Enabling sustainable production landscapes in Eastern Highlands and Western Highlands Provinces for Biodiversity, Human Livelihoods and Well-being

Part I: Project Information

GEF ID

10515

Project Type

FSP

Type of Trust Fund

GET

CBIT/NGI

☐CBIT

☐NGI

Project Title

Enabling sustainable production landscapes in Eastern Highlands and Western Highlands Provinces for Biodiversity, Human Livelihoods and Well-being

Countries

Papua New Guinea

Agency(ies)

FAO, UNDP

Other Executing Partner(s)
Conservation and Environmental Protection Authority (CEPA); PNG Forest Authority (PNGFA); Climate Change and Development Authority (CCDA), Department of Agriculture and Livestock (DAL)

Executing Partner Type
Government

GEF Focal Area
Biodiversity

Taxonomy
Biodiversity, Focal Areas, Protected Areas and Landscapes, Community Based Natural Resource Mngt, Terrestrial Protected Areas, Productive Landscapes, Mainstreaming, Agriculture and agrobiodiversity, Forestry - Including HCVF and REDD+, Forest, Education, Communications, Awareness Raising, Individuals/Entrepreneurs, Stakeholders, Influencing models, Convene multi-stakeholder alliances, Strengthen institutional capacity and decision-making, Demonstrate innovative approache, Indigenous Peoples, Private Sector, SMEs, Civil Society, Non-Governmental Organization, Academia, Type of Engagement, Participation, Information Dissemination, Consultation, Beneficiaries, Gender Equality, Gender results areas, Capacity Development, Knowledge Generation and Exchange, Participation and leadership, Access and control over natural resources, Gender Mainstreaming, Sex-disaggregated indicators, Gender-sensitive indicators, Women groups, Capacity, Knowledge and Research, Knowledge Exchange, Learning, Adaptive management, Indicators to measure change, Theory of change, Enabling Activities, Innovation, Knowledge Generation

Rio Markers

Climate Change Mitigation
Climate Change Mitigation 1

Climate Change Adaptation
Climate Change Adaptation 1

Duration
48 In Months

Agency Fee($)

Submission Date
3/20/2020

A. Indicative Focal/Non-Focal Area Elements

Programming Directions	Trust Fund	GEF Amount($)	Co-Fin Amount($)
BD-1-1	GET	4,835,730	36,870,000
BD-2-7	GET	1,627,367	15,780,000
	Total Project Cost ($)	**6,463,097**	**52,650,000**

B. Indicative Project description summary

Project Objective

Project Objective: To mainstream biodiversity in priority sectors and landscapes in Eastern and Western Highlands Provinces.

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

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount($)	Co-Fin Amount($)
Component 1 Improving spatial data and strengthening integrated land use planning, coordination and management	Technical Assistance	Outcome 1.1: Investment and land use decision making in EHP and WHP enhanced by using participatory and transparent decision support systems (DSS), backed by comprehensive land use and biodiversity information, and improved access to spatial data Indicators Extent to which investment and land use decisions in EHP and WHP is enhanced using DSS and improved data sets Output indicators 2 provincial biodiversity assessments completed and utilized in integrated land use and investment decision making 2 provincial forest assessments completed and utilized 2 provincial data sets made available to Western and Eastern Highlands and at national level and utilized	Output 1.1.1: Biodiversity assessments conducted in the (2) target provinces, including forest assessments supplementing the National Forest Inventory Output 1.1.2: Spatial data including gender disaggregated socio-economic data, customary landowner aspirations, development plans and historical land use and land use change in the two target provinces; key gaps and trends identified. Output 1.1.3: Biodiversity, socio-economic and historical land use and land use change information of the target provinces is made available through CEPA's web-database systems. Output 1.1.4: Priority areas and species for conservation and mainstreaming biodiversity defined through participatory planning with customary landowners Output 1.1.5: Participatory land and conservation planning assessments and mapping of 200,000 hectares of priority areas for agricultural improvement,	GET	1,853,696	16,050,000

