g., protecting 20% of farm for native forest).
High risk investments are made with local producers with a bad track record or dubious reputation.	Medium	The selection of credit beneficiaries will be rigorous and will consider the results of the assessment to be performed by the BanEcuador and COFIDE in order to qualify for financing.
Potential negative impact through competition with other micro-finance institutions (MFIs). that cannot offer concessional conditions in their operations	Medium	BanEcuador and COFIDE will work directly with micro-finance institutions, benefiting them directly. In addition, the project will make the sustainable financing educational materials available to other MFIs and the approach and lessons learned will also be shared with other MFIs, so that they can be inspired by it, learn from it, and adopt similar approaches once it has been tried and tested in this study. The guarantee is only partial (and not full wrap up) which ensures mitigates part of the risk and still provides exposure to bondholders to the risk.
Climate risks to agricultural production, local communities, and livelihoods, with unpredictable socio-economic impacts.	Moderate	As mentioned below, this will be assessed and mitigated through the proposed STAP Climate Risk screening and management plan to be funded by the PPG funds. Improved climate resilience of agricultural production is a key goal of this project through skill and technology transfer, to implement sustainable and where possible, climate-smart agriculture and agroforestry practices. Farmers will also be encouraged to take out climate-related insurance where possible, which could ideally be covered by the green credit.
Land ownership: The farmers not owning the land risk is the reduced access to financing because they do not have collateral.	Moderate	The bond is expected to be issued against the balance sheet of the issuer, so the creditworthiness of the issuer and its ability to meet obligations go beyond the asset behavior and the collateral or lack of it. BanEcuador has a local rating of A- and COFIDE a local rating of AA and is a recurrent issuer. Previous sections also explained the characterization of the potential client of microcredits that are small farmers. Many of them have legal ownership of their land, but there are large groups that have communal ownership of the land and also a smaller but significant group that do not have legal ownership of their lands. Therefore, they do not have a real or traditional guarantee that facilitates the figur

		e of credit. However, both BanEcuador and COFIDE have financial products of associative credits, in which small landholders would have to be endorsed by an agricultural or livestock guild, through cooperatives or associations. If the farmer does not pay, then the issuer does not have the liquidity to pay the bondholders. The mitigating factor is that issuers must have credit systems (SCORING) that allow good credit studies.
Coordination between the two countries issuance and action on both countries to preserve the corridor:	Moderate	The Steering Committee, the Technical Advisory Group and the different partners of the Project will have to meet at least twice a year and approve the activities in order to accomplish the Strategic Binational Land use management Plan. This document will have chronograms and operational annual plans that will secure coordination in the implementation of project´s actions in both countries.
Impacts derived from COVID-19 pandemic	Moderate	Maintain fluid communication with key project partners to identify difficulties in materialising co-financing. Encourage project partners to maintain as much as possible their contributions to the project. Seek opportunities for collaboration with other ongoing projects and initiatives to obtain contributions that can add to project co-financing. To ensure the continuation of the project despite prolonged social distancing requirements, meetings will be held in the design of the project and participation processes could transition online or a combination of in-person and virtual participants to minimize the risks of contagion. For those who cannot participate remotely, in-person meetings could be held with a reduced number of participants and with best practices in social distancing and hygiene. The development of the crisis will be closely monitored, and creative responses will be explored and implemented along the way focused on advancing project outcomes through alternative forms of participation, and flexibility in case meetings have to be rescheduled. The COVID-related risk analysis will be further developed during the PPG following the pertinent GEF guidelines.
Currency Risk	Medium	Currency risks will be mitigated through the swap market. CAF will make arrangements with the client who will pay for the swap.
Potential negatives impact on Indigenous populations in the project working area	Medium	CAF´s E&S safeguard *S05 Patrimonio Cultural* will be activated, and a mitigation plan will be designed for the Prodo

eas		c Construction phase. This plan will be used during projec t execution.
Potential negative impacts on Protected Natural Areas	Low	CAF´s E&S safeguard S03: *Conservation of biological dive rsity*, will be activated, and a mitigation plan will be design ed for the Prodoc Construction phase. This plan will be us ed during project execution.

6. Coordination

Outline the institutional structure of the project including monitoring and evaluation coordination at the project level. Describe possible coordination with other relevant GEF-financed projects and other initiatives.

The project will be executed through a public-private collaboration. CAF, in its capacity as a GEF agency and multilateral organization, will request funds for the execution of the project and will channel them, under its operational regulations, to the entities executing the project.

CAF has a past and present record supporting and supervising projects, programs and financial operations, not only directed at a single country, but also to improve the integration of member countries. CAF's success in the region is linked to 51 years of work with governments, the private sector, and social organizations at the regional, national and local levels, fulfilling its mission of promoting sustainable development and integration, in partnership with member countries.

To develop the studies and training outlined in this project, CAF will contract the necessary executing entities. The executing entities will be selected based on their knowledge of the agricultural sector in each country, their trajectory in the implementation of sustainable agriculture projects and programs, and their capacity to carry out training and sustainable technology transfer processes. CAF has explored potential executors, and has a procedure to conduct diligent analysis of executing agencies of third-party funds, for which it is estimated that this selection process for these entities will take place later in the project approval cycle. The potential executors mapped to this point are FAO, Conservation International and Global Green Growth International (GGGI) who have technical, administrative experience and staff in both countries, Ecuador and Peru.

