



Living in harmony with nature: Connecting biodiversity with production systems in the Gualaca Altitudinal Corridor Landscape.

Part I: Project Information

GEF ID

10649

Project Type

MSP

Type of Trust Fund

GET

CBIT/NGI

CBIT No

NGI No

Project Title

Living in harmony with nature: Connecting biodiversity with production systems in the Gualaca Altitudinal Corridor Landscape.

Countries

Panama

Agency(ies)

CAF

Other Executing Partner(s)

Wetlands International, Ministry of Environment (MiAmbiente)

Executing Partner Type

CSO

GEF Focal Area

Biodiversity

Taxonomy

Stakeholders, Consultation, Type of Engagement, Participation, Information Dissemination, Non-Governmental Organization, Civil Society, Indigenous Peoples, Beneficiaries, Gender Equality, Participation and leadership, Gender results areas, Access to benefits and services, Capacity Development, Gender Mainstreaming, Capacity, Knowledge and Research, Seminar, Knowledge Generation, Theory of change,

Learning, Field Visit, Knowledge Exchange, Focal Areas, Biodiversity, Species, Threatened Species, Biomes, Tropical Rain Forests, Mangroves, Rivers, Mainstreaming, Agriculture and agrobiodiversity, Fisheries, Protected Areas and Landscapes, Terrestrial Protected Areas, Productive Seascapes, Productive Landscapes, Coastal and Marine Protected Areas

Sector

Rio Markers

Climate Change Mitigation

Climate Change Mitigation 0

Climate Change Adaptation

Climate Change Adaptation 0

Duration

36 In Months

Agency Fee(\$)

160,638.00

Submission Date

6/16/2020

A. Indicative Focal/Non-Focal Area Elements

Programming Directions	Trust Fund	GEF Amount(\$)	Co-Fin Amount(\$)
BD-1-1	GET	1,584,862.00	10,000,000.00
BD-2-7	GET	200,000.00	2,500,000.00
Total Project Cost (\$)		1,784,862.00	12,500,000.00

B. Indicative Project description summary

Project Objective

Improve the management of the Altitudinal Gualaca Corridor and Landscape to benefit biodiversity conservation and foster sustainable use of natural resources with a landscape approach.

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

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount(\$)	Co-Fin Amount(\$)
Component 1. Strengthening the governance for biodiversity conservation and sustainable use of the PCAG .	Investment	<p>Outcome 1.1</p> <p>Landscape planning for PCAG biodiversity conservation and sustainable use of natural resources substantially improved.</p> <p>Indicator 1.1</p> <p>Number of hectares of landscapes and seascape under improved governance.</p> <p>Target 1.1</p> <p>Total: 348,474 ha</p> <p>Terrestrial: 228,767 ha.</p> <p>Marine: 119,707 ha</p> <p>Indicator 1.1.1</p> <p>Number of direct beneficiaries disaggregated by gender as co-benefits of GEF investment</p> <p>Target 1.1.1</p> <p>F 33173</p> <p>M 34528</p> <p>Total 67701</p>	<p>Output 1.1.1.</p> <p>Multi-sectorial PCAG governance platform formally created and functioning.</p> <p>Output 1.1.2</p> <p>Land and marine use plan developed using a Sustainable Landscape Planning (SLP) and Reef to Ridge (R2R) approach to effectively integrate conservation actions with PCAG production systems.</p> <p>Output 1.1.3</p> <p>Biodiversity-friendly farm and fisheries model management plans designed with conservation and sustainability criteria</p> <p>Output 1.1.4</p> <p>PCAG financial sustainability strategy designed and key actions implemented</p> <p>Output 1.1.5</p> <p>Lessons learned from project implementation systematized and widely disseminated</p>	GE T	305,200.00	2,150,000.00

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount(\$)	Co-Fin Amount(\$)
Component 2. Improving the conservation of biodiversity and ecosystems within the PCAG	Technical Assistance	<p>Outcome 2.1</p> <p>Key terrestrial and marine ecosystems within the PCAG are better protected and restored to ensure conservation of biodiversity and ecosystem services.</p> <p>Indicator 2.1 a)</p> <p>Number of hectares of protected areas with improved management effectiveness</p> <p>Target 2.1 a)</p> <p>61,386 ha (total)</p> <p>40,655 ha (terrestrial)</p> <p>20,731 ha (marine)</p> <p>(baseline and target METT scores TBD during PPG)</p> <p>Outcome 2.2</p> <p>Recovery of key connectivity areas outside protected areas beneficial for PCAG biodiversity processes.</p> <p>Indicator 2.2 a)</p> <p>Number of ha in prioritized connectivity areas restored and/or reforested</p> <p>Target 2.2 a)</p> <p>500 ha</p> <p>Indicator 2.2 b) Number of ha under Conservation Agreements with private owners.</p>	<p>Output 2.1.1</p> <p>Operational Plans for five prioritized PAs are updated and harmonized with priority actions implemented, strengthening the integrity and resilience of the PCAG landscape (Fortuna Forest Reserve, Chiriquí Gulf Marine National Park, David Mangroves Managed Resources Area, La Barqueta Wildlife Refuge, Boca Vieja Wildlife Refuge).</p> <p>Output 2.2.1</p> <p>Restored biological connectivity in key protected areas within PCAG.</p> <p>Output: 2.2.2</p> <p>A PCAG landscape conservation and restoration scheme for Conservation Agreements with private owners outside of PAs.</p>	GE T	1,318,662.00	9,220,000.00

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount(\$)	Co-Fin Amount(\$)
				Sub Total (\$)	1,623,862.00	11,370,000.00

Project Management Cost (PMC)

	GET		161,000.00		1,130,000.00	
		Sub Total(\$)	161,000.00		1,130,000.00	
		Total Project Cost(\$)	1,784,862.00		12,500,000.00	

Please provide justification

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(\$)
Recipient Country Government	Ministry of Environment (MiAmbiente)	In-kind	Recurrent expenditures	1,900,000.00
Recipient Country Government	Ministry of Environment (MiAmbiente)	Grant	Investment mobilized	1,300,000.00
Recipient Country Government	Ministry of Agricultural Development (MIDA)	In-kind	Recurrent expenditures	900,000.00
Recipient Country Government	Ministry of Agricultural Development (MIDA)	Grant	Investment mobilized	2,000,000.00
Recipient Country Government	Aquatic Resources Authority of Panama (ARAP)	In-kind	Recurrent expenditures	450,000.00
Recipient Country Government	Autonomous University of Chiriqu? (UNACHI)	In-kind	Recurrent expenditures	150,000.00
Private Sector	ENEL Fortuna S.A	In-kind	Recurrent expenditures	300,000.00
Private Sector	OTEIMA Technological University	In-kind	Recurrent expenditures	150,000.00
Private Sector	BATIPA Ecological Foundation	In-kind	Recurrent expenditures	300,000.00
Private Sector	The Centre for Competitiveness of Panama?s Western Region (CECOMRO)	In-kind	Recurrent expenditures	300,000.00
Private Sector	Agricultural Master Plan of the Western Region (PMARO)	Grant	Investment mobilized	4,000,000.00

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount(\$)
Beneficiaries	Local producers? beneficiaries	In-kind	Recurrent expenditures	300,000.00
GEF Agency	CAF Development Bank of Latin America	Grant	Investment mobilized	450,000.00
Total Project Cost(\$)				12,500,000.00

Describe how any "Investment Mobilized" was identified

Funding from the Ministry of the Environment, Ministry of Agricultural Development, Batipa Foundation, and PMARO are considered ?Investment Mobilized? because these fund sources are being/will be used to implement projects that are aligned with and will leverage the proposed 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	Panama	Biodiversity	BD STAR Allocation	1,784,862	160,638	1,945,500.00
Total GEF Resources(\$)					1,784,862.00	160,638.00	1,945,500.00

E. Project Preparation Grant (PPG)

PPG Required **true**

PPG Amount (\$)

50,000

PPG Agency Fee (\$)

4,500

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount(\$)	Fee(\$)	Total(\$)
CAF	GET	Panama	Biodiversity	BD STAR Allocation	50,000	4,500	54,500.00
Total Project Costs(\$)					50,000.00	4,500.00	54,500.00

Core Indicators

Indicator 1 Terrestrial protected areas created or under improved management for conservation and sustainable use

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
40,655.00	0.00	0.00	0.00

Indicator 1.1 Terrestrial Protected Areas Newly created

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

Name of the Protected Area	WPA ID	IUCN Category	Total Ha (Expected at PIF)	Total Ha (Expected at CEO Endorsement)	Total Ha (Achieved at MTR)	Total Ha (Achieved at TE)
----------------------------	--------	---------------	----------------------------	--	----------------------------	---------------------------

Indicator 1.2 Terrestrial Protected Areas Under improved Management effectiveness

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Total Ha (Achieved at MTR)	Total Ha (Achieved at TE)
40,655.00	0.00	0.00	0.00

Name of the Protected Area	WPA ID	IUCN Category	Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Total Ha (Achieved at MTR)	Total Ha (Achieved at TE)	METT score (Baseline at CEO Endorsement)	METT score (Achieved at MTR)	METT score (Achieved at TE)
----------------------------	--------	---------------	----------------------	----------------------------------	----------------------------	---------------------------	--	------------------------------	-----------------------------

Name of the Protected Area	WDPA ID	IUCN Category	Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Total Ha (Achieved at MTR)	Total Ha (Achieved at TE)	METT score (Baseline at CEO Endorsement)	METT score (Achieved at MTR)	METT score (Achieved at TE)
Akula National Park David Mangroves Multiple Resources Uses	125689	SelectPr otected area with sustainable use of natural resources	16,702.00						
Akula National Park Fortuna Forest Reserve	125689303326	SelectPr otected area with sustainable use of natural resources	19,500.00						
Akula National Park Gulf of Chiriqui Marine National Park	12568999632	SelectN ational Park	1,474.00						
Akula National Park La Barqueta Wildlife Refuge	125689303325	SelectH abitat/Species Management Area	2,979.00						

Name of the Protected Area	WDP ID	IUCN Category	Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Total Ha (Achieved at MTR)	Total Ha (Achieved at TE)	METT score (Baseline at CEO Endorsement)	METT score (Achieved at MTR)	METT score (Achieved at TE)
Akula National Park Playa Boca Vieja Wildlife Refuge	12568999640	SelectHabitat/Species Management Area	0.00						

Indicator 2 Marine protected areas created or under improved management for conservation and sustainable use

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
20,731.00	0.00	0.00	0.00

Indicator 2.1 Marine Protected Areas Newly created

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

Name of the Protected Area	WDP A ID	IUCN Category	Total Ha (Expected at PIF)	Total Ha (Expected at CEO Endorsement)	Total Ha (Achieved at MTR)	Total Ha (Achieved at TE)
----------------------------	----------	---------------	----------------------------	--	----------------------------	---------------------------

Indicator 2.2 Marine Protected Areas Under improved management effectiveness

Total Ha (Expected at PIF)	Total Ha (Expected at CEO Endorsement)	Total Ha (Achieved at MTR)	Total Ha (Achieved at TE)
20,731.00	0.00	0.00	0.00

Name of the Protected Area	WDPA ID	IUCN Category	Total Ha (Expected at PIF)	Total Ha (Expected at CEO Endorsement)	Total Ha (Achieved at MTR)	Total Ha (Achieved at TE)	METT score (Baseline at CEO Endorsement)	METT score (Achieved at MTR)	METT score (Achieved at TE)
Akula National Park Gulf of Chiriqui Marine National Park	12568999632	SelectNational Park	13,266.00						
Akula National Park La Barqueta Wildlife Refuge	125689303325	SelectHabitat/Species Management Area	3,725.00						
Akula National Park Playa Boca Vieja Wildlife Refuge	12568999640	SelectHabitat/Species Management Area	3,740.00						

Indicator 3 Area of land restored

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
500.00	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)
500.00			

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)
188112.00	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)
188,112.00			

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)
Type/Name of Third Party Certification			

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)
Type/Name of Third Party Certification			

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

Title	Submitted

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	33,173			
Male	34,528			
Total	67701	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

Part II. Project Justification

1a. Project Description

PART II: Project Justification

1A. Project Description.

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

Background information:

1. Panama has an area of 74,177.3 km² and 1,142.51 km² of mainland waters. Its territorial sea covers 2,210 km². The country is comprised of 10 provinces, 77 districts or municipalities, three indigenous *comarcas*^[1] with provincial status (Guna Yala, Embera and Ngabe-Bugl?), each with its own governor; and two indigenous *comarcas* with status of *corregimientos*^[2] (Guna de Madugandi and Guna de Wargandi). The districts comprise a total of 655 counties throughout the country^[3].

2. Panama is in the most biodiverse of six known centres of global biodiversity on the planet, having high altitude variations that when juxtaposed with a tropical climate favour a diversity of ecosystems. It includes 12 of the 30 planet-wide Holdridge Life Zones^[4] and 24 UNESCO denominated vegetation categories that represent configurations of ecosystems and habitats^[5]. This facilitates high species diversity. According to the WWF classification system, which uses the concept of eco-regions to promote large-scale conservation through an ecosystem approach, Panama has eight of the 200 recognized eco-regions around the world^[6]. Panama has 21 times more plant species per km² than Brazil; a greater number of vertebrate species than any other country in Central America and the Caribbean; 3.5% of the world's plants with flowers and 7.3% of the world's ferns and fern-like plants^[7]; 10% of bird species of the planet (more than 1,000 species between residents and migrants); 5% of the 4,327 species of mammals known in the world; 4% (198 species, IUCN 2013^[8]) of the total amphibian diversity of the world; and 3% (228 species) of the world's reptile diversity. In addition to the species common to other regions of America, there are between 1,300 and 1,900 species of plants, 23 species of amphibians, 24 species of reptiles, eight species of birds and ten species of mammals that are endemic or unique to the country^[9].

3. There are 4696 species of plants^[10] and animals in Panama that are distributed among the different terrestrial ecosystems, according to the information listed in the IUCN red list. Among these species are 584 threatened species^[11]: 10% (57 sp.) are critically endangered; 24% (142 sp.) are endangered; 37% (215 sp.) are vulnerable; and, 29% (170 sp.) are near threatened. A 16% (730 sp.) of the species have populations with declining trends. Eleven of the 12 categories of threat types established by IUCN affect Panama's species, of which the three most common were: Biological Resource Use (Hunting, collecting, gathering or harvesting) with 1154 species threatened; Residential & Commercial Development with 632 species threatened; and Agriculture & Aquaculture with 526 species threatened. Panama is the second country, after Mexico, with the most threatened species in Mesoamerica. Of the 74 endemic species in Panama, 46% (34 sp.) are threatened.

4. The Panamanian economy, traditionally based on the development of service industries and the agricultural sector, has in the last decade suffered considerable setbacks as a result of poor access to quality materials and seeds, limited use of technology, insecurity in land tenure, lack of technical

assistance and access to financing and markets. In consequence, the contribution of the agricultural sector to the Gross Domestic Product (GDP) has been decreasing. For example, in 1960 it was 25% of the GDP, in 1970 it was 15% of the GDP and today it is just 3% of the GDP^[12]. Employment in the sector has also fallen; in the 80s it represented 28% of the total labour force, while in 2010 it was 12.5%.

5. The agricultural and productive sector is highly segmented at the national level. According to the 2010 census, 43% of farms were less than half a hectare, and 82% less than 10 hectares, which reflects a large fragmentation in farmland space and use that has reduced natural habitat connectivity. These types of farms are subsistence farms and have low productivity because of unsustainable soil management practices. Land tenure rights remain an issue with an estimated 26% of farms in Panama without legal tenure. This percentage is higher among small-scale producers. However, this does not particularly refer to the project area. One of the reasons this site was selected was precisely that there is a high degree of definition of land tenure. Conflicts of this type are rare in the project area and well localized. Additionally, in the event of any eventuality, the National Land Titling Program of Panama (PONAT) will be able to count on the support of the institution in charge of managing these issues.

