



Conservation of wildcats and prey species through public-private partnerships and human-jaguar conflict management in Panama

Part I: Project Information

Name of Parent Program

Global Wildlife Program

GEF ID

10285

Project Type

MSP

Type of Trust Fund

GET

CBIT/NGI

CBIT

NGI

Project Title

Conservation of wildcats and prey species through public-private partnerships and human-jaguar conflict management in Panama

Countries

Panama

Agency(ies)

UNEP

Other Executing Partner(s)

Ministry of Environment and Yaguar? Foundation

Executing Partner Type

CSO

GEF Focal Area

Biodiversity

Taxonomy

Focal Areas, Biodiversity, Protected Areas and Landscapes, Productive Landscapes, Influencing models, Strengthen institutional capacity and decision-making, Stakeholders, Local Communities, Gender Equality, Gender results areas, Participation and leadership, Capacity, Knowledge and Research, Knowledge Generation, Knowledge Exchange

Rio Markers

Climate Change Mitigation

Climate Change Mitigation 0

Climate Change Adaptation

Climate Change Adaptation 0

Submission Date

4/13/2021

Expected Implementation Start

6/1/2021

Expected Completion Date

6/1/2025

Duration

36In Months

Agency Fee(\$)

160,638.00

A. FOCAL/NON-FOCAL AREA ELEMENTS

Objectives/Programs	Focal Area Outcomes	Trust Fund	GEF Amount(\$)	Co-Fin Amount(\$)
BD-1-2a	Landscapes and marine habitat under improved management (excluding protected areas) Terrestrial habitat under improved conservation and sustainable use (million hectares)	GET	1,784,862.00	16,122,550.00
Total Project Cost(\$)			1,784,862.00	16,122,550.00

B. Project description summary

Project Objective

To strengthen jaguar conservation capacity and connectivity between core protected areas in the Chagres National Park-Darien National Park complex

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
--------------------------	-----------------------	--------------------------	-------------------------	-------------------	----------------------------------	-----------------------------------

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
1. [Demonstration of benefits to] Conserve jaguar and prey species through connectivity promotion and human-wildlife conflict management GWP Program Components: 1. Conserve wildlife and its habitats	Technical Assistance	<p>Outcome 1.1:</p> <p>Proof of concept of jaguar-centric connectivity between Darien and Chagres National Parks demonstrated through privately financed environmental offsetting programs and integrated landscape planning</p> <p><i>[Private sector incorporate restoration of wildlife corridors in mandatory reforestation and compensation plans and cattle ranchers adopt anti-predation and sustainable management measures outside the project intervention area].</i></p> <p>Outcome 1.2</p>	<p>Output 1.1.1:</p> <p>A plan to direct environmental offsetting investments on restoration to wildlife corridors in the Chagres-Darien National Parks complex in line with the Public-Private Alliance for One Million Hectares and the National REDD+ Strategy</p> <p>Output 1.1.2:</p> <p>3 Private Sector environmental offsetting projects integrate jaguar-centric restoration and wildlife connectivity in their design and implementation in sites located within (i) the Panama Centro ? Chagres complex; (ii) the Panama Este-Chepo complex; and (iii) the Rancho Frío ? Darien</p>	GET	1,122,602.00	8,706,177.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
2. Generate scientific knowledge, build national capacity and promote regional commitments on wildcat conservation GWP Program Component: 5. Coordinate and Enhance Learning	Technical Assistance	<p>Outcome 2:</p> <p>Improved information management system on jaguar and wildlife conservation</p> <p><i>GoP adopts a new institutional arrangement to manage scientific knowledge and develop institutional capacity for the conservation of the Jaguar in Panama and across borders.</i></p>	<p>Output 2.1:</p> <p>The ?Wildcats Conservation and Research Centre? is established as a ?go-to? knowledge resource for scientific data on wildcats</p> <p>Output 2.2</p> <p>Project results are captured and inform regional jaguar conservation goals through regional coordination</p>	GET	500,000.00	5,804,118.00
Sub Total (\$)					1,622,602.00	14,510,295.00
Project Management Cost (PMC)						
			GET	162,260.00	1,612,255.00	
			Sub Total(\$)	162,260.00	1,612,255.00	
			Total Project Cost(\$)	1,784,862.00	16,122,550.00	

C. 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	MIAMBIENTE	Grant	Investment mobilized	13,422,550.00
Recipient Country Government	MIAMBIENTE	In-kind	Recurrent expenditures	1,200,000.00
Recipient Country Government	SENACYT	In-kind	Recurrent expenditures	500,000.00
Private Sector	Cemex Panam?	Grant	Investment mobilized	100,000.00
Private Sector	AES Panam?	Grant	Investment mobilized	300,000.00
Other	Fundaci?n Ciudad del Saber	In-kind	Recurrent expenditures	200,000.00
Other	Fundaci?n Yaguar? Panam?	In-kind	Recurrent expenditures	400,000.00
Total Co-Financing(\$)				16,122,550.00

Describe how any "Investment Mobilized" was identified

Investment mobilized has been categorized as financing that does not include Project Management costs, operational costs, and recurrent expenditures. This will include investments in research and development, science communication activities and training facilities by SENACYT; investments by AES in environmental compensation and voluntary reforestation program in San Lorenzo Protected Forest and Protected Landscape ? McKenzie Battery, Lago Gatun Recreation Area, Quebrada Bonita Private Estate, and Isla Galeta Protected Landscape; and investments by CEMEX in the integration of conservation into daily operations and creating environmental conditions similar or better than those that existed before the life cycles of quarries began; reforestation of quarries, conservation of flora and fauna, ecosystems and community environmental entrepreneurship programs. Investments by the Ministry of Environment include strengthening the non-timber products of Tagua and Chunga in rural communities of Dari?n; strengthening the Alliance for the Million Hectares initiative; recovery of forest cover and community participation through the application of agroforestry systems; support for the conservation plan of the Chagres National Park and Darien National Park; conservation of the Natural and Cultural Heritage; modernization of the technical and equipment capacities of the regional institutions that implement plans and strategies to combat illegal logging and protect biodiversity; strengthening the management of

protected areas through the design, construction and rehabilitation of infrastructure; and contribution of technical and administrative follow-up and monitoring activities of the Directorate of Protected Areas and Biodiversity and Regional Directorates. Co-financing provided in-kind by Yaguara Panama Foundation includes recurrent expenditure in personnel and technical assistance, use of offices and facilities, wildlife monitoring equipment for jaguar and terrestrial mammals Census and management of human-wildlife conflicts (HWC), transport and 4x4 vehicles, science communication and training activities. Other in-kind co-financing provided the Ministry of Environment also include recurrent expenditures in human resources, transport, communications and physical facilities.

D. 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(\$)
UNEP	GET	Panama	Biodiversity	BD STAR Allocation	1,784,862	160,638
Total Grant Resources(\$)					1,784,862.00	160,638.00

E. Non Grant Instrument

NON-GRANT INSTRUMENT at CEO Endorsement

Includes Non grant instruments? **No**

Includes reflow to GEF? **No**

F. Project Preparation Grant (PPG)

PPG Required

PPG Amount (\$)

50,000

PPG Agency Fee (\$)

4,500

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

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)
0.00	33,000.00	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	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 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)
0.00	33,000.00	0.00	0.00

Name of the Protected Area	WDP A 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	WDA 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 Chagres National Park	12568912684	Select National Park		11,000.00			54.00		<input type="checkbox"/>
Akula National Park Darien National Park	1256892554	Select National Park		11,000.00			55.00		<input type="checkbox"/>
Akula National Park Nargana Wildlife Protected Area	125689107334	Select Wilderness Area		11,000.00			41.00		<input type="checkbox"/>

Indicator 3 Area of land restored

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
0.00	100.00	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)
	100.00		

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)
0.00	717.00	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)
	717.00		

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)
----------------------	----------------------------------	----------------------	---------------------

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

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

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

Title	Submitted
-------	-----------

Indicator 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		1,575		
Male		1,925		
Total	0	3500	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

Core Indicator targets are further defined as follows: 1. 100 ha to be restored via 3 environmental offsetting programs in the Panama Centro-Chagres (Chagres NP), Panama Este-Chepo, and Rancho Frío-Darien (Darién NP) complexes; 2. 717 ha represented by 6 cattle ranches subject to sustainable management inclusive of site-specific anti-predation methods to reduce HWC in the Panama Este-Chepo and Rancho Frío-Darién complexes; 3. 33,817 ha under improved management refer to the 33,000 ha to be subject to improved management through the incorporation of jaguar census data into management, 100 ha to be restored via environmental offsetting programs, and 717 ha subject to sustainable management inclusive of site-specific anti-predation methods to reduce HWC; 4. 1,575 females and 1,925 males to benefit directly refer to estimates of the local population in communities within the project's proposed intervention area associated with cattle ranching and HWC

Part II. Project Justification

1a. Project Description

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

Overview & Environmental Context

Panama is a biodiversity rich country located on the Central American Isthmus, with a territorial extension of 74,177.20 km² (7,491,653 ha), 2,988 km² of coastline, 66,405 km² of coastal waters, and 319,823.9 km² of territorial sea[1]¹. The political-administrative division consists of 10 provinces, 77 districts, 3 indigenous counties considered provinces (Guna Yala, Ember? and Ng?be Bugl?) and 2 counties considered townships (Guna of Madugandi and Guna of Wargandi)[2]². Panama's lowlands encompass most of the country, covering around 70% with heights below 700 meters. The region formed by hills, reaches altitudes ranging between 90 and 460 meters above sea level, while the remaining 30% of the territory is made up of highlands that exceed 1,500 m in elevation[3]³.

Panama's diverse topography and weather conditions (rainfall ranges from <1,300 to> 3,000 mm per year, with a sharply drier period of 3 to 4 months in most areas of the country) endow it with a significant diversity of types of forests and other ecosystems. Panama's continental forest cover (forests, wetlands) is estimated at 4,305,154 ha (77.5%) of the country's land area. Mature forests are found mainly in the Caribbean lowlands and in the Darien region. Seasonal or more frequent floods give rise to several distinctive forest types, including mixed flooded forest from the Bocas del Toro province in the northwest of the country, and Orey (*Camptosperma panamiensis*) and Cativo (*Prioria copaifera*) forests, in the Darien. According to the Panama's Forest Cover and Land Use 2012 approved through Resolution No. DM-0067-2017, forest wealth is manifested by a coverage that reaches around 45,260Km² (60.1%); mainly concentrated in the Caribbean slope, which covers 30% of the national territory, representing the largest forest cover that constitutes the priority area of ??the Mesoamerican Biological Corridor of the Panamanian Atlantic. However, it is estimated that 1,597,127.53 ha of forest do not belong to the National Protected Areas System (SINAP). Although these forests are legally patrimony of the State with protection regime within the framework of forest legislation that specifically contemplates other conservation measures.

The many natural ecosystems of Panama are represented in its National Protected Areas System (SINAP), which consists of 120 protected areas covering 31.8% of the terrestrial area and 13.5% of the

marine area of the country. SINAP provides valuable benefits to the country, by protecting the forests of the river basins that produce water for human consumption and industry, for the generation of hydroelectric energy and for the operation of the Panama Canal. They also protect production areas and reservoirs of marine species of commercial interest, contribute to climate regulation, soil production and fertility, nutrient storage and recycling and absorption, safeguard areas with potential for traditional tourist development; it is a source of industrial, pharmaceutical, food and agricultural products; and it performs other functions such as carbon fixation. The Chagres National Park-Darien National Park Complex of the SINAP will be the primary intervention areas of this proposed project.

Conforming one of the most crucial migratory routes in the Western Hemisphere, Panama has facilitated the migration of species from North to South America since its formation playing a critical role in the preservation and evolution of biodiversity, through the fundamental role of allowing the movement and gene flow of many species, and maintaining viable metapopulations of neotropical species such as the jaguar (*Panthera onca*), the white-lipped peccary (*Tayassu pecari*) and the Baird's tapir (*Tapirus bairdii*). These three species have important connotations because they are species shared with Costa Rica and Colombia, they are also species sensitive to changes in forest cover and to the pressure of humans (hunting and deforestation) and they share habitats with 5 other feline wild species and 11 key species that Panama has included in the monitoring programs to establish "multi-species" corridors[4]⁴.

Panama is part of the Mesoamerican Biological Corridor, the second most important of 25 hotspots in the world for species diversity and endemism. Panama has 8 of the 200 recognized ecoregions around the world, with 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 and with representative samples of the 12 life zones and a variety of ecosystems. Panama has the greatest biological wealth after Mexico, which is the second key site in Mesoamerica to preserve biological diversity. The country's species richness, as reported in the 5th National Report to the Convention on Biological Diversity, was estimated at 220 species of freshwater fish, 1,157 marine fish, 211 amphibians, 242 reptiles, 976 birds, 259 mammals, and 10,444 plant species[5]⁵. It is estimated that of the identified species, 1,300 species are endemic; Of these, 1,176 species correspond to plants, 15 amphibian species, 18 reptile species, 12 bird species, 17 mammal species, and 56 freshwater fish species[3].

A keystone species native to the forests of Panama is the Jaguar (*Panthera onca*). The jaguar is the largest feline in the Americas and the only representative of the genus *Panthera* (large felines) in the continent[6]⁶. The jaguar is listed as Endangered in national legislation (Resolution No. DM-0657-2016), as Near Threatened by IUCN, and included in CITES Appendix I; the tapir is catalogued locally as Critically Endangered and as Endangered by IUCN; and the white-lipped peccary is listed locally as Endangered and as Vulnerable by IUCN. The abundance of the jaguar's natural prey including the

armadillo, deer, wild boar, peccaries, paca, and tapir, has declined and this decline affects jaguars throughout their range⁴. The loss of forest cover associated with agriculture, infrastructure development, urbanization and the decrease of its natural prey make the jaguar vulnerable and expose it to greater direct and conflictual contact with human populations and activities, having lost 40% of its habitat in Panama⁵. It is possible that the decline in the jaguar's natural prey has led to the depredation of alternative prey such as livestock, with cattle and other livestock now an accessible prey for the jaguar^[7]⁷. Poor animal husbandry leaves livestock vulnerable to jaguar attacks, particularly among calves and cattle that graze on the edge of forests, frequently resulting in conflict between cattle ranchers and jaguars, and in many cases in the death of the jaguar^[6].

Socio-Economic Context

In 2010, Panama had a population of 3.4 million, of which 50.3% are men and 49.7% are women; 53.0% of the total population is under 30 years old², but the population has since been reported at 4.2 million in 2018^[8]⁸. Panama has been one of the fastest growing economies in Latin America over the past decade, with real GDP expanding an average of 8.4% between 2004 and 2013. The economy of Panama is centered on a highly developed services sector, which represents more than 75% of gross domestic product (GDP). The Panama Canal accounts for almost 10% of the country's GDP, however, other important components of the service economy are the Colon Free Trade Zone, which is the second largest free port in the world, and the Trans-Panama Pipeline, which allows for the transport of crude oil between the Pacific and Atlantic coasts. The license and registry of the Panama flag to merchant ships, logistics and storage, banking, and insurance are also key to the economy of Panama. The country also relies on cattle ranching and on cash crops mainly bananas, corn, coffee and sugar.

Panama has made significant progress in reducing poverty in recent years. Between 2015 and 2017, poverty fell from 15.4% to 4.1% while extreme poverty fell from 6.7% to 6.6%. Despite the progress in poverty reduction, sharp regional disparities remain, in which poverty prevails in rural areas. Access to basic services is not universal and remains linked to factors such as geographic location, education levels, ethnicity and income levels of households. There are 11 years less in life expectancy for Indigenous women and men living in their territories (67.75) versus the overall population (79); and the maternal mortality rate is five times higher in Indigenous women who live in their territories versus the national average for all women (462 vs. 80 per 100,000 births)^[9]⁹.

The socio-economic conditions in the project's general intervention area, the Chagres National Park-Darien National Park Complex, are consistent with conditions typical of rural areas in Panama. According to figures from the Labor Foundation, while in the urban area 14 out of every 100 people are

poor or indigent, in the rural area this number is more than triple, affecting 50 out of every 100 inhabitants. In indigenous areas, exclusion is explosive, affecting poverty for 87% of that population, where 33 out of every 100 Panamanian workers work in rural areas, most of them in agricultural activities that lag far behind from the point of view of productivity and income. The agency notes that 7 out of 10 workers in rural areas do not contribute to social security and that among self-employed workers this exclusion reaches 85% of that group.

With the exception of government-created jobs, of approximately 5,800 jobs, most jobs were generated by freelance or informal jobs. In 2016, the occupation grew by 37 thousand people, made up of the labor and business sector. However, the latest household survey by the Comptroller General of the Republic revealed that unemployment rate and the number of unemployed increased for the fourth consecutive year in Panama. In August 2016, unemployment levels in the country's non-indigenous population reached a total of 102,497 people, which caused the unemployment rate to rise to 5.8%. With this result, the unemployment levels of 2016 exceeded that of the years 2012, 2013, 2014 and 2015, extending the trend of increasing unemployment in the Panamanian labor market. The unemployment rate stood at 4.2% in 2012, at 4.3% in 2013, at 5.1% in 2014 and 5.3% in 2015. By age, young people aged 20 to 24 had the highest total unemployment rate, with respect to the rest of the other adults[10]¹⁰.

The six (6) farms specifically selected to benefit from project intervention are located in the Darien and Chepo regions. As for the Darien, the community is a livestock area with 14 families with farms and an approximate total of 85 people (47 men and 38 women), where currently some of the farms have problems with jaguar predation. The estimated population in the Agua Buena sector is 340 people. In Chepo, the District's population is 57,414 inhabitants in 2017, mainly under 19 years of age with 42.5% of the population (equivalent to 19,609 inhabitants), divided into 10,063 men and 9,546 women. Making the district a relatively young population with a majority of the male gender. However, for Chepo specifically the community is a livestock area with 12 families with farms and an approximate total of 35 people (20 men and 15 women), where currently some of the farms have problems with jaguar predation. The township of Ca?itas has 2,514 inhabitants[11]¹¹.

Notwithstanding the socio-economic situation described above, Panama's Balance of Payments is expected to deteriorate by 3.7 billion dollars as a result of COVID-19 shock given a fall in tourism, transit through the Panama Canal, and lower foreign direct investment[12]¹², which in turn may potentially impact existing social safety nets. Losses in Gross Domestic Product (GDP) at the end of May 2020 were estimated at 1.28 billion dollars and up to 6.7% of GDP at the end of June 2020, with substantial unemployment in key sectors including retailing, hospitality, administrative and support services, and manufacturing[13]¹³. Poverty is expected to increase in Panama as a result of the COVID-

19 outbreak, and the pandemic is exacerbating existing weaknesses in the social fabric of societies in Latin America and the Caribbean, including gender inequality and violence against women and girls[14]¹⁴

Policy/Legal Context

The highest instance of the environmental legal framework in Panama is the Political Constitution, which in its 7 Chapter establish the Ecologic Regime, which first article 118 indicates that *it is a fundamental duty of the State to guarantee that the population lives in a healthy environment free of contamination, where air, water and food satisfy the requirements of the adequate development of human life* .

Through the development of constitutional dispositions, Panama starts to establish environmental regulations since the middle 60's when the first laws for water (1966), forest (1966) and wildlife (1967) were approved. In that moment the enforcement was a competence of the Natural Resources Department at the Agricultural Ministry, this department evolve to the Renewable Natural Resources National Institute (INRENARE-Law No. 21 of 1986) who rules the environment in Panama until 1998, when the National Authority of Environment (ANAM -Law No.41 of 1998) was created and empowered for the management of all the country's environmental affairs.

Law 41 of 1998, General Environmental Law, more than only create the ANAM, it dictates provisions for the conservation and administration of the natural resources in the country, including the Protected Areas National System (SINAP), created since 1992 through resolution No. J.D. 022-92 and matters such as shared management and sustainable development. Title VI on Natural Resources, chapter II, on Protected Areas and Biodiversity, and specifically in article 66, establishes that *(?)Protected areas will be regulated by the National Environmental Authority and administration and service concessions may be awarded to municipalities, provincial governments, trusts, foundations and private companies, according to planned technical studies. The procedure will be regulated by regulation?*[15]¹⁵. The basic definitions of the General Environmental Law included in article 2, establishes that the concession of administration is a *contract by which the municipality, provincial government, board, foundation or private company is granted the powers to conduct management, conservation, protection and development activities of a protected area, autonomously*?. To endorse this general disposition, the shared management activity was subsequently regulated through Resolution AG 1103-2009.

In order to strengthen the legal environmental framework, in 2005 through Law No. 5 of 28-01-2005, the Crimes Against the Environment was added to the Criminal Code of Panama, giving criminal

support to administrative regulations such as the Wildlife Legislation created since 1995, by Law No.24.

Panama's basic environmental legislation for Environmental Impact Assessment (EIA) started after the commitments signed at Rio de Janeiro during the United Nations Conference on Environment and Development (1992), when the first evaluation commission was created by local legislation through Resolution JD 024-1992, after that the obligation to present an Environmental Impact Assessment (EIA) was included in the Forest Legislation (Law No.1 of 1994) and the Wildlife Legislation (Law No.24 of 1995), followed by the General Environmental Law included other regulations and descriptions for EIA (Articles 23 to 31). The first EIA specific regulation was the Executive Decree 59 of March 16, 2000; this decree was subsequently repealed by Executive Decree 209 (December 5, 2006) which was also repealed and replaced by the Executive Decree 123 of 2009 that still is in effect. These regulations establish the organizational and institutional requirements for an EIA and specify the types of analytical work that apply to different levels of investments.

In 2015, the Ministry of Environment (MIAMBIENTE) was established through Law 8 of 2015, which modified and made additions to the General Environmental Law (No. 41 of 1998), as the governing entity of the environment, with all the powers of the National Environment Authority and those powers of the Panama Aquatic Resources Authority related to protection of marine-coastal resources. This new law strengthens the Environmental Advisory Commissions as true channels for citizen participation in environmental management; elevates the Strategic Environmental Assessment to a legal rank, a management instrument that ensures that the State's policies, plans and programs are consistent with environmental conservation and the sustainable use of natural resources; and establishes better tools for the protection and valorization of protected areas, as well as for the control of compliance with environmental regulations.

Panama is a party to international agreements on biodiversity, climate change, desertification, endangered species (CITES), hazardous wastes, law of the sea, marine dumping, migratory species, nuclear testing, ozone layer protection, ship pollution, tropical timber, wetlands, whaling, and has signed, but not ratified the Marine Life Conservation Treaty. In addition, Panama is also a party to regional agreements on tropical tuna, protection and development of marine environment, biodiversity and woodlands protection and transboundary movement of hazardous wastes^[16]. The primary international conventions and agreements that stand out as far as the management of natural resources and the environment, and which form the basis for many national policies, are the Sustainable Development Goals (SDGs), Convention on Biological Diversity (CBD) for which five national reports have been submitted in the years 1998, 2003, 2008, 2010 and 2014; United Nations Framework Convention on Climate Change (UNFCCC) for which three national communications have been submitted in the years 2001, 2011 and 2017; and Convention for the Fight against Desertification and Drought (UNCCD), for which four national reports have been submitted in the years 2000, 2002, 2006 and 2012^[1].