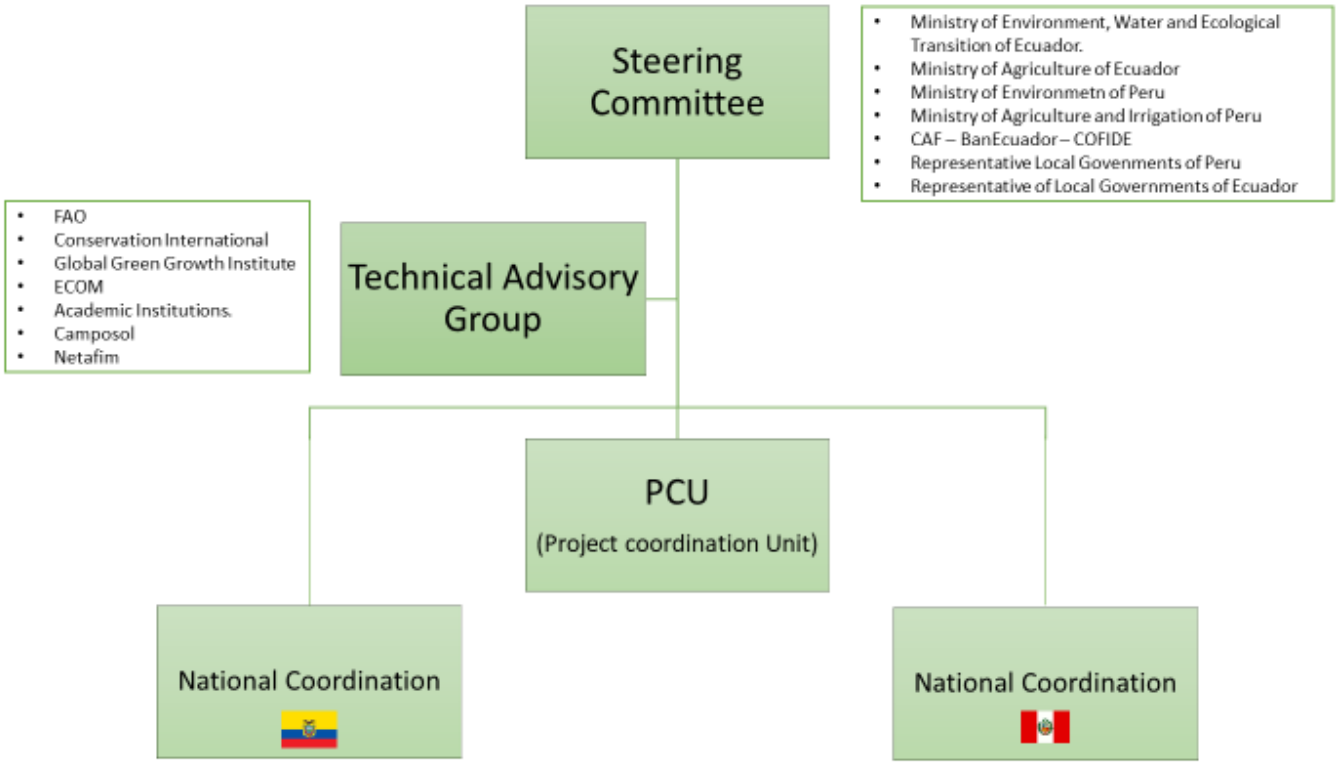
To supervise administrative and operational aspects of the project, CAF will define a Project Coordination Unit (PCU) to ensure its proper functioning. In order to monitor and evaluate the project, CAF will design a Monitoring, Reporting and Verification (MVR) tool with indicators of the project's environmental, social, gender and economic co-benefits. This tool will be linked to the reports of the banks involved in Ecuador and Peru.

There will also be an executive committee formed by the Ministry of Agrarian Development and irrigation of Peru, the Ministry of agriculture and livestock of Ecuador, the Ministry of Environment of Peru, the Ministry of Environment of Ecuador, the Food and Agriculture Organization of the United Nations (FAO), Conservation International and Global Green Growth Institute (GGGI). This executive committee will provide technical support to the project. Respecting the FAO, it is expected to join efforts with the sustainable landscape management programs already running. With regards Conservation International, conservation related advice will be provided. Finally, GGGI will provide technical advice for the green bond emission.

Additionally, CAF has an alliance with two national banks from Ecuador and Peru, BanEcuador and COFIDE, who are the selected stakeholders to issue the sustainable green bonds. If one of the issuers needs to be substituted, CAF will seek another partner to fulfil the project objectives. It is expected to create alliances with microfinance institutions, such as Caja Piura to deliver green credit lines to small agricultural producers.

Lastly, it is envisioned to create agreements with anchor companies to enhance the participation of small farmers and have a closer follow up and capacity building on sustainable agriculture practices, plus, to ensure the purchase of the product and reduce the risk of the producers' credits

Governance Structure and Project Coordination Levels.