6. The main threats to biodiversity arise from agricultural activities as well as expansion of the agricultural frontier and development of infrastructure without environmental considerations or safeguards. This has resulted in barriers to species movement, agrochemical pollution, untreated wastewater, and garbage causing ecosystem degradation and declining biodiversity. Other problems include indiscriminate hunting and the selective extraction of certain species. A backdrop of large-scale ecosystem shifts under global climate change as well as the introduction of invasive species presents a considerable challenge for informed management.

7. Currently the National Protected Areas System (SINAP, for its acronym in Spanish) serves as the principal mechanism for biodiversity conservation. Being composed of more than 100 management units the network covers 2.6 million hectares. However, most of the habitats of the lowlands and the Pacific coast have already been lost due to urbanization and establishment of productive systems, which has degraded and fragmented the forest, directly affecting biodiversity of the Pacific slope of Panama. In practice, SINAP faces several challenges to improve its PA network including budgetary restrictions, insufficient qualified personnel, and a lack of infrastructure and equipment that limits effective on the ground management^[13].

8. Given the (1) critical importance of connectivity for retaining biodiversity in fragmented landscapes, (2) the considerable natural heritage value of the PCAG region for Panama, and globally, and (3) the importance of ecosystem goods and services for producers and society as a whole, a landscape and ridge to reef conservation approach is needed to formulate development and conservation solutions with engagement of PA practitioners, resource managers and the private productive sector.

Within the framework of the GEF 5771 Project "Improving Mangrove Conservation across the Eastern Tropical Pacific Seascape (ETPS) through Coordinated Regional and National Strategy Development and Implementation", in 2018 it emerged as a solution to the problem addressed by that project and as a result of an extensive process of public consultation with all the actors on the "Design of strategic guidelines for the development of the Gualaca Altitudinal Biological Corridor (CBAG)", the document in the analysis of the context includes an analysis of actors linked to the threats and opportunities, as well as the actors identified in the CBAG are defined in the governance structure.

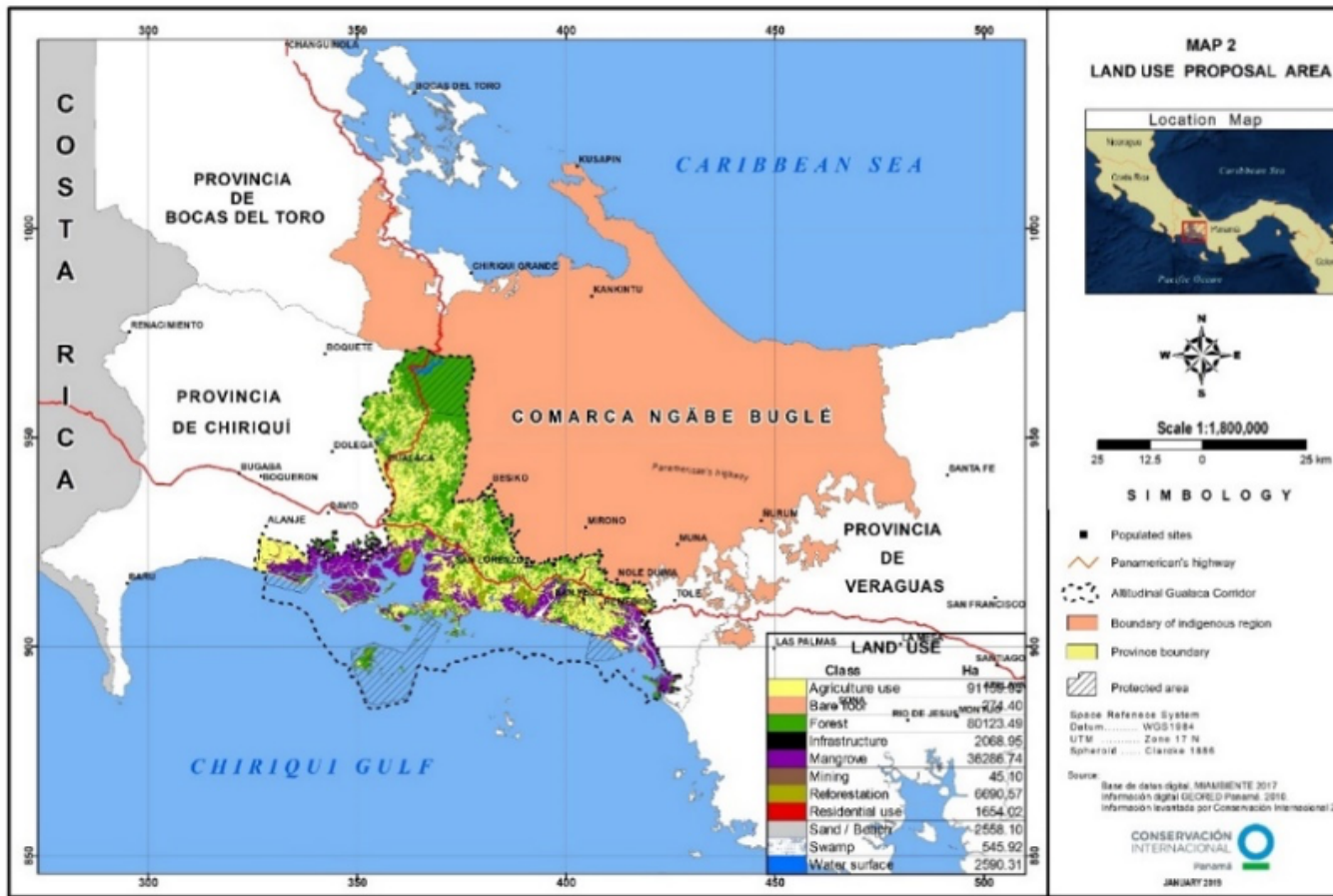
Project Area

9. The proposed project will be implemented in the Western Region of Panama in an area that is part of the Provinces of Chiriquí (6,548 km²), Bocas del Toro (4,644 km²) and the Ngöbe-Buglé Comarca (6,968 km²). A high cultural and biological diversity characterizes the area. Four different indigenous groups (Nogbe, Bugle, Naso-Teribe, and Bri-Bri) are in this region.

10. The definition of the Gualaca Altitudinal Corridor Landscape (PCAG, its acronym in Spanish) was based on a concept proposed in 1996^[14], developed by The National Association for the Conservation of Nature (ANCON) in 1998^[15] and updated in 2018^[16]. The original objective and justification for the establishment of this biological corridor was to guarantee the transit of wildlife in the region between its different altitudinal gradients.

11. The PCAG covers 348,474 ha, of which 228,767 ha (66%) are terrestrial, and 119,707 (34%) are marine. It is in the province of Chiriquí, between the districts of Alanje, David, Gualaca, San Lorenzo, San Felix, Remedios, and a part of Tolú. The PCAG aims to maintain altitudinal connectivity from the Fortuna Forest Reserve and part of Palo Seco Protective Forest of the northern sector, passing through the Chiriquí, Chorcha and Gualaca Rivers, the great Chorcha Plateau, Batipa Hill to the Barqueta Wildlife Refuge in the west. The landscape also includes the Mangroves of David, Alanje, San Lorenzo, San Felix, Remedios, and Tolú, as well as the Gulf of Chiriquí National Marine Park¹⁴.

Map of the Project Area



12. The greatest portion of the PCAG is concentrated in the districts of Gualaca, San Lorenzo and San Felix, with an estimated population of 25,074 people. This population is mainly engaged in agricultural activities. At the highest elevations, the main crop is coffee, although its production has been affected by the presence of pests and diseases. At intermediate elevations such as in the town of Los Angeles de Gualaca, dairy cattle are bred. In recent years, the number of cattle has decreased, and producers have converted grazing land into oil palm plantations. The main crops in the lower elevations are rice, beans, corn, industrial cane, palm oil, and pineapple. The latter two are mostly used for industrial production. In the coastal zone subsistence or small-scale fisheries activities focus on extraction of shellfish such as black clam and coastal fish, although there is also a small fleet with the capacity to fish in the open sea.

13. The project area is subject to a wide range in temperatures. In the highlands, average temperatures remain below 18°C throughout the year, while the lowlands are characterized by a tropical savannah climate, reaching up to 30°C. The annual relative humidity in the province of Chiriquí is high and ranges from 70% to 90%, with the lowest humidity in February and the highest in October^[17]. The district of Gualaca lies between intermediate and low elevation zones, and has a humid tropical climate^[18] with annual rainfall exceeding 2,500 mm. However, during the dry period which lasts three to four months (December through March) temperatures in the coolest month are typically above 18°C^[19].

14. A structural connectivity analysis conducted in 2017^[20] found that the riparian forests of the Chorcha River connect the Forest Reserve of Fortuna. Fortuna is the highest part of the PCAG, with Batipa hill and the mangroves of the San Lorenzo district in the lower part of the altitudinal gradient. This analysis also identified that another altitudinal connection may exist through the Chorcha plateau and the margins of the Chorcha river. In contrast, the Est?, Gualaca, Chorcha and Chorchita rivers in the intermediate and lower zones of the Gualaca district are considered vital hydrological networks for agricultural and human consumption activities^[21]. These areas provide water and influence the intertidal zones of David's mangroves. The Chorcha River is one of the most important rivers with significant mangrove stands in the Ba?les-Pedregal-Isla Sevilla-Estero Chorcha estuary.

15. The main activities that have reduced habitat connectivity in the area of the project have been expansion of traditional agriculture and livestock. Although important human settlements are not located in the project area, the Inter-American highway, which was recently expanded to four lanes, and three hydroelectric projects affect habitat connectivity and biodiversity conservation in the area.

16. Since the PCAG extends across varied climate and biomes, the resulting species richness is impressive. Approximately 1,300 plant species have been recorded in the Fortuna Forest Reserve^[22]. The area harbours a significant proportion of national vertebrate biodiversity; at least 29% of mammals, 30% of birds, 44% of reptiles, 15% of freshwater fish and 59% of the amphibians being registered within the PCAG^[23].

17. The marine-coastal area of the project area is uniquely important for the conservation of marine biodiversity with important upstream and downstream dependencies and interactions. The area encompasses part of a migration route for many marine species, and it is an important location for mating and reproduction of several cetaceans of the Eastern Tropical Pacific Seascape (ETPS). This includes some of the 13 registered species globally threatened cetaceans such as the blue whale (*Balaenoptera musculus*), sperm whale (*Physeter macrocephalus*), the fin whale (*Balaenoptera physalus*) and the false killer whale (*Pseudorca crassidens*)

18. The mangrove forests of the Gulf of Chiriqu? are considered some of the most important mangrove ecosystems in the Tropical Pacific region in terms of their biomass, extension, resident and migratory species. These forests are considered one of the major environmental and landscape indicators of the Neotropical Biogeographic Region^[24]. Fortunately, the mangroves in the province of Chiriqu? are still considered to be in good health. Across the estuarine deltas of the PCAG, there are seven mangrove species, of which two are considered ?vulnerable? by the IUCN: the salty mangrove (*Avicennia bicolor*) and mangrove pi?uelo (*Pelliciera rhizophorae*). The remaining five species: the gentleman mangrove (*Rhizophora racemosa*), the red mangrove (*Rhizophora mangle*), black mangrove (*Avicennia germinans*), button mangrove (*Conocarpus erectus*) and white mangrove (*Laguncularia racemosa*) are of least concern^[25]. Also, the mangroves of David and Batipa are known as key biodiversity areas (KBAs) and important bird areas (IBAs). These mangrove forests harbour mammal species such as raccoon (*Procyon lotor*), a white-nose coati (*Nasua narica*), the Rothchild?s porcupine (*Coendou*

rothschildi), jaguarundi (*Puma yagouaroundi*) and the squirrel monkey (*Saimiri oerstedii*). Among noteworthy bird species reported in the area, are the yellow-billed cotinga (*Carpodectes antoniae*), which is endangered, the orange-collared manakin (*Manacus aurantiacus*), and the black-hooded antshrike (*Thamnophilus bridgesii*), both with a restricted distribution in Costa Rica and Panama.

19. A total of 88 globally threatened species under IUCN Red Listing criteria are documented in the project area (see **Annex D**). Among vertebrates, birds have the greatest number of threatened species, followed by amphibians, mammals, and reptiles. Of the reported species, 41% are near threatened (NT) according to the IUCN criteria, while 59% fall in the categories vulnerable (VU), endangered (EN) or Critically Endangered (CR).

Classes of Vertebrates	IUCN Threatened				
	NT	VU	EN	CR	Total
Mammals	8	9	4	0	21
Birds	23	12	4	1	40
Reptiles	0	3	1	0	4
Amphibians	6	1	6	10	23
Total	36	25	15	11	88

NT (Nearly threatened); VU (Vulnerable), EN (endangered); CR (Critically endangered)

Problem analysis ? drivers that affect biodiversity loss and barriers

20. In preparation for this project, through a process that lasted over a year, different key stakeholders in the area were consulted (farmers, fishers, central and local governments, universities, business people, community members), to identify the main biodiversity threats in the PCAG. These threats included i.) expansion of livestock and agriculture; ii.) use of unsustainable and inefficient agricultural practices; iii.) illegal logging; iv.) illegal or unregulated fishing and vi) Incompatible infrastructure development.

The following table summarise the results of this analysis^[26]:

Biodiversity conservation objects	Conservation status [1]	Key threats [2]
Cloud forest	Regular	Illegal logging to advance the agricultural frontier [medium] Agriculture by the advance of the agricultural frontier [medium] Livestock grazing in forest areas [medium]
Riparian forest	Regular	Use of agrochemicals for industrial agriculture of pineapple, rice and oil palm [very high] Diversion of rivers due to hydropower development [very high]
Evergreen forest of intermediate elevations	Poor	Extensive livestock farming [very high] Hydropower development [very high] Introduction of pastures [very high]

Biodiversity conservation objects	Conservation status [1]	Key threats [2]
Deciduous and semi-deciduous forest	Regular	Fire caused by improper disposal of solid waste [high] Selective extraction of timber forest products [high] Use of agrochemicals and incompatible grazing practices [high]
Mangroves and associated ecosystems	Regular	Use of agrochemicals in the vicinity of mangroves [high] Selective extraction of non-timber forest products [medium]
Sea turtles	Good	Subsistence capture for meat consumption [low] Capture for commercial purposes [medium] Incidental catch [very high]
<p>[1] Three-point scale: good, regular, poor. [2] Four-point scale: low, medium, high, very high Source: CATIE. 2018. Diseño de lineamientos estratégicos para el desarrollo del corredor biológico altitudinal de Gualaca. Informe Final con propuesta del corredor biológico altitudinal de Gualaca, esquema de gobernanza, plan estratégico validado y mapas. Proyecto "Mejorando la Conservación de los Manglares a lo Largo del Corredor Marino del Pacífico Tropical Oriental (ETPS) a través del Desarrollo e Implementación de Estrategias Coordinadas Regionales y Nacionales". Centro Agronómico Tropical de Investigación y Enseñanza (CATIE). 28 marzo 2018: 75 pp.</p>		

There is information about mangrove cover reduction up to 2012 in the watersheds which are part of the project area. This information is shown in the following table:

Watershed	2000 (ha)	2012 (ha)	Change (ha)
Chiriquí Viejo river	459.90	384.15	- 75.74
Chico river	2,055.53	1,841.83	- 213.70
Chiriquí river	7,195.99	5,543.58	- 1,652.41
Fonseca river and between Chiriquí river and San Juan river	10,040.58	10,018.18	-22.41 112
Rivers between Fonseca and Tabasarí	9,600.21	8,786.43	- 813.78
Total	29,352.21	26,574.17	- 2,778.04
Source: MiAmbiente			

During the PPG more detailed information will be collected.