Specific elements of the legal framework relevant for jaguar protection and thus the objectives of this project are numerous, but are either generalized or offer indirect protection to jaguars. From among

laws, decrees and administrative resolutions, the following are those that may be most relevant to the management and protection of jaguars in Panama[17]¹⁷:

1. Law No. 14 of October 27, 1977. "By which the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) is approved?."
2. Law No. 26 of December 10, 1993. "By which the Statutes of the International Union for the Conservation of Nature and Natural Resources are approved."
3. Law No. 2 of January 12, 1995 by which the Convention on Biological Diversity (CBD) is approved, made in Rio de Janeiro on June 5, 1992.
4. Law No. 24 of June 7, 1995, which establishes the Wildlife Legislation in the Republic of Panama and dictates other provisions.
5. Law No. 39, of November 24, 2005, which modifies and adds articles to Law 24 of 1995, on wildlife, specifically related to Sport Hunting Regulations.
6. Law No. 14 of 2007 and its modifications. Single Text of the Penal Code of the Republic of Panama, which includes modifications to Chapter XIII related with Environmental Crimes, previously introduced by Law No.5 of 2005.
7. Executive Decree No. 43 of July 7, 2004, which regulates Law No. 24 of June 7, 1995 about Wildlife Regulation and dictates other provisions.
8. Executive Decree No. 12 of February 23, 2018. "That declares the first Saturday of March National Day of Wild Cats."
9. Resolution No. AG-0149-2014. From February 27, 2014. By which it is prohibited to enter the Territory of the Republic of Panama, Wild Animals of any species or origin that are part of fixed and itinerant Circuses, Shows, Exhibitions, Entertainment, Interaction with spectators and the like and they dictate other provisions.
10. Resolution No. DM-0657-2016, of December 16, 2016. "By which the Process for the preparation and periodic review of the list of threatened Fauna and Flora Species of Panama is established and other provisions are issued."

Panama's policy framework provides a strong foundation to prioritize jaguar conservation whilst building on commitments to reverse forest cover loss. The challenge lies in implementing commitments in an integrated way. Panama has prioritized jaguars as key biodiversity species to be conserved as denoted in the Action Plan for Jaguar Conservation (2011). Besides, the Forest Policy and related financial incentive mechanisms and the National Biodiversity Action Plan (NBSAP/2000) provide strong foundations for wildcats conservation. The country has also designed a National REDD+ Strategy (ENREDD+), which is directly connected to its commitment to restoring 13% of its national forest cover through the public-private pact "Alliance for 1 Million Hectares" and its UN Framework Convention on Climate Change (UNFCCC) Nationally Determined Contribution (NDC).

Panama's legal framework establishes that public and private investments in the infrastructure, energy and other sectors that lead to environmental degradation compensate (offset) the environmental damage caused (Executive Decree 123 of 2009, General Environmental Law, Forestry Law and Wildlife Law). Environmental compensation can take place anywhere in the country irrespective of the location of the investment at stake **through the approval of the Ministry of Environment**. Restoration of degraded areas is an accepted modality of environmental compensation in Panama. The legal framework requires that every public or private investment presents an Environmental Impact Assessment, including **an environmental compensation plan**. The latter can encompass compensation for forest clearance authorized by the Ministry of Environment. It follows that Reforestation and Compensation Plans are often part of these Environmental Impact Assessments and they include information on the location and size (hectares) of sites to be restored. It is mandatory that these restoration efforts abide to technical criteria and priorities established by the Ministry of Environment and comply with the national regulatory framework. The Ministry of Environment has therefore discretion over restoration efforts under environmental compensation schemes. **In addition, there are the voluntary reforestation programs** such as those that are part of the Alliance for a Million hectares / REDD +, which companies have to carry out in areas authorized by the Ministry of the Environment through Cooperation Agreements.

Institutional Context

Defined by the legal framework above, the primary institutional structure for the management and protection of jaguars in Panama is **the Ministry of Environment**. This Ministry also is the Office of the GEF Operational Focal Point and the National Designated Authority of the Green Climate Fund, and leads all coordination efforts for GEF funded projects with the other relevant focal points at the national level in project-relevant topics. The Ministry is arranged to deliver its mandate through ten operational directorates: Environmental Policy; Protected Areas and Biodiversity; Climate Change; Coasts and Seas; Environmental Culture; Environmental Impact Assessment; Forestry; Environmental Information; Water Security; and Verification of Environmental Performance. To complement the national institutional framework, there are fourteen (14) regional environmental directorates and protected areas management authorities through-out the country. At the level of environmental policy, there is an Environmental Advisory Commission and an Inter-institutional Environmental System. While municipal governments may possess Environmental Management Units, these are not legally mandated or equipped to deal with jaguar management issues.

There are several other government institutions that will be key partners in the implementation of this project, either as sources of technical support, data sources or in possession of complementary legal mandates that are necessary for the smooth implementation of the project. These include the National Secretariat for Science, Technology and Innovation (SNACYT), the Panama Canal Authority (ACP), the Ministry of Public Works (MOP), the Ministry of Agriculture, the Institute of Insurance for Agriculture, the Panamanian Tourism Authority (ATP), the Ministry of Education, Public Ministry, National Border Police (SENAFRONT), National Police and Environmental, Rural and Tourist Police (formerly known as the Ecological Police), and the City of Knowledge (CDS).

Panama's environmental NGO and Civil Society (CSO) community is active in environmental education, public awareness, and research, and private industry participation and commitment to

integrating environmental issues into its business activities is becoming more visible. The role of NGOs and CSOs has been instrumental in complementing the government's efforts in addressing environment and biodiversity management. Institutions such as the Smithsonian Institution Tropical Research Institute (STRI) has been a long-standing resource for technical and scientific information used to inform management. Other organizations (Howard Hughes Medical Institute ? HHMI, The Nature Conservancy ? TNC, Natura Foundation, Adopta Panama Rainforest, Nature 507 Foundation, Guyra Paraguay, Pronatura of Mexico and the Alliance for the Conservation of the Jaguar in Latin America) and Universities (University of Panama, Autonomous University of Chiriqui ? UNACHI, Institute of Ecology of the National Autonomous University of Mexico - UNAM, University of Costa Rica - UCR and National University of Costa Rica ? UNA, Major University of San Andr?s Bolivia and North Carolina University) have also provided inputs in ecosystems and country and regional planning, management planning and training in environment, protected areas and biodiversity related disciplines in each of the countries where they work, since long-term conservation will depend on strengthening in each country by each organization/government and together a better connection between countries and therefore their forests. Some local NGOs and CSOs have also been key players in the evolving institutional framework for environmental management in Panama. These include the National Association for the Conservation of Nature (ANCON) with many years leading public education and awareness efforts in support of conservation and sustainable development; Yaguara Panama Foundation which has led and continue to lead years of monitoring and research on the Jaguar population, distribution and abundance in Panama but also education at different levels, in coordination with The Ministry of Environment of Panama and different research and local organization in different countries of Central America. The City of Knowledge Foundation, the Pan-American Conservation Association, Foundation for the Pro-Conservation of Primates of Panama, and the Organization of Indigenous Women for Biodiversity Conservation are all key players in the institutional framework in support of environmental and biodiversity management.

Although there are national and regional institutional frameworks for addressing environmental problems, the ability to effectively implement and enforce environmental laws may be limited by the lack of fiscal and human resources. The challenges faced in enforcement at the national level include the need to strengthen enforcement and compliance mechanisms and national institutions[18]¹⁸.

Project Sites

The Chagres National Park (PNCH)?Darien National Park Complex is the broader geographical zone where GEF financed interventions will take place. This geographical target has been strategically selected to encompass the area between Panama Centro, the narrowest zone of the Central American isthmus with critical biodiversity habitats and where the jaguar is under the greatest threat, and the Darien National Park, home to the largest population of jaguars in the country. In terms of specific project intervention sites within the broader project area, jaguar census will be conducted in i) Chagres National Park, (ii) Darien National Park, and (ii) Nargana Wildlife Protected Area; 3 environmental offsetting programs will be pursued aimed at restoring 100 ha in the Panam? Centro?Chagres (Chagres NP), Panama Este-Chepo, and Rancho Fr?o?Darien (Dari'n NP) complexes; and jaguar-centric management plans will be implemented in 6 cattle ranches covering 717 ha in the Panama Este-Chepo

and Rancho Frío Darién complexes. General descriptions of the Chagres National Park (PNCH) and the Darien National Park (DNP) are provided below as a representative description of the overall project area. A map of the project area is provided in Annex J.

The PNCH is located in the narrow central region of the Isthmus of Panama, between the provinces of Panama and Colon, forming part of the districts of Panama, Chepo, Colon, Portobelo, and Santa Isabel. The Chagres river constitutes its main axis of historical and socioeconomic interest, moving from east to west, and corresponding to the water catchment area of Lake Alajuela. This protected area has an extension of 125,491 hectares and covers about 29.3% of the Panama Canal-Eastern Region Hydrographic Basin area, of which some 99,694 hectares are part, in turn, of the Chagres River Hydrographic Basin. Additionally, it maintains 38.4% of the total surface of the protected areas located in the Panama Canal Basin-Eastern Region. In the PNCH, four life zones have been identified that correspond to: the tropical humid forest, the very humid premontane forest, the very humid tropical forest and the premontane rain forest. The PNCH has a high floristic diversity with nearly 900 plant species, of which 143 are endemic, which corresponds to 12% of the endemic species for Panama. It has been estimated that the PNCH is home to 114 mammal species, 396 bird species or 42% of the country's bird species, 95 reptiles including 3 endemic species of reptiles (*Anolis lionotus*, *Rhadinaea sargenti* and *Micrurus stewarti*), which are found mainly in the mountains^[19].

The Darien National Park is the largest in Panama and the second largest protected tropical forest in Central America. The DNP was created in 1980 for its extraordinary biological diversity and high genetic value, in addition to the cultural wealth of the groups that guard and practice ancestral traditions; it was declared in 1981 as a World Heritage Site by UNESCO, and later, in 1983 as a Biosphere Reserve for Humanity. The Darien NP is a protected area of great importance for the conservation of the country's and the world's biodiversity, it is part of the Choco-Darien ecoregion shared with Colombia and classified by the Missouri Botanical Garden^[20] and World Wildlife Fund (WWF) among the highest priority ecoregions for conservation due to its high levels of endemism and biodiversity of global importance. The Darien region is the most extended, remote and unpopulated. Totalling 1,667,100 ha the Darien borders with Colombia on the East and with the Emberá-Wounaan and Guna Yala indigenous reserves to the West.

The Darien's high levels of biodiversity include 2,638 species of plants (27.7% of all registered for the country); 166 species of mammals (78% of the total for the country); 670 species of birds (69% of those registered in the country); 78 species of amphibians and 127 species of reptiles (the later corresponding to 60.4% of registered species in Panama). With respect to freshwater fauna, 72 species of fish have been recorded in the Darien, including 168 saltwater and brackish water fish, as well as 15 commercial species of bivalves and eight commercial species of gastropods (Plan de Conservación de Sitio, Darién, The Nature Conservancy). The Evaluation of the Conservation Status of the Terrestrial Ecoregions of Latin America and the Caribbean, carried out by Dinerstein, et al., 1995 for the World Bank, highlighted the outstanding biological distinction at the Global Level and the vulnerability of the

conservation status of the ecoregion of the humid forests of Chocó/Darién, which make it an Ecoregion of the Highest Global Priority for Conservation?

The Nargana Wildlife Protected Area is a wildlife reserve of species-rich primary forest containing biodiversity of global importance, with over 70% of the area containing primary and secondary forests. Scientific and traditional recognition made in the area indicates a wide diversity and abundance in wild flora and fauna, both from the jungle and the sea, including unknown, unique, migratory and endangered species. Four life zones have been described for the area: Very Humid Tropical Forest, which is the predominant; Premontane Rain Forest; Premontane Very Humid Forest; and Tropical Humid Forest, the latter being located towards the coastal plains. Four new flora genera have been reported in the area: *Reldia* (Gesneriaceae), *Sanblasia* (Marantaceae), *Plowmania* (Commelinaceae), and *Sapi garda* (Simarubaceae)[21]²¹. The existence of 58 species of mammals has been reported, excluding marine and flying species. Among the most interesting are: *Trichechus manatus*, *Ateles geoffroyi*, *Tapirus bairdii*, among others. In addition, 440 species of avifauna populate this region, not including numbers of migratory birds such as *Actitis macularia*, *Wilsonia canadensis*, *Hirundo rustica*. More than 30 species of reptiles and amphibians have been reported, some 46 species of freshwater fish, among them the *Rivulus chucunaque* (Rivulida), *Brachyrhaphys episcopi* (poecilida), and *Agnostomus* (Mugilido). There are numerous marine species of fish, octopus, mollusks, crustaceans (lobsters, crabs, pink shrimp), and four species of sea turtles. Another partial study reports a list of insects such as arachnids, butterflies and aquatic species such as Odonata and Trichoptera[22]²².

Project sites also include six (6) cattle ranches located in Comunidad Agua Buena (Darién Province) and Comunidad de Buenos Aires (Panama Province). Cattle ranches will be participating in project interventions geared towards the implementation of jaguar-centric farm management plans, and were selected based on the application of the criteria below:

- ? Presence of the Jaguar on the farm
 - ? Number of incidents of attacks or predation of the Jaguar
 - ? Number of animals killed by predation
 - ? Proximity to forest patches
 - ? Number of existing animals on the farm
 - ? Investment potential, project and producer (money and labor)
 - ? Interest and availability to implement mitigation measures
-

These farms are generally characterized by a mixture of broken primary and secondary forests, with forest coverage ranging from 10% to 55% and from 71 ha to 185 ha in size. Species inventories have revealed up to 15 mammal species plus other species of birds and reptiles, coexisting with farmed animals: cattle, goat and horses. The most common wild species observed on the six farms include the jaguar, puma (*Puma concolor*), ocelot (*Leopardus pardalis*), margay (*Leopardus wiedii*), jaguarundi (*Puma yagouaroundi*), crab eating fox (*Cerdocyon thous*), raccoon (*Procyon lotor/cancrivorus*), coati (*Nasua narica*), tayra (*Eira barbara*) and white lipped peccary (*Pecari tajacu*), wild turkey (*Crax rubra*), paca (*Cuniculus paca*), rabbit (*Sylvilagus gabbi*), coyote (*Canis latrans*), capybara (*Hydrochoerus isthmius*), and caiman (*Caiman crocodilus*). It is important to point out that all species of ungulates such as peccaries are important prey for the diet of jaguars and pumas. The farms have good diversity of species that are prey to big cats such as peccaries, illustrating that the farms serve as forest corridors that connect to areas of large forests.

Summary location, size and jaguar predation details of the six (6) cattle ranches to benefit from project interventions in the Panama Este-Chepo and Rancho Frío-Darien complexes are presented in Table 1.

Table 1. Location and Summary Details of Six Target Cattle Ranches

Location of the Ranch	Area (ha)	Province	Coordinates		Cases of Predation by Jaguar
Comunidad Agua Buena (Chucunaque-Punuloso)	102	Darien	08.62508	077.95314	Unconfirmed
Comunidad Agua Buena (Chucunaque-Punuloso)	71	Darien	08.62666	077.94246	2
Comunidad Agua Buena (Chucunaque-Punuloso)	164	Darien	08.64768	077.93700	83

Comunidad de Buenos Aires (Upper part of the Bayano river, Sector R?o Playita, between the Chulugant? river and the Playita river)	95	Panama	09.25977	078.76911	6
Comunidad de Buenos Aires (Upper part of the Bayano river, Sector Viejo Pedro, between the Chulugant? river and the Playita river)	185	Panama	09.26536	078.75414	12
Comunidad de Buenos Aires (Upper part of the Bayano river, in the old Pedro sector, passing the Playita river)	100	Panama	09.26837	078.76389	2
TOTAL (Ha)	717				

Threats / Root Causes

Systemic challenges contributing to the vulnerability of jaguars are primarily associated with the following threats:

Ecosystem degradation and forest fragmentation: Panama's human population of 4.2 million is growing at an annual rate of 1.3% and is concentrated in the Center and adjacent Protected Areas (PAs). Agriculture, extensive livestock farming, human settlement and infrastructure development are major drivers of forest change. Panama has 60% forest cover and the rate of deforestation has decreased over time, currently at 15,681 ha/year. However, in the central region of Panama, population growth and agricultural expansion continue to spread in forested areas and PA buffer zones, attributed to a displacement from established or traditional cattle rearing and agricultural areas, towards new forested areas as resources (water, soil, pastures) have become progressively depleted from overuse and exploitation in these traditional production regions. Jaguars have lost 39.6% of their natural habitat in their distribution range in Panama and in the remaining habitat deforestation and degradation of forest resources continue to advance, mainly in the provinces of Panama (especially in the eastern part of the province, Chepo District), Colón and Darién, mainly outside protected areas and indigenous regions. This part of the country has become the most deforested area and mainly affecting mature forests with "mosaic" type deforestation patterns, with forest loss in a fragmented way and without evidence of a consolidated front (north arch from the Guna Yala and up to Bocas del Toro); and with deforestation added and centralized in more or less consolidated blocks (Darién and the eastern part of the province of Panama).

The conversion of natural habitat for agriculture and specifically cattle ranching, as in the case of the Darien, constitutes one of the major threats to biodiversity. The conversion of forest lands (mature, secondary, mature forest, mangrove and forest plantation) to other uses (grazing pastures, stubble, agricultural lands, and annual crops represented 13,267 ha/year for the period 2006-2015, being 2009 the year of greater conversion. The expansion of traditional livestock production has been the unintentional result of past policies to improve access to food, respond to rising demand and promote economic development in a resource rich albeit economically depressed area. Unfortunately, agricultural growth has transpired without the considerations for production in highly diverse and fragile ecosystems (tropical forest-soils) thereby quickly becoming degrading and unsustainable. Vital ecosystem services such as carbon sequestration, soil preservation, flood and temperature regulation, and the conservation of biological diversity along with its attendant benefits have all been negatively and progressively affected. Annual habitat conversion rates in the Darien (or percentage of intact habitat degraded each year) between 2006 and 2012 stand at 1.53%^[23].

Ecosystem degradation and forest fragmentation in Panama is driving biodiversity loss and landscape change and threatening traditional livelihoods and cultures. Under this current situation, wild animals live in forest "islands," surrounded by cattle ranches, fields of crops, roads and other human developments that jeopardize their ability to move from one place and, correspondingly, from one group to another. Habitat fragmentation prevents wild animal movement and gene flow between

populations, which can be detrimental to their long-term survival[24]²⁴. Deforestation outside PAs in Panama, Col?n and Dari?n provinces suggests that North and South America are no longer connected in an effective way for some wild species and ultimately endangers the biogeographical connection between the Americas for some terrestrial mammals. This continuous encroachment of farming and ranching activities on wildlife habitats substantially increases the occurrence of human-wildlife conflicts (HWC).

Human-wildlife conflict, retaliatory killing of jaguars and poaching: Retaliatory killing of large carnivores in response to their attacks on cattle is recognized as one of the most important factors causing worldwide declines of large carnivores. The jaguar is protected by national legislation in Panama. It is illegal to damage, traffic, trade, capture, illegally possess and hunt. However, a major issue is retaliation for predation of domestic animals, mainly cattle and smaller animals. Livestock activity, managed under traditional systems, statistically maintains high levels (more than 10%) of annual animal losses caused by various diseases that can be mostly prevented, or by other causes (such as snake bites, loss due to vultures, plant toxicity, accidents at work and abortive cases), these figures are even higher than those of feline predation (jaguar and puma)[11]. Nevertheless, 96% of the 339 jaguar deaths reported by Yaguara Panama Foundation since 1989 were due to killing by humans after livestock death, with an average of 20-44 jaguar deaths per annum. Furthermore, studies suggest that the extent and degree of conflict, and thus the possible eventual death of a jaguar, is determined by the socio-cultural relationships that exist between jaguar and different groups of people[25]²⁵, especially relationships of dependence for food, beliefs driven by lack of understanding of jaguars, their behaviour and their role in ecosystem health, or other cultural beliefs which may ultimately place the jaguar in the category of either friend or foe.

Inadequate practices in the predominant traditional livestock production systems have generated alterations in the ecosystem and caused an ecological imbalance, increasing vulnerability levels due to poor production practices and low production yields. Currently the livestock activity developed lacks planning and good management practices where traditional extensive type systems prevail, with minimal investments in improvements and appropriate conditions for the proper use and exploitation of resources, and often developed in soils that present limitations of use for the development of productive activities. Furthermore, the vast majority of producers in Panama who have direct conflicts with the jaguar and the puma have their farms in or near protected areas and forested areas, which causes the conflict to increase. As a result, the jaguar is killed by ranchers and peasants who have suffered the economic loss of domestic animals. At other times, the jaguar is killed for the simple fact of receiving information about its presence in the area, without having preyed on any domestic animal, but killed as a "preventive measure" against the problem of predation. The management of cattle ranching must be improved to reduce cattle mortality from causes other than jaguar predation, but must also be adjusted to better manage the impact of socio-cultural relationships between ranch owners and jaguars.

Jaguar/livestock conflict may enable trade: Retaliatory jaguar killing may create informal local markets for jaguar parts that can set the stage for emergence of formal international markets, incentivizing increased retaliatory killings and targeted jaguar poaching, as evidenced by jaguars killed in the Guianas in 2010 presumably to satisfy Asian demand of parts for jewellery, meat, and medicinal purposes, and in Bolivia in 2014 where more than 750 canine teeth destined for China were intercepted, indicating a potential bold market for jaguar parts[26]²⁶. This trend is already observed in neighbouring Venezuela, in which studies revealed that commercial hunting appeared as the most common reason of human-caused jaguar mortality (52%) while retaliatory killing was less common (38%), with the commercial killing driven by demands for jaguar skins, canines, skulls, meat, fat, and cubs[27]²⁷. While one driver behind jaguar killings is clearly retaliation due to predation of domestic livestock, it also is clear that a serious threat exists for this to become a perverse incentive to hunt jaguars for their parts, thus leading to active poaching. It is critical to reduce interactions between jaguars and livestock and by so doing eliminate all incentives for the killing of jaguars[10]

Long-term Solution and Barriers

Jaguars have a wide distribution, require extensive areas to survive and inhabit a wide variety of ecosystems. Being an umbrella species, its protection implies the protection of its habitat and all the species that live with it. Furthermore, it is a crucial component for the maintenance of ecological conditions as it is at the top of the food chain, being an indicator of habitat quality due to its sensitivity in disturbed landscapes and to hunting pressures and habitat changes that affect their prey. Additionally, the jaguar is a keystone species in efforts to demonstrate connectivity and gene flow between Central and South America, with Panama being the only terrestrial connection between the Northern Hemisphere and the Southern Hemisphere.

Efforts to address jaguar management and conservation must seek to reduce habitat loss, degradation and fragmentation, enable jaguar prey base recovery, and reduce retaliatory killings that can eventually serve as an incentive to poaching. To achieve this, the long-term solution and systems transformation proposed under this GEF Project involves promoting wildlife corridors; mainstreaming biodiversity conservation in environmental offsetting efforts; mainstreaming anti-predation measures in livestock management to reduce human wildlife conflict (HWC); and robust jaguar-centric monitoring and data systems that contribute to region-wide conservation targets. Before the desired transformations can be achieved, the following barriers must be addressed.

Barrier 1 - Lack of Integrated Jaguar-Centric Landscape and PA Management Plans. While numerous planning tools exist across Panama for the management of land, land use, natural resources and

biodiversity, there are no integrated plans at the landscape or corridor level, such as the Chagres National Park-Darien National Park Complex, which contains management considerations specific to the well-being of jaguars. The management plans of protected areas speak generally to the protection of biodiversity and wildlife, but are insensitive to the specific needs of these cats as it relates to the extension of forest and land they need for their distribution, movement and survival or to the densities of prey species required to meet feeding requirements, and thus reduce the need to prey on domestic animals. Landscape level plans will give due consideration to the geographic range, habitats, forest protection, prey species composition, water sources, and other landscape level needs to ensure jaguar survival, and more importantly, ensure connectivity at the corridor level and movement of the gene pool across the continents. Better jaguar census data is required to allow for revision and update of protected areas management plans and other planning tools to ensure jaguar-centric considerations are included; this will help to strengthen existing jaguar baseline data, will provide reliable and systematic data on jaguar population dynamics and distribution, and will strengthen institutional capacity for the monitoring of jaguars. Deforested and degraded areas as a consequence of public and private sector investments within the jaguar landscape must be reforested to restore connectivity and the ecosystem functions forest perform in the life cycle of jaguars and the other species.