7. Consistency with National Priorities

Is the Project consistent with the National Strategies and plans or reports and assesments under relevant conventions?

Yes

If yes, which ones and how: NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, INDCs, etc

x National Bio Strategy Action Plan (NBSAP)

x CBD National Report

- Cartagena Protocol National Report

- Nagoya Protocol National Report

x UNFCCC National Communications (NC)

x UNFCCC Biennial Update Report (BUR)

x UNFCCC National Determined Contribution

x UNFCCC Technology Needs Assessment

x UNCCD Reporting

- ASGM National Action Plan (ASGM NAP)

x Minamata Initial Assessment (MIA)

- Stockholm National Implementation Plan (NIP)

- Stockholm National Implementation Plan Update

- National Adaptation Programme of Action Update

- Others

The project is aligned with the Ecuador National Development Plan 2017-2021 by means of the following principles: i) implementation of processes for the identification, knowledge, conservation and value of natural and cultural, terrestrial and aquatic landscapes, to secure the integrity, connectivity and functionality as a basic condition for the generation of environmental services necessary for sustainable development; ii) prevent the expansion of the agricultural frontier towards ecologically fragile areas, and iii) halt the natural resources degradation processes in rural territories and promote agro-ecological practices to favor ecosystem recovery.

The project is linked to Objective no. 2 of the Ecuador National Biodiversity Strategy and Action Plan 2015-2030, aimed at reducing the pressure and the inadequate use of biodiversity to secure its conservation and integrity and National Result no. 9 aimed at securing the sustainable management of the agricultural and agro-forestry systems, through the use of clean technologies and energies, to ensure the conservation of biodiversity.

The project is also aligned with the Peru National Strategic Development Plan 2021, under the Strategic Objective no. 6, which establishes that environmental quality, biological diversity and natural disasters risk management, are important components of the country's territorial strategic planning. This objective is oriented to the protection of the environmental patrimony and the reduction of environmental negative impacts of productive activities to be developed in the national territory, but fundamentally, to the wealth produced through the sustainable management of natural resources and the integrity of the ecosystem services.

The project is consistent with the Peru National Biodiversity Strategy 2021, Strategic Objective no. 3: Reduce the direct and indirect pressures to biodiversity and ecosystem-based processes, Goal no. 6: awareness regarding the benefits of conserving biodiversity to national development and welfare is increased by 20%, Goal no. 7: ecosystem degradation rate has been reduced to 5%.

Ecuador in its target 17 of its NBP related to the sustainable management of areas destined for agriculture, aquaculture and forestry, guaranteeing the conservation of biological diversity. It scored an average progress. With regard to target 20: To improve the mobilization of financial resources to effectively implement the Strategic Plan for Biodiversity 2011-2020, its progress is medium. And it has an average fulfilment of Target 4 as it sought by the year 2020, that ecosystems that provide essential services, including water-related services, and others that contribute to the health, livelihoods and well-being of women, indigenous and local communities and the poor and vulnerable, have been restored and safeguarded.

Peru has also non remarkable scores in most of the 20 targets of its NBP. The lack of availability of finance for the different actions related with the objectives caused by the scarce flow of financial resources is one of the factors affecting its accomplishment of the Aichi goals.

For the CBD National Report, the project will contribute to the 1,4,5,7,8,14,18,19,20 Aichi Targets and is an initiative that will comply with the mainstreaming of biodiversity in the productive sectors.

As well, the project attended national commitments from the UNCCD and embodied the national determined contributions of both countries, by reducing greenhouse gases emissions through drylands and agricultural soils restoration. Furthermore, the implementation of agricultural sustainable practices will create resilience to climate change impacts in crops.

Additionally, Peru as part of the UNCCD, has the goal of reaching the Land Degradation Neutrality by 2030. Particularly, the project will contribute to the goal of recuperating 3.5% of agricultural soils of intensive use for productive processes that are resilient to hazards associated with climate change by 2030. The project will also contribute to achieve some of Peru's National Voluntary Land Degradation Neutrality Targets (LDN Targets) mainly the sub-target 5 related to optimize agricultural and land use to reduce 30 per cent GHG emissions in Peru, the sub-target 6 that says by 2030, 9 410 hectares of agricultural land include management and conservation practices that improve their productive capacity in areas vulnerable to hazards associated with climate change. And by 2030, 39 per cent of agricultural producers implement good agricultural and cattle ranging practices considering the effects of climate change.

Ecuador has not published yet their Land Degradation Neutrality goals with the United Nations Convention to Combat Desertification (UNCCD), nevertheless, they have been active promoting this convention and its mandate. In Ecuador, about 40 per cent of land are degraded, of which 20 per cent is severely degraded. In this country, land degradation is relevant not only as an environmental issue, but as an important aspect in Ecuador's food security and sovereignty.

The project through the creation of the financial mechanism will create an enabling environment to achieve land degradation neutrality targets by facilitating the access to financing that will allow the adoption of sustainable practices in agriculture and at a time limit land degradation in production soils.

Finally, both countries will contribute to comply with their commitments with the Minamata Convention on Mercury by eliminating harmful chemicals used in agricultural sectors.