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount($)	Co-Fin Amount($)
Component 2: Scaling up landscape-level action for integrated conservation & sustainable supply chain development	Technical Assistance	Outcome 2.1: Key value chains for sustainably harvested products strengthened/established and financial and market support mechanisms for forest and farm producer organizations made available Indicators 1,000 farmers are demonstrably benefiting from improved 'green' value chains in WHP and EHP Number of small-scale farmers with improved business arrangements 5,000 jobs created by small scale NTFP enterprises at community level. Output indicators50 sites where gender sensitive, biodiversity friendly and climate resilient practices and approaches identified 50 improvement plans prepared 50 bankable business plans developed	Output 2.1.1: Review of the farming and forest use systems (gender disaggregated) of the target provinces conducted and options for gender sensitive, biodiversity friendly and climate resilient practices and approaches identified Output 2.1.2: 1,000 men and women farmers of the target provinces supported to improve their farming and forest management systems, including forest restoration and agroforestry, and adopt biodiversity friendly and climate resilient practices that support green commodity value chains Output 2.1.3: 50 assessments of specific production values by local women and men farmers and forest and farm producer organizations (FFPOs) conducted, and improvement plans prepared Output 2.1.4: Customary landowners and their FFPOs (50) have identified and selected preferred forest and farm product value chains and developed bankable business plans for	GET	2,417,865	21,000,000

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount($)	Co-Fin Amount($)
Component 3: Strengthening the enabling environment and governance structures for integrated landscape/land use planning, coordination and management	Technical Assistance	Outcome 3.1: Integrated decision support systems for land use management of the targeted landscapes enabled by adequate policies and methodologies Indicators The extent to which integrated decision support systems at national and provincial levels (WHP and EHP) are supported effectively by improved policies and methodologies Output indicators 6 policies and methodologies that support integrated decision support systems 8 platforms (2 provincial, 2 district, 4 local) operational for improved coordination and land use planning 2 assessments of the effectiveness of relevant laws, policies, and regulations governing value chains of selected	Output 3.1.1: Strengthened national and provincial regulatory frameworks (6) for the conservation and sustainable use of multi-functional landscapes Output 3.1.2: Platforms for improved coordination and land use planning are operating (8 = 2 provincial, 2 district, 4 local) Output 3.1.3: Review and assessment (2) of the effectiveness of relevant laws, policies, and regulations governing value chains of selected forest and farm products, including an analysis of impacts on women and youth Output 3.1.4: National and provincial policy and regulations (4) on agricultural, fisheries and forestry commodity trading strengthened to support gender sensitive, biodiversity friendly and climate resilient practices and approaches	GET	1,208,932	10,000,000

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount($)	Co-Fin Amount($)
Component 4: Effective knowledge management, monitoring and evaluation	Technical Assistance	Outcome 4.1: Stakeholders and the project benefit from the project's knowledge management and monitoring and evaluation systems Indicators Key stakeholders at local, provincial, national and global levels benefit from project knowledge Output indicators 1 functioning M&E system that is tailored to national and local context(s) Mid-term and Final evaluation completed 8 major project outputs disseminated 5 Knowledge exchange networks of Farmer Field Schools and Forest and Farm Producer organizations operating	Output 4.1.1: Monitoring and evaluation of project progress on a regular basis using harmonized, gender disaggregated, monitoring and learning approaches (at local and national level) Output 4.1.2: Knowledge sharing strategy developed, and lessons and best practices disseminated in appropriate formats at local and national level Output 4.1.3: Knowledge exchange network of Farmer Field Schools and Forest and Farm Producer organizations (for both women and men) in the targeted landscapes established and supported for linking to the global and sub-regional knowledge-sharing networks	GET	674,838	5,600,000

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount($)	Co-Fin Amount($)
				Sub Total ($)	**6,155,331**	**52,650,000**
Project Management Cost (PMC)						
				GET	307,766	
				Sub Total($)	**307,766**	**0**
				Total Project Cost($)	**6,463,097**	**52,650,000**