Barrier 2 - Management of Cattle Ranches Lack Considerations for Interactions with Jaguars. It has been established above that livestock activity, managed under traditional systems, statistically maintains high levels (more than 10%) of annual animal losses caused by various diseases that can be mostly prevented, or by other causes (such as snake bites, loss due to vulture, plant toxicity, accidents at work and abortive cases), these figures are even higher than those of feline predation (jaguar and puma). In an effort to reduce the impact of predation and thus the probability of conflict between ranchers and jaguars, cattle ranches must adopt management measures aimed at minimizing livestock predation losses and increase revenues for ranchers, while simultaneously controlling poaching and illegal trade of wildlife species. In overall enhancement of ranch management, ranchers and their employees must understand that it is useful to adopt a strategy of 'mutual co-existence' with jaguars, since predation may always be present as a part of natural ecosystem function.

In this regard, enhanced management must include education and management programs for local ranchers, education related to conservation of the jaguar and their prey, implementation of strategies that reduce predation episodes (by reducing the vulnerability of cattle), protect populations of wildlife prey species from poaching, and reintroduction of prey species when necessary. Specific jaguar-centric strategies to be considered for enhanced management of cattle ranches include[28]²⁸: use of night enclosures and corrals; enhance the spatial distribution of cattle, natural prey and felines through thoughtful location of water sources; fencing of forested areas; use of breeding seasons; design and location of calving paddocks; use of experienced animals, donkeys and bells; change of livestock operations; strategic herd movements; timely discard of carcasses; use of cattle breeds with defensive disposition; efficient cattle health programs; use of the Wagon Wheel paddock system; physical and chemical repellents; shade management; diversified food source; and use of electric fences. To offset the financial losses from jaguar predation, farm management may also consider making plaster molds of the jaguar tracks to be sold to nationals and foreigners.

Barrier 3 ? Strengthen the Knowledge Base and National Capacity for Jaguar Management and Conservation. Since 2003 Panama is generating important scientific information on the jaguar and

mammals throughout the country, but it is necessary to expand and collect new information. The areas covered by this Project are important to reconnect corridors, institute better management over time (new information) and increase the geographical coverage of study area on jaguars and prey species. Achieving this project's objectives would lead to more efficient conservation management in Panama and improved conservation of the jaguar and its environment, which would be an important contribution for the country and the region. The transboundary and inter-continental distribution of jaguars demands close coordination and collaboration between regulatory agencies, NGOs, CBOs and academia across borders to obtain unified data on jaguars, allowing for proper management interventions at a large landscape level. At the national level, capacity for data collection, analysis, interpretation and monitoring must be established among all institutions directly involved in jaguar monitoring, regulation enforcement, and wildcats rehabilitation and reintroduction. The sustainability of jaguar data collection, monitoring and **management will be determined by the level of institutionalization that can be established**, consistent with the importance of keeping the species alive and thriving to fulfil its role as an inter-continental keystone species. This institutionalization will require an organization that can lead and oversee coordination among regulatory agencies, NGOs, CBOs, and academia, in Panama and across borders, to obtain unified data on jaguars and provide guidance for intervention at a large landscape level, ultimately leading to strengthened enforcement and compliance mechanisms and national institutions. Complementary to this institutionalization process, is the need for a formally structured Knowledge Management Strategy that guarantees the timely systematization and dissemination of all information on jaguars both nationally and internationally (especially with the nationally based organizations of each country, amongst which collaboration would be necessary in the medium and long term).

2) The baseline scenario or any associated baseline projects

A number of projects and initiatives both current and recently concluded in Panama, bear testament to the baseline investments that are relevant to this proposed project. These include those funded by the Government of Panama as well as those funded by international donors such as the Global Environment Facility, and from multilateral banks such as the Inter-American Development Bank and the World Bank.

Baseline Scenario and Government Baseline Spending

*Alliance for one million reforested hectares in line with the REDD+ Strategy of Panama: **this public-private pact led by the Ministry of Environment** aims to recover 13% of forest cover restore 1 million ha in 2015-2030. It includes the new "Reforesta Panama Fund" with USD 15 million per year in grants from the General State Budget for forest restoration and conservation projects. In addition, the Government of Panama has allocated USD 23.5 million for reforestation projects, community agroforestry development and adaptation to climate change during 2015-2018.*

Water, Protected Areas and Wildlife Trust: finances local public-private investment initiatives and is expected to provide USD 20 million per year for initiatives during 2018-2030 from the General State Budget.

Environmental Economic Incentives Program in the Panama Canal Watershed: An approximate of US \$16 million (2009-2020) initiative executed by the Panama Canal Authority with the Ministries of Environment and Agricultural Development that promotes water conservation, reforestation, agroforestry and silvopastoral activities in over 20,000 ha, including PAs. Currently, The Panama Canal Authority has included in its 2020-2021 budget, pending to be duly approved, an estimate of US\$ 2,000,000.00 to continue the development of program activities.

Program to finance and support conservation-oriented livestock production in the Dari?n: led by the Ministry of Agriculture with financing of USD 12 million (2017-2022), the program conditions credit and loans to the presentation of sustainable cattle ranch management plans inclusive of conservation measures.

Total government baseline spending relevant for this project has been US\$86,500,000.

Donor-Funded Baseline

Production Systems and Biodiversity Conservation Project in the CBM-Panama (CBM-Panama) of the Ministry of the Environment with a budget of US \$28.97 million, financed by the Global Environment Facility (GEF), the Government of Panama, contributions from project beneficiaries and other sources of financing (2016-2019). This project sought to complement and consolidate the results achieved by the two previous phases of the Mesoamerican Biological Corridor of the Panamanian Atlantic (CBMAP) project. The project's objective is to conserve biodiversity and improve management effectiveness in 12 protected areas (PAs) that represent 22.9% (617,018 ha) of the country's protected areas and their buffer zones. Sub-projects for the conservation of the jaguar were carried out with the technical assistance of the Yaguar? Foundation within the framework of the Technical Cooperation Agreement that it maintains with the Ministry of Environment (MIAMBIENTE). These included: (i) Project ?Strengthening MIAMBIENTE's capacities in support of the Jaguar Conservation Plan in the Mesoamerican Corridor? that was implemented simultaneously in 5 protected areas (Soberan?a NP, Portobelo NP, Santa Fe NP, Bosque Protector de Arraijan / Peninsula Gigante (Natural Monument of Barro Colorado), and Nusagandi in Guna Yala), and included monitoring with camera traps and telemetry to model movements in the fragmented landscape and improve the design of biological corridors; and (ii) Project "Program for the preventive management of livestock-jaguar conflicts in 5 selected areas" executed in 5 provinces (Dari?n, East Panama, Col?n, Veraguas and Bocas del Toro) where the highest number of cases of jaguar-conflicts is registered, focusing on reducing livestock losses due to predation of big cats in vulnerable areas by improving production systems through the application of anti-predation measures and technical assistance

for the preparation of Management Plans in 15 farms. The resulting experiences were considered by the Agricultural Insurance Institute in its 2019 Agricultural Insurance Manual.

Mainstreaming Biodiversity Conservation through Low-Impact Ecotourism in SINAP (ECOTUR-AP II) with GEF-6 financing of US\$ 6,753,427.00 (2017-2019), following on from the previous *Mainstreaming biodiversity conservation through low-impact ecotourism in the SINAP* with a budget of \$14 million from the GEF-4 and implemented by the Inter-American Development Bank. In this Project, the activities around the conservation of the jaguar have been defined as a powerful attraction in a specialized segment of tourism that would allow the generation of jobs and income to support the continuity of the community initiatives of the Portobelo National Park, Chagres National Park and Darién National Park. Within this framework, the Project "Ecotourism as a tool for the conservation and scientific and participatory monitoring of the Jaguar in the National Parks: Chagres, Portobelo and Darién" was carried out, with the aim of contributing to improve actions for the conservation of the jaguar around a project that links tourism with scientific research as a more comprehensive conservation scheme as economic alternatives for the benefit of local communities.

Special fund for the conservation of the jaguar at the community level - USD. 200,000.00 (2019-2021): executed through the GEF/UNDP Small Grants Programme (GEF/UNDP SGP). Aimed at conserving the jaguar through initiatives led by community-based organizations and local NGOs in the Darien region that have carried out previous work in alliance with the Yaguar? Panama Foundation, the Executing Agency of this proposed project. This has made it possible to channel resources to support initiatives led by local communities through a range of initiatives related to the promotion of ecological tourism, the adaptation of cattle farms with anti-predation measures and environmental education campaigns, etc. This project will seek to improve upon and expand the preliminary results obtained by the GEF/UNDP SGP in terms of anti-predation measures.

Program for the conservation and management of the cultural and natural heritage of Panama: implemented by the Ministry of Environment and the National Institute of Culture with US \$107 million of IDB financing (2018-2023) it promotes jaguar conservation and local job creation through community tourism.

A GEF-CAF project *Ecosystem-based biodiversity friendly cattle production framework for the Darien Region of Panama?* (GEF funding USD 3.5 million, indicative co-financing USD 14.3 million) is under development and has some geographical and thematic overlap with the proposed project. Close collaboration and complementarity between the two projects will be ensured, especially as it relates to lessons learned in working with cattle ranchers and engagement with women and indigenous peoples in Darien.

The total donor-funded baseline relevant for this project has been US\$157,223,427. The overall total project baseline investments have been **US\$243,723,427**.

3) The proposed alternative scenario, GEF focal area[29]²⁹ strategies, with a brief description of expected outcomes and components of the project

Intervention Logic ? Theory of Change

The intervention logic of the project is guided by the ?drivers?, ?assumptions?, and ?logical pathways? needed to achieve the ultimate impact of the project: *To strengthen jaguar conservation capacity and connectivity between core protected areas in the Chagres National Park-Darien National Park complex*, and consequently delivering on the global environmental benefits anticipated. The key drivers are those activities and processes that the project can potentially and directly sponsor (inputs), in support of project outputs and outcomes, while the assumptions are those conditions and circumstances that are necessary to achieve the desired project results, but are outside the control of the project. The logical or impact pathways are the set of steps, consisting of activities, processes and assumptions that collectively will deliver the desired project objective (see full illustration in the Project Theory of Change in Annex Q).

The project?s proposed interventions/activities (drivers) build on the baseline conditions which already exist and which were described above, and seek to drive those additional steps and processes required to achieve incremental results. The project contributes to the GWP?s Theory of Change in its quest to achieve quantifiable wildlife and habitat conservation results, thus communicating directly with GWP?s outcomes under Components 1 and 2. This project will address human wildlife conflicts related to the retaliatory killings of jaguars and promote connectivity through enhancement of multispecies biological corridors and wildlife habitat. This project further contributes to the GWP?s Theory of Change through the promotion of environmental offset schemes to enhanced connectivity as an innovative means of diversifying financing for jaguar conservation through public-private collaboration, and by the generation and dissemination of targeted scientific knowledge on jaguar and other wildlife populations at national and regional levels.

The project?s intervention logic also capitalizes on the enabling environment provided by the commitments of the Government of Panama with respect to various international conventions and agreements. Primary *drivers* include:

- Support to directing environmental offsetting investments on restoration to wildlife corridors in line with the National REDD+ Strategy
 - Incorporation of jaguar-centric considerations in the reforestation/ restoration of wildlife corridors, resulting in habitat protection for the jaguar and its prey ? with a special focus on environmental offsetting financing
-

- Jaguar and terrestrial mammals census established to inform conservation planning and improve management of Human-Wildlife Conflicts (HWC)
- Implementation of site-specific antipredation measures in Cattle Ranching Management Plans to reduce livestock loss and retaliatory killings of wildlife
- Establishment of 'Wildcats Conservation and Research Centre' as a research and education agency, to promote regional and global learning on the management of HWC.
- Development and implementation of strategies for Knowledge Management and dissemination on jaguar conservation and management, networking and South-South Cooperation in support of global learning on HWC matters.

-

The project's key *assumptions* are:

- a) **Outputs to Outcomes:** Targeted private sector, cattle ranchers and community organizations fully embrace the project's objectives and effectively participate.
 - a. Indigenous People do not Boycott the project's interventions
 - b. Recommendations of the Gender Advisory Group is taken on board by the Project Steering Committee

- b) **Outcomes to Intermediate States:** The project is able to deliver the results anticipated with visible metrics necessary to replicate and expand interventions to a scale necessary to achieve Global Environmental Benefits (GEBs).
 - a. National Association of Cattle Ranchers institutionalizes cattle ranching best practices and anti-predation measures, promoting their adopting across its membership.
 - b. Independent Cattle Ranchers adopt cattle ranching best practices and anti-predation measures promoted by the project.

- c) **Intermediate States to Impact/GEBs:** The Government of Panama asserts leadership in upscaling the project's results and in supporting the sustainability of the Wildcats Research and Conservation Centre.
 - a. Ministry of Environment empowers the Centre to coordinate action on its behalf, nationally and internationally, and gives it full authority and freedom to conduct resource mobilization

b. Centre produces cutting-edge science on wildcat species, leading to enhanced South-South cooperation.

The project's *logical pathways* are summarized below:

Pathway 1: This logical pathway proposes that directing environmental offsetting investments on reforestation/ restoration of wildlife corridors will ensure environmental offsetting projects integrate jaguar-centric reforestation/ restoration and wildlife connectivity in their design and implementation in sites located within the Panamá Centro-Chagres complex, the Panamá Este-Chepo complex, and the Rancho Frío-Darien complex and beyond. This directed environmental offsetting will provide proof of concept of jaguar-centric connectivity between Darien and Chagres National Parks through integrated landscape planning and privately financed environmental engagements in support the conservation of the habitat and management of jaguars, while providing opportunities for alignment with the ongoing public-private-partnership of Alliance for One Million Hectares and the National REDD+ Strategy.

Pathway 2: This pathway advocates that addressing the needs for reliable and systematic data on jaguar population dynamics and distribution through the implementation of a community and gender-sensitive National Jaguar and Terrestrial Mammals Census in 3 protected areas covering 33,000 ha, will be instrumental in meeting the data needs for conservation planning, will facilitate the modification of cattle ranching management plans to include anti-predation measures, strengthen institutional capacity to monitor jaguar and prey species in protected areas targeted by the project leading to improved management of human-wildlife conflicts, and ultimately reduce jaguar attacks on livestock and incidents of retaliatory killings of wildlife. This pathway will lead to the establishment of a robust methodological baseline to be replicated through-out the rest of the jaguar corridor in Panamá and beyond, while promoting the co-existence between jaguars and cattle ranchers with clear economic benefit to the community. It is necessary to emphasize that, while this pathway does not seek to establish a dependence or casual links between HWC and jaguar census data, it does suggest that the availability relevant data on jaguars that can inform the management of HWC is a significant positive step in efforts to address HWC.

Pathway 3: This pathway proposes that the establishment of the 'Wildcats Conservation and Research Centre' will serve as the primary knowledge and learning resource for scientific data on wildcats, will encourage and promote the generation of regional scientific knowledge and learning, will build national capacity and inform regional jaguar conservation goals through regional coordination and South-South cooperation, thus leading to improved information management on jaguar and wildlife conservation, and the management of HWC.

Project Rationale

The Government of Panama has come a long way in projects and initiatives that seek to collaboratively implement conservation initiatives on behalf of the country's jaguars and their habitats within Panama's Protected Areas System, strategically balance economic development and jaguar habitat preservation throughout Panama, mitigate rancher-jaguar conflict, and initiate jaguar conservation education for the people of Panama. It is worth noting the country's leadership in the search for allies who really work for the real future of the country, creating a cooperation agreement with the Yaguara Panama Foundation since 2017 for "execution of a program for the conservation of jaguar (*Panthera onca*) and the preventive management of livestock-jaguar conflicts", where the main researcher has been collaborating with MiAmbiente since 1998. Non-governmental organizations and civil society have also done great work over the past 20 years in support of jaguar conservation, monitoring and management, as well as in support of general biodiversity and protected area management.

Notwithstanding the effort and the progress made to date, there is still a steady increase in jaguar mortality in Panama due to retaliatory killings as a consequence of jaguar predation of domestic livestock, especially in National Parks and their buffer zones, and more notably so areas like Panama Centro and Darien. This situation is compounded by the fact that there is no centre in Panama for the rehabilitation of wildcat cubs who are left orphans as a result of HWC, illegal trade, infrastructure development, etc. Ecosystem degradation and forest fragmentation, lack of landscape level integrated plans, lack of large-scale monitoring capacity, ranch management plans that are insensitive to the presence and co-existence of jaguars, and the lack of coordinated data collection and analysis all collectively contribute to the current status of affairs.

Landscape level plans are necessary to give due consideration to the geographic range, habitats, forest protection, prey species composition, water sources, and other landscape level needs to ensure jaguar survival, and more importantly, ensure connectivity at the corridor level and movement of the gene pool across continents. In an effort to reduce the impact of predation and thus the probability of conflict between ranchers and jaguars, cattle ranches must adopt management measures aimed at minimizing livestock predation losses and increase revenues for ranchers, while simultaneously controlling poaching and illegal trade of wildlife species. The lack of a large-scale database, over long periods of time and in a systematic way (using the same methodologies in previous projects in Panama to compare) and in large areas have resulted in no effective management at country scale to date in the conservation of jaguars, prey species and forests where they live.

The project's wildcat conservation rationale therefore is to promote connectivity between the hotspot of vulnerability and the largest jaguar habitat; landscape level measures to reduce human-wildlife conflict caused by habitat loss and fragmentation; better-informed protected area management that integrates robust information on the status of wildcats and their prey; and an institutionalized jaguar

research and information centre at the service of jaguar populations through-out Central and South America.

Contribution to GEF Focal Area Strategies

The project will contribute to the GEF Biodiversity Focal Area (BD-1-2a), with Focal Area Outcomes ? Landscapes and marine habitat under improved management (excluding protected areas)? and ?Terrestrial habitat under improved conservation and sustainable use (million hectares)?. The project also is aligned with Global Wildlife Program (GWP) components 1. Conserve wildlife and its habitats; 2. Promote wildlife-based economy; and 5. Coordinate and Enhance Learning

The project contributes to Aichi Targets Strategic Goal A: Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society; Strategic Goal B: Reduce the direct pressures on biodiversity and promote sustainable use; Strategic Goal C: To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity; Strategic Goal D: Enhance the benefits to all from biodiversity and ecosystem services; and Strategic Goal E: Enhance implementation through participatory planning, knowledge management and capacity building. Specific targets and their relevance to project outcomes and outputs are presented in Table 2.

Table 2. Applicable Aichi Targets

SPECIFIC TARGETS	RELEVANT PROJECT ACTIVITIES (Outcome and Output Level)
Target 1: By 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably	Outcome 1.3; Output 1.3.1 Outcome 2.1; Output 2.1.1; Output 2.1.2
Target 2: By 2020, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems.	Outcome 1.1; Output 1.1.1
Target 7: By 2020, areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.	Outcome 1.1; Output 1.1.2

Target 12: By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.	Outcome 1.2; Output 1.2.1 Outcome 1.3; Output 1.3.1
Target 14: By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable.	Outcome 1.2; Output 1.2.1 Outcome 1.1; Output 1.1.2
Target 15: By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification.	Outcome 1.1; Output 1.1.2
Target 19: By 2020, knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied.	Outcome 2.1; Output 2.1.1; Output 2.1.2

Project Objective

To strengthen jaguar conservation capacity and connectivity between core protected areas in the Chagres National Park-Darien National Park complex

Components ? Outcomes ? Outputs

Component 1. Conserve jaguar and prey species through connectivity promotion and human-wildlife conflict management

Environmental offsetting programs by the infrastructure sector are legally mandated by the Forest Law (Law No.1/1994) and ensuing regulation (article 41); and the General Law on the Environment (Law No. 41/1998) and its Decree 123/2009 on Environmental Impact Assessments. The Ministry of Environment has oversight of these projects. Component 1 seeks to utilize the current legal framework under the mandate of the Ministry of Environment to restore and strengthen biological/jaguar connectivity in the Chagres National Park-Darien National Park Complex, via environmental offsetting by the infrastructure sector, which requires the incorporation of biodiversity considerations into public and private investment projects. Jaguar conservation measures will be integrated into environmental compensation projects linked to the infrastructure sector and promotion of connectivity between

Panama Central-Darien through these projects in coordination with the Alliance for the Million Hectares Reforested:REDD+. Biodiversity considerations will be mainstreamed into infrastructure project designs, institutional capacity will be strengthened for jaguar data collection, monitoring and management, and jaguar anti-predation strategies will be incorporated into farm management plans distributed through-out the project intervention area.

Outcome 1.1: Proof of concept of jaguar-centric connectivity between Darien and Chagres National Parks demonstrated through privately financed environmental offsetting programs and integrated landscape planning.

Output 1.1.1: A plan to direct environmental offsetting investments on restoration to wildlife corridors in the Chagres-Darien National Parks complex in line with the Alliance for One Million Hectares and the National REDD+ Strategy. The GEF project will execute geospatial planning to guide the geographical prioritization of future environmental compensation projects with a view to guaranteeing the use of private resources to maintain the biological corridor in the central-eastern part of the country, between PN Chagres and PN Darien. Activities include a Plan to direct future offset investments to the Chagres NP-Darien NP ?multispecies? biological corridor inclusive of criteria to prioritize restoration sites building on GIS data and forest carbon stock data as a proxy for the status of jaguar habitat, and potential to contribute to The Alliance for One Million Hectares 2015-2030 and the REDD+ Strategy. An assessment of the areas based on the forest carbon stock will allow the design of more specific measures to incorporate the conservation of biodiversity within the five (5) REDD+ strategy activities. Furthermore, in this way, the impact of REDD+ on the conservation of biodiversity can be evaluated, at the same time as it measures the effectiveness of the implementation of the ?Alliance for One Million Hectares? in the restoration of habitats and biological corridors. The assessment results will lay the foundations for the elaboration of an Action Plan to guide company offsetting programs, ensure coordination with the ?Alliance for One Million Hectares? and contribute to the Low Carbon Strategy of Panama by fostering emission reductions, encouraging companies to invest in REDD+ projects and in this way begin to cross investments and evaluate the potential of REDD+ pilot projects to promote wildlife conservation in Panama. In terms of habitat and connectivity, it can be demonstrated by comparing the current baseline with the data that will be generated with the CENSUS and more specifically with the evaluation of forest carbon stock, which is the way in which Panama has decided to assess the state conservation or loss of habitat in the REDD + Strategy, its Forest Emission Reference Level / Forest Emission Level (NREF / NEF); and the Alliance for One Million Hectares. Consistent with the above, the project will also provide technical assistance to 3 environmental offsetting programs (further detailed under Output 1.1.2) aimed at restoring 100 ha in the Panam? Centro?Chagres (Chagres NP), Panama Este-Chepo, and Rancho Fr?o?Darien (Dari?n NP) complexes. The expected result is to redirect reforestation/restoration actions across demonstration hectares in priority areas for the jaguar, in such a way that a standard planning and methodology is established in the country to eventually guide these processes. Reforestation supports ecological restoration by contributing directly to restoring the habitat of the jaguar, and will include nurseries or seedling purchase, site preparation, maintenance and control, monitoring and evaluation, and reporting.

Output 1.1.2: Three (3) environmental offsetting projects integrate jaguar-centric restoration and wildlife connectivity in their design and implementation in sites located within (i) the Panama Centro-Chagres complex; (ii) the Panama Este-Chepo complex; and (iii) the Rancho Frío-Darien complex. GEF funds will be focused on integrating fauna and flora criteria, with a special focus on jaguar conservation and the promotion of connectivity in the design of offsetting projects by infrastructure companies. This will support the establishment of minimum requirements to inform criteria for environmental compensation involving reforestation in support of ecological restoration in a unified way. If there is information on the populations of jaguars and prey (CENSUS), as well as the conditions of their habitats (forest carbon stock), it is possible to reinforce reforestation actions and evaluate their direct contribution to the conservation of the species (maintain and increase populations, according to the results of the evaluation carried out as part of this proposal). The project will seek to demonstrate that mandatory and voluntary compensation programs can be successful financing mechanisms for conservation at the landscape level, both for jaguar populations and for multi-species biological corridors.