8. Knowledge Management

Outline the knowledge management approach for the Project, including, if any, plans for the Project to learn from other relevant Projects and initiatives, to assess and document in a user-friendly form, and share these experiences and expertise with relevant stakeholders.

The project will promote participatory planning, monitoring and assessment in the target population, as well as the management of knowledge and the administration of the operation. It will also include the strengthening of project's stakeholders in the fundamental aspect of project implementation and sharing of best practices.

Knowledge management will be designed according to the different types of stakeholder groups participating in the project. During the project's preparation stage, this aspect will focus on establishing effective mechanisms for the systematic exchange and dissemination of project information. Consultations will continue during project preparation, to examine a variety of options, tools and processes for knowledge management to determine the most suitable options, mechanisms and modalities. At the project management level, it will include, implementation aspects, systematization of project experiences, lessons learnt and best practices. All these issues will be documented on the websites and documentation of participating institutions.

FAO is going to lead the project´s knowledge management activities that will have cofinace resources with CI, CAF, GGGI and other strategic partners. Each partner will have a specific role, for instance GGGI´s cofinance will help to build training guides for banking officials and a training guide for sustainable practices in agriculture to be used by smallholders in the intervention areas, with the aim of promoting net zero deforestation and reducing forest degradation.

In particular, outputs will be made available for other microfinance institutions in Ecuador and Peru. There are many of these, such as Caja Piura, Asociación de Bancos del Perú (ASBANC), la Asociación de Instituciones de Microfinanzas del Perú (ASOMIF) and Banco Agropecuario (AGROBANCO) in Peru, and Asociación de Instituciones de Microfinanzas del Ecuador (ASOFIME), Banco CODESARROLLO, Banco Finca y Solidario Conmigo in Ecuador. An ultimate overall aim is to catalyze this type of sustainable agriculture approach across Peru and Ecuador, and even wider.

Additionally, alliances with medium producers such as ECOM, Camposol and Netafim will be created to have a closer knowledge management with small producers, it is expected that medium producers share best practices on agro-ecology and sustainable landscape management. Relevant green bond initiatives in Peru and Ecuador will also be involved, for example Mesa Redonda de Bonos Verdes in Ecuador.

9. Environmental and Social Safeguard (ESS) Risks

Provide information on the identified environmental and social risks and potential impacts associated with the project/program based on your organization's ESS systems and procedures

Overall Project/Program Risk Classification*

PIF	CEO Endorsement/Approval	MTR	TE
Medium/Moderate			

Measures to address identified risks and impacts

Provide preliminary information on the types and levels of risk classifications/ratings of any identified environmental and social risks and potential impacts associated with the project (considering the GEF ESS Minimum Standards) and describe measures to address these risks during the project design.

The preliminary risk analysis tool of CAF stated a moderate E&S risk: Because of potential contamination from handling hazardous chemicals; inconvenience to the community and / or population in surrounding areas due to the activities. Beside the project has positive effects because of the project dry forest ecosystems restoration.

Based on all the aspects considered and evaluated based on the aspects (social, environmental, climatic, gender and others), as well as the safeguard policies of CAF and GEF, the Project Document must incorporate a participation plan of The interested parts. Considering all the topics evaluated, the project is considered a category moderate risk.

Climate risk management

As laid out in the GEF-STAP guidelines on climate screening, climate risks should be classified for the lifetime of the project's ongoing Global Environmental Benefits in order to develop an appropriate climate risk management plan (GEF, 2019).

The climate-related hazards of this project include both short-term weather events as well as slow-onset environmental changes in the region, with a projected average warming of approximately 1.6-3.2 °C and a 2-6% increase in precipitation (IPCC, 2021), exacerbating the impacts of the El Niño phenomenon. The dry forests are particularly vulnerable to this warming as they constitute a semi-arid type of ecosystem which may be exposed to a monsoon climate. As they grow and regenerate slowly, limited regrowth poses a real risk of desertification.

The region also sees a high level of climate variation and for some areas, climate change will significantly increase the risk for drought, soil salinisation, and erosion, leading to desertification (Bergmann et al, 2021). In Peru, climate change has been evidenced by species migration (e.g., native potato now being produced in higher areas) and shifts in pest and disease distribution (World Bank, 2014).

Furthermore, climate change is expected to exacerbate the impacts of the El Niño phenomenon, which causes changes in the phenology of plants and flood areas. Between 1997 and 2006 in Peru, 72% of national emergencies were related to drought, heavy rains, floods, frost, and hail, which have already become six times more frequent (World Bank, 2014). This significantly impacts the income and food security of local communities who depend on natural resources for agricultural production.

In both Ecuador and Peru, the dry forests are also highly vulnerable to the effects of climate change as the semi-arid ecosystem becomes exposed to a monsoon climate. As the dry forest grows and regenerates slowly, limited regrowth exposes the region to a real risk of desertification.

Climate change also affects tropical glaciers, which have begun to melt. As the intensive agriculture across coastal Peru is highly dependent on irrigation from the Andean glacial meltwater, the region is highly vulnerable to future water scarcity (Bergmann et al, 2021).