21. Expansion of livestock and agriculture. Habitat fragmentation and loss is largely due to agriculture activities across the project area resulting in deforestation as the agricultural frontier expands. In the project area, an estimated 50,000 ha are dedicated to agricultural activities (rice, coffee, beans, plantains, pineapple, oil palm, among others), and more than 68,000 ha are dedicated to livestock grazing^[27].

22. Typically, expansion of agricultural land takes place through conversion of natural forest, causing a significant negative impact on biodiversity^[28]. Although most of the deforestation occurs outside of protected areas, the impact on biodiversity remains significant. The loss of key forest cover (cloud

forest, deciduous and semideciduous forest and mangrove) reduces or removes connectivity between important biodiversity areas and directly affects species that require large ranges and foraging habitat, for example the jaguar, puma, tapir, and collared peccary.

23. Unsustainable and inefficient agricultural practices. This threat is associated with the first one presented above. The lack of technical and financial assistance to producers in the region does not facilitate the widespread adoption of more efficient, profitable and sustainable production practices. Current agricultural practices are unsustainable because they do not take into account biodiversity conservation. Most producers continue to implement the same practices they learned from their parents such as slash-and-burn, use of agrochemicals, many of which harm biodiversity, pollute water sources, and even affect soil viability and productivity. This situation is pervasive across all the PCAG, but it is notably more intense in the middle basin.

24. Illegal logging. Whether for commercial or subsistence purposes, illegal logging has an impact on the biodiversity in the upper basin (cloud forest), middle basin (deciduous and semi-deciduous forest) and lower basin (mangrove forest and associated ecosystems) of the PCAG. The threat becomes more serious if we consider that the authorities do not have the necessary resources to carry out effective control and surveillance actions. Illegal logging occurs more frequently outside protected areas but continues to happen within protected areas for species of high commercial value.

25. Illegal or unregulated fishing. While poaching in protected areas remains a concern, the main threat in the region comes from the unsustainable extraction of fishery resources. In recent years, various threats to natural resources have been identified at the landscape level: extraction of turtle eggs, industrial fishing within the limits of protected areas, extraction of black clam below its minimum size, among others. The use of unsustainable fishing gear in the region, together with the failure to comply with seasonal bans, is causing over-exploitation of commercially viable fish species and thus a decrease in the populations of these species. These factors put at risk the marine biodiversity, the income sources of local fishermen, as well as the food security of the communities that depend on these resources.

Identified Barriers

26. Through consultations with key actors, a number of main barriers were identified as challenges for project implementation. The barriers identified were i.) Lack of territorial planning under a landscape approach ii) limited management capacity in protected areas; iii.) Weak Governance; iv.) Lack of knowledge and capacity; v.) Lack of sustainable alternatives for local producers.

27. ***Barrier 1: Lack of integrated territorial planning under a landscape approach***. A landscape management approach has not been applied to the PCAG area. Although isolated planning and management efforts for land and marine-coastal ecosystems exist, there is no landscape-level vision that considers connectivity and harmonization of conservation and production policies, laws, and regulations. Hence, without policies that recognize and accommodate connections and dependencies between natural and productive systems there is a fundamental lack of integrated planning efforts. There is weak coordination between multiple government institutions and their investments in the area which makes it a challenge to effectively align economic activities with biodiversity conservation

goals. Planning and development of infrastructure in the landscape of the Altitudinal Corridor of Gualaca lacks environmental considerations and green - grey infrastructure is not considered as an alternative that contributes to diminish impacts of infrastructure on biodiversity.

28. The project proposes implementation of a Gualaca Altitudinal Corridor landscape plan that harmonizes development needs of the productive sector with conservation criteria that maintain and improve the provision of ecosystem goods and services across the upland, coastal and marine socio-ecological gradient.

29. **Barrier 2: Limited management capacity in protected areas.** The implementation of management actions within protected areas is perceived as inadequate due to insufficient budget, personnel, and equipment, as well as planning, monitoring, and financial management instruments, among other elements^[29]. Except for the Fortuna Forest Reserve which has a specific management scheme, the other four of five protected areas found in the PCAG do not have updated Management Plans or enough resources for their effective management. Additionally, none of the protected areas (PAs) have adopted a landscape approach in their planning. The project will support mainstreaming of landscape planning in protected areas and undertake a series of activities designed to address management capacity, cross learning, and economy of scale in and between protected areas.

Protected Areas of the Landscape of the Altitudinal Corridor of Gualaca

Protected Area	Total (ha.)	IUCN Category	Establishment law
Gulf of Chiriqu? National Park	14,740	II	Gaceta Oficial N? 22.6177 December 1994.
La Barqueta Beach Wildlife Refuge	6,704	IV	Gaceta Oficial N? 22.6177 September 1994.
Boca Vieja Wildlife Refuge	3,740	IV	Gaceta Oficial N? 22.6177 September 1994
David Mangroves Managed Resources Area	16,500	VI	Gaceta Oficial N? 25.884 25 September 2007
La Fortuna Forest Reserve	19,500	VI	Ley No. 18 9 April 1976.

30. **Barrier 3: Weak governance.** Despite prior efforts looking to reduce pressures in protected areas and buffer zones to encourage connectivity, there are in practice no functional biological corridors yet in Panama. In part this is a result of the absence of an appropriate and inclusive governance structure that ratifies objectives, evaluates function, and ensures their long-term management.

31. The governance structure currently in place for the PCAG region follows that defined for the country with distinctions by provinces and indigenous lands, subdivided into districts and ?corregimientos? which represent smaller geographic units. In this scheme, different governmental actors interact at different levels (national, regional, local) orientated by their institutional goals, without a more holistic vision and platform that allows them to coordinate and synergize. Although there are some initiatives created for this purpose, such as river basin committees and environmental consultative commissions established by the General Environmental Law, these commissions are neither constituted nor operating in the PCAG.

32. The project proposes to engage the existing drainage basin committees into a landscape governance structure of the Gualaca Altitudinal Corridor via a stepwise multi-sectorial process between PCAG stakeholders.

33. **Barrier 4: Lack of knowledge and capacity.** The facility of authorities (national and local) to design policies and regulatory frameworks with a landscape approach is yet limited. There is no inter-institutional coordination for adequate territorial management that serves to integrate productive, social, and environmental components. Also, local stakeholders are largely unaware of the value of biodiversity and associated ecosystem benefits and how their loss affects human well-being.

34. Agricultural land use often does not consider the agro-ecological capacity of the soil for different crops. The implementation of non-sustainable fishing gear (trawls, the use of explosives), the lack of compliance with closure periods for fished species and a lack of respect for minimum catch sizes are pervasive problems across coastal areas of the PCAG that reduce community resilience and biodiversity through associated ecological impacts. Additionally, the destruction and contamination of mangroves and reef habitat in the region affects the reproduction and recruitment cycles of fishery species. The absence of clear harvest control regulations impacts the quality and quantity of goods and ecosystem services across the PCAG, influencing the quality of life of local communities and increase local extinction risk.

35. **Barrier 5: Lack of sustainable alternatives for local producers.** Land use practices in the PCAG lack a landscape planning approach. Subsistence agricultural and fishing practices are often applied with little or no consideration of biodiversity and the integrity of natural ecosystems. The lack of sustainable and profitable alternatives for local farmers and fishers as well as the absence of an integrated planning that considers environmental and sustainability criteria prevents them from changing their production patterns into biodiversity-friendly ones. No models for management plans and no clear criteria exist for biodiversity-friendly and profitable farms and fisheries for the specific circumstances in the PCAG area.

2. Baseline scenario and associated projects

Baseline Scenario

Four national entities are key to address the key conservation issues of the Gualaca corridor:

The Ministry of the Environment (MiAmbiente) is the national environment authority, responsible for the protection and conservation of the environment and the sustainable use of natural resources. It implements the environment law (Law 41 of 1998) and manage the national system of protected areas (SINAP), forests (natural and plantations), watersheds (e.g., water concessions and discharge permits) and coastal and marine resources, among other. The ministry also manages the system which assess the environmental impact of development activities and issue environmental permits. MiAmbiente coordinate the implementation of the national biodiversity strategy and action plan (2018-2050). This strategy includes ecological connectivity is a priority for in situ conservation (action 1.3.1).

The Ministry of Agricultural Development (MIDA) is responsible of the agricultural sector, especially regarding agricultural services (e.g., extension), prices, marketing and incentives to the producers. MIDA regulates agricultural production.

The Aquatic Resources Authority of Panama (ARAP) is the national fisheries and aquaculture authority. ARAP implements the fisheries law (law 17 of 1959) which is being updated.

The Ministry of Housing and land use planning (MIVIOT) coordinate the implementation of the national land use plan, which was updated in 2019. Land use planning is implemented at the local level through districts and corregimientos.

At the local level, municipalities administer districts and are responsible of local development and land use planning. Indigenous territories have a special administration regime. The Ng?be-Bugl? comarca

was established by in 1997 by law 10; it has the status of a province and the land is a community property. The comarca is headed by a cacique and a general council, who are elected every six years.

It is worth mentioning that CAF assisted the preparation of the Agricultural Master Plan for the western region of Panama and is supporting its implementation. This will facilitate to mainstream biodiversity conservation considerations into the agriculture sector where the Gualaca corridor is located.

A conservation agreement is a tool developed by Conservation International to facilitate biodiversity conservation. They contemplate direct incentives for conservation, through a package of benefits negotiated in exchange for an improvement in the use of natural resources by the communities. This tool has been widely used worldwide and there are a number of lessons to improve its application. Further information can be found in:

<https://www.tandfonline.com/doi/abs/10.1080/14888386.2010.9712639>

<https://www.conservation.org/blog/what-on-earth-is-a-conservation-agreement>

<https://asociacionbalam.org.gt/wp/wp-content/uploads/2016/07/Evaluating-Conservation-Agreements-as-a-Tool-for-Conserving-Nature.pdf>

The specific details for the use of conservation agreements in the Gualaca corridor will be developed during the PPG.

36. **Protected Areas:** The National System of Protected Areas does not have a formally established strategy. Many of the protected areas within the PCAG do not have management plans, or they are outdated. The PCAG includes a total of 5 protected areas that are currently not adequately managed and lack the financial resources to improve their management. These areas have a total area of 61,386 ha, including Mangroves of David (16,702 ha), Fortuna Forest Reserve (19,500 ha), Gulf of Chiriquí Marine National Park (14,740 ha), La Barqueta Wildlife Refuge (6,704 ha.) and Boca Vieja Wildlife Refuge (3,740 ha). In absence of this project the management of these protected areas will be isolated, the threats very likely to continue and even increase, and it will be more difficult to integrate and potentially reconnect each management unit into a broader sustainable landscapes vision over time as adjacent industry and agriculture infrastructure develops. The effectiveness of protected areas to prevent biodiversity loss as refuge areas under climate scenarios will be reduced if they are not considered as part of a complementary network. These networks should also consider important biodiversity challenges and the effectiveness of 'spill over' effects outside of those same areas.

37. **Agriculture:** Agricultural activities which were for many years the main activity of the region are declining. Low yields and the lack of access to markets are causing many of the children of farmers to consider more profitable activities such as trade, construction, or tourism. The farmers who remain continue to replicate inefficient and unsustainable practices. Agricultural production in the area occurs without planning and often without considering the environment. The farmers in the project area do not have the management guidelines or the financing necessary to make the required changes needed, particularly to produce in a biodiversity-friendly way. The continued use of unsustainable production practices affects biodiversity conservation and ecosystem services in the area. Poor farming practices are contributing to the extinction of highly sensitive species such as amphibians.

38. **Fishing:** Fishing is an important economic activity for coastal communities in the project area. It is estimated that only in the districts of Remedios, San Felix, and San Lorenzo about 450 people are engaged in fishing activities. Fishing is a key element of food security of some 2000 families in the coastal zone; people who mostly live below the poverty line. However, illegal fishing, fishing with non-permitted gear and not respecting the minimum sizes of catch, is generating the depletion of the resource. No clear management guidelines exist for biodiversity-friendly fishing practices. In absence

of this project unsustainable fishing practices will continue in the area, depleting the resources and reducing ecosystem stability.

39. **Connectivity.** In recent years, the level of landscape fragmentation has increased due to the absence of policies and incentives that promote the protection and restoration of ecosystems. Although different initiatives have been developed to promote biological corridors in the country, Panama does not yet have a corridor formalized, recognized by its constituents and managed. The project's contribution is to establish the first formal biological corridor in Panama that is managed by a representative multisector governance structure using a sustainable landscape approach and where public-private investments are aligned to contribute to improving productivity and conserving and restoring ecosystems, and with it the goods and services that these ecosystems provide to people.

40. **Governance:** The project area lacks a governance scheme that effectively incorporates all existing government and non-government agencies and would allow a comprehensive vision for development of the region. Central government agencies (e.g., Ministry of Environment, Ministry of Agro-development, Ministry of Health, Ministry of Public Works, Aquatic Resources Authority) do not coordinate with each other or with local government (e.g., municipalities, counties). The private sector promotes development alternatives which are not necessarily compatible with the interests or needs of other stakeholders. The project will install a governance structure for the landscape management of the Altitudinal Corridor of Gualaca and will develop tools that will facilitate their work and will generate landscape changes.

41. **Financing:** There is no reliable information on the financial situation of Protected Areas in Panama, except an analysis of financial needs undertaken for the National System of Protected Areas some years ago ^[30]. Some PAs prepare annual operational plans that, rather than responding to the priorities and needs established in the corresponding management plans, are adjusted to the budget assigned by the Ministry. The project will support annual finance planning and undertake priority actions to be determined during the planning process. The project will also work on mechanisms for financial sustainability, capacity building, and technical guidance to create better conditions for landscape management. A key factor for the success of the governance structure and to maintain the landscape management vision in the long term will be the establishment of a financial mechanism as part of the financial sustainability strategy of the project. This will guarantee the sustainability of the governance platform and its long-term operation.

Baseline ? Related Projects

42. There are many projects and investments related to forests conservation and sustainable fishing, management of natural resources and protection of biodiversity, productive sector improvement, and indigenous peoples in the external project area. Some of these projects are detailed in the table below.