The 2 companies participating with the project in 3 environmental offsetting programs are CEMEX Panama involved in construction materials and AES Corporation Panama, dedicated to electricity and electrical infrastructure. These companies were selected as per the following criteria:

- ? They are companies linked to the sectors relevant for the project, infrastructure and extractive industries.
- ? They currently have a current environmental impact study with a compensation obligation.
- ? They have an agreement with MIAMBIENTE within the framework of the Alliance for the Million Hectares with voluntary compensation goals.
- ? They are in the priority areas of the project, especially in the buffer zone of the Chagres National Park and in the area of influence of Nargana and the Darién National Park.
- ? They have annual and budgeted reforestation actions that will be effective beyond the project completion date.
- ? They have environmental and biodiversity conservation corporate policies. And at least one has its biodiversity action plan.
- ? They have an interest and a willingness to support the project.
- ? They have the potential to identify other hectares to incorporate and redirect efforts towards the priority areas established in planning as a result of project execution.

The companies participating in the offsetting programs will redirect investments and reforestation initiatives towards the priority areas and as per the criteria established in planning exercises supported by the GEF project, and will monitor and document lessons learned to be shared with stakeholders and MIAMBIENTE, as part of the broader Knowledge Management strategy of the project.

Outcome 1.2: Strengthened institutional capacity to monitor jaguar and prey species conservation in 3 protected areas: (i) Chagres National Park, (ii) Darien National Park, and (ii) Nargana Wildlife Protected Area (33,000 ha covered by Census) through a gender-sensitive approach.

Output 1.2.1: The first National Jaguar and terrestrial mammals Census designed covering 3 protected areas (33,000 ha) in support of conservation planning and improved management of human-wildlife conflicts. The project will support the first National Census of Jaguar and Terrestrial Mammals using the method of camera traps along 33,000 ha in Chagres National Park, Darien National Park, and Nargana Wildlife Protected Area. This activity will require that in excess of 700 camera traps be installed and regularly monitored across an extensive area in the three targeted protected areas, including significant on-the-ground movement by project personnel, YPF and other project partners. A substantial amount of training in jaguar census methodology, monitoring, data analysis and interpretation will be delivered by the project to YPF and protected areas staff, ensuring that trainees are selected using a gender-sensitive selection criteria, consistent with the overall gender mainstreaming objectives of the project. The aim is to estimate the jaguar density and the relative abundance of the preys (terrestrial mammals and other species) at priority sites for their conservation, determine the current situation and the size of the jaguar populations. The census will set new standards for the conservation of the species at the country level and the information generated will serve to determine priority areas for the conservation of the jaguar at the local and regional level. In addition, it is intended to identify the areas that must be managed in coordination with jaguar conservation objectives and adequate sites to establish biological corridors linking the priority sites, essential to balance the conservation of the species with the current development needs of the country. This pioneering effort would enable the integration of jaguar data in 3 protected area management plans and support activities on connectivity and HWC management, the latter being most applicable for the successful implementation of anti-predation measures at cattle ranches located within protected areas.

Outcome 1.3: Decreased incidences of human-wildlife conflict and increased benefits to communities through the implementation of anti-predation and sustainable management measures in 6 cattle-ranches in the (i) Panama Este-Chepo complex and (ii) Rancho Frío ? Darién complex through a gender-sensitive approach.

Output 1.3.1: Six (6) cattle ranches implement sustainable management plans inclusive of site-specific anti-predation measures, reduce jaguar attacks on livestock and incidents of retaliatory killings of wildlife. GEF funds would implement sustainable management plans inclusive of site-specific anti-predation methods to reduce HWC. The management plans were designed under the project "Preventive Management of Jaguar-Cattle Conflict" led by the Ministry of Environment/Fundacion Yaguara Panama in 6 cattle ranches covering 717 ha in the Panama Este-Chepo and Rancho Frío/Darién complexes. The specific location (coordinates), biodiversity, jaguar predation statistics, and selection criteria for the 6 cattle ranches have been described above in the section "Project Sites". For the long-term sustainability of the initiative, training for ranchers will be carried out with a manual for the development and updates of farm management plans with best

practices for the conservation of biodiversity. The selection of trainees shall be based on a gender-sensitive criteria, and the associated training manual shall be structured to with provisions to facilitate the participation of women and the delivery of teaching materials in a manner that enables effective and equitable uptake and learning by both men and women. Sustainable management plans to minimize jaguar predation and consequently HWC, will include considerations for the establishment of improved pastures, live fence multiplication, establishment of fodder and protein banks, paddock division with electric fences, creation of safe conditions and areas for maternity and calf raising, fencing of wooded areas, implementation of production records system, cattle herd categorization, pasture Management, and health Management. This will allow for the development and implementation of more effective strategies and measures to protect livestock by reducing the vulnerability of farms to feline attack, instead of killing jaguars. By demonstrating cost-effective human-wildlife conflict prevention measures the project will generate proof of concept of jaguar-livestock coexistence in productive landscapes, and these results and lessons learned shall be widely disseminated to cattle ranchers through the project's Knowledge Management approach, and in coordination with ANCON in terms of cattle ranchers in the Filo del Tallo Canglon protected area and the broader Darien region.

Component 2. Generate scientific knowledge, build national capacity and promote regional commitments on wildcat conservation

Component 2 will support the co-financing and provide funds to set-up the first stage of the "Wildcats Conservation and Research Center of Panama" as a "go to" resource for scientific data, capacity building, and knowledge dissemination on jaguar conservation and HWC management. GEF funds will: (i) invest in basic infrastructure and equipment for research and training, (ii) promote institutional strengthening of relevant government organizations, (iii) plan for the 1st Phase of the Pilot Program for the Management, Rehabilitation and Reintroduction of Wildcat Cubs, and (iv) undertake a needs assessment for further investments in the Centre. Data sharing with regional initiatives (between countries) on jaguar conservation would also be promoted.

Outcome 2: Improved information management system on jaguar and wildlife conservation.

Output 2.1: The "Wildcats Conservation and Research Centre" is established as a "go-to" knowledge resource for scientific data on wildcats. Law 24 of 1995, which establishes the wildlife legislation, allows the Ministry of the Environment to "Promote local participation in the administration and management of wildlife, providing the facilities and resources for it"; as well as "Establish agreements or agreements for the development of programs and activities that promote the improvement, development and protection of wildlife, with public and private entities."

This output will establish the Center for the Conservation and Research of Wild Cats (WCRC) of Panama that will facilitate for the first time the training of future professionals and the exchange of best practices, the management of scientific knowledge, building of institutional capacities and awareness to address the conservation of the Jaguar and manage actions to reduce their threats. The WCRC, by the

nature of its research, education and wildlife management activities, will be focused on the Pilot Program for the rehabilitation and reintroduction of small wild cats. The project during its execution will generate technical experiences and financial information, which will allow defining the best administrative model in accordance with the national legal framework, guaranteeing its sustainability. The Ministry of the Environment signed a Cooperation Agreement with the Yaguar? Panama Foundation in 2017 for "the execution of a Program for the conservation of the jaguar (*Panthera onca*) and the preventive management of livestock-jaguar conflicts". In this regard, MIAMBIENTE and Yaguar? Panama are already working together in the management, rescue, release and monitoring of wild cats, attending more than 100 annual cases of small cats (ocelot, tigrillo and jaguarundi). However, rehabilitation options are void due to resource limitations and appropriate facilities that force individuals to be kept in private enclosures without any option to return to their natural habitat. The Ministry of the Environment, as the normative authority on environmental and natural resource management issues, is responsible for participating in the administration of the Center for Research and Conservation of Wild Cats; In this sense, it will coordinate with the Yaguar? Foundation, to lead the WCRC administration during the execution of the project.

The facility will be located at the narrowest point of the biological corridor mountain range, a priority site for the conservation of the jaguar in terms of movement and connectivity of the species and close to one of the top priority areas for forest cover recovery in terms of movement of the species. Specifically, the Centre will be located along the Llano-Carti highway in the Chepo District, in the same direction and a few kilometers from Nusagandi in the Nargan? Protected Wild Area, Guna Yala Region. The area is easily accessible and connects with the 3 protected areas of the project, which will facilitate the logistical and operational aspects of the Centre. The area is located 70 km from Panama City and Chagres National Park, and 150 km from Darien. The Centre will include the development of infrastructure and equipment for research, monitoring, extension services to farmers related to HWC, training to promote research and data exchange. It will maintain an institutional strengthening program to increase specialized and trained human resources on jaguar-livestock conflict to improve response capacity in dealing with complaints and events of livestock predation by wild cats, as well as advise on site-specific actions that could be taken in place to reduce conflict. This will include the strengthening of other institutions (Regional Directorates of the Ministry of Environment, Directorate for Protected Areas and Biodiversity of the Ministry of Environment, Municipalities of Darien and Panama, Guna General Congress, Authorities of the Comarca Embera-Wounaan District of Cemaco, etc.) and operators of justice (Ecological Police, Executing Court of the Ministry of Environment, National Border Service, etc.) that are linked to the problem. It will set new standards for the management, rehabilitation and release of wild cats with the first stage of the Pilot Program for the Management, Rehabilitation and Reintroduction of small to medium size Wildcats (margays, jaguarundis and ocelots) which will include rescue and reintroduction protocol, establish pre-release areas, criteria and methodologies, and release; investigation of population status and conditions of possible release sites.

The project will provide critical institutional and organizational development support in the preparation of all initial assessments, governance tools, guidelines, policies, manuals and strategies that are essential to the proper start-up, functionality and sustainability of the Wildcats Conservation and Research Centre. These will include an assessment of the operational frameworks nationally and regionally to address wildcats conservation and management, needs assessment, assessment of opportunities for strategic positioning as a national centre with potential for regional reach and growth,

and detailed proposal for the establishment of the Centre including the identification of governance structures, operational structures and initial human resource needs, as well as the Centre's first proposed Strategic Plan, Annual Operational Plan & Budget, administrative manual (human resource management, financial management, and procurement) and a Resource Mobilization Strategy and Plan for the Centre. In this regard, this initial Resource Mobilization Strategy and Plan will be structured to address the financing required to consolidate the establishment and operation of the Centre during the first 5 years, while seeking to establish robust resource mobilization structures for the long-term. Additionally, alliances and partnerships with the private sector through their Corporate Social Responsibility (CSR) programs will be thoroughly explored as a key element of the overall resource mobilization process. In addition, other alliances will be pursued with institutions, companies and organizations related to nature tourism focused on supporting the creation of capacities and the diversification of products and tourist attractions with scientific research on the jaguar, to favour local economic development. A central focus of the Mid-Term review of the project will be to assess the progress made in the establishment and institutionalization of the Centre, with particular focus on its legal identity, operational structure, and sustainability.

Output 2.2. Project results are captured and inform regional jaguar conservation goals through regional coordination. This output addresses the Knowledge Management approach of the project. Using GEF resources, the project will document, share and disseminate the results of the Project and capitalize on the experience to generate relevant knowledge on the conservation and monitoring of the jaguar and land mammals of Panama; as well as information on the fight against wildlife crime through comprehensive multimedia education and outreach campaigns to ensure a positive change in attitude of the local population towards jaguars and wild cats. The work will focus on Knowledge Management to generate and share lessons learned by facilitating information transfer and multi-sectoral coordination at the local, national and regional levels to underpin more effective policies and interventions based on scientific information on jaguar conservation. There will be an information management website platform established with the exchange of data, monitoring and evaluation status of the jaguar population, the conservation of habitats and corridors, and; knowledge sharing to facilitate information exchange and learning about integrated environmental management of jaguar landscape uses at the national and regional level, consistent with the objectives of the GWP. Access to educational resources based on scientific research on wildlife will be facilitated for citizen science on ecology and conservation biology that will be available to educators and the general public in Spanish and English. Additional details on the Knowledge Management Approach are provided in Section 8 of this CEO Endorsement Request.

4) Incremental/additional cost reasoning and expected contributions from the baseline, the GEFTE, LDCF, SCCF, and co-financing

This project is incremental insofar as it will complement other ongoing initiatives under implementation in Panama to secure globally significant BD values in key BD areas. MIAMBIENTE, Yaguar? Panam? Foundation, and other public and private stakeholders are executing activities that will run parallel to the project and help achieve its objectives.

Scenario without GEF Funding

Without the GEF funding there will continue to be an absence of integrated plans at the landscape or corridor level to give due consideration to the geographic range, habitats, forest protection, prey species composition, water sources, and other landscape level needs to ensure jaguar survival, and more importantly, ensure connectivity at the corridor level and movement of the gene pool across continents. Protected Areas Management Plans may be developed or updated, but will continue to lack jaguar-centric considerations and continue to be insensitive to the specific needs of these wild cats. Much needed institutional capacity for the monitoring of jaguars will remain constrained without proper and comprehensive jaguar census data to inform management and the success of ongoing conservation efforts. A lack of GEF funds will result in lost opportunities for private sector investments within the jaguar landscape to contribute to the reforestation and restoration of connectivity and the ecosystem functions of forest critical to the life cycle of jaguars in Panama and the region.

Similarly, without GEF funding, management measures aimed at minimizing livestock predation losses and increase revenues for ranchers, while simultaneously controlling poaching and illegal trade of wildlife species will remain foreign to cattle ranchers and their approach to farm management. No GEF funding means the education and awareness necessary to improve coexistence between ranchers and jaguars may not be launched and better understanding of the socio-cultural relationships between jaguars and ranchers in Panama will suffer delays with substantial consequences for both jaguars and ranchers due to losses from predation and jaguar killings. There will continue to be a lack of coordinated and systematic scientific data with extended time series and geographical coverage, and efforts to institute effective management and conservation of jaguars in Panama will continue to be limited, due to a persistent lack of coordination and collaboration between regulatory agencies, NGOs, CBOs and academia across borders to obtain unified data on jaguars, allowing for proper management intervention at a large landscape level. In the absence of GEF funds, capacity for data collection, analysis, interpretation and monitoring will not be established among institutions involved in jaguar monitoring, enforcement regulation, and jaguar rehabilitation and reintroduction. This will in turn negatively affect the sustainability of jaguar data collection, monitoring and management, since necessary institutionalization of the data collection function may not occur, and the accompanying Knowledge Management Strategy will not be developed and implemented.

In summary, in the absence of GEF funding, the Government of Panama will continue to provide resources to update PA management plans without unified data on jaguars and other key terrestrial mammals. MIAMBIENTE will continue to engage the private sector in the execution of mandatory and voluntary offsetting programs, but without any strategic planning to benefit globally important BD. While these reforestation/restoration efforts will benefit the Alliance for One Million Hectares/REDD+ goals and Panama's emission reduction commitments under the Paris Agreement, there will be an opportunity lost from not mainstreaming specific BD standards within their planning framework. The business-as-usual scenario will be characterized by limited capacity for monitoring jaguars and other key species, increased encroachment and fragmentation of crucial forest habitat, enhanced Human-Wildlife Conflict in human settlements adjacent to protected areas, and the consequent loss of biodiversity. Without GEF funding, many conservation objectives will not be achievable in the short term, and others will be jeopardized.

Scenario with GEF Funding

With funding from the GEF, proof of concept of jaguar-centric connectivity between Darien and Chagres National Parks will be demonstrated through privately-financed environmental offsetting programs and integrated landscape planning; institutional capacity to monitor jaguar and prey species conservation in 3 protected areas will be strengthened through a gender-sensitive approach; and incidences of human-wildlife conflict will be decreased with increased benefits to communities through the implementation of anti-predation and sustainable management measures in 6 cattle-ranches, with the establishment of an improved information management system on jaguar and wildlife conservation.

GEF resources will restore and strengthen biological/jaguar connectivity in the Chagres National Park-Darien National Park Complex, via environmental offsetting by the infrastructure sector, which requires the incorporation of biodiversity considerations into investment projects. Jaguar conservation measures will be integrated into environmental compensation projects linked to the infrastructure sector and promotion of connectivity between Panama Central-Darien through these projects in coordination with the Alliance for the Million Hectares Reforested:REDD+. Biodiversity considerations will be mainstreamed into infrastructure project designs, institutional capacity will be strengthened for jaguar data collection, monitoring and management, and jaguar anti-predation strategies will be incorporated into farm management plans distributed through-out the project intervention area. In terms of the conservation of jaguar connectivity and HWC management, the GEF will specifically fund a plan to direct environmental offsetting investments on restoration to wildlife corridors in the Chagres-Darien National Parks complex in line with the Alliance for One Million Hectares and the National REDD+ Strategy; 3 environmental offsetting projects integrate jaguar-centric restoration and wildlife connectivity in their design and implementation in sites located within (i) the Panama Centro-Chagres complex; (ii) the Panama Este-Chepo complex; and (iii) the Rancho Frío-Darien complex; The first National Jaguar and Terrestrial Mammals Census designed covering 3 protected areas (33,000 ha) in support of conservation planning and improved management of human-wildlife conflicts; and 6 cattle ranches implement sustainable management plans inclusive of site-specific anti-predation measures, reduce jaguar attacks on livestock and incidents of retaliatory killings of wildlife.

Funds from the GEF will support the co-financing and provide funds to set-up the first stage of the Wildcats Conservation and Research Center of Panama as a go-to resource for scientific data, capacity building, and knowledge dissemination on jaguar conservation and HWC management. GEF funds will: (i) invest in basic infrastructure and equipment for research and training, (ii) promote institutional strengthening of relevant government organizations, (iii) plan for the 1st Phase of the Pilot Program for the Management, Rehabilitation and Reintroduction of small and medium size Wildcat (oncilla, margays, jaguarundis and ocelots), and (iv) undertake a needs assessment for further investments in the Centre. Data sharing with regional initiatives on jaguar conservation would also be promoted. In terms of the generation of scientific knowledge, build national capacity and promote regional commitments on wildcat conservation, GEF resources will specifically support the establishment of the Wildcats Conservation and Research Centre as a go-to knowledge resource for scientific data on wildcats, and a fit for purpose information management system which ensures

project results are captured and inform regional jaguar conservation goals through regional coordination with other countries (local country organization).

Co-financing

The project's outcomes and objectives will be achieved through the GEF TF support of **USD\$1,784,862** and co-financing in the amount of USD\$16,122,550. The project co-financing (USD\$16,122,550 or approximately 90% of the total project cost) is distributed between three Government sources, two Private Sector Sources and two Non-Governmental Organizations: the Ministry of Environment (MIAMBIENTE); the City of Knowledge Foundation (CDS); National Secretariat for Science, Technology and Innovation (SENACYT); Cemex Panama; AES Panama; and Yaguara Panama Foundation. Of the total co-financing amount, 77.2% is grant and 22.8% is in-kind. In kind support will be provided in the form of staff time, salaries of government, private sector and NGO staff attending to project activities, and indirect administrative support and follow-up to project processes. Grant resources from the private sector will support transportation, seedlings, nurseries, planting and maintenance, monitoring & reporting of reforestation and restoration activities linked to the environmental compensation and offsetting scheme. Details on investments mobilized were provided in Section C.

5) Global environmental benefits (GEFTF) and/or adaptation benefits (LDCF/SCCF)

This project will generate global environmental benefits by restoring critical habitat and increasing connectivity along the isthmus from Chagres National Park to Darien National Park, ultimately contributing to the conservation of endangered species such as the jaguars. It will secure the future of many threatened and endangered species in one of the most ecologically diverse regions of the world. Improved conservation of threatened species such as *Bradypus variegatus*, *Hydrochoerus isthmius*, *Choloepus hoffmanni*, *Tapirus bairdii*, *Tayassu pecari*, *Myrmecophaga tridactyla*, *Leopardus wiedii*, *Leopardus pardalis* and *Panthera onca* will serve to protect and improve genetic diversity for the future. Furthermore, the implementation of reforestation and pilots and restoration of critical habitat in the buffer zones of protected areas will help maintain their role as a carbon sink. The project will also contribute directly to improved management of approximately 600 ha for globally significant biodiversity and ecosystem services.

The integrated approach proposed by this project is in full alignment with the Global Wildlife Program (GWP)'s Theory of Change as it ultimately aims to achieve quantifiable wildlife and habitat conservation results, thus communicating directly with GWP's outcomes under Components 1 and 2. In particular, this approach seeks to address human wildlife conflicts related to the retaliatory killings of jaguars in response to attacks on livestock. The effective implementation of HWC management strategies that increase incentives to protect wildlife is prioritized through the implementation of

sustainable management plans inclusive of on-site anti-predation measures in selected cattle ranches (GWP Component 1 output and short-term outcome).

HWC is associated with habitat loss and degradation that lead to greater proximity between wildcats and human activities. It follows that this project's integrated approach equally promotes connectivity through enhancement of multispecies biological corridors and wildlife habitat. Directing environmental offset schemes to promote enhanced connectivity is an innovative means of diversifying financing for jaguar conservation through public-private collaboration (GWP Component 2 output and short-term outcome). Finally, access to more robust data on jaguar conservation through more accurate knowledge on the status of jaguars in key protected areas (Census) and targeted scientific knowledge (Conservation Centre) creation and dissemination at national and regional levels is also a dimension of this project's integrated approach. It contributes to improved protected area management through the integration of more accurate data on jaguar status in PA management plans and supports efforts to quantify jaguar and other wildlife populations (GWP Component 1 output and short-term outcome and GWP Component 5).

The anticipated global environmental benefits of the proposed project may be summarized as follows:

? Contribute to Sustainable Development Goals (SDGs): SDG 5 (Gender Equality); SDG 10 (Reduced Inequalities); SDG 13 (Climate Action); and SDG 15 (Life on Land)

? Contribute to the GEF Biodiversity Focal Area (BD-1-2a), Focal Area Outcomes ? ?Landscapes and marine habitat under improved management (excluding protected areas)? and ?Terrestrial habitat under improved conservation and sustainable use (million hectares)?

? Contribution to Aichi Targets 1,2,7,12,14,15,and 19

? Contribution to Global Wildlife Program (GWP) components 1. Conserve wildlife and its habitats; 2. Promote wildlife-based economy; and 5. Coordinate and Enhance Learning

? Contribution to GEF-7 Core Indicator 3 - Area of land restored (Hectares): **100**

? Contribution to GEF-7 Core Indicator 4 - Area of landscapes under improved practices (excluding protected areas)(Hectares): **717**

? Contribution to GEF-7 Core Indicator 5- Total area under improved management (Hectares): **33,817**

? Contribution to GEF-7 Core Indicator 11 - Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment; Female: 1,575; Male: 1,925 (TOTAL: **3,500**)

6) Innovation, sustainability and potential for scaling up

Innovation:

The project provides an opportunity for the unique combination of science, technology and information needed to better inform jaguar management policy. With regards to the project's overall approach to learning, scaling-up and replication, the proposed project is innovative because it will develop standards for planning environmental offset projects from the infrastructure sector based on scientific research resulting from the National Census of jaguars and mammals, the first in Central America and the second in Latin America. It will show that compulsory compensation programs of private companies can be successful financing mechanisms for landscape-level conservation, both for jaguar populations and for "multispecies" biological corridors. Forest carbon stock will also be measured as a first in the evaluation of the habitat conditions of big cats and their prey, contributing to the development of new methodologies and guidelines for jaguar management and conservation, including lessons that could also be mainstreamed across the region.

Sustainability:

This project is sustainable because it builds upon itself, strengthening the capacities of national institutions through the development of public-private partnerships and the establishment of the Conservation and Research Center of Wildcats of Panama. The intent to consider forest carbon stock in jaguar habitat and promote explicit linkages with national REDD+ activities and financing streams cannot only lead to the fulfilment of international commitments related to the UNFCCC Paris Agreement and the CBD Aichi Targets, but could also generate relevant knowledge and lessons learnt to other countries in the region. The same applies to the participatory approach promoted through community engagement in the management of habitats for large cats and the replicability of cost-effective HWC measures, which will lead to behavioural and attitudinal changes supportive of conservation-oriented production practices.