Based on this preliminary hazard assessment, the success of this project is vulnerable to moderate or high levels of climate risk, as it is dependent on the long-term viability of agricultural production. This comes as climate change has the potential to cause widespread impacts on the agro-ecosystems of the project area, through hazards such as water scarcity, desertification, extreme weather events, lowered productivity, and land degradation. For example, cocoa, being an agricultural product identified for technification in Ecuador under the Project Component 3 pilot, is highly susceptible to drought. Such vulnerabilities may stop smallholder farmers from generating sufficient revenue to pay back their credit loans, impairing the success of the project.

The department ' environmental and social analysis of BanEcuador, created with support from CAF will be responsible for ensuring the viability of operation, thus adequately managing environmental and social risks associated with lending to small and medium farmers.

CAF and the committee of the pilot project will monitor and ensure that: a) activities approved are executed; and b) controls are put in place so that the project only finances operations that contribute to its goals. In this sense, an environmental and social management system will be implemented on the basis of safeguarding environmental and social CAF standards, whose compliance shall be provided by the Unit responsible for managing environmental and social risks (linked to Vice Chair risk) and Coordination environmental monitoring and social (attached to the Vice-Chair of sustainable development) of CAF.

Given the above, PPG funds will be used to design a robust Climate Risk management Plan for the Project.

In addition, this project will also incorporate significant climate mitigation strategies, which will be included in the risk management plan. Under Project Component 1, approximately 30,000 hectares of dry forest will be restored, which will strengthen the region's climate resilience. Additionally, under Component 2, smallholder farmers' capacities for sustainable agricultural management will be strengthened through the transfer of skills and technology, and through the introduction of climate-smart agriculture practices and agroforestry. This will improve the resilience of agricultural production in the region, and thus mitigate the climate risks involved in the success of this project.

Consequences of COVID

Since February 2020, Ecuador has recorded a total of 505,860 confirmed cases of Covid-19, and 32,559 deaths, the most of which occurring between February and May of 2021 (WHO, 2021). Peru has seen a total of 2,166,419 confirmed cases and 198,976 deaths, with around double the population of Ecuador (WHO, 2021). The north-western department of Piura has recorded a total of 11,902 deaths (Gobierno Regional Piura, 2021). Throughout the last two years, the impacts of the pandemic have been particularly devastating in Peru primarily due to their largely informal economy and inadequate healthcare systems (Letzing, 2020), leading to high levels of unemployment (Yacila, 2020). This caused at least 167,000 people living in urban areas to apply for a permit to leave their city in 2020 (Yacila, 2020).

The Covid-19 pandemic can be expected to have short-term consequences for the implementation of this project as well; farmers and other local actors may be more risk-adverse in periods of economic uncertainty, and reluctant to attend gathering such as workshops or training sessions. To ensure the success of this project, is it vital that any face-to-face meetings are held safely and outdoors when possible, with the correct use of face masks. Virtual meetings may also be useful in some contexts, but less so in rural communities.

The pandemic has also demonstrated the importance in improving rural communities' resilience to such social and economic crises. This project has the potential to deliver such benefits by promoting crop productivity, generally improving the resilience of agricultural production, and thereby creating more reliable sources of income in rural Ecuador and Peru. In the long run, increased investment in rural areas could promote decentralization, encourage the development of a formal economy, and strengthen the social welfare systems.

Other social and environmental impacts

Additionally, considering the sensitivity of the environment in the coastal dry forests of Ecuador and Peru, it is expected that the project may cause some negative social and environmental impacts in its implementation and deployment. These are expected to be associated with the following activities: (i) transportation of equipment and materials; (ii) transfer of personnel to the project site; and (iii) agricultural and silvopastoral practices of the project beneficiaries. In this sense, it is estimated that the potential adverse impacts will be related to the following: (i) alteration of air quality due to the use of vehicles; (ii) potential contamination from handling hazardous chemicals; (iii) inconvenience to the community and / or population in surrounding areas due to the activities; (iv) increase in noise due to mobilization. The project does not foresee being located in protected areas, however, if it is located in the area of influence, it could generate indirect impacts to the protected natural areas and / or indigenous communities.

CAF's Environmental and Social Safeguards that have been preliminarily activated for the Project are: S01: Evaluation and Management of Environmental and Social Impacts; S02: Sustainable use of renewable natural resources; S03: Conservation of biological diversity; S04: Pollution prevention and management; S05 Cultural Heritage; S06 Ethnic groups and cultural diversity; and S08: Working conditions and training. However, during the evaluation phase of the operation, a new analysis will be carried out on the application and activation of other safeguards.

During the Prodoc construction, the following will be verified:

1. the environmental and social management capacity of the Financial Intermediaries (FIs) and/or the modality under which they will carry out such management
2. the implementation of their Environmental and Social Risk Analysis System (SARAS), their performance, as well as the human and financial resources they have to fulfill the tasks of that system.
3. the list of exclusions of the IFs and their compatibility with that of CAF.

4. whether they have gender studies and/or measures for the application of this approach.

As mentioned above, PPG funds will be used to design a robust Climate Risk management Plan for the Project.