Project	Description (figures in US dollars)	A brief description of how it is linked to the proposed GEF project
---------	-------------------------------------	---

Project	Description (figures in US dollars)	A brief description of how it is linked to the proposed GEF project
Sustainable Production Systems and Conservation of Biodiversity	<p>GEF 5546 (2015-2019) Aimed at consolidating the results obtained from the "Rural Poverty and Conservation of Natural Resources" (PRCRN, loan 4158-PAN), the "Atlantic Mesoamerican Biological Corridor" (CBMAP, GEF TF020454) developed in 2003-2007, and "Rural Productivity Project" (loan 7439-PA) partially combined with the "Rural Productivity and Consolidation of the Atlantic Mesoamerican Biological Corridor" project developed 2007-2014. This project contributed to the protection of 36,126 hectares in 12 protected areas. Total value: \$28,969,000</p>	<p>This project seeks to strengthen the effective management of some protected areas and create connectivity areas in buffer zones of some of the PAs (Amistad, Barú Volcano, San San Pond Sak, Fortuna, and Bastimentos).</p>
Towards Joint Integrated, Ecosystem-based Management of the Pacific Central American Coastal Large Marine Ecosystem (PACA)	<p>GEF 10076 (under development) Aimed at promoting ecosystem-based management of the Pacific-Central American Large Marine Ecosystem (PACA) through the strengthening of regional governance. This is a regional project which includes seven countries. Total value: \$6,877,626 (GEF)</p>	<p>This project will develop the regional collaboration framework for PACA, including Panama's territorial waters. It includes a regional pilot on coastal and marine spatial planning that has a site in the Gulf of Chiriquí.</p>

Project	Description (figures in US dollars)	A brief description of how it is linked to the proposed GEF project
Protection of Reserves and Carbon Sinks in Mangroves and Protected Areas of Panama	<p>BMUB ? IKI-UNDP (2013 ? 2018). Funded by the German government, the project includes the mangrove swamps of the San Lorenzo, San Felix, and Remedios districts in the Gulf of Chiriqu?. The area is threatened by timber extraction, expansion of the agricultural frontier and pollution. These activities endanger the carbon stock and the biodiversity of the mangroves, diminishing their capacity to continue providing vital environmental services for coastal communities. This project, includes three components: the strengthening of protected areas and special management zones by incorporating local and municipal areas, biological corridors and other priority areas; the generation of scientific research and studies that promote the use and rational management of mangroves and associated ecosystems; and pilot programs for managing mangroves and associated ecosystems to maximize their potential for climate adaptation and carbon sequestration Total value: \$2,900,000</p>	<p>The work completed by this project furthered knowledge of mangroves in the Pacific area and its relationship with the ecosystems located in the middle and upper watersheds. This knowledge was used as a reference for the design of the GEF proposal.</p>
Marine Program for the Eastern Tropical Pacific	<p>Conservation International (2004-present) This program covers the entire coastal-marine zone of the Pacific coasts of Costa Rica, Panama, Colombia, and Ecuador. CI's work has been focused on the restoration of critical coastal areas, working to change destructive fishing practices such as overfishing and trawling and coordinating cooperation among the governments of these four countries to create a more sustainable the Pacific Ocean. In Panama, the project is aimed at conserving protected marine-coastal areas in the Gulf of Chiriqu? (Montijo, Coiba, Gulf of Chiriqu?, Mangroves of David), recovering coastal community fisheries in the Gulf of Chiriqu? and conserving mangrove forests in the Gulf of Chiriqu?. Total value: \$6 million</p>	<p>The conservation of mangroves and their associated ecosystems goes beyond the coastal marine areas. After more than ten years of work in the area, this program has concluded that the greatest pressure on these ecosystems comes from the middle and upper elevations of the PCAG. To face these challenges, Conservation International has tested innovative solutions and instruments in other areas of the region and the planet. Some of these instruments are Planning with a Landscape Approach, Conservation Agreements, Conservation Finance, and Watershed Health Index, among others. These tools will be applied in this project as part of the actions to conserve biodiversity and enhance sustainable production in connectivity areas.</p>

Project	Description (figures in US dollars)	A brief description of how it is linked to the proposed GEF project
Agricultural Master Plan of the Western Region of Panama (PMARO)	<p>The Agricultural Master Plan for the Western Region (PMARO) was prepared with support of CAF and consists of six cross-cutting programs, vertical value chain programs, business plans, and investment projects, and organizing public and private institutions for project development, as well as a system for monitoring and evaluating results. The total investment required is \$155 million. The first trench of investment is a loan of \$27.6 million from CAF that initiated implementation in 2019. Total value: \$27.6 million</p>	<p>This project has been working closely with the PMARO coordinators to convert the PCAG into a development model to be replicated in the region. The project expects to align the results of C1 and C2 expected in this project with the PMARO interventions planned for the project area.</p>
Support for the National Indigenous Peoples Development Plan	<p>World Bank (2018 ? 2023). This project aims to strengthen the capacities of the indigenous authorities and the government of Panama to jointly plan and implement development plans and programmes in the 12 indigenous territories of the country. The project supports the implementation of the National Indigenous Peoples Development Plan. The project is financed with a loan of the World Bank. Total value: \$80 million</p>	<p>This project will strengthen the capacities of indigenous authorities to undertake development actions. This will in turn will contribute to the conservation efforts in the Altitudinal Gualaca Corridor</p>
Agricultural Transformation Project	<p>The government of the Republic of Panama (2001-present) Law No. 25 of June 4, 2001, which dictates the provisions on the National Agricultural Transformation Policy, currently consists of an administrative and financial support tool aimed at improving productivity, competitiveness, and the overall development of the agricultural sector. Total value: \$43.6 million</p>	<p>This project will coordinate with the Ministry of Agricultural Development to ensure they are part of the governance platform created for PCAG and that part of the financial resources for productive activities are channel to the project area to implement the biodiversity friendly farm and fisheries model management plans designed in this project.</p>

Project	Description (figures in US dollars)	A brief description of how it is linked to the proposed GEF project
<p>Improving mangrove conservation across the Eastern Tropical Pacific Seascape (ETPS) through coordinated regional and national strategy development and implementation</p>	<p>GEF-WWF/ CI (2016-2019) GEF 5771 This project fits within the framework of existing initiatives, where regional-scale projects and national investments have contributed to establishing conditions that help in the success of mangrove conservation. On-the-ground conservation efforts that are linked to the development of sustainable societies present an opportunity to help strengthen the link between safeguarding local livelihoods and the improved practices that underpin the resource. Despite the challenges, the governments of the ETPS countries are generally more willing and committed to supporting conservation efforts, recognizing to some extent the role and general value of ecosystems for human well-being. Even so, most of these efforts operate on a small scale, and we continue to see losses due to lack of application, coordination, and capacity at all scales. Total value: \$6,588,741</p>	<p>The Panama component of national work undertaken by this project included a feasibility analysis and construction of a development model for conservation and sustainable use of biodiversity across the Altitudinal Gualaca Corridor landscape, based on active participation of key stakeholders (central government, local governments, private sector, universities, producers, NGOs, community groups). The project proposed will use the results of the ETPS project as baseline to continue the work in the Altitudinal Gualaca Corridor Landscape.</p>

3. Proposed Alternative Scenario

A brief introduction to the project aims and design

43. The project aims to conserve unique national biodiversity by encouraging a sustainable and compatible use of natural resources across the Altitudinal Gualaca Corridor through a series of coordinated actions under a cooperative and participatory landscape planning approach. The intention is to reduce pressures and threats to the region's biodiversity through the design and implementation of a land-use planning mechanism that will allow sustainable use of its natural resources as well as by improving connectivity through conservation and restoration activities.

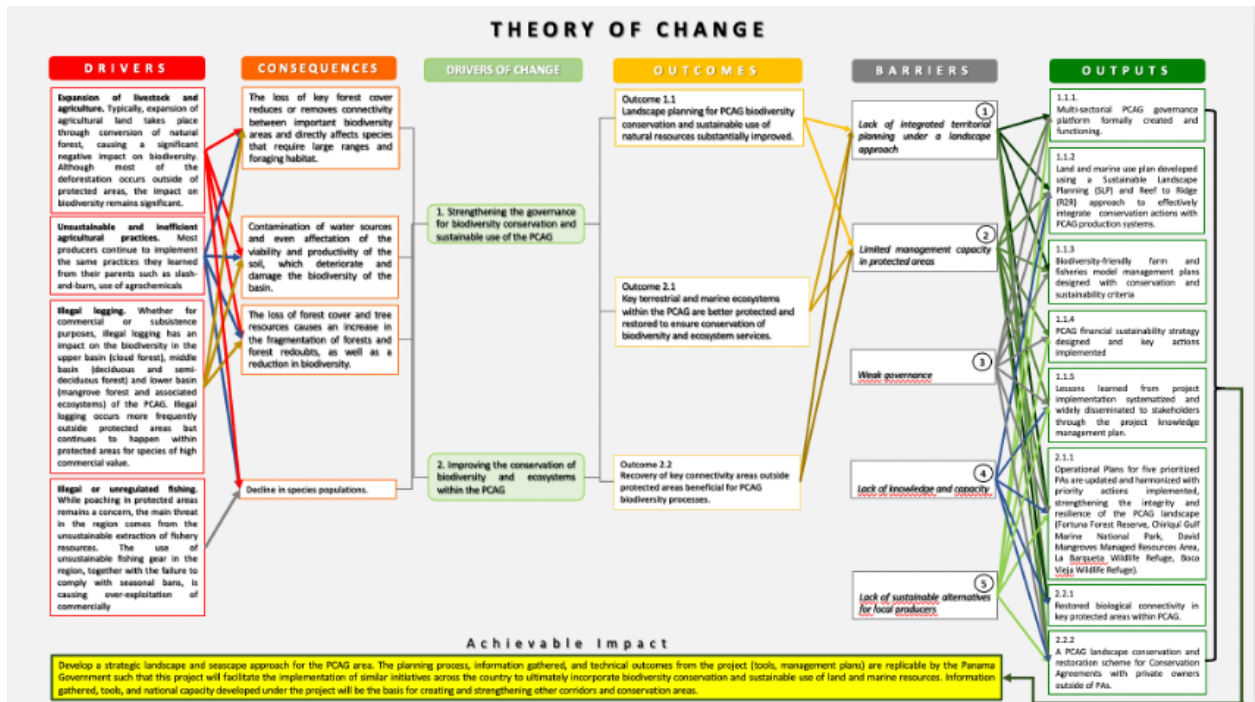
44. To achieve this objective, the project proposes two key strategic lines. The first relates to the strengthening of governance and application of landscape planning. The second strengthens the management of priority conservation areas (five protected areas) as well as the restoration of connectivity between these areas.

45. The key project contributions will be: i) Improved project area management by using a landscape approach for land and marine activities, ii) strengthened management of the five protected areas within the project area to support the Panama's National System of Protected Areas, iii) an integrated landscape planning model to guide local, regional and national actions through the land and marine use plans, iv) strengthened governance structures that contribute to the conservation of biodiversity and the maintenance of ecosystem services in the PCAG, v) improved awareness and capacity building for local actors, in particular children in primary and secondary level, women and indigenous communities, vi) increased financial sustainability for the integral management of the landscape, vi) improved

connectivity in key areas that generate tangible benefits for biodiversity through landscape restoration, vii) reduced pressures or threats that affect conservation of biodiversity in the long term

In the flowchart below, the theory of change (TOC) of the project is detailed. This shows the existing interrelationships between the drivers, their consequences, the drivers of change, the outcomes, the barriers and the expected outputs, to facilitate its reading. Detailed way, primary drivers, assumptions, and the two key logical pathways of the project's Theory of Change (ToC) are presented below and the graphical illustration of the TOC is presented in Figure 1.

Figure No. 1



Project objective, components, outcomes, and outputs

46. The **objective of the project** is to improve the management of the Altitudinal Gualaca Corridor and Landscape to benefit biodiversity conservation and foster sustainable use of natural resources with a landscape approach. The landscape approach seeks to provide the tools and concepts needed to manage territories in a way that allows them to achieve social, cultural, economic and environmental objectives in an area where agriculture and other productive uses of the land compete with environmental and biodiversity conservation objectives.

47. The project will be divided into two components. Component 1 will focus on "**Strengthening the governance for biodiversity conservation and sustainable use of the PCAG**," considering the levels of coordination of actions and investments in the landscape and Component 2 will work on "**Improving the conservation of biodiversity and ecosystems within the PCAG**", through the generation of information and the planning necessary for decision-making regarding the management of protected areas and key sites for the protection of biodiversity, and improve connectivity through reforestation and landscape restoration .

48. **Component 1: Strengthening the governance for biodiversity conservation and sustainable use of the PCAG.** This component will generate a planning process with a landscape approach with key actors. Additionally, it will provide key actors with a functional governance platform and a better understanding of the connections between social, ecological, economic and governance processes, as well as the benefits offered by the protection and sustainable use of natural resources for the region with the generation of the plan for sustainable landscape of the Altitudinal Corridor of Gualaca.

49. **Barriers addressed by component 1.** This component addresses four of the barriers identified in our analysis: the development of a planning process with a landscape approach for the Altitudinal Corridor of Gualaca (*Barrier 1*); strengthening of landscape governance with the creation of a coordination platform with landscape vision that transcends the boundaries of protected areas, integrating other institutional actors (Ministry of Agriculture) and civil society (producers and community organizations) (*Barrier 2*); strengthening the capacity of the Ministry of Environment to manage protected areas in terms of prioritizing efforts towards strategic actions (*Barrier 3*); promotion of knowledge and local capacities in the field of biodiversity conservation (*Barrier 4*) and lack of sustainable alternatives for local producers (*Barrier 5*). To address these barriers, the project proposes the following outcomes and outputs.

50. **Outcome 1.1:** Landscape planning for PCAG biodiversity conservation and sustainable use of natural resources substantially improved. The sustainable landscape approach will consider three complementary actions to i) develop a landscape planning process through a participatory and inclusive process that considers the Reef to Ridge (R2R) approach and climate-smart agriculture, ii) design and develop a platform of inclusive, equitable and participatory governance for the management of the sustainable landscape of the Altitudinal Corridor of Gualaca, iii) strengthen capacities in key stakeholders and sensitize the population about the importance of conserving natural resources as a way to maintain the ecosystem services that they provide. Target for outcome 1.1: 348,474 ha (terrestrial: 228,767 ha. and marine: 119,707 ha), of landscapes and seascapes under improved governance. The ?Area of landscapes under improved practices (hectares; excluding protected areas)? is 188,112 ha. This is the terrestrial surface area of the Gualaca corridor which is outside of protected areas. Total Gualaca corridor area: 228,767 ha = 40,655 ha of protected areas + 188,112 ha of land outside protected areas.

51. Output 1.1.1 Land and marine use plan developed using Sustainable Landscape Planning (SLSP³¹) and Reef to Ridge (R2R) approach to effectively integrate conservation actions with PCAG production systems. A comprehensive land use plan for both coastal-marine and terrestrial landscapes will be developed in the PCAG to incorporate conservation and production actions, making the two compatibles. A SLSP strategy identifies a set of objectives or results that stakeholders want to achieve to improve management and sustainably develop the scape, as well as a detailed set of activities to achieve them. Strategy targets include reducing threats, improving the status of natural resources, advancing the socioeconomic status of communities, building resilience to climate change, strengthening the enabling environment. It includes i.) Developing a thorough understanding of people + place; ii.) Establishing good governance through designing policies + practices; iii.) Effectively managing ecosystems services and productive systems; iv.) Ensuring benefits to people; v) capacity building and sensitization of actors and, vi.) Enabling, sustaining, and scaling impact. This land use plan will align with existing planning processes and will be used by the local stakeholders that will participate in the multi-governance platform. **Gender parity will be consider into account in the project's participation and decision-making aspects.**

52. Output 1.1.2 Biodiversity-friendly farm and fisheries model management plans designed with conservation and sustainability criteria. Based on output 1.1.1, biodiversity-friendly model management plans will be designed to include conservation and sustainability criteria and guidelines for farms and fisheries that are part of the project area. These model plans will be designed as an input for farms and fisheries of the area, to support aligning their productive activities with the land and marine use plan developed for PCAG. The model plans will also align with the financial sustainability

strategy which aims to provide sustainable and biodiversity-friendly alternatives for producers. The project will coordinate with the Ministry of Agricultural Development to use the model plans as reference for their investments in the area and their work with local producers.

53. Output 1.1.3. Multi-sectorial PCAG governance platform formally created and functioning.

As part of the governance strengthening of PCAG management, the multi-stakeholder platform will provide support and guidance to governments, community groups and businesses in the development of their formal and informal framework of rules, regulations, generally accepted practices and processes by which decisions are taken and implemented. The platform will foster coordination within different decision-making levels and stakeholders for the implementation of landscape approach management in the project area.

53.1 The Project will take up the actions developed by CATIE and Conservation International, which proposed a governance structure proposal for the Gualaca Altitudinal Biological Corridor Landscape with the participation of key actors, which should be taken up and formalized by the project. The platform will be comprised of key public and private stakeholders. It is expected that they will draft, to negotiate and sign a collaboration agreement in support of the management of the Gualaca Altitudinal Corridor. At this stage, it is not possible to provide details on its composition and modes of operation. During the preparation phase, a detailed stakeholder analysis will be conducted and a discussion with key stakeholders will provide the details of this matter, taking up the process already initiated by CATIE and Conservation International.