The project's results will be sustained by the institutionalization of regulations and policies promoted by the Ministry of Environment in support of integrated landscape plans and updated management plans to achieve sustainable resource use while ensuring jaguar conservation. The sustainability outlook for the project also is strengthened by institutional policies of the Ministry of Agriculture Development that seek to modernize the agriculture sector inclusive of cattle ranching through: (i) the promotion of efficiencies in the use of resources, (ii) mainstreaming conservation and sustainability concerns in its operations and policies, (iii) addressing and prioritizing sectors with 'inappropriate practices' currently affecting biodiversity and ecosystem services critical to maintaining production potential, (iv) exploring regulatory tools and incentives to encourage behavioural change and the application of conservation-oriented parameters and standards; and (v) identifying optimal entry points and 'sector-specific' tools through which to conduct lasting interventions.

Additionally, sustainability will be secured through the project's institutional and organizational development support to ensure the proper establishment and consolidation of the Wildcats

Conservation and Research Centre, inclusive of all governance tools, policies and Resource Mobilization Strategy and Plan, complemented by commitment from the Government of Panama to see the Centre established, operational and providing critical support and services required for the sustainability of wildcat species in Panama and beyond, while serving as an effective vehicle for South-South cooperation.

Scaling-up and Replication:

The project provides an opportunity for the unique combination of science, technology and information needed to better inform jaguar management policy. With regards to the overall approach to learning, scaling-up and replication, the proposed project will develop standards for planning environmental offset projects from the infrastructure sector based on scientific research resulting from the National Census of jaguars and mammals, the first in Central America and the second in Latin America. It will show that compulsory compensation programs of private companies can be successful financing mechanisms for landscape-level conservation, both for jaguar populations and for "multispecies" biological corridors. Forest carbon stock will also be measured as a first in the evaluation of the habitat conditions of big cats and their prey, contributing to the development of new methodologies and guidelines for jaguar management and conservation, including lessons that could also be mainstreamed across the region.

This project's considerable potential for replication, given its national and intersectoral scope, will be reinforced by knowledge management and the exchange of best practices through the Center of Conservation and Research of Wildcats of Panama. Additionally, the project will engage membership organizations representing the cattle ranching sector such as ANAGAN (the National Association of Cattle Ranchers) to institutionalize jaguar-centric farm management plans promoted by the project, which will thus allow for massive replication and upscaling across the national membership of ANAGAN and other similar type producer organizations. In this regard, jaguar-centric management plans for cattle ranches will be designed to serve as templates for future use by other cattle ranching farms, thus facilitating upscaling and replication. Field methodologies used and tested in the jaguar census and in carbon stock measurements as proxy for the health status of critical habitat for keystone species will inform the application of other similar type assessments on a much larger scale regionally and internationally.

[1] Estrategia Nacional de Biodiversidad y Plan de Accion 2018 ? 2050. Ministerio de Ambiente, Republica de Panama

[2] Censo Nacional de Poblacion y Vivienda 2010, INEC, Contraloria General de la Republica de Panama

[3] GEO Panama 2014. Informe del Estado del Ambiente. Autoridad Nacional del Ambiente, Republica de Panama. Junio 2014

[4] N. Meyer, R. Moreno, C. Sutherland, J. Antonio de la Torre, H. Esser, C. Jordan, M. Olmos, J. Ortega, R. Reyna Huertado, S. Valdes, P. Jansen. 2019. Effectiveness of Panama as an intercontinental land bridge for large mammals. *Conservation Biology* 1-13.

[5] Quinto Informe Nacional de Biodiversidad de Panama Ante el Convenio Sobre Diversidad Biologica. Noviembre 2015. Pagina 15

[6] Moreno R, A. Bustamante, P. M?ndez-Carvajal & J. Moreno. 2016. Jaguares (*Panthera onca*) en Panam?; Estado actual y conservaci?n. El jaguar en el Siglo XXI: La perspectiva Continental. Fondo de Cultura Econ?mica, M?xico D.F.

[7] Moreno R, S. Vald?s, A. Artavia. N. Young, J. Ortega, E. Brown, E. Sanchez & N. Meyer. 2016. Conflicto Felinos y Humanos en Panam?; avances en la resoluci?n del conflicto, educaci?n y conservaci?n del jaguar en Panam?. Libro: Serie Fauna Silvestre Neotropical. II. Conflicto entre felinos y humanos en Am?rica Latina.

[8] Focus Economics ? Economic forecasts from the world?s leading economists. <https://www.focus-economics.com/countries/panama>. March 2020

[9] The World Bank in Panama. Overview. <https://www.worldbank.org/en/country/panama/overview> March 2020.

[10] Mileika Lasso. 2016. Pobreza en Panam? alcanza al 50% de la poblaci?n rural. La Estrella de Panama. <https://www.laestrella.com.pa/economia/161227/50-panama-pobreza-alcanza>. March 2020

[11] Proyecto "Dise?o e implementaci?n de programa de gesti?n preventiva de conflictos ganader?a-jaguar en 5 ?reas seleccionadas". Ejecutado por MIAMBIENTE Y YAGUARA.

[12] IMF 2020. Policy Response to COVID-19. <https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19#P>

[13] PNUD. 2020. Analisis socioeconomic del impacto del COVID-19 en Panama. <https://www.pa.undp.org/content/panama/es/home/>

[14] World Bank 2020. <https://www.worldbank.org/en/news/feature/2020/05/15/covid-19-could-worsen-gender-inequality-in-latin-america-and-the-caribbean>

[15] World Bank. 2013. *Panama - Sustainable Production Systems and Conservation of Biodiversity Project : environmental assessment (Vol. 2) : Marco de gestion ambiental (Spanish)*. Panama ; s.n..

[16] Final Environmental Review. U.S. ? Panama Trade Promotion Agreement. Office of the U.S. Trade Representative. September 2011.

[17] Wildlife Legislation Summary, specifically applicable to jaguar and wild cats. Yaguara Panama Foundation. 2020

- [18] Republic of Panama ? Country Environmental Analysis. Sustainable Development Department. World Bank. 2008
- [19] Parque Nacional Chagres. Plan de Manejo. ANAM/USAID/TNC. Abril 2005.
- [20] DavidM. Olson and Eric Dinerstein. 2002. The Global 200: Priority Ecoregions for Global Conservation. Annals of the Missouri Botanical Garden. Vol. 89, No. 2 (Spring 2002), pp. 199-224
- [21] Geodisio Castillo. 2016. Plan de Manejo Comarca Biosfera del Corregimiento de Nargana: Sintesis y Diagnostico. <http://gubiler.blogspot.com/2016/08/plan-de-manejo-comarca-de-biosfera-del.html>
- [22] Onel Masardule. 2012. Reconocimiento y Apoyo a las Iccas en Panama. ICCA Consortium, IUCN/TILCEPA, Kalpavriksh, and Natural Justice. CDB Secretariat Technical Series No. 64, 49p
- [23] Ecosystem-based biodiversity friendly cattle production framework for the Darien Region of Panama. Project Document. Development Bank of Latin America (CAF) 2018.
- [24] Panama Risks Becoming a Broken Link in an Intercontinental Wildlife Route. Scientific American. Debbie Ponchner, August 2019
- [25] Fort, J., C. Nielsen, A. Carver, R. Moreno & N. Meyer. 2017. Factors influencing local attitudes and perceptions regarding jaguar *Panthera onca* and National Parks conservation in Panama. Fauna & Flora International/ Oryx. 1-10
- [26] Jaguar Hunting and Trafficking in Mesoamerica. Recent Observations. Wildlife Conservation Society (WCS). 2018
- [27] Moreno R, N. Meyer, M. Olmos, R. Hoogestjein & A. Hoogestjein. 2015. Causes of jaguar killing in Panama- a long term survey using interviews. Cat News 62:40-42.
- [28] Moreno, R., Young, N & Valdes, S. 2016. Manual para la Convivencia pacifica entre seres humanos y el jaguar. Guia para ganaderos y guardaparques. Ministerio de Ambiente: Direccion de Areas Protegidas y Vida Silvestre, Departamento de Biodiversidad y Vida Silvestre. Panama. 16 pag. .
- [29] For biodiversity projects, in addition to explaining the project?s consistency with the biodiversity focal area strategy, objectives and programs, please also describe which [Aichi Target\(s\)](#) the project will directly contribute to achieving.

1b. Project Map and Coordinates

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

Please see maps of project area in Annex J. Included are a map of the national distribution of jaguars in Panama, as well as maps of the three targeted protected area sites where project intervention will

concentrate: Chagres National Park (PNCH), Darien National Park (DNP), and Nargana Wildlife Protected Area.

1c. Child Project?

If this is a child project under a program, describe how the components contribute to the overall program impact.

The project has a comprehensive component dedicated to coordinating and improving learning about wild cat conservation. Although the focus of the project is fundamentally national, there is an equally marked ambition to take advantage of the results of its Component 2 to contribute to the regional initiative with countries that have been working for several years on the conservation of the jaguar (Mexico, Argentina, Paraguay, Chile, Guatemala, Honduras, Costa Rica, among others), in this way it is possible to make the most of participation in the broader Global Wildlife Program (GWP) community of practice to exchange lessons learned on a global scale with multi-stakeholder counterparts in Africa, Asia-Pacific and the global North involved.

Jaguars are of particular relevance in the Latin American context not only because they are the largest felines in the region acting as apex predators with a range that extends from Mexico all the way down to Argentina, but also because they are mostly under threat. It follows regional collaboration to increase the knowledge base for jaguar and wildcat conservation is particularly strategic. Regional and sub-regional information exchange on efforts to promote connectivity and wildlife corridors centered on jaguars can substantially increase the effectiveness of these measures over time. Panama very much takes this strategic priority on board as demonstrated by a dedicated output under this project to regional coordination. It intends to direct GEF funds to ensure the results under this project (on promotion of connectivity, addressing HWC, the National Jaguar and Mammals Census in 3 protected area, and knowledge management activities) are systematically captured and both hard data and lessons learnt disseminated regionally through the GWP network as well as contribute to the jaguar conservation initiative by countries.

2. Stakeholders

Please provide the Stakeholder Engagement Plan or equivalent assessment.

This section describes the Stakeholder Engagement Plan (SEP) for the project. The SEP is designed to ensure effective engagement between all stakeholders throughout the lifecycle of the project. The project will aim to maintain dialogue with the relevant government ministries, regional and municipal governments, the private sector, local community groups, NGOs, academia, and international organizations. The SEP embraces the definitions of 'stakeholder' and 'stakeholder engagement' as defined in the GEF Policy on Stakeholder Engagement:

Stakeholder means an individual or group that has an interest in the outcome of a GEF- financed activity or is likely to be affected by it, such as local communities, Indigenous Peoples, civil society organizations, and private sector entities, comprising women, men, girls and boys

Stakeholder Engagement means a process involving stakeholder identification and analysis, planning of Stakeholder Engagement, disclosure of information, consultation and participation, monitoring, evaluation and learning throughout the project cycle, addressing grievances, and on-going reporting to stakeholders.

Consistent with the definitions above, the SEP seeks to ensure that stakeholders are identified and their meaningful participation and involvement secured through-out project preparation and implementation; that consultations are gender-responsive and free of manipulation, interference, and/or discrimination; and that stakeholders have access to all relevant project information in an easily accessible and timely manner. Stakeholders were identified and placed in 1 of 3 levels according to their relationship with the project:

Level 1: persons and groups who are able to influence and decide the outcomes and the manner of the Project implementation or make decisions based on the outputs of the project

Level 2: persons and groups that participate in the project directly or indirectly

Level 3: persons and groups affected directly or indirectly by the outcomes of the Project implementation.

Key project stakeholders and their relationship level with the project are presented in Table 3.

Table 3. Key Project Stakeholders

Stakeholder	Relevance for project preparation	Participation in project implementation	Level of Relationship
National Government Institutions			

Ministry of Environment (MIAMBIENTE)	<p>Project Focal Point and Liaison Office in country</p> <p>GEF Operational Focal Point - Validation and endorsement of PRODOC and CEO Endorsement Request</p> <p>Provide official methodology for carbon accounting (Climate Change Division)</p>	<p>Facilitate and support all policy related outcomes proposed by the project</p> <p>Project Monitoring and Evaluation at the national level</p> <p>Liaison with the GEF Implementing Agency and the project's Executing Agency</p> <p>Chair PSC and Co-financing source</p>	Level 1
National Secretariat for Science, Technology and Innovation (SENACYT)	Inputs to project design during stakeholder consultation workshop	<p>Technical support and source of data during project implementation; develop research, studies, and educational processes</p> <p>PSC member and co-financing source</p>	Level 1
Panama Canal Authority (ACP)	One of the participating entities in the restoration/offsetting interventions of the project	Key project participant for achieving project results in the mitigation/restoration component; and PSC member	Level 1
Ministry of Agricultural Development (MIDA)	Responsible for managing cattle-ranching activities	Support policy related outcomes by the project in term of sustainable management plans and antipredation measures	Level 1
Agricultural Insurance Institute of Panama (ISA)	Play a role in compensation for predated animals	Play a role in compensation for predated animals	Level 2

Agricultural Development Bank (BDA)	Primary institution that finances cattle ranching activities through loans	Partner for possible application of anti-predation measures and/or sustainable management plans as preconditions to loans	Level 2
Environmental, Rural and Tourist Police (Ecological Police)	Responsible for responding to wildlife crimes	May play an important role in terms of relationship and support of pilot cattle-ranchers in a depredation or poaching event	Level 2
National Border Service (SENAFRONT)	Responsible for border security and a key presence in the Darien region for responding to wildlife crimes.	Coordination of security when in remote areas (i.e. jaguar and ungulate census) and support in a depredation or poaching event	Level 1
Regional or Municipal Government Institutions			
Guna General Congress (Traditional Authorities of the Guna Yala Indigenous territory)	Need to participate in the stakeholder consultation since the Nargana protected area lies within their indigenous territory. The project will seek Prior and Informed Consent from the Guna General Congress during the inception phase of the project.	Will need to be consulted during project implementation on n of the Environmental and Social Safeguards. May need to be consulted during the jaguar/ terrestrial mammals census	Level 3
Authorities of the Comarca Embera-Wounaan District of Cemaco	Responsible for management of their indigenous territory. The project will seek Prior and Informed Consent from the Authorities of the Comarca Embera-Wounaan District of Cemaco during the inception phase of the project.	May need to be consulted during the jaguar/ terrestrial mammals census	Level 3

Summit Municipal Park	Responsible for management of the wild animal veterinary clinic	Coordination of the first stage of the Pilot Program for the Management, Rehabilitation and Reintroduction of small to medium size Wildcats	Level 3
Darien Municipality	Responsible for management of the protected area	Coordination of jaguar/ terrestrial mammals census	Level 2
Panam? Municipality	Responsible for management of the protected area	Coordination of jaguar/ terrestrial mammals e census	Level 2
Civil Society Organizations			
Yaguara Panama Foundation	Project Executing Agency	Project Executing Agency; Secretariat of the PSC and Technical Committee member; Co-financing Source	Level 1
City of Knowledge Foundation (CDS)	Resource for technical input	Member of the PSC member and Technical Committee; Co-financing Source	Level 2
National Association for the Conservation of Nature (ANCON)	Resource for technical input, collaboration and coordination with another GEF-funded project	Data source and technical resource for development of project components; member of the Gender Advisory Group (GAG)	Level 2
Pan American Association for Conservation (APPC)	Resource for technical input and data	Data source and technical resource for development of the pilot Program for the Management, Rehabilitation and Reintroduction of small to medium size Wildcats	Level 2

Organization of Indigenous Women for the Conservation of Biodiversity (OMIUBP)	Members in project intervention ?rea	Target group to ensure compliance with Environmental and Social Safeguards; member of the Gender Advisory Group (GAG)	Level 3
STRI Foundation (Smithsonian Tropical Research Institute)	Resource for technical input and data	Member of Technical Committee and ; member of the Gender Advisory Group (GAG) Data source and technical resource for development of project components	Level 2
Conservation of Panamanian Primates Foundation (FCPP)	Resource for technical input and data	Data source and technical resource for development of project components	Level 2
Academia			
University of Panama: School of Biology and Faculty of Natural Sciences and Faculty of Agronomy	Technical resource on methodology, field data collection, data analysis and interpretation	Data source and technical resource for development of project components; Develop training and educational processes	Level 2
Tecnology University of Panama	Technical resource on methodology, field data collection, data analysis and interpretation	Data source and technical resource for development of project components; Develop training and educational processes	Level 2
Private Sector			
CEMEX Panam?	One of the participating entities for the mitigation/restoration component	Key project participant for achieving project results in the mitigation/restoration component; PSC and Technical Committee member; Co-financing Source	Level 2

ENSA	One of the participating entities for the mitigation/restoration component	Key project participant for achieving project results in the mitigation/restoration component	Level 2
AES	One of the participating entities for the mitigation/restoration component.	Key project participant for achieving project results in the mitigation/restoration; PSC and Technical Committee member; Co-financing Source component; PSC and Technical Committee member	Level 2
ANAGAN	National Association of Cattle Ranchers could be influential in adapting anti-predatory measures in key project areas	PTD - Potential member of Technical Committee	Level 2
DICEASA	Potential participating entity for the mitigation/restoration component	Key project participant for achieving project results in the mitigation/restoration component	Level 2
ITS Consulting	Entity that may help identify new participating companies in mitigation/restoration component	Key project participant for achieving project results in the mitigation/restoration component	Level 2
Minera Panama	Potential participating entity for the mitigation/restoration component	Key project participant for achieving project results in the mitigation/restoration component	Level 2
Erasmus De Le?n - Finquero Dari?n (Agua Buena Chucunaque)	Ranch owner and key project participant	Owner of one of the pilot cattle-ranches for implementing Sustainable Management Plans including anti-predation measures	Level 2
Baudilio - Finquero Dari?n (Filo del Tallo)	Ranch owner and key project participant	Owner of one of the pilot cattle-ranches for implementing Sustainable Management Plans including anti-predation measures	Level 2
Inter-governmental Institutions			
GEF Small Grants Program (UNDP)	Source of lessons learned in rural Panama from GEF Small Grants Program	Complementary efforts of project implementation, especially in the application of lessons learned in rural Panama; member of the Gender Advisory Group (GAG)	Level 2

United Nations Development Programme (UNDP)	Source of lessons learned in project design and implementation	Coordination with other complementary projects in Panama and potential for collaboration in certain project activities; ; member of the Gender Advisory Group (GAG)	Level 2
Secretariat for the Implementation of Environmental Law -TPC USA-Panama	Advocacy ally and source of information on compliance with environmental law in Panama	Potential partner in advocating for compliance with environmental law	Level 2

Stakeholders participated in the identification of project priorities and in the definition of planned outputs and outcomes during interviews and consultations. Project stakeholders had the opportunity to review and comment on proposed project activities and to provide specific inputs to the project formulation process. During project implementation, stakeholder participation will include the provision of co-financing, participation of technical staff in workshops, training, and tools development, the facilitation of local project events and processes, the provision of project oversight through participation on the PSC or TAC, as data sources, technical expertise and knowledge management through the institutionalization of project results and lessons learned to allow for up-scaling, replication, and sustainability. The inclusion and engagement of Civil Society Organizations (CSOs) and the public in the implementation of the project will be ensured via their direct participation in the governance and decision-making bodies of the project. Special effort will be made to ensure that CSOs active or present in the area of influence of the project are represented in project decision-making and in interventions which may affect their interests. In all instances, the standards and guidelines of the GEF Policy on Environmental and Social Safeguards and the GEF Policy on Stakeholder Engagement shall apply, especially as it relates to ensuring appropriate stakeholder participation.

Key stakeholders identified in the mapping exercise include: cross-sectoral government institutions; local communities involved in efforts to minimize the impacts of HWCs (from ranch owners to neighbouring dwellers, indigenous groups, and women groups); private sector actors in the infrastructure and other sectors engaged in environmental offsetting schemes; academic institutions that hold information on the status of jaguars and could benefit from increased capacity on scientific monitoring through the National Jaguar Census and ?Wildcats Conservation and Research Centre?; and civil society working on conservation in the target geography.

Consistent with the engagement approach described above, the project's Stakeholder Engagement Plan is summarized in Table 4 below, while the corresponding monitoring plan in accordance with the minimum standards required by the GEF, is presented in Table 5. The required budget for the Stakeholder Engagement Plan is absorbed under the project's Knowledge Management Approach in Component 2.

In terms of "prior and informed consent" from the indigenous peoples, informative and consultation meetings will be held with the authorities of the General Congress of Guna Culture and the General Congress of the Ember?-Wounaan region of the Cemaco Region, in accordance with the legal provisions of Panama. National regulations establish different mechanisms for the processes of consultation and free prior and informed consent to indigenous peoples of Panama; written consent is a legal obligation for access to biological and genetic resources in indigenous regions.

In the specific case of the project, the activities to be carried out in indigenous areas are related to the National Census of jaguars and land mammals through camera traps, activities that have already been carried out in the areas and that by their nature do not affect collective rights, the physical existence, cultural identity, quality of life or development of indigenous peoples. However, the requirement is institutionalized through the scientific permits granted by MIAMBIENTE in order to carry out scientific research in the country. To carry out Census activities as scientific research, the written authorization of the indigenous authorities is required in accordance with the established procedures and as part of the requirements to approve scientific research permits by the Ministry of the Environment through Resolution Administrative.

It is important to note that since 2012, the Yaguar? Panama Foundation in collaboration with the Guna Culture Congress have carried out scientific research and biological monitoring projects with camera traps, as well as education and environmental awareness, specifically in the Nusagandi Reserve and the Wilderness Area of Nargan?. In 2014 Yaguar? provided advice and financial resources for the Thesis "Ecological aspects of wild cats and their prey in the Nargan? Wild Area, Guna Yala" prepared by Elliot Brown Rivera to qualify for the bachelor?s degree in Environmentally Oriented Biology. The now MSc. Brown from the Guna community, is a research associate of the Foundation. To give continuity to the work carried out in the area, a Cooperation Agreement has been signed between the General Congress of Guna Culture and the Yaguar? Panama Foundation, which is in the final stage of ratification by the Guna General Congress.

Regarding the previous consultation processes with indigenous peoples during the PPG phase, communication has been maintained with Mr. Andr?s Mart?nez Bill, president of the General Congress of Guna Culture, Mr. Geodesio Castillo and Mr. Sime?n Brown, representatives of the Congress. For the Cemaco area, communications were maintained with the Regional Chief Edilfonso Aj? and Edilberto Dogirama, president of the General Congress of the Ember?-Wounaan region of the Cemaco Region, to keep them informed of the project's progress. In the PPG phase, workshops and interviews were held for the Gender Action Plan with the Organization of Indigenous Women United by Biodiversity of Panama (OMIUBP), which groups women from the Guna and Ember? indigenous communities. It should be noted that this organization is executing in conjunction with the Yaguar? Panama Foundation, the Project "Rescuing the traditional knowledge of my grandmothers and grandparents, on the conservation of jaguars and felines, in the Guna and Ember? People" with

financing from the Special Fund of the Big Cats through the Small Grants Program administered by UNDP.