Left: Indigenous communities and archaeological sites in the equatorial dry forest ecoregion

Right: Peru Hazard Map - Equatorial Dry Forest Ecoregion

Supporting Documents

Upload available ESS supporting documents.

Title	Submitted
ESS-Risk	

Part III: Approval/Endorsement By GEF Operational Focal Point(S) And GEF Agency(ies)

A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S): (Please attach the Operational Focal Point endorsement letter with this template).

Name	Position	Ministry	Date

ANNEX A:

Instructions. Please submit an indicative termsheet in this section. The NGI Program Call for Proposals provided a template in Annex A that can be used by the Agency. Agencies can use their own termsheets but must add sections on Currency Risk, Co-financing Ratio and Financial Additionality as defined in the template provided in Annex A. Termsheets submitted should include sufficient details to allow a financial expert to understand and judge the financial viability of the proposed investments. Indicative terms and conditions should be used when specific details are not yet available. Please ensure that by copying the termsheet in the section of the PIF/PFD, the format allows reviewers to read the content.

Project Title	Green Finance and Sustainable Agriculture to Protect the Dry Forest Ecoregion o f Ecuador and Peru
Project Number	10852
Project Objective	Support the conservation of biodiversity in prioritized territories of the Dry Forest s in Ecuador and Peru, by financing of climate smart sustainable agricultural pra ctices, building capacities and transferring technology to small and medium far mers. The financing of sustainable agriculture practices at adequate financial ter ms and conditions is to be enabled through the issuance of one or more green b onds in Peru and Ecuador that will benefit from guarantees provided by GEF and CAF. The guarantees will act as credit enhancements thereby improving the term s of financing of the issuers, and their on-lending terms for the small holder farm ers in that region.
Country [ies]	Peru and Ecuador
Agency presenting th e Project	CAF
Project Financing	Please include: A. Sources of Co-financing, Name of Co-financier and type of co-financing (part I section C of the PIF)

Sources of Co-	Name of Co-financ	Type o f Co-fi	Investm ent Mob	Amount

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount ($)
GEF Agency	CAF	Guarantee	Investment mobilized	6,600,000
GEF Agency	CAF	Loan	Investment mobilized	8,000,000
Donor Agency	Agence Francaise de Developpement	Loan	Investment mobilized	12,600,000
Private	Private lenders/bond holders – through green bond issued by BanEcuador (borrowers)	Loan	Investment mobilized	25,700,000
Private	Private lenders/bond holders – through green bond issued by COFIDE (borrowers)	Loan	Investment mobilized	7,300,000
Recipient Country Government	Ministry of Agriculture in Ecuador	In-kind	Recurrent expenditures	1,544,000
Recipient Country Government	Ministry of Agriculture in Perú	In-kind	Recurrent expenditures	1,544,000
Recipient Country Government	Ministry of Environment in Ecuador	In-kind	Recurrent expenditures	1,500,000
Recipient Country Government	Ministry of Environment in Perú	In-kind	Recurrent expenditures	1,000,000
Recipient Cou	Guayas Provincial	In-kind	Recurre	400,000

ntry Governme nt	Government		nt expen ditures	
Civil Society Or ganization	Water Fund of Gua yaquil	In-kind	Recurre nt expen ditures	312,000
Donor Agency	Conservation Inter national	In-kind	Recurre nt expen ditures	1,000,000
Donor Agency	Food & Agriculture Organization (FAO	In-kind	Recurre nt expen ditures	500,000
Other	Global Green Grow th Initiative (GGGI)	Grant	Recurre nt expen ditures	200,000
Total Co-finan cing				68,200,000

B. Indicative Trust Fund Resources Requested under the NGI Program (Part I section D of the PIF)

GEF Agency	**Trus t Fu nd**	**Countr y/ Region al/ Glo bal**	**Focal A rea**	**Program ming of Fund s**	**(in $)**		
					GEF Proj ect Finan cing (a)	**Agenc y Fee (b)**	**Total (c) = a + b**
CAF	GEF	Region al	Multi-f ocal Ar ea	NGI	6,00 0,000	540,0 00	6,540,000
Total GEF Resources					6,000, 000	540,0 00	6,540,0 00

Total Project Financing: sum of A+B

	68,200,000 + 6,540,000 = 74, 740,000
Currency of the Financing	In Ecuador: USD In Peru: PEN
Currency Risk	Currency risk will be mitigated through the swap market. CAF will make arrangements with the client/ issuer who pays for the swap.
Co-financing Ratio	Every GEF US $1 mobilizes US $5.5 of private sector co-financing (bondholders) and 1:10 in investment mobilized (private and public)
Financial Additionality of GEF resources	Financial barriers addressed: The main financing barrier for sustainable agricultural practices is high cost of borrowing in the agricultural sector and small farmers in Ecuador and Peru and short term tenors. Quantification of financial additionality: rating agencies will quantify the financial additionality ahead of CEO endorsement; it is expected that a joint guarantee of GEF and CAF will result in a reduction of borrowing costs of [10]% and lengthening of several years [7 years].
Beneficiary of the Financing (Borrower(s)/Issuer(s))	COFIDE & BANECUADOR or other issuer if one of the issuer is not able to tap the capital markets to meet the Project Objectives. The other issuer could be an SPV created with the sole purpose of issuing green bonds to finance the Project Objectives or another to be selected by CAF to fulfil Project Objectives.
Type of Guarantee to be provided by the GEF	Partial Credit Guarantees, first loss to the CAF Guarantee for the Bond Issuances The guarantees of GEF and CAF will cover defaults on principal, interest or both. The GEF guarantee will be used as a first loss guarantee (for up to 18% of the bond issuance) to complement a CAF second loss guarantee (of up to 20%) for the green bonds issuance. The guarantees will help attract investors to invest in the otherwise high-risk sector of sustainable agriculture. The use of proceeds also h