53.2 The search for solutions to reduce the pressures mentioned in the document (lack of control, illegal logging and unsustainable productive practices) will be addressed jointly with competent authorities (Miambiente, ARAP) through actions aimed at strengthening institutional control and surveillance. The project is also expected to help mobilize stakeholders to report illegal activities, through awareness-raising initiatives about the importance of maintaining the environmental services offered by the CAG ecosystems. Additionally, work will be done with local producers / fishermen in the development of more profitable and socially and environmentally responsible production techniques (good production practices).

54. Output 1.1.4 PCAG financial sustainability strategy designed and key actions implemented.

This Output includes the design of an Integral Financial Sustainability Strategy for the management of PCAG and that, in consensus with key stakeholders, implements some of the prioritized key actions. This strategy will consider, at least, the areas of governance, conservation inside and outside protected areas, sustainable production and connectivity (restoration / reforestation) in order to maintain and improve the conservation of biodiversity and ecosystem services of the PCAG.

?Key actions? should be understood as those activities related to the strategy that ensures the financing of the management of the CAG's Governance Platform once the project is finished. It includes the validation and formalization of the proposed governance platform, its operations budget based on a five-year strategic plan and a plan for raising resources with public and private sources. All this agreed with the multisectoral and inter-institutional actors that make up this governance platform.

55. Output 1.1.5 Lessons learned from project implementation systematized and widely disseminated to stakeholders through the project knowledge management plan. This output will systematize lessons learned from project implementation as well as disseminate the information with key stakeholders at local, regional and national level as means to create capacities and share information that can scale up or inform other processes or decision making. The systematization of information and dissemination will be part of the knowledge management plan of the project. Producing documents, media and hosting specific events to disseminate the information is part of what this output envisions to share the implementation experiences and implement the knowledge management plan.

56. **Component 2: Improving the conservation of biodiversity and ecosystems within the PCAG.**

The ecological integrity and long-term viability of the region's landscapes will be protected and improved, repairing historical impacts, reducing and where possible eliminating threats and restoring ecological processes. It implies better management of the key priority areas of the sustainable landscape of the Altitudinal Corridor of Gualaca and the reforestation and restoration of key areas of connectivity that will favour the conservation of biodiversity. This will contribute to reduce the impacts from climate change by strengthening resilience and adaptation.

Barriers addressed by component 2. This component addresses two barriers identified in the analysis: it will strengthen the capacity of the Ministry of the Environment to manage the main protected areas in terms of prioritizing efforts towards strategic actions (*Barrier 2*) and the weak governance that limits the decision making of all the actors and hampers a better management and planning of the territory, considering for example improving connectivity through reforestation and restoration actions for the sustainable use of its environmental services (*Barrier 3*).

57. **Outcome 2.1.** Key terrestrial and marine ecosystems within the PCAG are better protected and restored to ensure conservation of biodiversity and ecosystem services. The project will safeguard five priority protected areas and improve the connectivity between key core areas in the PCAG, through the development and implementation of a connectivity strategy that contributes to identify and prioritize reforestation and restoration actions among core areas with remarkable biodiversity and the provision of goods and ecosystem services. The prioritization of actions to strengthen the management of the PAs within the PCAG will be based on the priorities established in their management plans and on the results of the application of a Protected Areas Management and Monitoring of Effectiveness tool. Targets for this outcome are: 138,729 ha (terrestrial: 55,483 ha and marine: 83,237 ha), of protected areas with improved management effectiveness.

58. **Output 2.1.1. Operational Plans for five prioritized PAs are updated and harmonized with priority actions** implemented, strengthening the integrity and resilience of the PCAG landscape (Fortuna Forest Reserve, Chiriquí Gulf Marine National Park, David Mangroves Managed Resources Area, La Barqueta Wildlife Refuge, Boca Vieja Wildlife Refuge). The project will improve the effectiveness of the management of five protected areas: David Mangroves (16,702 ha), Fortuna Forest Reserve (19,500ha), Gulf of Chiriquí Marine National Park (14,740 ha), La Barqueta Wildlife Refuge (6,704 ha.) and the Boca Vieja Wildlife Refuge (3,740 ha) - covering a total of 61,386 ha. To this end, annual operational plans will be updated jointly with the relevant authorities, incorporating the connectivity approach, and strategic actions of those updated plans jointly identified with the Ministry of Environment will be financed and implemented by the project.

The strategic actions of the PA plans will be oriented towards strengthening the capacities of control, surveillance, and awareness of the population to reduce the main pressures identified and the awareness of the actors, all this with a landscape approach. The details will be developed during the project preparation phase in consensus with those responsible for the management of protected areas (Miambiente) and other important key actors to strengthen these actions (ARAP, Fundaci?n Natura, CREHO, UNACHI, OTEIMA, among others).

59. **Outcome 2.2 Recovery of key connectivity areas outside protected areas beneficial for PCAG biodiversity processes.** The project will identify key areas to improve connectivity through reforestation actions and restoration of these critical habitats to benefit biodiversity and ecological processes in the PCAG. Targets for this outcome are: 500 ha. in prioritized connectivity areas restored and/or reforested, and 1500 ha. of ha under Conservation Agreements with private owners.

Forest land restoration is not a separate indicator, the indicator includes reforesting and / or restoring 500 ha in key areas of connectivity. The technical action will depend on the condition and environment of the area selected to intervene. Additionally, the conservation of 1,500 ha is proposed under conservation agreements with private owners in priority areas. The priority area for the development of

reforestation and / or restoration actions and establishment of Conservation Agreements will be defined in greater detail during the project preparation phase, in common agreement with the producers and other key stakeholders. Likewise, some criteria will be defined to facilitate the prioritization of these sites.

60. Output 2.2.1. Restored biological connectivity in key protected areas within PCAG. 500 hectares of critical areas for connectivity in the landscape of the Altitudinal Corridor of Gualaca are recovered through reforestation and restoration actions of key ecosystems to favour biodiversity and ecosystem services in the project area. The specifics of reforestation and restoration actions depend on the priority areas selected and it will be developed in detail during the PPG phase.

61. Output 2.2.2 A PCAG landscape conservation and restoration scheme for Conservation Agreements with private owners outside of PAs. Using the landscape planning approach with other complementary planning tools, critical areas for connectivity will be identified, in particular: areas with remarkable biodiversity, areas of interest for the generation of ecosystem goods and services, and environmentally vulnerable areas given the pertinent climate change scenarios. To relieve pressure on ecosystems and improve connectivity between core areas this output seeks to establish Conservation Agreements with local communities. Conservation agreements are voluntary arrangements between beneficiaries and investors (the project in this case) that encourage enduring nature stewardship through incentives. The pressure on ecosystems is reduced, and connectivity between central areas improved through the establishment of such Conservation Agreements with private landowners. The conservation agreements will encourage protection and restoration of forests and recover key ecosystems, effectively complement the conservation in the protected areas. As a result, ecosystem functions that support biodiversity across the broader region will be retained or restored.

4. Alignment with GEF focal area and Impact Program strategies

62. The proposed project actions are aligned with the GEF 7 Biodiversity focal area. In particular, objective 1-1 Mainstream biodiversity across sectors as well as landscapes and seascapes through biodiversity mainstreaming in priority sectors, and objective 2-7 address direct drivers to protect habitats and species and improve financial sustainability, effective management, and ecosystem coverage of the global protected area estate of the GEF 7 Biodiversity Strategy The project is in line with objective 1 because it aims to reduce biodiversity loss caused from reduced connectivity and continued habitat loss, by improving management with a landscape approach. This represents an integrated approach to strengthen existing conservation tools to improve biodiversity management and use. Such considerations include strengthening the land and marine use planning, creating a governance platform for the project area and improve the management of five protected areas while supporting biodiversity conservation outside protected areas through restoration and reforestation of key connectivity areas that are important for the biological corridor of PCAG.

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

63. GEF resources will leverage additional funds (i) to strengthen governance of the PCAG area by implementing a landscape approach as means to enhance conservation and sustainable use of biodiversity and (ii) improve biodiversity conservation of the PCAG area by improving management of protected areas and implementing reforestation and restoration actions in key connectivity areas defined for the Gualaca Corridor. In addition, GEF resources will be invested into gaining experience and building in-country capacity into biodiversity conservation and sustainable use by building collaborative relationships with stakeholders, and to advance on building connectivity between inland ecosystems and coastal areas within the PCAG.

64. GEF incremental resources will lead to a boost in the implementation of the Biodiversity Policy which is part of Panama's National Environment Strategy and aims at integrating biodiversity conservation in socio-economic development and address key barriers, institutional and operational, in the process of establishing and implementing a landscape approach for biodiversity conservation in the PCAG area.

65. This project will take advantage of and build on the investments made by the Ministry of Environment, Ministry of Agriculture and previous GEF projects in biodiversity conservation and management of protected areas. It will also build on the investments made by the Government in the agricultural sector by improving land use planning and hence reducing pressure on natural resources. The project will create the conditions for synergic landscape management of the PCAG area through effective collaboration that links the national and regional government with the local communities.

The project seeks to take advantage of the capabilities and tools developed by other projects that have made significant investments in part of the project area and contribute to the regional development initiative of the Mesoamerican Biological Corridor by proposing the construction of an altitude corridor that connects the mountainous area of the La Amistad Biosphere Reserve specifically in the core area of the Fortuna Forest Reserve with the Chiriquí mangroves. The GEF-CAF project wants to become a subregional model that formalizes, manages and develops the first biological corridor of Panama, incorporating elements of productivity through its sustainable use (socially and environmentally) of the natural capital of the region, at the same time as the conservation of ecosystem goods and services in this region is strengthened. Additionally, this project is part of the subregional development initiative called the Agro Master Plan of the Western Region of Panama, which has financing granted by CAF of \$ 80 million. This seeks to contribute to raising the installed capacity and competitiveness of more than 15,000 agricultural producers over seven years so that they take advantage of market opportunities, thus promoting the development of priority value chains in the main agricultural region of Panama.

6. Co-financing

66. The total amount of co-financing expected for this project is USD 12,500,000. The estimated co-financing is coming from government institutions who will benefit from the project implementation and private stakeholders within the PCAG area. Component 1, co-financing comes primarily from the Ministry of Environment, the Ministry of Agricultural Development and the Aquatic Resources Authority of Panama. Component 2 co-financing includes support for protected area management, restoration, and reforestation activities in key connectivity areas outside protected areas and comes from the Ministry of Environment, Ministry of Agriculture and private institutions such as ENEL-Fortuna, Oteima Technological University and the PMARO. CAF will provide co-financing for both components. Project Management co-financing is from the Ministry of Environment, the Ministry of Agricultural Development, PMARO and CAF. Co-financing amounts by organization are listed in Part I. Table C while total co-financing by component is listed in Part I. Table B.

7. Global Environmental Benefits

67. The proposed project area is key for global biodiversity. It is home to several habitats that are part of three global priority ecoregions: montane forests of Talamanca and the Pacific mangroves as well as two ecoregions of national importance: the humid forests of the Pacific. Likewise, the project incorporates two marine ecoregions of global importance: Coco Island and Nicoya of the Eastern Tropical Pacific and the Caribbean ecoregion of Costa Rica and Panama. Those areas are part of the global hotspot for biodiversity of Mesoamerican Forests, with an impressive biological richness, represented by more than 2000 species of wild plants and animals, of which 88 species of vertebrates (mammals, birds, reptiles, and amphibians) are globally threatened.

68. In total, the project will improve the management of the total area of the PCAG - 348,474 ha - to benefit the conservation of biodiversity. Within the PCAG, it will improve the management effectiveness of 5 protected areas, with a total terrestrial area of 55,483 ha and a total marine area of 83,237 ha. Furthermore, 500 ha of land will be restored and/or reforested, and 1,500 ha of land will be conserved through conservation agreements with private owners. All this will contribute to improve the microclimate of the region to be more resilient to the impact of global climate change.

8. Innovation, sustainability, and potential for scaling up

Innovation

69. This project is innovative because it proposes a combined landscape and seascape approach that connects terrestrial and marine ecosystems through integrated altitudinal management. Implementation of the most effective current thinking on landscape planning to connect PAs to agriculture and societal needs by working on key connectivity areas outside the protected areas and improving the management of five PAs within the PCAG area is proposed for this project.

This project is innovative, sustainable and scalable because it proposes a subnational development model that seeks to solve the traditional problems of rural productivity and poor market access conditions with the adoption of productive and market practices with a green approach, that is, that conserve natural capital through protection and / or sustainable use under the premise that it is more convenient economically, socially and environmentally not only for the benefits it can generate, but also for the costs it can avoid in terms of loss and / or degradation of environmental services and increase of climate vulnerability.

Although, it is possible that the final results will be obtained beyond the project's execution horizon, it seeks to catalyze and channel existing subnational development initiatives (the Master Plan for Agro for the Western Region of Panama has an approved loan from \$ 80M to promote development) through the creation of enabling conditions (landscape vision, productive organization, governance, financial mechanisms, etc.)

It is scalable because it is expected that the products generated in this project (planning with a landscape approach, governance schemes, financial mechanisms, productive and market organization, conservation agreements, etc.) once contrasted, can be adopted and replicated in other areas of the country.

Once the project is finished and the expected conditions have been enabled, for the productive activities of the project, it is expected to channel resources from the Master Plan for the Development of Agro (\$ 80M is available for the region) to support productive activities and access to better market conditions that will be developed by the draft. With the support of the Ministry of Agricultural Development (Law 25 of Agricultural Transformation), it is expected to create a financial instrument (part donation, part soft loan) to continue financing productive activities, as well as Conservation Agreements in the future.

With respect to protected areas, the adoption of this new production model will generate a series of long-term benefits, including the reduction of threats. This will make it possible to optimize the available resources of the PAs towards other activities such as planning, monitoring and environmental education, as well as the design of financial sustainability strategies based on the promotion of visitation and alliances with the private sector (hydroelectrics, tourism)

70. The PCAG will be the first biological corridor formally established in Panama with a public-private governance platform that will guide its management. The establishment and implementation of the governance platform constitutes a learning experience for the country which can be an example for other parts of the country that want to improve biodiversity conservation and management at a landscape level. Stakeholder coordination and involvement for joint decision-making processes will be key for the project success. This type of involvement where public and private stakeholders coordinate for joint decision making at landscape and seascape level is innovative for Panama.

Sustainability

71. *Environmental sustainability*: the project will contribute to the environmental sustainability of the terrestrial and coastal marine ecosystems of the PCAG. This contribution includes a reduction in the negative impacts on biodiversity by agricultural and fishing activities in the project area by applying an integrated landscape and seascape approach. The objectives will be achieved through the landscape planning processes within protected areas, municipalities, farms, and fisheries, as well as alignment with the government initiatives aiming at protecting biodiversity such as the 'Alliance for one million hectares reforested?'. Actions aimed at strengthening governance, along with capacity building, training and knowledge management will contribute to achieve environmental sustainability and landscape and seascape resilience.

72. *Social sustainability*: Social sustainability will be achieved through strengthening the capacities of local governments and local community organizations that will participate in the project activities and benefit from its results. The design of a governance mechanism to strengthen the PCAG management and improve the conservation and use of biodiversity in the area will have the active participation of local stakeholders that will continue with the project activities after it is completed. The development of biodiversity friendly model management plans for farmers and fishers constitutes an important tool to guide the production practices into more sustainable and profitable ones.