Table 4. Stakeholder Engagement Plan

Stakeholder Group	Engagement Purpose	Engagement Method	Frequency	Responsible Entity
-------------------	--------------------	-------------------	-----------	--------------------

<p>Level 1: persons and groups who are able to influence and decide the outcomes and the manner of the Project implementation or make decisions based on the outputs of the project</p>	Define details of project intervention strategies	Physical or virtual meetings of the PSC	Progress reports quarterly	Chair of the Project Steering Committee
	Review of project work plans and budgets	Written Progress Reports	Audit reports annually	Individual Project Steering Committee members
	Review and approval of project progress reports	Written letters	Physical or virtual meetings quarterly	Project Coordinator
	Review of project Audit Reports	Official project emails		GEF Operational Focal Point
	Conduct fiduciary duties	Written grievance reports	At least one physical meeting every 6 months	National Project Liaison
	Address project conflicts	Written Audit Reports	Grievance deliberations on an as needed basis.	Yaguara Panama Foundation
	Addressing stakeholder grievances	Project Meetings with the GEF Operational Focal Point		UN Environment Programme
	Conflict resolution at all levels			
Agree on project policy communications with the Government and UN Environment Programme				

<p>Level 2: persons and groups that participate in the project directly or indirectly</p>	Consult on project work plans and budget	Technical Working Groups	Technical Advisory Committee meetings at least every 4 months;	Yaguara Panama Foundation
	Technical inputs to Terms of Reference	Focus Group Sessions	virtual meetings every 2 months	Project Coordinator
	Validation of technical reports	Meetings of the Technical Advisory Committee	Field extensions, data collection and monitoring at least quarterly	National Project Liaison
	Exchange of technical data and lessons learned	Field extension visits	Project website postings and social media on a continuous basis	Project Staff
	Joint planning and collaboration	Field data collection and monitoring	Progress reports quarterly	Members of Technical Advisory Committee
	Extension services and provision of technical assistance	Workshops and trainings in the field		
		Memorandum of Understanding between organizations and the project		
	Project website, social media, printed materials, Project Progress Reports			

<p>Level 3: persons and groups affected directly or indirectly by the outcomes of the Project implementation.</p>	Inform on the project implementation status	Local and community level informative and focus group discussions	Focus group discussions at least every 4 months	Yaguara Panama Foundation
	Collect opinions and concerns during public meetings or other contacts	Social media	Workshops at least twice per year	Project Coordinator
	Register, analyse and address grievances or comments submitted	Local radio and TV in language of local community and with tailor-made messages	Radio and TV messages on a continuous basis	National Project Liaison
		Printed brochures	Printed materials on a continuous basis	Project Staff
		Community level trainings and workshops		Local community leaders
				Owners of cattle ranches
				Technical directors of private companies in compensation program

In addition, provide a summary on how stakeholders will be consulted in project execution, the means and timing of engagement, how information will be disseminated, and an explanation of any resource requirements throughout the project/program cycle to ensure proper and meaningful stakeholder engagement.

Table 5. Stakeholder Engagement Monitoring Plan

Parameter	Monitoring & Reporting Responsibility	Reporting Frequency
-----------	---------------------------------------	---------------------

1. Number of government agencies, civil society organizations, private sector, indigenous peoples and other stakeholder groups that have been involved in the project implementation phase	Project Coordinating Unit	Annually
2. Number persons (sex disaggregated) that have been involved in the project implementation phase	Project Coordinating Unit	Annually
3. Number of engagement (e.g. meeting, workshops, consultations) with stakeholders during the project implementation phase	Project Coordinating Unit	Annually
4. Percentage of stakeholders who rate as satisfactory the level at which their views and concerns are taken into account by the project	UN Environment Programme - Outsourced	Annually
5. Grievances handling mechanism ? how grievances are received, and results communicated to all stakeholders	Project Coordinating Unit	Annually

Select what role civil society will play in the project:

Consulted only;

Member of Advisory Body; Contractor; Yes

Co-financier;

Member of project steering committee or equivalent decision-making body;

Executor or co-executor; Yes

Other (Please explain) Yes

Civil Society Organizations will be an important technical resource as well as sources of data and information needed to better inform jaguar management and biodiversity conservation.

3. Gender Equality and Women's Empowerment

Provide the gender analysis or equivalent socio-economic assesment.

Overview

Panama is party to numerous international conventions and agreements in support of the rights of women, which provide an international framework for women's rights in the country. Of note are the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW), the Inter-American Commission of Women, the Inter-American Convention on the Prevention, Punishment and Eradication of Violence Against Women "Convention of Belem do Para", and the United Nations Sustainable Development Goals (SDG 5 ? Gender Equality).

The national legal and policy framework to ensure compliance with international obligations has seen several important improvements. These include Law No. 4 of January 29, 1999 on Equal Opportunities for Women prohibiting all gender-based discrimination, and guaranteeing the protection of human rights and condemns all kinds of violence against women. Law No. 17 of March 28, 2001-approving the optional protocol to the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW), through which individual cases or extensive violations of women's human rights are examined, and serving as a mechanism for rectification and reporting against the practices of any type of attack on protected rights under CEDAW. Law 71 of 2008, which created the National Institute for Women (INAMU) with the objective of coordinating programs and projects that promote participation, reduction of gender inequality, equal access and control of resources for development purposes, among others[30]. The Public Policy on Equal Opportunities for Women (PPIOM) was developed in December 2012, with the aim of reducing discriminatory situations, inequities and inequalities; Executive Decree No. 31, 16 April 2001, through which the National Gender Training System was created; while Executive Decree No. 100, 20 April 2017, that regulates Law 82, 24 October 2013, which adopts measures to prevent violence against women and reforms the Penal Code to identify the murder of women and penalize acts of violence against women, and Law 7, 14 February 2018, which adopts measures to prevent, prohibit, and penalize discrimination against women. That same year Law 54 was passed on Electoral Parity. The National Plan against Domestic Violence and Citizen Cohabitation Policies 2004 ? 2014 was an important part of the national framework, and sought to ensure compliance with relevant laws and overcome socio-cultural, institutional and legal obstacles and address the multiple dimensions of the problem of domestic violence and the eradication of violence against women, as well as the promotion of a life free of violence. In addition, Law 56 of 2017 promotes women's participation in Advisory Boards, establishing women's right to access and actively participate in decision making within public organizations and regulated businesses in the country. Article 2 of Law 56 states that those organisms that have a structural organization that includes a Board of Directors, a Management Council, or other similar organizations, they must designate, at a minimum, a total of 30% women comprising those roles. Also, Panama was the first country in the region to join the Equal Pay International Coalition (EPIC) and within those commitments as part of this coalition are the Regional Plan and National Plan to reduce the gender-based salary gap.

However, despite all these advances, there are still major challenges in terms of gender equality and access to the rights of women living in the rural areas, especially among indigenous peoples, in terms of quality of life.

According to the Global Index of Gender Inequality, gender inequality in Panama is high; and increased between 2009 and 2014. The exclusion factors, in both rural and urban areas, are related to the lack of employment opportunities, inequality in education, and poverty, as well as their role as caretaker of the home, that is largely seen in rural and indigenous areas. According to the INEC (2018), women represent the majority of the qualified labor force in the country, however, they have lower participation in medium and high-level positions and lower incomes compared to men.

According to the Multidimensional Poverty Index (IPM) in 2018, 18.6% of the women were in a situation of multidimensional poverty, being the Indigenous Comarcas and the provinces of Bocas del Toro and Dari?n where most impact have poverty conditions. Indigenous women are more vulnerable because they are indigenous (47.8% of indigenous women nationally are illiterate). Indigenous women also have the highest rate of internal migration (7.08%), compared with non-indigenous women, the majority of those migrating are seeking education, work, and medical services (these migrants comprise 57% men and 43% women).

As of 1 January 2020, the population of Panama was estimated to be 4,227,828 people of which 50.3% are men and 49.7% are women. This is an increase of 1.64 % (68,054 people) compared to population of 4,159,774 the year before. In 2019 the natural increase was positive, as the number of births exceeded the number of deaths by 61,856. During 2020 the population is projected to increase by 69,167 people and reach 4,296,995 in the beginning of 2021[31]. Darien, Guna Yala and Embera-Wounaan represented 2.7% of the population. In Panama, male and female roles vary; female roles consist of childcare, cooking, household chores, minimal farming, making of clothing, and making bead-art by hand for sale at local markets. Male roles consist of fulltime employment outside of the home, making items by hand to sell at local markets, working in the fishing, forestry or construction industry, farming, and other heavy and physical work. In Panama the insertion of men and women into the labor market is uneven; men continue to have greater advantages of entering the labor market, compared to women. In the areas of intervention of the Project, the main occupations of women are related to agriculture, livestock and the sale of handicrafts, which implies precarious jobs that do not result in a decent state of well-being since these jobs are not well paid. However, statistics from the agricultural census of 2011 indicate that there are over 14,000 parcels dedicated to cattle ranching nationwide, of which 15.5% (over 2,000) are managed by women, which does suggest a gradual improvement in women?s access to management positions in rural jobs.

The vision of women and men in the forests of Panama is different and very marked by their gender roles and practical needs, making one more sustainable than the other. The man makes the forest visible as a form of income that is directly related to his construction of masculinity because the possession of land and cutting trees in the forest is a task to achieve social recognition; while women assume their role as protectors of nature associated with the care of their family and future generations, because they obtain resources from the forest to meet their practical needs: food, water, energy, clothing, medicines and crafts. Literacy is also a very relevant issue for women in Panama. Some rural women often have difficulty reading, since some women do not complete primary school. Lack of schooling impacts the degree of participation that women can have in decision-making processes, about their livelihoods and management of the ecosystems upon which they rely. This puts women at a disadvantage, since, in the case of having access to information and documents, they do not have the necessary tool to make this information accessible or useful. Literacy rate, adult female (% of females ages 15 and above) in Panama was reported at 94.88 % in 2018, according to the World Bank collection of development indicators, compiled from officially recognized sources.

One in three women in the Americas have been victims at some point in their lives of violence by their partner or stranger. It takes many forms, but sexual, physical and emotional violence by a male partner are the most prevalent forms[32]. The ENASSER survey (2009) revealed that violence is a widespread problem throughout the Republic of Panama. It reflected that 19.7% of Panamanian women said they were victims of physical violence after they turned 12 and 16.2% of all victims are adolescents between 15 and 19 years old. Records in the Ember? region were 10.2%, while the highest percentage of violence tolerance occurs within indigenous populations (45.8%)[33]. Heritage and psychological violence have been identified as a serious problem by rural and indigenous women. The abandonment

of women, and their children by their partners is experienced by them as an act of violence that affects all spheres of their lives, but economic. This situation becomes one of the main problems that indigenous women have, since, in many circumstances, they are left with more than five children and without any support from the father. This violence is not only heritage and economic, but also psychological against mothers and their children, who must face the loss and abandonment of a loved one who, in cases like this, decides to separate and start another family.[34]

Gender Inequalities

In 2010 the United Nations Development Programme developed the Gender Inequality Index (GII) with respect to three dimensions: reproductive health, empowerment, and labour market. Panama's GII is 0.58, which qualifies Panama as a country of high gender inequality, where the loss of opportunities due to inequality are significant and where still there are major challenges in closing the gaps between men and women. An analysis of the GII by province and region reveals a country with significant gender differences between their territories between 2014-2016. The GII was lower for the province of Panama with 0.54, and higher for the Guna Yala Region with 0.87 in 2014[35]. In 2020, Panama scored 0.73, after five consecutive years of scoring 0.72, which shows a gender gap of approximately 27 percent (women are 27 percent less likely than men to have equal opportunities). That same year, the gender gap in the area of political empowerment in Panama amounted to 78 percent[36].

In Panama, 18.3 percent of parliamentary seats are held by women, and 74.8 percent of adult women have reached at least a secondary level of education compared to 68.4 percent of their male counterparts. For every 100,000 live births, 94.0 women die from pregnancy related causes; and the adolescent birth rate is 81.8 births per 1,000 women of ages 15-19. Female participation in the labour market is 52.5 percent compared to 80.5 for men[37]. In terms of access to the labour market, in 2016, of 1,130,273 male and female workers, 655,574 were men and 474,699 were women. The average participation in economic activities of women represented 41%, versus 59% of men's occupation, while the rate of entrepreneurs established for 2016 was 5.7 for men versus 3.2 for women, with a gender gap of 0.56[38]. In 2014, 44% of all senior and middle management positions in Panama were occupied by women[39]

As a general observation in Panama, rural women face discrimination in access to resources and control of land and property. Owning the land is important for women due to the economic value that this represents, but also to be able to use it as a means of production and to generate additional income. It is a way in addition to being able to access training programs, links to cooperatives of women farmers or organizations for local development. When women do not own the land, it also makes the different tasks that they carry out in the territory invisible and makes it more difficult for them to participate in community development spaces. As for their participation in decision-making, in general it is limited and when it is done in a shared way with men, it happens that women seek legitimization of their decisions in the male figures of the family.

In terms of recent positive developments in favour of women, on July 24th 2020 the Panama Canal reaffirmed its commitment to gender equality and the economic empowerment of women, through the signing of the Principles for the Empowerment of Women, or WEPs. With this signature, the Panama Canal joins the 23 Panamanian companies that work together with UN Women and ?Sumarse? ?

Global Compact Panama, in the economic empowerment of women, under the motto, "gender equality is good business"[40].

Specific Needs of Women in the Project Intervention Areas

Notwithstanding the challenges presented by the COVID 19 pandemic, and considering that internet connectivity is not appropriate in rural areas of Panama, consultations with women from the project intervention areas conducted during the PPG phase included farm women, indigenous women, and women experts in biodiversity. These women identified the following priority needs for the said intervention areas:

- ? Need to generate spaces of economic empowerment and strengthening of women's technical capacities to contribute to the protection of the jaguar
- ? Need to secure the involvement of women through access to information and knowledge about the jaguar
- ? Need to provide a support mechanism for women experiencing violence
- ? Need to provide access to health services for women
- ? Need to increase the negotiation capacity of women at home and in the community
- ? Need to strengthen the role of women as decision makers
- ? Need for the rights, legal and social status of rural women to be given full recognition
- ? Need to generate productive economic opportunities for rural women
- ? Need to establish Community Boards with defined roles for women: bodies at the community level responsible for ensuring the protection of the community and participating in jaguar preservation actions must involve women
- ? Need to include women in training and decision-making processes related to the management of natural assets.

Project Activities to promote Gender Equity

The Project will seek to institutionalize gender mainstreaming at all levels of intervention and operation of the project by promoting gender equity. In its efforts to fully integrate gender mainstreaming, the Project will be guided by the principles that gender elements are important drivers and incentives for achieving global environmental and adaptation benefits, and in ensuring gender equity and social inclusion. The Project also embraces the fact that the needs, interest, and capabilities of women are habitually structurally different from those of men, in relation to the access, use, and management of biodiversity resources within project intervention areas, and thus, must be given special consideration in ensuring equal access to the resources and services of the Project. The project's gender mainstreaming objectives address the following action areas of the GEF: closing gender gaps in access

and control of resources; improving women's participation in decision-making and conservation management; and contributing to social and economic benefits or services for women.

In the context of overall training and capacity building programmes, both women and men will be involved in a balanced way, ensuring that the selection criteria for training include gender-specific characteristics that will ensure meaningful and significant participation by women in all trainings offered by the project (up to 50% where feasible), with the intention of ensuring that at least 1,575 women benefit overall from the project interventions, consistent with the GEF-7 Core Indicator No. 11 of the project. The gender aspect will also be taken into account in the information and communication strategy of the project, by formulating messages specifically tailored to women and men independently, whenever relevant, and by taking into account gender aspects and the representation of both genders in all project implementation activities, and particularly in all communication and information materials.

The project will have to be genuinely gender mainstreamed, from the initial design phase, through the implementation, and impact evaluation. The project will ensure that all offsetting plans, cattle ranching plans, monitoring, and jaguar census activities include gender-sensitive approaches and participation, while ensuring that local women's groups are at the forefront of all mainstreaming efforts. Some key gender mainstreaming activities will include the 3 companies participating with the project in environmental offsetting programs to sponsor training on gender equality and its links with biodiversity for its staff to be engaged with the project; strengthening of the capacity of Yaguara technicians involved in the project on gender equality and its links with biodiversity; assessment of the role of women in the HWC value chain to better assert their participation in HWC management; targeted campaign to raise awareness of the communities about women role on sustainability and ecological practices to guarantee the conservation of the jaguar in jaguar-centric restoration and wildlife connectivity; training to rural women on ecological conservation and protection practices of the jaguar, and training to rural women on research methods, data collection, analysis, and interpretation in jaguar monitoring. Additionally, the project will guarantee women membership and participation in the community-level monitoring and evaluation working groups and, in the project's, governing bodies: Steering Committee and Technical Advisory Committee.

Ensuring that both men and women can equally participate in and benefit from this project is key to its success and can be achieved through careful gender planning and mainstreaming. A Gender Mainstreaming Plan with gender-sensitive indicators has been prepared for the project and is presented in Annex K.

[30] Informe nacional PANAMA? En el contexto del 20o aniversario de la Cuarta Conferencia Mundial sobre la Mujer y la aprobacio?n de la Declaracio?n y Plataforma de Accio?n de Beijing Divisio?n de Asuntos de Ge?nero de la CEPAL camino a Beijing+25

[31] Panama Population. <https://countrymeters.info/en/Panama>. Referenced 25th July 2020.

[32] Multi-country study on health of women and domestic violence against woman: WHO; 2005. http://www.who.int/gender/violence/who_multicountry_study/en/.

[33] Diagnosis of the situation of women indigenous in Panama. The United Nations Development Programme (UNDP)2016

[34] Diagnostico de las mujeres indigenas de Panama PNUD 2016

[35] VII Informe Nacional. Clara Gonzales, ?Situacion de la Mujer en Panama? 2014-2016?

[36] Published by Marina Pasquali, Mar 9, 2020, <https://www.statista.com/statistics/802911/panama-gender-gap-index/>

[37] United Nations Development Programme., 2019. Human Development Report 2019. Inequalities in Human Development in the 21st Century. *Briefing note for countries on the 2019 Human Development Report, 9p*

[38] Clara Gonzales, op. cit..

[39] International Labour Organization, ILOSTAT database. Data retrieved in June 21, 2020.

[40] Panama Canal Reaffirms Commitment To Women's Empowerment. Updated on July 24, 2020. <https://www.marineinsight.com/shipping-news/panama-canal-reaffirms-commitment-to-womens-empowerment/>

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

Yes

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

Improving women's participation and decision making Yes

Generating socio-economic benefits or services or women Yes

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

Yes

4. Private sector engagement

Elaborate on private sector engagement in the project, if any

Panama's legal framework establishes that public and private investments in the infrastructure, energy and other sectors that lead to environmental degradation compensate (offset) the environmental damage caused (Executive Decree 123 of 2009, General Law of the Environment, Forestry Law and Wildlife Law). It is mandatory that these compensation efforts abide to technical criteria and priorities

established by the Ministry of Environment and comply with the national regulatory framework. The Ministry of Environment has therefore discretion over restoration efforts under environmental compensation schemes. In other words, the Ministry has full power to determine where private sector environmental offsetting activities will occur as well as the technical standards to which they should subscribe. Notwithstanding this mandatory requirement, companies participating in the Project will benefit from support in technical assistance, training and transfer of knowledge and technology, opportunities for the exchange of resources and experience, and access to information generated in terms of wildlife conservation and carbon stocks that will also allow them to measure the environmental performance of their own projects. The private sector will benefit from geospatial planning and prioritized geographic areas for environmental compensation projects, as well as a standard methodology and unified procedure in the country to guide these processes with updated data on wildlife species and more specifically, with the evaluation of forest carbon stocks to guide mandatory compensation programs within the government-approved Environmental Impact Studies, and the voluntary reforestation programs that companies must carry out in the areas authorized by the Ministry of the Environment. This would allow for faster approval processes, with less discretion and standardized technical criteria, saving companies time and money.

The cattle ranchers selected to participate in this project have already been "converted" to adopt sustainable production practices in a previous Ministry of Environment - Yaguar? project, and will be further incentivized by the project to engage in acquisition and installation of anti-predatory measures, and mobilize higher incomes due to a reduction in the loss of livestock to jaguar attacks. The project will disseminate lessons learned from the implementation of sustainable production practices and socialize them with other ranchers, which will serve as an incentive for other ranchers to adopt and replicate these practices beyond project duration.

Consistent with the above, the project will specifically engage the private sector through five primary fronts: (1) environmental offsetting programs aimed at restoring 100 ha in the Panama? Centro?Chagres (Chagres NP), Panama Este-Chepo, and Rancho Fr?o?Dari?n (Dari?n NP) complexes, under the framework of the voluntary and involuntary environmental compensation program managed by the Ministry of Environment, in which two private companies will be directly engage in transportation, seedlings, nurseries, planting and maintenance, monitoring & reporting of reforestation and restoration activities; (2) the implementation of jaguar-centric management plans on six privately-owned cattle ranches covering 717 ha in the Panama Este-Chepo and Rancho Fr?o?Dari?n complexes, inclusive of site-specific anti-predation methods to reduce HWC and training for ranchers for the development and update of farm management plans with best practices for the conservation of biodiversity and reducing the vulnerability of farms to feline attack, and consequently, generating proof of concept of jaguar-livestock coexistence in productive landscapes; and (3) through the provision of co-finance, in which two private companies will collectively invest US\$400,000 in grant resources to complement GEF resources in the delivery of project results; (4) as a technical resource to the Technical Advisory Committee of the project; and (5) by being strategically positioned, private sector membership organizations such as ANAGAN and others will be crucial in the scaling-up of project strategies and outcomes in terms of forest and habitat restoration and in the implementation of jaguar-centric management plans on cattle ranches to reduce predation by jaguars and to reduce HWC.

5. Risks to Achieving Project Objectives

Elaborate on indicated risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and, if possible, the proposed measures that address these risks at the time of project implementation.(table format acceptable):

Risk	Risk Description	Risk Level	Mitigation approach
Lack of coordination among the institutions and organizations contributing to the project.	Project dysfunctionality and lack of ownership occur due to institutional apathy and absence from participating project processes.	Low	The lead project organizations (Ministry of Environment and Yaguara Panama Foundation) are committed to the project at the national level, and consider this project a priority in their respective programming portfolios. Their complementary roles, functions and responsibilities have been mutually discussed, as have the forthcoming institutional arrangements and coordination structures designed to guide project development and provide implementation oversight. There is a political and institutional commitment supported at Ministerial levels.
Private companies not carry through with reforestation efforts	Other corporate priorities may increase tendency for companies to renege on commitments, putting at risk the project's target of restoring 100 ha of forests.	Low	Under the environmental offsetting scheme managed by the Ministry of Environment, offsetting interventions may be mandatory, while others may be voluntary such as the Alliance for One Million Hectares. In this regard, the project will work closely with the companies and the ministry alike, and is confident that this two-prong approach will minimize any potential risk of not meeting project targets. The project will also monitor closely progress of this activity and will be ready to explore and identify alternative companies if necessary.

Risk	Risk Description	Risk Level	Mitigation approach
Lack of support from Cattle Ranchers	The six cattle ranchers selected lose faith in the project proposed benefits and retract from updated farm management plans.	Medium	Cattle ranches were selected using a robust criterion, including their specific interest and commitment to implementing mitigation measures, in exchange for enhancing management of cattle, with clear economic benefits to the ranchers, resulting from efficiencies in management, reduced predation from jaguars, and increased returns from cattle. The project will continue to engage ranchers while advocating for the declared anticipated benefits for both rancher and jaguar, while making the best possible use of lessons learned from the management plans implemented before .
Impacts of Climate Change and Weather	Extreme weather events such as excessive rainfall, floods or droughts may negatively affect the ability of the project to conduct reforestation, jaguar census, and monitoring.	Medium	Yaguara Panama will carefully examine historical rainfall data for the project intervention area, and will program census and monitoring data collection within a conservative period to accommodate for early onset of rains or an extended rainy season.
Gender risk	Gender mainstreaming by the project may be undermined without a series of activities aimed at understanding women's challenges, and if the project does not take advantage of their capabilities and leadership roles within the family unit and the local community.	Low	The project will have to be genuinely gender mainstreamed, from the initial design phase, through the implementation, and impact evaluation. Particular attention has to be paid to addressing all possible information gaps that may place women in an unfavourable position. The project has developed a Gender Mainstreaming Plan, inclusive of a Gender Action Plan, to ensure that the project truly gender-sensitive and minimize any potential gender risks.