	elp fund green lines (with lower interest rates and longer loan periods) that can be offered to small farmers increasing the number and amount of loans likely to be made.
Guaranteed Instrument	Green bond issuance from Issuers. The Green Bonds issued will follow ICMA principles; the use of proceeds will be verified by a third party.
Use of Proceeds	The use of proceeds is to finance sustainable agriculture including climate smart agriculture activities that support the conservation of biodiversity in prioritized territories of the Dry Forests in Ecuador and Peru. The use of Proceeds will seek to deliver GEBS as defined by the GEF in the Land Degradation and Biodiversity focal areas.
Principal Financing Agreements	The definitive Principal Financing Agreements will contain conditions precedent, representations and warranties, covenants, events of default, material adverse change or effect, and other provisions customary for facilities of this type including, but not limited, to those noted below, and in terms at least equivalent to those agreed by the Borrower with other senior unsecured creditors. The Loan Documentation shall be in proper legal form under any applicable and/or governing law for the enforcement thereof against the Borrower.
Guarantee Amounts	Maximum Guaranteed Amount (CAF+GEF) : 38% of the bond issuance. In the case of a bond issuance of US$ 33 Million: USD 12,600,000 of which 6,000,000 from GEF and 6,600,000 from CAF Available Guarantee Amount from GEF: minimum between 18% of the bond issuances or US$ 6,000,000.
Term	Between 7- and 8-years co-terminus with the bond issuances
	If the Issuers make the planned payments, both of the principal and of the intere

Interest on Guarantees under the Reimbursement obligations	If the issuers make the planned payments, both of the principal and of the interest, CAF and GEF Partial Credit Guarantees will be extended revolving and successively to the following planned payments of principal and interest, always up to a maximum of US $ 12,6,00,000. The CAF Partial Credit Guarantee will not be applied to any amount that is not contemplated within the payment program originally foreseen within the bond issue. If the Issuers fail to make a payment of the principal or interest provided for within the payment schedule that is guaranteed by CAF at that date, and only in that case, CAF will be obliged to make those payments subject to CAF receiving, at least 2 days in advance, a written confirmation from the bondholders' agent of the failure to pay the principal and / or interest. If within [60-90] days following the disbursement made by CAF, the Issuers return to CAF the amount used to cover the guarantee in addition to the accrued interest, the guarantee will be reinstated to cover the following obligations of the Issuers related to the issue. If issuers do not pay within [60-90] days, subject to reimbursement agreements, CAF may, at its discretion, demand payment from the Concessionaire immediately, or in a period of time according to the terms of a Special Loan. <u>Special Loan:</u> Each payment that CAF makes under the Guarantee will automatically become a loan that CAF grants to the issuers (the “Special Loan”), and which it undertakes to repay under conditions established in the guarantee contract.
	The amount paid by CAF will be totally or partially restored to the available amou

Operation of the Guarantee	nt of the Guarantee, up to the maximum limit established in the guarantee contract, if and only if the issuers reimburse CAF in whole or in part, the amount paid by the latter, together with the respective interest accrued at the corresponding interest rate, and will continue to guarantee the subsequent amortization payments of the bonds that are scheduled. If the bonds are accelerated, CAF will be obliged to pay the Bondholders the amount of the guarantee available on the date of the acceleration
Reimbursement obligations	Semi-annual in accordance with market practices in both countries (Ecuador and Peru)
Guarantee premium	1.5% per year A risk margin will be added to this rate, which will be calculated by the finance department of CAF, as a result of the result of due diligence.
Governing Law of the Financing	Local law applicable to each country[1].

[1] COFIDE has defined governance structure the information is in its webpage https://www.cofide.com.pe/detalles4.php?Id=12 ; however banecuador will have to build it and probably the governance structure of the bond has to get the approval of the Superintendency of Securities, Insurance and Companies; besides banecuador should follow the recommendations in the guidelines for green bond issuance in Ecuador, made by the Quito Stock Exchange.

ANNEX B:

Instructions. Please submit a reflows table as provided in Annex B of the NGI Program Call for Proposals. Any financial returns/gains/interests earned on non-grant instruments, will be transferred to the GEF Trust Fund as noted in the Guidelines on the Project and Program Cycle Policy. Partner Agencies will be required to comply with the reflows procedures established in their respective Financial Procedures Agreement with the GEF Trustee.