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

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount($)
Government	Conservation and Environment Protection Authority	In-kind	Recurrent expenditures	1,000,000
Government	PNG Forest Authority	In-kind	Investment mobilized	500,000
Government	Climate Change and Development Authority	In-kind	Recurrent expenditures	150,000
Government	Department of Agriculture and Livestock	In-kind	Recurrent expenditures	150,000
GEF Agency	FAO (Regional, Global and TCPs)	Grant	Recurrent expenditures	50,000
Donor Agency	European Union (STREIT Project)	Grant	Recurrent expenditures	2,000,000
Donor Agency	European Union (Strengthening integrated sustainable landscape management in Enga Province)	Grant	Recurrent expenditures	6,000,000
Donor Agency	European Union (Sustainable wildlife management programme)	Grant	Recurrent expenditures	2,800,000
Donor Agency	US AID	Grant	Recurrent expenditures	20,000,000

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount($)
Donor Agency	GCF Results Based Pilot Programme	Grant	Recurrent expenditures	20,000,000
			Total Project Cost($)	**52,650,000**

Describe how any "Investment Mobilized" was identified

There is no new spending being provided because of the existence of the GEF project; at the moment, all co-finance is rather ‘recurrent expenditure’ - The agency will work further at PPG to identify IM.

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

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount($)	Fee($)	Total($)
FAO	GET	Papua New Guinea	Biodiversity	BD STAR Allocation	3,622,710	341,107	3,963,817
UNDP	GET	Papua New Guinea	Biodiversity	BD STAR Allocation	2,840,387	272,887	3,113,274
				Total GEF Resources($)	**6,463,097**	**613,994**	**7,077,091**

E. Project Preparation Grant (PPG)

PPG Required

☐

PPG Amount ($)

200,000

PPG Agency Fee ($)

19,000

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount($)	Fee($)	Total($)
FAO	GET	Papua New Guinea	Biodiversity	BD STAR Allocation	111,111	10,556	**121,667**
FAO	GET	Papua New Guinea	Biodiversity	BD STAR Allocation	88,889	8,444	**97,333**
				Total Project Costs($)	**200,000**	**19,000**	**219,000**

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)
284,998.00	0.00	0.00	0.00

Indicator 1.1 Terrestrial Protected Areas Newly created

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Total Ha (Achieved at MTR)	Total Ha (Achieved at TE)
10,000.00	0.00	0.00	0.00

Name of the Protected Area	WDPA ID	IUCN Category	Total Ha (Expected at PIF)	Total Ha (Expected at CEO Endorsement)	Total Ha (Achieved at MTR)	Total Ha (Achieved at TE)
Akula National Park 5 community conserved areas to be identified	**125689**	**Select**Protected area with sustainable use of natural resources	10,000.00			

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)
274,998.00	0.00	0.00	0.00

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

Name of the Protected Area	WDPA ID	IUCN Category	Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Total Ha (Achieved at MTR)	Total Ha (Achieved at TE)	METT score (Baseline at CEO Endorsement)	METT score (Achieved at MTR)	METT score (Achieved at TE)	
Akula National Park Baiyer River	**125689** 3146	**Select**Protected area with sustainable use of natural resources	741.00							
Akula National Park Crater Mountain WMA	**125689** 106683	**Select**Habitat/Species Management Area	270,000.00							
Akula National Park Hogave Conservation Area	**125689**	**Select**Protected area with sustainable use of natural resources	0.00							
Akula National Park Jimi Valley NP	**125689** 15797	**Select**National Park	4,180.00							
Akula National Park Mt Gahavisuka PP	**125689** 9714	**Select**Protected area with sustainable use of natural resources	77.00							

Indicator 3 Area of land restored

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

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
800.00	0.00	0.00	0.00

Indicator 3.1 Area of degraded agricultural land restored

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

Indicator 3.2 Area of Forest and Forest Land restored

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
800.00			

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)
190000.00	0.00	0.00	0.00

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

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
190,000.00			

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

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

Type/Name of Third Party Certification

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

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

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 6 Greenhouse Gas Emissions Mitigated