Risk	Risk Description	Risk Level	Mitigation approach
Indigenous peoples	The technical nature of project activities may potentially lead to exclusion or limited participation of indigenous peoples, in the event that they may be directly affected or relevant for the project's intervention	Medium	All efforts will be made by the project to ensure communication and outreach materials are sensitive to the needs and inclusion of indigenous peoples as necessary and relevant. Local community leaders, including those of indigenous peoples, will be invited to participate in all local events where project results will be presented and interpreted for the local community. The project will seek Prior Informed Consent from indigenous communities involved during the inception phase of the project.
Covid-19 pandemic	Prolonged social distancing measures and recurring national quarantine measures in Panama.	High	To guarantee the continuation of the project despite prolonged social distancing requirements, project meetings and the engagement processes could transition on-line or a combination of in-person and virtual participants to minimize contagion risks. Remote technological infrastructure would be used to facilitate this type of engagement including easily accessible videoconferencing services, etc. For those who cannot participate remotely, in-person meetings could be held with a reduced number of participants and holding social distancing and hygiene best. The development of the crisis will be closely monitored, and creative responses will be explored and implemented along the way focused on advancing project outcomes through alternative forms of engagement, and flexibility in case meetings and field visits have to be rescheduled. Similarly, innovative ways of ensuring co-financing funds can be effectively deployed under a COVID-19 risk scenario may also have to be explored.

Risk	Risk Description	Risk Level	Mitigation approach
Wildcats Conservation and Research Centre?	Stakeholders do not support implementation arrangements for the functioning of the Center (including the 5 Million committed as co-finance)	High	The detail proposals for the Centre, including identity, governance and operational structures, strategic plan, business plan, and financial sustainability plan will all be produced early in project implementation to allow sufficient time to fully exhaust all options and possibilities for establishment and sustainability, including alliances with the private sector as part of their Corporate Social Responsibility programs.

6. Institutional Arrangement and Coordination

Describe the institutional arrangement for project implementation. Elaborate on the planned coordination with other relevant GEF-financed projects and other initiatives.

Institutional Arrangements

The United Nations Environment Program (UN Environment Programme) is the GEF's Implementing Agency for this project and is tasked with the overall responsibility of ensuring that GEF policies and criteria are adhered to and that the project meets its objectives and deliver on expected outcomes. Yaguara Panama Foundation (YPF) will perform the role of executing agency and is responsible for the fiduciary oversight and reporting of the project, including financial management and procurement consolidation according to the project's operational manual and procurement plan. A Technical Advisory Committee (TAC) will be appointed to provide technical oversight, guidance and support during project implementation, and also will have responsibility for reviewing and providing recommendations on project methodological processes (technical quality) and activities to the project for its consideration. A Gender Advisory Group (GAG) will also form part of the institutional arrangements as a separate body, but which may also have representation on the TAC. A Project's Steering Committee (PSC) will be established as the project's superior governing body, with responsibility for ensuring that the project meets goals announced in the Project Results Framework by helping to balance conflicting priorities and resources. A complete description of institutional arrangements, including the project's organizational structure is presented in Annex H.

Coordination with On-going and Past Projects

The proposed project will coordinate and build on interventions by the GEF-CAF Project *'Ecosystem-based biodiversity friendly cattle production framework for the Darien Region of Panama'(2018-2022)*. Coordination will be sought specifically in activities to be conducted by both projects such as green fencing and engagement of the National Cattle Ranchers Association (ANAGAN) in efforts to secure meaningful participation by cattle ranchers in project activities, and also importantly, in making the best

possible use of the umbrella structure of ANAGAN for purposes of future upscaling of results and outcomes of both projects. There also is opportunity for close collaboration with the *Program to finance and support conservation-oriented livestock production in the Dari?n*, led by the Ministry of Agriculture, which advocates for sustainable cattle ranch management plans inclusive of conservation measures as pre-conditions to be able to access credit. This program provides an enabling environment for jaguar-centric measures to be incorporated into sustainable cattle ranching management plans as one of the pre-conditions to be able to access credit. Other opportunities for the inclusion of jaguar-centric considerations into the management plans are offered by the IADB-supported *Program for the conservation and management of the cultural and natural heritage of Panama (2019-2024)*, which will fund the development and implementation of management plans in 4 PAs; these are strategic opportunities that must be pursued by the principals of this proposed project. In terms of collaboration in engaging the community in reforestation in protected areas, this proposed project will seek opportunities for coordination with the *Environmental Economic Incentives Program in the Panama Canal Watershed* initiative executed by the Panama Canal Authority with the Ministries of Environment and Agricultural Development, that promotes water conservation, reforestation, agroforestry and silvopastoral activities in over 20,000 ha, including PAs.

Public-private partnerships with two companies under the framework of the environmental offsetting scheme by the Ministry of Environment will form an important part of this project to secure reforestation efforts and connectivity of forests for jaguars and other wildlife. In this regard, this project will seek collaboration with the *Alliance for one million reforested hectares in line with the REDD+ Strategy of Panama*, and with initiatives under the *Water, Protected Areas and Wildlife Trust*, both of which can offer important lessons learned in consolidating public-private partnerships in support of reforestation and sustainable management of natural resources for wildlife protection. The GEF-IADB project *?Mainstreaming Biodiversity Conservation through Low-Impact Ecotourism in SINAP II (ECOTUR-AP II)? (2018-2021)* seeks to strengthen the PA management related to ecotourism activities and build participatory management models in PAs linked to ecotourism activities. This proposed project must also capitalize with this other GEF-funded project at the institutional level to ensure jaguar conservation and reforestation strategies are upscaled and replicated in all cases where opportunities present themselves, especially in the inclusion of jaguar conservation measures in PA management plans, with due consideration of the future potential of jaguars as a tourism asset within protected areas.

The first phase of the IDB/GEF-ECOTUR (2014-2018) advanced in developing instruments for sustainable planning, oversight, monitoring, and management of low-impact ecotourism in 9 PAs in Panama, and made significant progress in piloting efforts to promote the participation of local communities and the private sector in the management of PAs, the endorsement of normative instruments for granting concessions, and shared management in protected areas. There are numerous lessons learned by the IDB/GEF-ECOTUR that may be applicable to the implementation of this proposed project in engaging local communities and the private sector in the management of PAs and in aspects related to the shared management of PAs. The project will also build on the GEF/UNDP Small Grants Programme, which continues to focus on the Darien region via its Country Strategy document, and on the results and many lessons learned under the Ministry of Environment/World Bank/GEF Project *?Sustainable Production Systems and Conservation of Biodiversity ? (2014-2019)*, as related to the Darien National Park.

The project will seek collaboration with the "Conservation of Biodiversity and Sustainable Development through Productive Innovation and Competitiveness of the Rural Sector" project (GEF ID: 10709) being implemented by the World Bank and the Ministry of Environment, which is also the focal point ministry for this project. The activities under this project will significantly complement and contribute to three of the four outcomes defined under the World Bank project. The extensive Jaguar Census to be conducted across three protected areas will generate high quality technical data that will directly increase scientific biodiversity knowledge and will provide a robust baseline against which management plans and strategies may be adjusted to improve management effectiveness of protected areas, as well as improved management of the jaguar as a species of critical importance and primary indicator species of the health of the connectivity that exists between Central and South America. Reforestation by the private sector and broader connectivity planning efforts under this project will contribute directly to improving the connectivity of protected areas, which is a specific outcome of the World Bank project. Lastly, both of these GEF-funded projects should closely coordinate, share strategies and join forces to optimize private sector engagement, including public-private partnerships.

7. Consistency with National Priorities

Describe the consistency of the project with national strategies and plans or reports and assessments under relevant conventions from below:

NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, INDCs, etc.

- National Action Plan for Adaptation (NAPA) under LDCF/UNFCCC; National Action Program (NAP) under UNCCD
- ASGM NAP (Artisanal and Small-scale Gold Mining) under Mercury; Minamata Initial Assessment (MIA) under Minamata Convention
- National Biodiversity Strategies and Action Plan (NBSAP) under UNCBD; National Communications (NC) under UNFCCC
- Technology Needs Assessment (TNA) under UNFCCC; National Capacity Self-Assessment (NCSA) under UNCBD, UNFCCC, UNCCD
- National Implementation Plan (NIP) under POPs; Poverty Reduction Strategy Paper (PRSP)
- National Portfolio Formulation Exercise (NPFE) under GEFSEC; Biennial Update Report (BUR) under UNFCCC
- Others
- United Nations Sustainable Development Cooperation Framework for Panama (2021-2025)

The project is consistent with multiple national strategies, policies and plans, all of which are responsive to commitments under a series of international conventions and agreements, including SDGs 5, 10, 13 and 15. This proposed project is consistent with the National Biodiversity Policy of Panama of 2008, which seeks to "implement the National Biodiversity Policy, as the core of a national strategy to articulate the sustainability of biological diversity, with economic and social development processes, to improve the country's competitiveness, quality of life, poverty eradication, subsistence, the integration of peoples, and sustainable development". The proposed objectives of the project are aligned with the Vision, Mission and Guiding Principles of the National Biodiversity Strategy and Action Plan 2018-2050 (NBSAP), and in particular with the objectives of strategic areas 1, 2 and 4, addressing Conservation and Restoration, Reduction of Pressures on Biodiversity, and Use and Sustainable Management, respectively. The project's alignment with Aichi Targets 1,2,7,12,14 and 15 will build on the progress of Panama in its compliance with the Aichi targets as reported in the country's Fifth National Report to the Convention on Biological Diversity of November 2014. Also at the national level, the project is aligned with the 2017 National Strategic Plan of Panama, Section 6.3.1.5 - Biodiversity and Ecosystems, as it relates to scientific investigation, biological inventories and census, and the protection of routes used by terrestrial migratory species, and with the objectives and programs of the National Forest Policy relating to reforestation and restoration. Additionally, integrating jaguar conservation monitoring and national REDD+ monitoring efforts is a strategic priority that can contribute to fulfilling commitments under the country's UN Framework Convention on Climate Change (UNFCCC) Nationally Determined Contribution (NDC) and Alliance for the Million Hectares' restoration targets. This approach can further ensure jaguar conservation efforts benefit from REDD+ financing and results-based payments.

This proposed project also fully embraces the actions outlined in the 2011 Action Plan for the Conservation of Jaguars in Panama, which has as its primary components: Actions and Measures for Direct Conservation; Capacity Building; Collection, Management and Analysis of Information; and Education and Public Participation. The key proposed outcomes of the project are a clear representation of the

objectives of the Cooperation Agreement between the Ministry of Environment and Yaguara Panama Foundation ? ?Program for the Conservation and Preventive Management of Cattle-Jaguar Conflicts?, being to promote the conservation of the jaguar and its co-existence with humans, through the development of scientific information, technical assistance, environmental education and other related actions, to resolve or reduce jaguar-cattle conflict.

The project further aligns with the United Nations Sustainable Development Cooperation Framework for Panama (2021-2025). In particular, Change Area 3 on climate change, integral environmental management and disaster risk reduction and products 3.3. with its focus on reforestation and restoration, among other things, and product 3.4 through its focus on environmental data and management.

8. Knowledge Management

Elaborate the "Knowledge Management Approach" for the project, including a budget, key deliverables and a timeline, and explain how it will contribute to the project's overall impact.

The Knowledge Management Approach of the project will seek to create a jaguar conservation and information and knowledge management framework, within the context of the proposed outputs and outcomes of the project in Panama. It is envisioned that the successful implementation of this framework within the life span of the project will result in a solid foundation for the extended dissemination and exchange of jaguar and wildcats knowledge in Panama, the region and beyond. The KM approach will be developed and implemented to ensure systemic documentation and uptake of results, experiences and lessons learnt is realized through-out project implementation, and not just as a consequence of periodic monitoring of time-bound project milestones. The development of this approach will be guided by the GEF approach to KM and by globally accepted elements affecting the successful implementation of Knowledge Management Systems: adoption, acceptance and assimilation[41]. The institutionalization of knowledge management initiatives and processes developed by the project will be a specific objective of the Knowledge Management Approach, and will be a critical element for the sustained storage, access and dissemination of project results and outcomes beyond the life of the project.

The KM approach will document, share and disseminate knowledge on the conservation and monitoring of the jaguar and terrestrial mammals of Panama; as well as information on the fight against wildlife crime through comprehensive multimedia education and outreach campaigns to ensure a positive change in attitude of the local population towards jaguars and wild cats. While some informative materials to be produced by the project will reach the population at large, the education and outreach campaign will primarily target cattle ranching families that have a history or high probability of HWC based on their location within the project intervention area, as well as other local communities that are located adjacent to cattle ranching or are engaged in wild game hunting. The education and outreach campaign will include general informative material on the importance and need for coexistence between humans and wildlife; audience-specific messages (in both content and language of choice) on non-lethal HWC mitigation options such as anti-predation measures; information on how local communities can help in managing HWC through attitude and behavioural adjustment; and information on the socio-economic benefits of anti-predation measures. While electronic means and social media are key choices for message delivery, the project will implement sustained and systematic engagement with stakeholders through community meetings and field visits. The KM approach will include an information management website platform,

the exchange of data, monitoring and evaluation status of the jaguar population, the conservation of habitats and corridors, and; knowledge sharing to facilitate information exchange and learning about integrated environmental management of jaguar landscapes. Access to educational resources based on scientific research on wildlife will be facilitated for citizen science on ecology and conservation biology that will be available to educators and the general public in Spanish and English.

Other activities will include the development of standardized data collection and reporting formats for use in all project documents (Progress Reports, M&E reports, work plans, etc.); and standardized definitions of common terminologies to be used with respect to jaguar-centric management and conservation. The project will develop a KM and Communication Guideline as a formal document to guide the KM and communication approach of the project based on best practice, which will also allow for proper monitoring and evaluation of the effectiveness of the KM and communication approaches of the project. Key personnel from YPF, protected area authorities and project partner institutions will be trained in the use of the project's KM and Communication Guideline. The project will conduct a systematization of experiences and lessons learned as a result of project interventions; implementation of national and regional institutional partnerships and South-South Cooperation for wildlife protection through the 'Wildcats Conservation and Research Centre' focusing on data collection and analysis, monitoring, rescue, and rehabilitation of wild cats; technical exchange programs, internships, collaborative research agreements and Memoranda of Understanding as possible vehicles or mechanisms for practical implementation. The KM approach will ensure optimum communication and visibility of project processes, progress, results and opportunities for replication and upscaling.

The KM approach is designed to meet the initial needs of the project as a temporary project/organizational structure, but with KM investments, structure, processes and systems, which will continue to be functional beyond the life of the project, with clear capacity building and institutionalization across Panama.

[41] Knowledge Management Tools. <https://www.knowledge-management-tools.net/knowledge-management-systems.html>

9. Monitoring and Evaluation

Describe the budgeted M and E plan

The project will follow the UN Environment Programme's standard monitoring, reporting and evaluation processes and procedures. Substantive and financial project reporting requirements are summarized in Appendix 8 of the UN Environment Programme Project Document. Reporting requirements and templates are an integral part of the legal instrument to be signed by the Executing Agency and the UN Environment Programme.

The project M&E plan is consistent with the GEF Monitoring and Evaluation policy. The Project Results Framework is presented in Annex A of this CEO Endorsement Request and Appendix 4 of the UN Environment Programme Project Document, and includes SMART indicators for each expected outcome, means of verification, as well as mid-term and end-of-project targets. These indicators along with the key deliverables and benchmarks included in Annex I of this CEO Endorsement Request and Appendix 6 of the UN Environment Programme Project Document will be the main tools for assessing project implementation progress and whether project results are being achieved. The project's Costed M&E Plan is presented in Annex G of this CEO Endorsement Request and in Appendix 7 of the UN Environment Programme Project Document, with all mentioned M&E costs fully integrated in the overall budget of the project, presented in Annex F-1 and F-2 of this CEO Endorsement Request and Appendix 1 of the UN Environment Programme Project Document.

The M&E plan will be reviewed and revised as necessary during the project inception workshop to ensure project stakeholders understand their roles and responsibilities vis-à-vis project monitoring and evaluation. Indicators and their means of verification may also be fine-tuned at the inception workshop. Day-to-day project monitoring is the responsibility of the project management team, but other project partners will have responsibilities to collect specific information to track the indicators. It is the responsibility of the Project Coordinator to inform UNEP of any delays or difficulties faced during implementation so that the appropriate support or corrective measures can be adopted in a timely fashion.

The Project Steering Committee will receive periodic reports on progress and will make recommendations to UNEP concerning the need to revise any aspects of the Results Framework or the M&E plan. Project oversight to ensure that the project meets UNEP and GEF policies and procedures is the responsibility of the GEF Task Manager at UNEP. The Task Manager will also review the quality of draft project outputs, provide feedback to the project partners, and establish peer review procedures to ensure adequate quality of scientific and technical outputs and publications.

Project supervision will take an adaptive management approach. The Task Manager will develop a project supervision plan at the inception of the project which will be communicated to the project partners during the inception workshop. The emphasis of the Task Manager supervision will be on outcome monitoring but without neglecting project financial management and implementation monitoring. Progress vis-à-vis delivering the agreed project global environmental benefits will be assessed with the Steering Committee at agreed intervals. Project risks and assumptions will be regularly monitored both by project partners and UN Environment Programme. Risk assessment and rating is an integral part of the Project Implementation Review (PIR). The quality of project monitoring and evaluation will also be reviewed and rated as part of the PIR. Key financial parameters will be monitored quarterly to ensure cost-effective use of financial resources.

A mid-term management review or evaluation will take place on January 30, 2023 as indicated in the project milestones. The review will include all parameters recommended by the GEF Evaluation Office for terminal evaluations and will verify information gathered through the project PIRs and quarterly progress

reports, as relevant. The review will be carried out using a participatory approach whereby parties that may benefit or be affected by the project will be consulted. Such parties were identified during the stakeholder analysis. The Project Steering Committee will participate in the mid-term review and develop a management response to the evaluation recommendations along with an implementation plan. It is the responsibility of the UNEP Task Manager to monitor whether the agreed recommendations are being implemented.

In-line with the GEF Evaluation requirements, the project will be subject to an independent Terminal Evaluation. Additionally, a performance assessment will be conducted at the project's mid-point. The Evaluation Office will decide whether a Mid-Term Review, commissioned and managed by the Project Manager, is sufficient or whether a Mid-Term Evaluation, managed by the Evaluation Office, is required.

The Evaluation Office will be responsible for the Terminal Evaluation (TE) and will liaise with the project manager throughout the process. The TE will provide an independent assessment of project performance (in terms of relevance, effectiveness and efficiency), and determine the likelihood of impact and sustainability. The project performance will be assessed against standard evaluation criteria using a six-point rating scheme. It will have two primary purposes: (i) to provide evidence of results to meet accountability requirements, and (ii) to promote learning, feedback, and knowledge sharing through results and lessons learned among UNEP staff and implementing partners. The direct costs of the evaluation will be charged against the project evaluation budget. The TE will typically be initiated after the project's operational completion. If a follow-on phase of the project is envisaged, the timing of the evaluation will be discussed with the Evaluation Office to feed into the submission of the follow-on proposal.

The draft TE report will be sent by the Evaluation Office to project stakeholders for comment. Formal comments on the report will be shared by the Evaluation Office in an open and transparent manner. The final determination of project ratings will be made by the Evaluation Office when the report is finalised.

The evaluation report will be publicly disclosed and will be followed by a recommendation compliance process. The evaluation recommendations will be entered into a Recommendations Implementation Plan template by the Evaluation Office. Formal submission of the completed Recommendations Implementation Plan by the project manager is required within one month of its delivery to the project team. The Evaluation Office will monitor compliance with this plan every six months for a total period of 12 months from the finalisation of the Recommendations Implementation Plan. The compliance performance against the recommendations is then reported to senior management on a six-monthly basis and to member States in the Biennial Evaluation Synthesis Report.

Annex G: Costed Monitoring & Evaluation Workplan

Type of M&E activity	Responsible Parties	Budget from GEF (USD)	Budget co-finance ? In-kind (USD)	Time Frame
Inception Meeting	Yaguara Panama Foundation Government of Panama -Ministry of Environment	3,000	1,000	Within 2 months of project start-up
Inception Report	Yaguara Panama Foundation	1,000	1,000	1 month after project inception meeting
Measurement of project indicators (outcome, progress and performance indicators, GEF tracking tools) at national and global level	Yaguara Panama Foundation National Consultants	18,000	5,000	Outcome indicators: start, mid and end of project Progress/perform. Indicators: annually
Semi-annual Progress/Operational Reports to UNEP	Yaguara Panama Foundation	3,000	3,000	Within 1 month of the end of reporting period i.e. on or before 31 January and 31 July
Project Steering Committee meetings and Technical Advisory Committee meetings	Government of Panama -Ministry of Environment Yaguara Panama Foundation	6,000	2,000	Once a year minimum
Reports of PSC meetings	Yaguara Panama Foundation	3,000	1,000	Annually
Monitoring visits to field sites	Yaguara Panama Foundation	13,000	10,000	As appropriate
Mid Term Review/Evaluation	UN Environment Programme Yaguara Panama Foundation National/International Consultant	20,000	9,000	At mid-point of project implementation

Type of M&E activity	Responsible Parties	Budget from GEF (USD)	Budget co-finance ? In-kind (USD)	Time Frame
Terminal Evaluation	UN Environment Programme National/International Consultant	30,000	6,500	Within 6 months of end of project implementation
Project Final Report	Yaguara Panama Foundation	3,000	3,000	Within 2 months of the project completion date
Co-financing report	Government of Panama ? Ministry of Environment Yaguara Panama Foundation	5,000	2,500	Within 1 month of the PIR reporting period, i.e. on or before 31 July
Publication of Lessons Learnt and other project documents	Yaguara Panama Foundation	5,000	-	Annually, part of Semi-annual reports & Project Final Report
Total M&E Plan Budget		110,000	46,000	

10. Benefits

Describe the socioeconomic benefits to be delivered by the project at the national and local levels, as appropriate. How do these benefits translate in supporting the achievement of global environment benefits (GEF Trust Fund) or adaptation benefits (LDCE/SCCF)?

Socio-Economic Benefits:

The socio-economic benefits to be offered by this proposed project may be expressed at multiple levels. As stated above, cattle ranchers often lose as much as 10% of their animals and associated income from causes other than jaguar predation and mainly due to sub-optimal management practices, a situation which may be exacerbated by predation by jaguar, and thus a further economic loss to the cattle rancher. The project will help cattle ranchers to minimize losses and improve income through jaguar-centric strategies for enhanced management of cattle ranches such as use of night enclosures and corrals; enhance spatial distribution of cattle, natural prey and felines through thoughtful location of water sources; fencing of forested areas; use of breeding seasons; design and location of calving paddocks; use of experienced animals, donkeys and bells; change of livestock operations; strategic herd movements; timely discard of carcasses; use of cattle breeds with defensive disposition; efficient cattle health programs; use of the Wagon Wheel paddock system; physical and chemical repellents; shade management; diversified food source; and use of electric fences. These benefits to the cattle rancher as a consequence of improved management and reduced predation by jaguars may be considered as ?payments for enhancing coexistence?, which achieve a dual purpose of promoting biodiversity

conservation and alleviating poverty through increased income. At the community level, the protection of jaguars and their prey have tremendous eco-tourism potential which can support job creation and provide community livelihoods. Reforestation efforts to be supported by the project also bring broader community benefits in terms of ecosystem services such as the production of water, in addition to global environmental benefits such as carbon sequestration and direct support to the conservation of wildlife by contributing to the maintenance of a critical corridor necessary for the survival of numerous species of global importance.

The project project will directly benefit 1,575 women and 1,925 men in the communities of the project intervention area. The jaguar-centric cattle ranching management plans and reforestation efforts will provide numerous opportunities for both women and men to participate in training in the application of improved cattle management practices, the operation of nurseries to produce seedlings for reforestation, in jaguar monitoring, and in campaigns to better disseminate the necessary socio-cultural relations between cattle ranchers and the jaguar and the benefits of coexistence. Improved management and reduced predation by jaguars will strengthen the resilience of cattle production and the resilience of the cattle ranching community, and by extension will directly support the economic position and the livelihoods of ranchers. Additionally, the project's gender mainstreaming approach will ensure that women receive their fair share of project benefits, and especially women ranchers or those directly working on cattle ranches, with a direct positive impact on their economic independence.