73. *Institutional sustainability*: The Ministry of Environment, the Ministry for Agricultural Development, the Aquatic Resources Authority and other governmental entities have been involved in the design of the proposal and are committed to collaborate with this project as it aligns with their objectives of mainstreaming biodiversity conservation in agricultural and fishing activities. Government institutions being main executing agencies and beneficiaries of this project will ensure the institutional sustainability after the project is completed. Creating capacities within the government institutions and jointly implementing the activities of the project in the PCAG area is key to ensure institutional sustainability. The creation of an inter-institutional coordination platform for the PCAG will also contribute to institutional sustainability through the consolidation of permanent cooperation links between the different institutions and the creation of a governance platform for the project area that will continue operating after the project ends.

74. *Financial Sustainability*: Very little resources are currently allocated towards natural resource management and the protected areas protection of PCAG. It is also well acknowledged that the Panama government has many competing priorities. The project intends to guarantee the financial sustainability of its activities through the design and implementation of a comprehensive financial sustainability strategy for the management of the PCAG. The financial sustainability strategy will consider natural resources management at a landscape and seascape level and will propose how to mainstream biodiversity conservation in sustainable production, leveraging financial resources to achieve this objective. The project will work with the Ministry of Environment and Ministry of Agricultural Development to assure that public funds are directed to the PCAG area and that those investments are in line with the land and marine use plans and sustainability criteria developed by this project.

Potential for replicability and expanding the scope of the project

75. This project aims to develop a strategic landscape and seascape approach for the PCAG area, creating the first altitudinal biological corridor in Panama. The planning process, information gathered, and technical outcomes from the project (tools, management plans) are replicable by the Panama Government such that this project will facilitate the implementation of similar initiatives across the country to ultimately incorporate biodiversity conservation and sustainable use of land and marine resources. Information gathered, tools, and national capacity developed under the project will be the basis for creating and strengthening other corridors and conservation areas.

[1] *Comarcas* are indigenous territories with semi-autonomous administration. Within comarcas indigenous people largely govern themselves under their own political system.

[2] *Corregimientos* are the smallest political-administrative divisions in Panama and are administratively similar to a county in that municipalities are typically subordinate to the government of a *corregimiento*.

[3] General Comptroller of the Republic of Panama. Panama in Numbers 2012-2016.

<http://www.contraloria.gob.pa/INEC/archivos/P8551DatosGenerales2.pdf>

[4] Tosi, J. 1971. Zonas de vida: Una base ecológica para las investigaciones silvícolas e inventariación forestal en la República de Panamá. PNUD-FAO. Informe técnico. 89 p. map., il.

[5] ANAM (Autoridad Nacional del Ambiente). 2010. Atlas Ambiental de la República de Panamá (primera versión). ANAM y BID (Banco Interamericano de Desarrollo). Editora Novo Art. S.A. 187 Páginas.

<http://www.miambiente.gob.pa/images/stories/BibliotecaVirtualImg/AtlasAmbiental.pdf>

[6] Dinerstein E, Olson DM, Graham DJ, Webster A, Primm SA, Bookbinder MP, Ledec G. 1995. A conservation assessment of the terrestrial ecoregions of Latin America and the Caribbean. Washington (DC): The World Bank.

[7] Correa, M., C. Galdames y M.S. de Stapf. 2004. Catálogo de las Plantas Vasculares de Panamá. Editora Novo Art, S.A. Panamá. 599 pp.

[8] <https://portals.iucn.org/library/sites/library/files/documents/IUCN-2014-017.pdf>

[9] Ministry of the Environment. Fifth National Report for the Convention on Biological Diversity 2010 <https://www.cbd.int/doc/world/pa/pa-nr-05-es.pdf>

[10] Correa, M., C. Galdames y M.S. de Stapf. 2004. Catálogo de las Plantas Vasculares de Panamá. Editora Novo Art, S.A. Panamá. 599 pp.

[11] <https://portals.iucn.org/library/sites/library/files/documents/IUCN-2014-017.pdf>

[12] General Comptroller of the Republic of Panama. Advanced Annual Figures of the National Accounts. 2013-2016.

http://www.contraloria.gob.pa/INEC/Publicaciones/Publicaciones.aspx?ID_SUBCATEGORIA=26&ID_PUBLICACION=837&ID_IDIOMA=1&ID_CATEGORIA=4

[13] Sistema Nacional de Áreas Protegidas

https://es.slideshare.net/damiansolis712/sistema-nacional-de-areas-protegidas-sinap?next_slideshow=1

[14] Tovar, D. 1996. Plan del Sistema Nacional de Áreas Protegidas y Corredores Biológicos. Programa de Naciones Unidas para el Desarrollo (PNUD), Global Environmental Facility (GEF) & Comisión Centroamericana de Ambiente y Desarrollo (CCAD). Panamá. 156 p

[15] Asociación Nacional para la Conservación de la Naturaleza (ANCON). 1998. Proyecto Planeación Metodológica y apoyo a la promoción de corredores biológicos locales en la República de Panamá. PROARCA/CAPAS. Panamá.

[16] Araúz, K. Diseño de lineamientos estratégicos para el desarrollo del Corredor Biológico Altitudinal de Gualaca. CATIE/Conservación Internacional. Panamá. 2018.

[17] Fortuna E, Anam (2012) Diagnóstico, Biológico, Físico, Socioeconómico y Cultural de la Reserva Forestal Fortuna. Investigaciones realizadas por Grupo para la Educación y el Manejo Ambiental Sostenible (GEMAS) y sus colaboradores, para la Elaboración del Plan de Manejo de la Reserva Forestal Fortuna, Provincia de Chiriquí, República de Panamá.

- [18] Aguilar E, Peterson T, Ramirez OP *et al.* (2005) Changes in precipitation and temperature extremes in Central America and northern South America, 1961-2003. *Journal of Geophysical Research: Atmospheres*, 110
- [19] Sánchez Pinzón M (2010) *Gualaca, la tierra de las cascadas. Culturama Internacional*, David, Chiriquí, Panamá
- [20] Rodríguez J, Spekerman L, Tejada I (2017) Análisis de conectividad de bosques (MSPA), Distritos de San Lorenzo, San Félix y Remedios y las Cuencas 110 y 112.
- [21] Sánchez Pinzón M (2010) *Gualaca, la tierra de las cascadas. Culturama Internacional*, David, Chiriquí, Panamá.
- [22] McPherson, G. 1998. Unpublished data.
<http://www.life.illinois.edu/dalling/Fortunareportecientifico.pdf>
- [23] ANCON (1999). Evaluación ecológica del propuesto corredor biológico altitudinal de Gualaca, Provincia de Chiriquí, República de Panamá 180 pp.
- [24] Ibañez A (2006) *Golfo de Chiriquí: ecosistemas y conservación de la zona insular y costera*, Nature Conservancy.
- [25] IUCN 2019. The IUCN Red List of Threatened Species. Version 2018-2.
 <<http://www.iucnredlist.org>>
- [26] <https://chm.cbd.int/api/v2013/documents/05B386D2-5BCD-A52D-6097-F853803CC619/attachments/Corredor%20biol%C3%B3gico%20Gualaca%20-%20Informe%20Final%20-%20CATIE.pdf>.
- [27] Araúz, 2018.
- [28] UN REDD Program - Panamá. 2015. La superficie boscosa y la tasa de deforestación en Panamá.
- [29] Barsev Radoslav. 2013. Análisis de la brecha financiera del Sistema Nacional de Áreas Protegidas de Panamá. Análisis económico y financiero y estudios de mercado del Proyecto Sistemas de Producción Sostenible y Amigables con la Biodiversidad y Conservación de Áreas Protegidas en el CBMAP Panamá. Autoridad Nacional del Ambiente y Proyecto Corredor Biológico Mesoamericano (CBMAP II). 35 p.
- [30] Barsev Radoslav. 2013. Análisis de la brecha financiera del Sistema Nacional de Áreas Protegidas de Panamá. Análisis económico y financiero y estudios de mercado del Proyecto Sistemas de Producción Sostenible y Amigables con la Biodiversidad y Conservación de Áreas Protegidas en el CBMAP Panamá. Autoridad Nacional del Ambiente y Proyecto Corredor Biológico Mesoamericano (CBMAP II). 35 p.
- [31] Conservation International defines a Sustainable Landscape or Seascape as is a place where people steward natural capital alongside sustainable production systems, at a scale that encompasses multiple levels of governance, a wide range of uses, and essential natural capital, to enhance long-term human well-being in a changing world

1b. Project Map and Coordinates

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

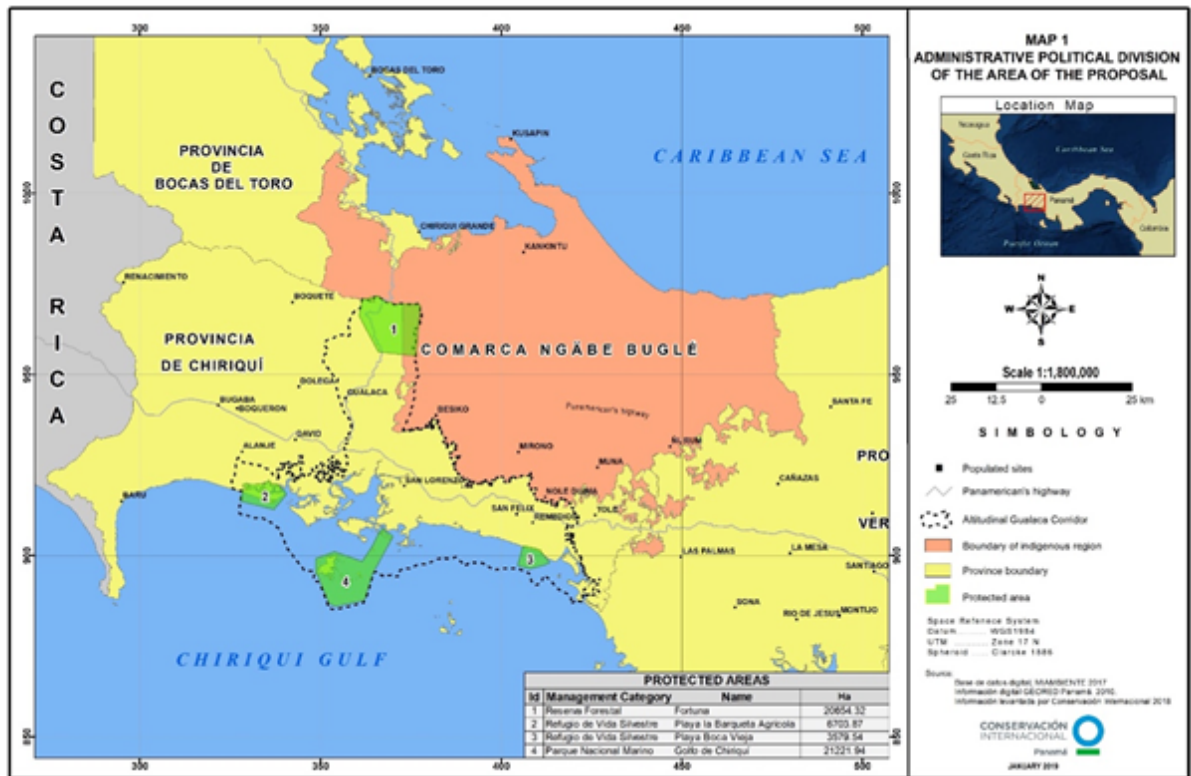
1.B. Project Map and Coordinates. Please provide geo-referenced information and map where the project interventions will take place.

1. The PCAG territory covers an area of 348,473,5 ha, of which 46% has forest cover. It is in the province of Chiriquí, between the districts of Alanje, David, Gualaca, San Lorenzo, San Félix, Remedios, and a part of Tolú. The PCAG aims to maintain altitudinal connectivity from the Fortuna Forest Reserve and part of the Protected Forest of Palo Seco in the northern sector, passing through

Chiriqu?, Chorcha, Gualaca, the great Chorcha Plateau, Batipa Hill to the Playa Wildlife Refuge La Barqueta in the western sector, including the Manglares de David protected area. There is also near-shore (horizontal) connectivity between the mangrove nuclei of the sectors of Boca Chica, Santa Cruz to the mangrove extensions between Remedios and Tol?.

2. The limits of the PCAG territory, was defined and validated in a consultation workshop with key actors, where it was agreed that "at the political level the boundaries of the territory include the districts and corregimientos[1]¹ of Gualaca, San Lorenzo, San Felix and Remedios; as well as the corregimientos of Guarumal and Quer?valo belonging to the district of Alanje; the corregimientos of Pedregal, Chiriqu? and the lower part of David Cabecera and San Pablo Nuevo that belong to the district of David; and part of the corregimientos of Quebrada de Piedra, Lajas de Tol? and Tol? cabecera in the district of Tol? ". Also, it was agreed to include "the sub-basin" of the Hydrographic Region of the middle part of Chiriqu? and "Lower part of the Chiriqu? River of Basin 108 of the Chiriqu? River" to define the limits of the northwest region,

3. The PCAG is located between UTM 286929,16 W; 1063844,17 N, and between UTM 427481,70 W; 427481,70 N (WGS84, Zone 17 North), The map below shows the project area as defined above.



[1] Corregimiento: corresponds to a territorial subdivision of the districts, whose political representative is the corregimiento representative.

2. Stakeholders

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

Indigenous Peoples and Local Communities Yes

Civil Society Organizations Yes

Private Sector Entities Yes

If none of the above, please explain why:

1. In the project area, there is an abundant and diverse number of partners, from national government institutions to local government, non-governmental organizations, and private and community institutions. For the past two years, meetings and workshops were held in the region with interested parties to define the scope of the initiative and contribute to the design of an Altitudinal Corridor Concept, as well as the most convenient governance mechanism for all parties.

2. In the Project Preparation Grant (PPG) phase, a process to further engage local stakeholders of the project area will be carried out and extended to other areas of the PCAG. The consultation process will include indigenous people within the project area in line with the safeguards? compliance. Culturally appropriate approaches and tools will be applied to ensure the proper integration of these groups into the project preparation document design. In compliance with the principles of Free, Prior and Informed Consent (FPIC), meetings will be held with traditional authorities and community assemblies.

3. Stakeholder engagement will be undertaken mainly through workshops, working groups and consultations to ensure that the inputs of key actors are included in the project document. For government agencies, there will be additional engagement ensuring their participation to strengthen their institutions and in line with the government priorities. The private academic sector will support implementation, while local groups that include farmers, fisher men and indigenous communities are the direct beneficiaries of the project, In the table below a detail the key actors identified is presented with a description of their expected role. Roles and type of engagement for each stakeholder category identified is explained in the table below, but it will be further developed during PPG phase.

Category	Partner	Role
Strategic Allies	Ministry of the Environment (MiAmbiente)	The Ministry of Environment is the main executing agency for the project.
	Ministry of Agricultural Development (MIDA)	MIDA and ARAP will be part of the Project's Directive Board as observers. The two institutions will provide technical y political support to the implementation of the project on the field and will also benefit from adopted tools and linked capacity building opportunities to improve effective management.
	Aquatic Resources Authority of Panama (ARAP)	
Public Sector	Ministry of Education	They will contribute to promoting awareness of the importance of conserving natural resources to generate long-term welfare among the schools in the work area. For this, they will receive technical assistance and will be provided with didactic resources.
	Local Authorities and Traditional Authorities	members of the governance platform of the PCAG. Key actors to promote and strengthen processes of sustainable production and connectivity in their areas of administration (districts).
	Chiriqu? Autonomous University	They will be key players in the process of building the governance of the PCAG and supporting researching and extension activities on the field.