GEF Project Number	ID 10852
Estimated Agency Board approval date	September 1st – 15th , 2022
Investment type description (financial product: debt, equity, guarantee, other)	Guarantee
Expected date for start of investment	December 31st, 2022
Amount of investment (USD GEF funds)	US $6 million
Amount of investment (USD co-financing)	US $ 60.2 million
Estimated interest rate/return/ premium	1,5% of the Guaranteed amount per year premium for the guarantee For the GEF:0.7105% which represents 47,36% of the guarantee provided [18,18% out of the total 38,18% provided=0.7105%] If the guarantee is called, see Interest on Guarantees under the Reimbursement obligations section.
Maturity	Maturity: Between 7 and 8 years co-terminus with the bond

Estimated reflow schedule	
Repayment method description	Capital in semi-annual, equal and consecutive installments+ accrued interest on the unpaid balance
Frequency of reflow payments	Semi-annual
First repayment date	25 July 2023
First repayment amount	US $ 44,763

First repayment amount	US $ 14,700
Final repayment date	31 December 2030
Final repayment amount	US $ 8.374[1]
Total principal amount to be paid- reflowed to the GEF Trust Fund	US $ 6,000,000 if the guarantee is not called or called and recovered in full. (See below for more scenario analysis).
Total interest/earnings/premiums amount to be paid-reflowed to the GEF Trust Fund	US $ 528,479

The following fund reflow scenarios were calculated based on an issuance with mortgage-type payments

Scenario 1: Where GEF recovers 0% of GEF Guarantee:

CAF will pay the GEF the total interest charged to the bondholders for the right to have the guarantee, that is, USD 528,479 proportional to its exposure.

Scenario 2: Where GEF recovers 50% of GEF Guarantee:

CAF will pay the GEF the total interest charged to the bondholders for the right to have the guarantee, that is, USD 528,479 proportional to its exposure.

Once CAF has recovered the amount of the guarantee used by the bondholders, CAF will deliver USD 3,000,000 recovered by CAF through a special loan.

Scenario3: Where GEF recovers 100% of GEF Guarantee

CAF will pay the GEF the total interest charged to the bondholders for the right to have the guarantee, that is, USD 528,479 proportional to its exposure.

Once CAF has recovered the amount of the guarantee used by the bondholders, CAF will deliver USD 6,000,000 recovered by CAF through a special loan.

NOTES:

The Available Guarantee Amount from GEF will be the minimum between 18% of the outstanding bond issuances or US$ 6,000,000.

If CAF makes any disbursement, the Available Amount of the Guarantee will be immediately reduced by said amount.

---

[1] Assuming an Amortizing Bond as per scenarios below.

ANNEX C:

The GEF Agency submitting the PIF or PFD is required to respond to the questions in Annex C of the NGI Program Call for proposals in order to demonstrate its capacity and eligibility to administer NGI resources as established in the Guidelines on the Project and Program Cycle Policy, GEF/C.52/Inf.06/Rev.01, June 9, 2017 (Annex 5).

The GEF Agency submitting the PIF will demonstrate its capacity and eligibility to administer NGI resources as described below:

A) Ability to accept financial returns and transfer from the GEF Agency to the GEF Trust Fund

CAF has well-defined operational processes to send and receive payments. These processes have security controls as dual approval, prevention of money laundering and bank reconciliations. The main tool for transferring, receiving and monitoring funds is SWIFT. Moreover, we have access to banking platforms for funds' transferring in local currencies. CAF has a Business Continuity Plan that guarantees regular processing of payments and loan disbursements.

B) Ability to monitor compliance with non-grant instrument repayment terms

CAF follows up both active and passive portfolio maturities. It also has a credit system that alerts due dates and allows reporting including historical performance of each operation or loan. CAF works under a dual verification and approval scheme, where all payment transfers are verified and sent following all contractual conditions. CAF also monitors consolidated loan repayment and disbursement cash flow on a daily basis.

C) Capacity to track financial returns (semester billing and receiving) not only within its normal lending operations, but also for transactions across trust funds

CAF has several sources of financing that have allowed it to gain experience in the management and fulfilment of all conditions and obligations established by these sources, such as collection and transfer of funds periodically.

D) Commitment to transfer reflows twice a year to the GEF Trust Fund

The volume of payments that CAF processes daily exceeds USD 2 billion on average. Therefore, CAF has the capacity to transfer GEF Trust Fund reflows twice a year.

And, in case of NGI for private sector beneficiaries:

E) Track-record of repaid principal and financial returns from private sector beneficiaries to the GEF Agency

The track-record of both, capital and interest, is available and stored in CAF's credit system.

This system allows the monitoring and controlling of repayment behavior of credit clients (private sector and sovereign sector).

And, in case of concessional finance for public sector recipients:

F) Track-record of lending or financing arrangements with public sector recipients

The track-record of both, capital and interest, is available and stored in CAF´s credit system.

This system allows the monitoring and controlling of repayment behavior of credit clients (private sector and sovereign sector).

G) Established relationship with the beneficiary countries' Ministry of Finance or equivalent

CAF has a direct and fluent relationship with all beneficiary countries' Ministries of Finance or equivalent.