Cost-Effectiveness:

Firstly, the project is expected to be cost-effective by complementing the baseline investments defined under the "GEF Alternative", while contributing the GEF Biodiversity Focal Area (BD-1-2a) and the Global Wildlife Program Components 1,2 and 5. Secondly, the project is expected to be cost-effective as a result of its ability to bring together various partners including regulatory, productive (private sector) and Civil Society entities in public-private partnerships which will produce tangible outcomes in favour of wildcats and their prey, forests connectivity, increased income to cattle ranchers from enhanced management practices, and extended socio-economic benefits to the communities in the project intervention area. Thirdly, project intervention measures were chosen based on a qualitative analysis of their alignment with national policies and priorities, their technical feasibility, estimated individual costs, probable execution times, availability of favourable enabling frameworks (in the political, legal, institutional, private sector willingness, and environmental aspects), and the estimated time for their design and implementation. This approach allowed for an effective identification of those interventions that can be implemented in the project cycle, have the highest probability of co-financing, and those that are most likely to consolidate alliances, not just nationally, but which also provide opportunities for regional and other possible South-South exchanges critical to the success of the "Wildcats Conservation and Research Centre", while achieving tangible economy of scale in knowledge management through the maximization of experiences and lessons learned. Finally, the cost-effectiveness of the project is further strengthened through the involvement of UN Environment Programme as the GEF Implementing Agency and Yagaura Panama Foundation as Project Executing Agency, together with the Ministry of Environment. This ensures that a competent organization with substantial project management experience is able to support project execution and strengthen the administrative, financial and technical oversight of the project, with priority on efficient execution of funds, achievement of economies of scale, and the maximization of return on project investments.

Technical Soundness of the Project:

The project is considered to be technically sound, given that:

- a. Jaguar-centric Cattle Ranching Management Plans will be developed based on sound technical and proven best practices and economic viability.
- b. Environmental compensation and offsetting regulations in Panama provide an enabling framework for public-private alliances for reforestation in support of connectivity needed to sustain multiple keystone species.
- c. The Project will minimize technical difficulties in applying innovative approaches by developing and implementing agreed protocols for collection, processing and dissemination of information, technology transfer and knowledge management, extending to South-South collaboration.
- d. The involvement of the private sector and Civil Society brings years of experience and technical know-how, thus providing a high degree of assurance to the quality of projects outputs and outcomes.
- e. The Ministry of Environment, Ministry of Agriculture Development and Yaguara Panama Foundation are committed to lead and consolidate cattle ranching management practices that support jaguar conservation through the institutionalization of jaguar-centric management plans.
- f. The project employs decentralized structures that ensure the participation and contribution of local stakeholders at the level of communities in the project intervention area, municipalities, and productive sectors.

11. 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

Elaborate on the types and risk classifications/ratings of any identified environmental and social risks and impacts (considering the GEF ESS Minimum Standards) and any measures undertaken as well as planned management measures to address these risks during implementation.

Please refer to the Annex P of the CEO Endorsement document.

Supporting Documents

Upload available ESS supporting documents.

Title

Module

Submitted

ANNEX A: PROJECT RESULTS FRAMEWORK (either copy and paste here the framework from the Agency document, or provide reference to the page in the project document where the framework could be found).

Please refer to the Annex A of the CEO Endorsement document.

ANNEX B: RESPONSES TO PROJECT REVIEWS (from GEF Secretariat and GEF Agencies, and Responses to Comments from Council at work program inclusion and the Convention Secretariat and STAP at PIF).

Please refer to the Annex B of the CEO Endorsement document.

ANNEX C: Status of Utilization of Project Preparation Grant (PPG).
(Provide detailed funding amount of the PPG activities financing status in the table below:

<i>Project Preparation Activities Implemented</i>	<i>GETF/LDCF/SCCF Amount (\$)</i>		
	<i>Budgeted Amount</i>	<i>Amount Spent To date</i>	<i>Amount Committed</i>
Project Development Consultant	25,000	25,000	0
National Project Preparation Coordinator	7,250	7,250	0
Gender Expert	7,200	7,200	0
Project Preparation Team Travel to Project Sites	2,750		2,750
Environmental Offset Workshop	2,500		2,500
Human-Jaguar Conflict Workshop	2,300		2,300
Project Document Validation Workshop	3,000		3,000
Total	<u>50,000</u>	<u>39,450</u>	<u>10,550</u>

ANNEX D: Project Map(s) and Coordinates

Please attach the geographical location of the project area, if possible.

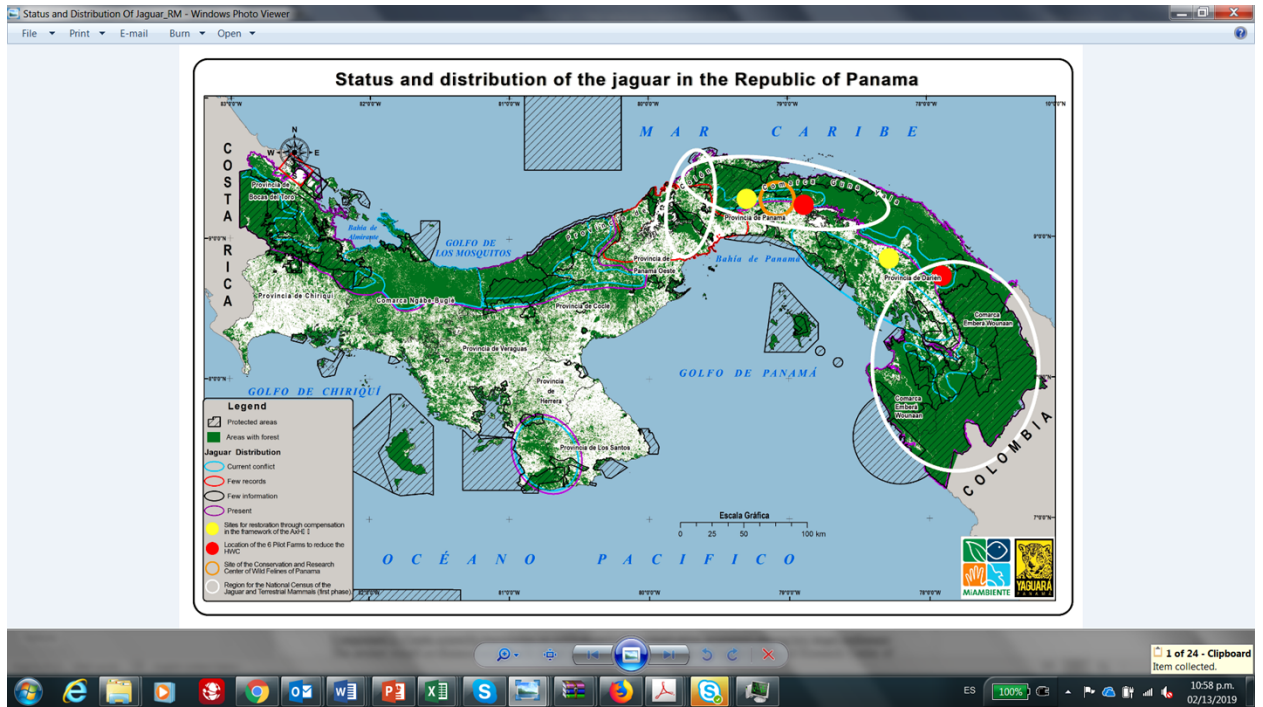


Figure 1. Jaguar Distribution at the National Level

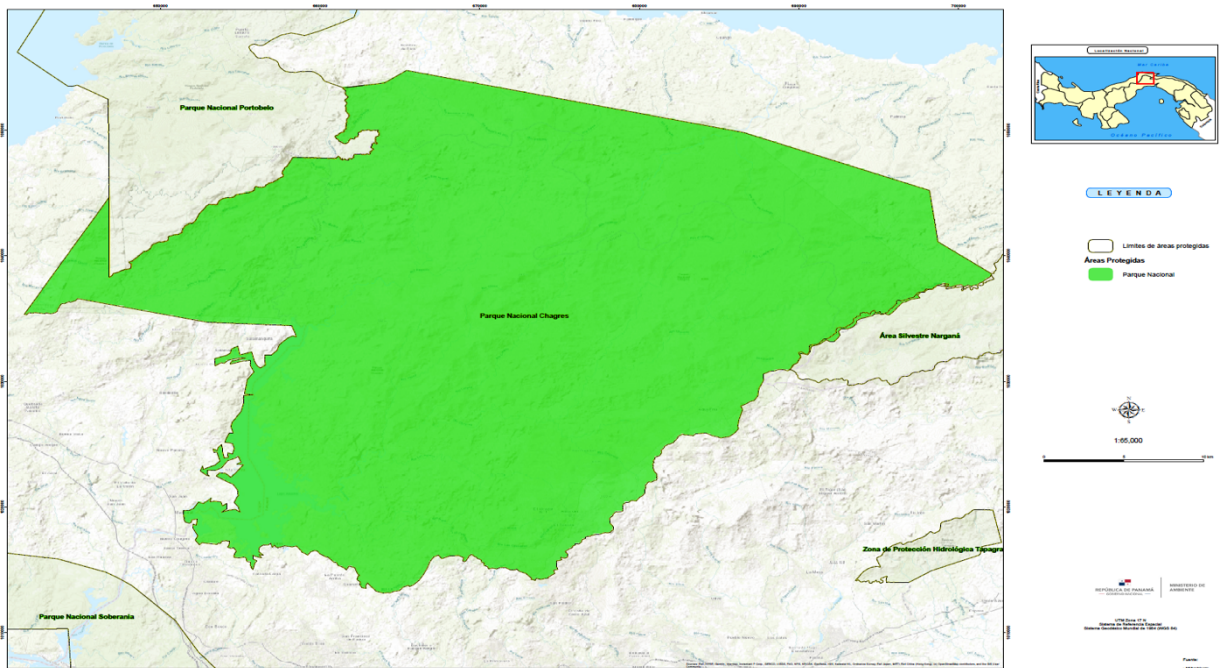


Figure 2. Project Site 1 - Chagres National Park

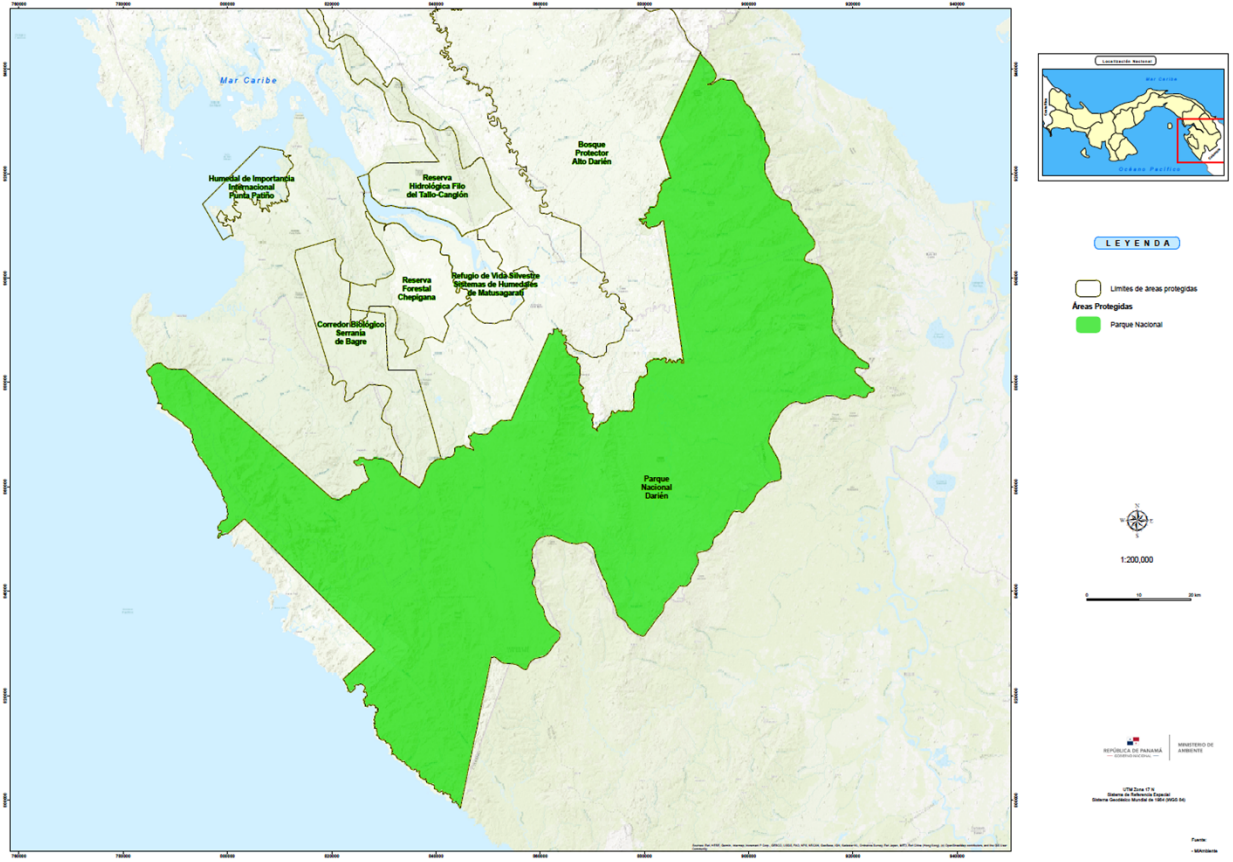


Figure 3. Project Site 2 - Darien National Park

		<i>O u t c o m e 1. 1</i>	<i>O u t c o m e 1. 2</i>	<i>O u t c o m e 1. 3</i>	<i>O u t c o m e 2. 1</i>					(U S D e q.)	(U S D e q.)	(U S D e q.)	(U S D e q.)	(U SD e q.)	(U SD e q.)			
Wor ks	<i>Buildi ng - Wildca ts Conser vation and Resear ch Centre</i>				22 0, 00 0	22 0,0 00			22 0,0 00	50, 00 0	12 0,0 00	50, 00 0		127 ,51 0	85, 00 0	432 ,51 0		Yaguara Panama Foundat ion
Go ods																		
	<i>Veterin ary Equip ment</i>				25 ,0 00	25, 00 0			25, 00 0	5,0 00	15, 00 0	5,0 00		352 ,04 0	45, 00 0	422 ,04 0		Yaguara Panama Foundat ion
	<i>Furnit ure & applia nces</i>				32 ,0 00	32, 00 0			32, 00 0		16, 00 0	16, 00 0		100 ,00 0		132 ,00 0		Yaguara Panama Foundat ion
	<i>Camer a Traps No Glow Black Flash</i>		78 ,0 00			78, 00 0			78, 00 0	48, 00 0	30, 00 0					78, 000		Yaguara Panama Foundat ion
	<i>Camer a Traps Low Glow Long Range</i>		78 ,0 00			78, 00 0			78, 00 0	48, 00 0	30, 00 0			150 ,00 0		228 ,00 0		Yaguara Panama Foundat ion

	<i>Surveillance and monitoring cameras</i>				14,000	14,000			14,000	14,000						14,000	Yaguara Panama Foundation
	<i>SD cards</i>		7,500	2,000		9,500			9,500	9,500						9,500	Yaguara Panama Foundation
	<i>Batteries</i>		5,000	1,700		6,700			6,700	6,700						6,700	Yaguara Panama Foundation
	<i>Camera traps Cellular enabled monitoring anti-predation measures</i>			15,000		15,000			15,000	15,000						15,000	Yaguara Panama Foundation
	<i>Integrated Audio Visual, Video-Conferencing and Direct Surveillance System</i>		2,700	2,700	2,000	7,400			7,400	5,000	2,400					7,400	Yaguara Panama Foundation
	<i>Laptops & rugged tablets outdoors</i>	10,000		2,000		12,000			12,000	11,000	1,000					12,000	Yaguara Panama Foundation

	<i>Start-up manuals, policies and Resource Mobilization Strategy for Wildcat Conservation and Research Centre</i>			5,000	20,000	25,000			25,000	10,000	10,000	5,000		270,000		295,000	Yaguara Panama Foundation
	<i>Pilot Program design and Standards Manual for the Management, Rehabilitation and Reintroduction of small to medium size Wildcats</i>				22,000	22,000			22,000	16,000	6,000			350,000		372,000	Yaguara Panama Foundation

	<i>Technical Standard, Training and data analysis for the National Census of Jaguar and Terrestrial Mammals (including monitoring and data of threat and conflict mapping)</i>		31,000		31,000			31,000	7,000	10,000	10,000	4,000	1,000,000		1,031,000		1,031,000	Yaguara Panama Foundation
	<i>Technical Standard and Training for Chemical Containment Methods and Veterinary Management of Wild Cats Pilot Program</i>		3,000	6,000	9,000		9,000	3,000	3,000	3,000			500,000		509,000		509,000	Yaguara Panama Foundation

	<i>Carbon Stock Assessments correlated with information on jaguar populations and habitat</i>	25,000				25,000		25,000	4,000	15,000	4,000	2,000	170,000		195,000			Yaguara Panama Foundation
	<i>Integration of Jaguar data and conservation measures in 3 Protected Areas Management Plans, develop or modify legal instruments to incorporate measures of biodiversity impact in the evaluation of development projects</i>	14,000				14,000		14,000	10,000	4,000			600,000		614,000			

Technical Assistance to 6 Cattle Ranches in On-Site Anti Predation Measures				18,000	18,000			18,000	4,000	6,000	5,000	3,000	400,000		418,000	Yaguara Panama Foundation
<i>Business Plan and Financial Sustainability for Wildcat Conservation and Research Center</i>				25,000	25,000			25,000	8,000	17,000			40,000		65,000	Yaguara Panama Foundation
Design of operational structures and basic infrastructure for the construction of the Wildcat Conservation and Research Center				30,000	30,000			30,000	20,000	5,000	5,000		90,000		120,000	Yaguara Panama Foundation

	Gender & ESS Specialist	4,500	1,000	4,500		10,000			10,000	5,000	5,000					10,000	Yaguara Panama Foundation
	<i>Design of multimedia education and outreach campaigns</i>	5,000		5,000	5,000	15,000			15,000	2,500	5,000	5,000	2,500	40,000		55,000	Yaguara Panama Foundation
	<i>Design of Information management website platform</i>	2,500		2,500	2,000	7,000			7,000	4,000	1,000	1,000	1,000	40,000		47,000	Yaguara Panama Foundation
	<i>Development and Training in KM and Communications Guidelines</i>	4,000	1,000	2,500	5,000	12,500			12,500	4,000	3,000	3,000	2,500	40,000		52,500	Yaguara Panama Foundation
						0											
Salary and Benefits and Staff costs	<i>Project Coordinator</i>					0		96,000	24,000	24,000	24,000	24,000		1,312,000		1,408,000	Yaguara Panama Foundation

	<i>Biologist</i>	15,000	15,000	15,000	15,000	60,000			60,000	15,000	15,000	15,000	15,000		48,000	108,000	Yaguara Panama Foundation	
	<i>Administrative Assistant</i>					0	48,000		48,000	12,000	12,000	12,000	12,000		20,000	68,000	Yaguara Panama Foundation	
						0												
Training, Workshops and Meetings	<i>Inception Workshops - gender inclusive</i>					0	3,000		3,000	3,000					40,000	43,000	Yaguara Panama Foundation, UN Environment Ministry of Environment	
	<i>Project Steering Committee (PSC) and Technical Advisory Committee Meetings - gender inclusive</i>					0	6,000		6,000	1,500	1,500	1,500	1,500		50,000	56,000	Yaguara Panama Foundation	
	<i>Training in Jaguar Monitoring and Data Collection - gender inclusive</i>		13,000			13,000			13,000	8,000	5,000				500,000	90,000	603,000	Yaguara Panama Foundation

	<i>Training in Anti-Predation, Pasture Management and Health Management - gender inclusive</i>			8,000		8,000		8,000	3,000	3,000	2,000			383,000	53,000	444,000	Yaguara Panama Foundation
	<i>Training workshops to strengthen the institutional capacities of justice operators to attend the HWC - gender inclusive</i>			10,000		10,000		10,000	3,500	3,500	3,000			500,000	50,000	560,000	

	<i>National Consultant to field sites</i>	2,000	2,500	2,500	2,000	9,000			9,000	2,000	3,000	2,000	2,000	50,000		59,000	Yaguara Panama Foundation
	<i>Jaguar Census Field Trips</i>		223,000			223,000			223,000	13,000	16,000	50,000		2,100,000	40,000	2,363,000	Yaguara Panama Foundation
	<i>Cattle Ranches Field Trips</i>	2,500	2,500	9,500		14,500			14,500	5,000	4,000	4,000	1,500	350,000	10,000	374,500	Yaguara Panama Foundation
	<i>Monitoring visits to field sites by Project Staff</i>					0			15,000	3,750	3,750	3,750	3,750	1,200,000	20,000	1,235,000	Yaguara Panama Foundation
	<i>Technical Exchange Programs</i>	10,000	1,500	10,000	8,000	29,500			29,500	12,000	11,000	4,000	2,500	300,000		329,500	
						0											
Office Supplies						0											Yaguara Panama Foundation
	<i>Office supplies and consumables</i>	2,500	2,500	2,500		7,500			7,500	2,500	2,500		2,500	100,000	30,000	137,500	Yaguara Panama Foundation

	<i>Equipment maintenance</i>	9,000	9,000	9,000	5,000	32,000			32,000	12,000	12,000	7,000	1,000			32,000	Yaguara Panama Foundation
	<i>Banking fees</i>	1,000	1,000	1,000	700	3,700			3,700	1,000	1,000	1,000	700			3,700	Yaguara Panama Foundation
	<i>Fuel</i>	6,000	3,200	7,000	1,200	17,400		260	17,660	6,000	6,460	3,500	1,700	150,000		167,660	Yaguara Panama Foundation
	<i>Financial Audits</i>					0		18,000	18,000	4,500	4,500	4,500	4,500		68,000	86,000	Yaguara Panama Foundation
	<i>Mid-Term Review /Evaluation</i>					0		18,000	18,000		18,000				114,000	132,000	UN Environment
	<i>Terminal Evaluation</i>					0		25,000	25,000				25,000		100,000	125,000	UN Environment
	Grand Total	21,800	52,430	30,100	47,500	1,560	11,600	1,784,862	487,600	759,762	348,500	189,000	13,822,550	2,300,000	17,907,412		

ANNEX F: (For NGI only) Termsheet

Instructions. Please submit an finalized termsheet in this section. The NGI Program Call for Proposals provided a template in Annex A of the Call for Proposals that can be used by the Agency. Agencies can use their own termsheets but must add sections on Currency Risk, Co-financing Ratio and Financial Additionality as defined in the template provided in Annex A of the Call for proposals. Termsheets submitted at CEO endorsement stage should include final terms and conditions of the financing.

ANNEX G: (For NGI only) Reflows

Instructions. Please submit a reflows table as provided in Annex B of the NGI Program Call for Proposals and the Trustee excel sheet for reflows (as provided by the Secretariat

or the Trustee) in the Document Section of the CEO endorsement. The Agency is required to quantify any expected financial return/gains/interests earned on non-grant instruments that will be transferred to the GEF Trust Fund as noted in the Guidelines on the Project and Program Cycle Policy. Partner Agencies will be required to comply with the reflows procedures established in their respective Financial Procedures Agreement with the GEF Trustee. Agencies are welcomed to provide assumptions that explain expected financial reflow schedules.

ANNEX H: (For NGI only) Agency Capacity to generate reflows

Instructions. The GEF Agency submitting the CEO endorsement request is required to respond to any questions raised as part of the PIF review process that required clarifications on the Agency Capacity to manage reflows. This Annex seeks to demonstrate Agencies' capacity and eligibility to administer NGI resources as established in the Guidelines on the Project and Program Cycle Policy, GEF/C.52/Inf.06/Rev.01, June 9, 2017 (Annex 5).