	Panama University. Faculty of agricultural sciences.	Through its campus in Chiriqui province can support education, research, and extension. Mainstreaming farming and environment best practices into farmers and forestry producers.
Strategic Allies	Centre for Competitiveness of the Western Region of Panama	They will provide political and financial support to the implementation of the project.
Private Sector	OTEIMA Technological University, ENEL Fortuna	They will be key players in the process of building PCAG governance and supporting research and complementary activities in the field,
Direct beneficiaries	Individual farmers and fishermen	They will be the recipients of the transfer of knowledge and financial resources to incorporate better productive practices in critical areas of the project
ONG?s	Batipa Foundation, ANCON, CATIE, ACD, and others,	They can contribute to project goals by leveraging additional resources for common goals. They can also be part of the governance platform of the PCAG, as necessary.

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

During the process of preparing the PIF, several workshops were held in the project area in which the participation of more than fifty organizations:

1. Government: Ministerio de Desarrollo Agropecuario (MIDA), Instituto de Investigaci?n Agropecuaria de Panam? (IDIAP), Instituto de Seguro Agropecuario (ISA), Autoridad de los Recursos Acu?ticos de Panam? (ARAP), Autoridad de Turismo de Panam? (ATP), Ministerio de Ambiente (MiAmbiente), Ministerio de Educaci?n (MEDUCA), Ministerio de Obras P?blicas (MOP), Ministerio de Comercio e Industrias (MICI), Consejo Nacional para el Desarrollo Sostenible (CONADES), Ministerio de Salud (MINSA), Instituto Paname?o Aut?nomo Cooperativo (IPACOO), Banco Nacional de Panam? (BNP), Banco de Desarrollo Agropecuario (BDA), Municipios de Alanje, David, Gualaca, San Lorenzo, San F?lix, Remedios y Tol?, Autoridad Mar?tima de Panam? (AMP), Instituto de Mercadeo Agropecuario (IMA), Juntas comunales, Instituto Nacional de Formaci?n Profesional y Capacitaci?n para el Desarrollo Humano (INADEH).
2. Academy: Universidad Aut?noma de Chiriqu? (UNACHI), Universidad Tecnol?gica Oteima, Universidad de Panam? (UP), Universidad Tecnol?gica de Panam? (UTP).
3. Private sector and NGOs: Cecomro, Enel Fortuna, Finca Batipa, AES Panam?, CIELSA, Innovaci?n y Desarrollo Latinoam?rica (IDEL), HELMOT, Matadero de Chiriqu? S.A (MACHISA), Las Olas Resort, San Pedro S.A (SAPESA), C?mara de Comercio Industrias y Agricultura de Chiriqu? (CAMCHI), Conservaci?n Internacional (CI), Wetlands International, Programa de las Naciones Unidas para el Desarrollo (PNUD), Mar Viva, Alianza para la Conservaci?n y el Desarrollo (ACD), Plataforma de Voluntarios de Golfos Vivos ? ICEPED
4. Local organisations: Asociaciones de productores locales (APOCHI), Asociaci?n de Peque?os y Medianos Ganaderos de Paja de Sombrero (ASOPEGA), Asociaci?n Nacional de Ganaderos (ANAGAN), Asociaci?n Nacional de Productores de Ganado Lechero de Panam? (APROGALPA), Asociaci?n de Criadores de Ceb? en Panam? (CRICEPA), Cooperativa Gualaca, Grupos ambientalistas, Asociaciones de arroceros, Asociaci?n Nacional de Reforestadores y Afines de Panam? (ANARAP), Asociaci?n Tur?stica de Boca Chica.

To socialize and the process of receiving feedback from all the actors that will be involved in the project, two workshops were held on 01-13-2018 and 03-14-2018; This process included: 14 government institutions, 5 local governments and 1 traditional (county authorities), 15 non-governmental organizations and community-based organizations, 4 universities and 1 international organization, as well as 15 from the private sector. Two workshops were also specifically held with the Ministry of the Environment, the first on 4-5 and 6-2017 and a final one held on 04-16-2019. The details of these activities, including the participants, can be found in the document Systematization of the workshops and socialization process of the Project Living in harmony with nature: Connecting biodiversity with production systems in the Gualaca Altitudinal Corridor Landscape, in the annex E.

In addition to the commitment expressed by the majority of the participating organizations, they expressed interest in the development and implementation of good productive practices for small and medium-sized rural owners, in order to make productive activities compatible with the conservation of the diversity of flora and fauna of the region, as well as improve conservation through landscape restoration. The consultations allowed in particular to further identify and confirm the potential project stakeholders and consider priority activities to be implemented by the project. Although the project will only indirectly impact the Ng?be Bugl? Comarca through its buffer zone, these communities were also part of the project's socialization and feedback process.

The GEF ID 5771 project funded the preparation of the strategy to develop the Gualaca Altitudinal Corridor. This was a participatory process with key local stakeholders. The results of the process are found in the annex document in the roadmap.

Local producers and land-owners were included in the table as ?direct beneficiaries? ?individual farmers and fishermen?. The table has been updated to incorporate specific mention of indigenous people and local communities.

The priority area of intervention where the main field actions of the Project will be concentrated does not include territories or indigenous communities (See map of the area of priority area of intervention).

However, during the preparation phase of the Project Document (PPG), prior informed consultation processes must be developed that includes representatives and traditional indigenous authorities as a small part of the N?gb? Bugl? Comarca is within the proposed Sustainable Landscape of the Gualaca Altitudinal Corridor. Additionally, during the PPG phase, compliance with the environmental and social safeguards protocols established by the CAF will be complied with.

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).

The PCAG has a total population of 67,701 people (CGR, 2010) of whom 51% are men and 49% women. From this population, 13% are afro-descendant and 1% indigenous descendant. Every effort will be made by the project to further gender equality in the PCAG region of Panama. To ensure that the project meets CAF-GEF Gender Mainstreaming Policy and GEF?s policy on gender equality, the PRODOC will be included a gender analysis and a gender action plan during the PPG phase of the project. The purpose of the gender action plan will be to promote gender equality and the empowerment of women through project actions. **The project will prioritize the effective participation of women, seeking gender parity in the steering committee for decision-making, as well as direct beneficiaries of the project.**

The gender analysis will include an assessment of gender roles, responsibilities, uses, and needs relating to the environment/natural resources on which the project will be based, as well as both short-term and long-term costs and benefits of the project to men and women. It will also include potential roles, benefits, impacts, and risks for women and men of different ages, ethnicities, social structure, and status. Specific actions and activities will be identified to ensure that gender-related adverse impacts of this project are appropriately avoided, minimized, and/or mitigated. The gender action plan will explicitly describe the actions and processes to be put in place during the PPG and implementation phases in order to ensure that women and men: 1) receive culturally compatible social and economic benefits, 2) do not suffer adverse effects during the development process, and 3) receive full respect for their dignity and human rights. Finally, the gender action plan will provide specific indicators for monitoring and evaluating progress towards gender equality within the project.

CAF has procurement procedures that explicitly recognize the promotion of gender equality as a standard business practice. As a result, gender equality will be taken into consideration through their procurement programs when sourcing staff, equipment, and consultants with GEF trust funds and/or co-financing. The following is a list of examples of project elements that are particularly gender-sensitive and thus focal areas for the gender action plan. The project team will ensure that:

Component 1: (i) work supporting the landscape planning and governance platform for PCAG such as the analysis, strategies, and guidelines developed are gender sensitive in terms of participation, use of language and in terms of outcome. (ii) presentation of results and lessons learned reach both women and men. Component 2: (i) operational management plans for protected areas are accessible to both women and men; (ii) Community consultative and participatory processes are designed to facilitate equal participation, mutual respect, and collective decision making by women and men; (iii) both women and men are involved in activities within and outside protected areas being active contributors to the connectivity actions the project will design and implement.

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; No

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

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.

In recent years, a group of entrepreneurs from the region has come together to develop a socioeconomic development initiative that responds to the needs of the region in an initiative called the Master Plan for the Development of Agriculture in the Western Region of Panama (PMARO, acronym in Spanish). For this work, they formed a platform called Centre of Competitiveness of the Western Region of Panama (CECOMRO), which is a non-profit private foundation originated from the initiative of the Panamanian Association of Business Executives (APEDE), the Chamber of Commerce, Industries and Agriculture of Chiriquí, the Pro-Chiriquí Foundation, among others. CECOMRO's mission is to promote the competitive position of the Western Region of the country, articulating public and private efforts, providing companies with the tools that allow them to develop sustainable competitive advantages and lead actions linked to the attractiveness of investments, entrepreneurship, development of new companies, necessary infrastructures and the valorisation of R & D, as well as contributing improve public, horizontal and sectoral policies.

The groups mentioned in the PIF are those that were identified as key for the development of the corridor because of their influence in the area. These are: Competitiveness Center of the Western Region of Panama (CECOM-RO) ENEL Fortuna S.A. that administers the Fortuna hydroelectric power station. Finca Batipa a large holding of farming and forestry businesses. AES Panama an energy company that operate the Chiriquí hidropower complex.

The above mentioned a crucial for the development of the corridor. Farmers, fishers, and other resource users are key stakeholders. The main organisations have been identified. For example: Chiriquí Organic Producers Association (APOCHI), Association of small and medium farmers of Paja de Sombrero (ASOPEGA), National Association of Cattle Ranchers (ANAGAN), National Association of Dairy Cattle Producers of Panama (APROGALPA), Panama Cebu Breeders Association (CRICEPA), National Association of Reforestation (ANARAP), Association of Tourist Guides of the Port and Hotels of Boca Chica.

Regarding the fishing sector, there are nor formal organizations, neither SMEs with investment in fishing. There are only subsistence activities in the marine and estuarine areas. In the same way, the small agricultural producers of the region are not united by any formal organization, association or cooperative.

All these groups will participate in the planning process. It is foreseen that some of them will be elected to be part of the governance structure. The specific groups that will be part of the conservation agreements will be identified during the PPG.

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)

5. Risks

1. Below, a series of project risks are presented, and the corresponding mitigation measures established.

Risks	Level	Risk Mitigation Measures
Weak management capacity, lack of use plans, and production activities dissociated from environmental measurements undermine conservation outcomes	M	The broad drivers of deforestation, such as land conversion to agriculture, will be identified and addressed, using proven conservation science, technology, and practices, with multi-stakeholder participation to protect the ecosystem services and the biodiversity and achieve sustainable production and management in the PCAG.
Lack of political will to support the regulatory changes necessary to implement new management instruments	M	Targeted communications and meetings to leverage government and sectoral support follow up, and the implementation of new viable mechanisms to facilitate processes will be provided through the project. A mechanism for improving inter agency coordination, to achieve the necessary support will be proposed and analysed in a participatory process.
Equitable gender is limited due to the traditional dominance of adult men in decisions and receipt of benefits	M	Particular attention to the consideration of appropriate ways to maximize the involvement of women during project implementation activities. For this, the project will prepare a gender mainstreaming plan at PPG phase and take advantage of the knowledge and experience of CAF in enhancing a rights-based approach in line with the GEF policies.
Lack of interest, reluctance, or cultural resistance to accepting conservation and new management measurement	L	Local stakeholders will be part of project design and implementation of project activities. Permanent awareness and capacity building activities will be implemented in line with the knowledge management plan that will be developed during PPG phase. A communication strategy targeted for different audiences will be developed in the first year of project implementation.
Increased frequency of extreme weather events, such as floods and droughts that can lead to project delays and impacts on project outputs	M	Adaptive management will be implemented through project management in the case of delays to project activities due to extreme weather events. The crops and restoration plants to be used in the vegetative restoration and agroforestry on the local communities or local producers will be based in biogeography suitability and resilience to the more common and likely climate change impacts.

Lack of commitment from local and regional stakeholders to participate in the coordination instances and take on the regulations and policies provided by this governance body.	L	Structured partnership development between stakeholders with shared capacity-building incentives and benefits and encouraging leadership between key stakeholders to legitimize the platform and ensure the governance body is accepted by key actors.
Change of government and national and provincial authorities affect decisions on the technical and financial execution of the project	M	Once the new government authorities are appointed, in the first instance the project will be presented to the new government authorities and at the provincial level meetings will be held to present the project to the key authorities. The project document will be designed in close coordination with the new government team. A strategy to involve key government partners throughout project implementation will be developed.
Activities proposed for the project within critical habitats or environmentally sensitive areas or their surroundings	L	The project will include activities with a minimum or no risk of adverse effects on biodiversity or natural resources within the prioritized production landscapes, There is very limited or no risk of reducing the population of any species that is recognized as a threatened, vulnerable, or endangered species, All of the project activities will be carried outside of legally protected areas.
The results of the project will be sensitive or vulnerable to potential climate change impacts	M	The project will increase ecosystem connectivity and strengthen ecosystem services in the prioritized landscapes using tools that will promote sustainable land use and conservation of biodiversity, thereby reducing the potential risks of climate change effects. To increase resilience to climate change, the project will strengthen the capacity of the public and private stakeholders at the local and regional levels to develop response measures through planning, knowledge and information, monitoring, management, and interinstitutional coordination.
Risk that local banks do not have financing mechanisms available for small producers	M	It is intended to channel resources for small producers through the Agricultural Development Bank as part of CAF's financing of the Western Region Agro Master Plan, which is located on the limits of the GEF project

The mobility limitations imposed by the COVID-19 pandemic in Panama may affect the actions that need to be carried out in the field

M

In Panama, it suffered one of the most serious outbreaks of COVID-19 in LAC, the social and economic impacts resulting from the COVID-19 pandemic have deepened the condition of social vulnerability that the country's disadvantaged population was already experiencing. It is estimated that poverty could have reached 18.8% in 2020, to reduce this condition the government established in March 2020 the Panama Solidarity Program, an emergency plan and relief social assistance for those affected by the global pandemic of the COVID- 19 aimed at vulnerable families approximately 1 million 350 thousand. Through the digital voucher which delivers money so that people can meet their priority needs in the purchase of food and medicine, through physical vouchers or transfers and bags of food with essential items from the basic basket. Although emergency transfer policies were essential to confront the deterioration of citizens' living conditions, they have not been enough for the most vulnerable. In this context, the risks associated with the COVID-19 pandemic have been analyzed to determine how they may affect important elements of the project.

As risk and mitigation measures: The possible reestablishment of the COVID-19 containment measures has been considered, and in the event of such an occurrence, there is capacity for PPG work to be carried out remotely, which is decreed by the redirection of travel budget lines to support the remote participation of disadvantaged stakeholders. The role of local partners will be paramount in this contingency, as they stay closer to the beneficiaries to provide them with support for their participation in the event that it is not possible to hold face-to-face meetings.

The opportunities offered by the Project to mitigate risks: Although economic growth is a necessary condition to overcome the crisis imposed by the COVID-19 pandemic, it is necessary to support growth with specific policies and measures that address the various dimensions of the crisis. social situation, including quality housing and jobs with good conditions. In this context, the project will provide opportunities for the adoption of sustainable practices with a special focus on rural and disadvantaged communities, giving a central role to improving the quality of life in vulnerable groups, since these groups are the most close to opportunities. and enhance the impact of policies and the recovery of the social economy. In addition, the project will contribute to the empowerment of women, reducing the tension between participation in the labor market and unpaid care within households. The project will also improve the structural support for these opportunities by supporting better institutional coordination and the participation of the desired parties, fostering inter-institutional coordination mechanisms and promoting local value chains. Regarding the availability of co-financing and price increases, the analysis does not identify the remaining risks, since they have been considered in the final stages of the identification process.

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.

1. Implementing the project requires a participatory and coordinated approach, which will guarantee the effectiveness of the planned activities, as well as time management and mobilization of resources and optimal use of them. Therefore, it is essential to establish an effective project management structure to achieve success. The final structure will be proposed in the PPG phase, but a preliminary outline is as follows.

2. The GEF Implementing Agency will be CAF. The project's leading executing agency will be the Ministry of Environment of Panama. During the PPG phase an implementing partner will be selected. This entity, upon agreement with the implementing agency and MiAmbiente, will provide support to the project implementation, bringing expertise and operational support as needed. Close coordination with the Ministry of Agriculture, and the Aquatic Resources Authority of Panama will be held during PPG and implementation phase to define their involvement in the project. The latter institutions are not executing partners of this project but coordination with them is needed to achieve the expected results in the project area.

3. A Steering Committee will be established as a decision-making platform that will guide the project implementation at a strategic level. For the daily management and implementation of the project, a Project Management Unit will be established, with a team responsible for the day-to-day execution of the activities that will work closely with the Ministry of Environment. Additional stakeholders' platforms needed for the project, for example safeguards management or governance will be defined during PPG phase. **Gender approach prioritizing parity in participation and decision-making in the steering committee, favoring the participation of women.**

4. This project builds on previous GEF projects that have been implemented and completed in the country. In particular, the project will seek to coordinate actions to complement and give continuity to the actions of the "Sustainable Production Systems and Conservation of Biodiversity" project, whose execution will culminate in 2019-2020. This project will also coordinate with the GEF project "Conservation and sustainable use of biodiversity in marine-coastal production zones" executed by UNDP in the Azuera Peninsula in Panama. Finally, coordination with the Ministry of Agricultural Development is needed to align the project activities with the Ministry's work and investments in the area. This coordination will be done at a planning and governance level.

7. Consistency with National Priorities

Is the Project consistent with the National Strategies and plans or reports and assessments 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

The project responds to Panama's Government Strategic Plan 2020 - 2024 (PEG for its acronym in Spanish) which states that the government will focus on the main environmental problems to guide the country towards sustainable development that preserves the natural wealth for present and future generations.

The project will contribute to the following key actions:

Strategic line 3 "competitive economy that creates jobs":

Fisheries. Key action 2. To promote sustainable management of national fisheries resources.

Environment.

Key action 2. To protect Panama's biodiversity and natural heritage as a priority in the environmental agenda of the country.

Key action 4. To promote actions to combat climate change, including the promotion of clean energies and the protection of the country's natural forests.

Key action 7. Prevent illegal logging that occurs in provinces like Darien and water producing basins, working closely with communities and local authorities.

Key action 13. To prepare and update the management plans of critical protected areas of the country (Panama Bay Wetland, Chagres National Park, Coiba, among others).

Key action 14. To implement a national programme for restoration and protection of the country's ten most threatened terrestrial and marine ecosystems, through alliances with communities, NGOs, private sector, and international organizations.

Key action 15. Comply with the National Water Security Plan 2015 - 2050.

Strategic line 4 "combating poverty and inequality":

a. Water. Water security.

Key action 2. To analyse new alternative water sources or improvement of existing ones to be developed with best practices in social and environmental management, with full participation of the society.

Key task 5. To launch a national reforestation program for water producing basins.

b. Indigenous people.

Key action 5. To promote sustainable agriculture, rescuing the ancient and traditional agricultural techniques of indigenous peoples.

Key action 6. To promote agricultural tourism, agroecology, the protection of native seeds, rivers, and the territory, to strengthen sustainable agriculture in accordance with the indigenous vision of food sovereignty and that guarantees local indigenous production.

The project will contribute to the "Alliance for the Million Hectares"^[2] -- a public ? private partnership aimed at reforesting one million hectares over 20 years (2015 - 2035) , and contribute to reduce the vulnerability of ecosystems and populations at risk, promote ecotourism in protected areas, and collaborate with initiatives aimed at the protection and conservation of water resources.

The project will contribute to the fulfilment of four of the five challenges established by the National Water Security Plan (2015-2050^[3]): Achieve 100% sustained coverage with quality water and basic

services (challenge 1); ensure water availability for inclusive socio-economic growth in a changing climate (challenge 2); restore and maintain healthy the 52 watersheds of the country (challenge 3); and evolve towards a culture of responsible and shared use of water (challenge 5).

This project also responds to the objective of the biodiversity policy included in the National Environment Strategy (ENA, for its acronym in Spanish), to integrate biodiversity sustainability with the processes of economic and social development. To this end, the initiative will implement actions compatible with the mandates in the ENA, such as strengthening the environmental management capacities of the public, private and municipal sectors; generate and disseminate scientific information that contributes to protect biodiversity; develop and implement tools and procedures for the comprehensive and reasonable use of biological and genetic resources; establish collaborative alliances that allow bio-friendly production techniques in the buffer zones of protected areas; and implement sustainable production techniques that benefit the poor residing within protected areas. The project also contributes to the policy of decentralization of environmental management and its action plan by collaborating in the planning and execution of municipal environmental plans.

This proposal directly contributes to the implementation of the Action Plan of the National Biodiversity Strategy (2018-2050)[4] since it contemplates the implementation of most of the actions that fall within the five priority strategic axes: 1) conservation and restoration; 2) reduction of pressures on biodiversity; 3) Environmental knowledge, awareness, and education; 4) sustainable use and management; and 5) integration and governance.

At the regional level, the project is consistent with the requirements of the Mesoamerican Biological Corridor (MBC) Master Plan 2020: Environmental and Spatial Management in the Mesoamerican Biological Corridor, adopted by the environment ministers of Mesoamerica, Colombia and the Dominican Republic, and incorporated into the Mesoamerican Environmental Sustainability Strategy (EMSA, for its acronym in Spanish) and the Environmental Plan of the Central American Region (PARCA, for its acronym in Spanish) 2010-2014. This plan is seen as a long-term development strategy in the MBC, aimed at achieving the convergence of productive processes and environmental protection in a spatial management initiative that allows the generating economic resources, the conservation of biodiversity and addressing climate change, through mechanisms that benefit the people who live in the region.

At the global level, the proposed project contributes to the successful implementation of several environmental, social and economic policies of the country that respond to international commitments signed by Panama. These initiatives include actions within the framework of the Sustainable Development Goals (MDGs), agreed upon by the Member States of the United Nations to be carried out between 2000 and 2016. The actions of the SDGs have given way to the 2030 Agenda for Sustainable Development, in particular, the 17 Sustainable Development Goals to be achieved in the next fifteen years. Above all, the Clean Water and Sanitation, Sustainable Cities and Communities, Responsible Production and Consumption, Climate Action, Underwater life, Life of Terrestrial Ecosystems and Alliances. Also, the project also contributes to the fulfilment of the Convention on

Biological Biodiversity (CBD), in particular, the five Strategic Objectives of the Aichi Targets for biological diversity and its 20 specific goals^[5].

The proposed project will contribute to advance the post-2020 global biodiversity framework to be adopted in 2020 by the Conference of the Parties of the Convention on Biological Diversity. From the zero draft of the post-2020 global biodiversity framework, it is foreseen that this project will contribute to the following 2030 action targets:

1. Retain and restore freshwater, marine and terrestrial ecosystems, increasing by at least [50%] the land and sea area under comprehensive spatial planning addressing land/sea use change, achieving by 2030 a net increase in area, connectivity and integrity and retaining existing intact areas and wilderness.
2. Protect sites of particular importance for biodiversity through protected areas and other effective area based conservation measures, by 2030 covering at least [60%] of such sites and at least [30%] of land and sea areas with at least [10%] under strict protection.
7. Enhance the sustainable use of wild species providing, by 2030, benefits, including enhanced nutrition, food security and livelihoods for at least [X million] people, especially for the most vulnerable, and reduce human wildlife conflict by [X%].
8. Conserve and enhance the sustainable use of biodiversity in agricultural and other managed ecosystems to support the productivity, sustainability, and resilience of such systems, reducing by 2030 related productivity gaps by at least [50%].
18. Promote education and the generation, sharing and use of knowledge relating to biodiversity, in the case of the traditional knowledge, innovations and practices of indigenous peoples and local communities with their free, prior and informed consent, ensuring by 2030 that all decision makers have access to reliable and up to date information for the effective management of biodiversity.
19. Promote the full and effective participation of indigenous peoples and local communities, and of women and girls as well as youth, in decision making related to the conservation and sustainable use of biodiversity, ensuring by 2030 equitable participation and rights over relevant resources.

The proposed project will also contribute to the Sustainable Development Goals for Environmental Sustainability and responds to the mandates and agreements of the United Nations Framework Convention on Climate Change and the Master Plan of the MBC 2020: Territorial Environmental Management in the Mesoamerican Biological Corridor.

^[1] Ministry of Economy and Finance. Strategic plan 1 July 2019 to 30 June 2024. Together we do it. Approved by Cabinet Resolution 149 of 30 December 2019, published on the Digital Official Gazette of Tuesday 31 December 2019.

^[2] <https://www.alianzaporelmillon.org/>

^[3] <http://www.oas.org/en/sedi/dsd/iwrm/Documentspot/Primer%20Plan%20Nacional%20de%20Seguridad%20Hidrica%20de%20la%20Republica%20de%20Panama.pdf>

^[4] <https://www.cbd.int/doc/world/pa/pa-nbsap-v2-es.pdf>

[5] <https://www.cbd.int/sp/targets/>

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.

1. The lessons learned will be communicated to the direct and indirect beneficiaries in diverse manners. The project expects to contribute to capacity building through: (i) technical workshops and events with target audiences to share the experiences generated by project implementation and create capacities of local stakeholders, (ii) design a communication strategy for the project to target different audiences and both men and women and indigenous people, (iii) work with academic partners of the project in generating knowledge useful for scientific advocacy, (iv) systematize the landscape and seascape management model used for PCAG for replication in other regions or countries. Output 1.1.5 envisions to produce knowledge outputs during the project by producing a knowledge management plan that will be implemented in a cross-cutting way through all project components and during the 3 years of implementation. A specific knowledge management plan, including the communication strategy, will be designed during the PPG phase.

As the project is based on a conceptual development derived from a GEF project called Improving Mangrove Conservation throughout the Eastern Tropical Pacific Marine Corridor (ETPS) through of the Development and Implementation of Coordinated Strategies Regional and National. From which the proposal arises: Design of strategic guidelines for the development of the Gualaca Altitudinal Biological Corridor.

All the experience accumulated in the process will be fundamental for the management of knowledge since a map of actors has been established, among which community organizations, academic centers, and public institutions stand out. Since it is intended to build on what has already been developed for the generation of new knowledge mainly oriented to the development of good productive practices that favor the conservation of existing biodiversity, such as the improvement of the environment. Mainly through didactic guides and field practices aimed at producers and direct beneficiaries of the project. Another source of experiences from which the project will draw is the knowledge products that have been generated from the implementation of the management plans of the protected areas located within the project. All this set of experiences will be used to improve the impact and increase the sustainability of the project.

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
Low			

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.

As the project restores habitat and only positive effects are envisaged for threatened species, this project is considered a Category C Project (low risk), for which no environmental and social assessment is required.

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 C project low risk.

The preliminary Environmental, Social and Climate assessment made by CAF's specialist's team the categorized the Project as 2C, "Low Environmental and Social Risk". However, the project activates CAF's safeguard S06 "Ethnic groups and Cultural diversity"; Therefore, CAF will make all the efforts in order to guarantee that the indigenous peoples approach integrates FPIC mechanisms, the basic principles of self-determination, and respect for indigenous knowledge, traditional cultures and practices that contribute to sustainable and equitable development.

During the PPG stage, it will be relevant to explore ways, through formal FPIC processes, for the different worldviews of indigenous peoples and rural communities, among other actors in the territory, to be taken into account, in order to maximize the local effectiveness of project activities, including its delivery of benefits to these actors.

Besides, from the climate risk's analysis's perspective, the project reduces the vulnerability of both ecosystems and population to the expected impacts of climate change and contributes to build adaptive capacities. The measures supported by the project would only turn from preventive to mitigative in an accelerated-change scenario, but its financial, environmental and social performance and production of GEB are unlikely to be affected except marginally by that change during the design period.

The specific climate risk analysis provides two main recommendations for the broader project. First, it reinforces the project's general approach of providing targeted care, in a positively discriminated manner, to the most vulnerable members of its beneficiary populations. All stakeholders involved in the project must have better opportunities to participate in project activities and enjoy its benefits.

^[1] <https://www.caf.com/media/3381440/manual-caf-gef-safeguardsfinal.pdf> See page 86.

Supporting Documents

Upload available ESS supporting documents.

Title	Submitted
ESCC Risk Preliminar Assessment PCAG	

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

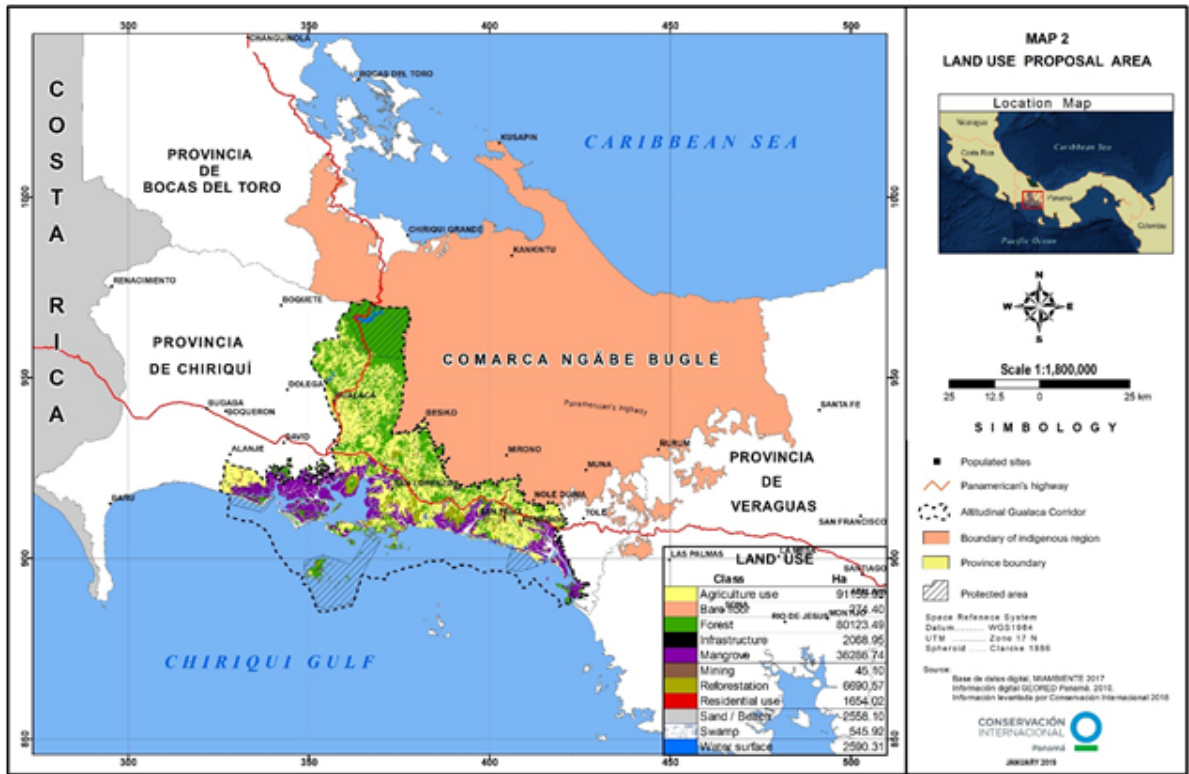
A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S): (Please attach the Operational Focal Point endorsement letter with this template).

Name	Position	Ministry	Date
Raul Pinedo	Operational Focal Point GEF - Panama	Environmental Ministry	3/14/2022

ANNEX A: Project Map and Geographic Coordinates

Please provide geo-referenced information and map where the project intervention takes place

Annex A. Program/project map and geographic coordinates



The project area is located between the UTM coordinates 919717,259 and 89300,425 north latitude and the UTM coordinates 365752,278 and 353878,13 of West longitude.