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO_2e (direct)	1316073	0	0	0
Expected metric tons of CO_2e (indirect)	0	0	0	0

Indicator 6.1 Carbon Sequestered or Emissions Avoided in the AFOLU (Agriculture, Forestry and Other Land Use) sector

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO_2e (direct)	1,316,073			
Expected metric tons of CO_2e (indirect)				
Anticipated start year of accounting	2021			
Duration of accounting	20			

Indicator 6.2 Emissions Avoided Outside AFOLU (Agriculture, Forestry and Other Land Use) Sector

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO_2e (direct)				
Expected metric tons of CO_2e (indirect)				
Anticipated start year of accounting				
Duration of accounting				

Indicator 6.3 Energy Saved (Use this sub-indicator in addition to the sub-indicator 6.2 if applicable)

Total Target Benefit	Energy (MJ) (At PIF)	Energy (MJ) (At CEO Endorsement)	Energy (MJ) (Achieved at MTR)	Energy (MJ) (Achieved at TE)
Target Energy Saved (MJ)				

Indicator 6.4 Increase in Installed Renewable Energy Capacity per Technology (Use this sub-indicator in addition to the sub-indicator 6.2 if applicable)

Technology	Capacity (MW) (Expected at PIF)	Capacity (MW) (Expected at CEO Endorsement)	Capacity (MW) (Achieved at MTR)	Capacity (MW) (Achieved at TE)

Indicator 7 Number of shared water ecosystems (fresh or marine) under new or improved cooperative management

	Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)
Shared water Ecosystem				
Count	0	0	0	0

Indicator 7.1 Level of Transboundary Diagonostic Analysis and Strategic Action Program (TDA/SAP) formulation and implementation (scale of 1 to 4; see Guidance)

Shared Water Ecosystem	Rating (Expected at PIF)	Rating (Expected at CEO Endorsement)	Rating (Achieved at MTR)	Rating (Achieved at TE)
Select SWE				

Indicator 7.2 Level of Regional Legal Agreements and Regional management institution(s) (RMI) to support its implementation (scale of 1 to 4; see Guidance)

Shared Water Ecosystem	Rating (Expected at PIF)	Rating (Expected at CEO Endorsement)	Rating (Achieved at MTR)	Rating (Achieved at TE)

Indicator 7.3 Level of National/Local reforms and active participation of Inter-Ministeral Committees (IMC; scale 1 to 4; See Guidance)

Shared Water Ecosystem	Rating (Expected at PIF)	Rating (Expected at CEO Endorsement)	Rating (Achieved at MTR)	Rating (Achieved at TE)

Indicator 7.4 Level of engagement in IWLEARN throgh participation and delivery of key products(scale 1 to 4; see Guidance)

Shared Water Ecosystem	Rating (Expected at PIF)	Rating (Expected at CEO Endorsement)	Rating (Achieved at MTR)	Rating (Achieved at TE)

Indicator 10 Reduction, avoidance of emissions of POP to air from point and non-point sources (grams of toxic equivalent gTEQ)

Grams of toxic equivalent gTEQ (Expected at PIF)	Grams of toxic equivalent gTEQ (Expected at CEO Endorsement)	Grams of toxic equivalent gTEQ (Achieved at MTR)	Grams of toxic equivalent gTEQ (Achieved at TE)

Indicator 10.1 Number of countries with legislation and policy implemented to control emissions of POPs to air (Use this sub-indicator in addition to Core Indicator 10 if applicable)

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

Indicator 10.2 Number of emission control technologies/practices implemented (Use this sub-indicator in addition to Core Indicator 10 if applicable)

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

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

	Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)
Female	2,000			
Male	1,000			
Total	3000	0	0	0

Part II. Project Justification

1a. Project Description

1a. *Project Description.*

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

Papua New Guinea (PNG) is situated in the South West Pacific and comprises the eastern half of New Guinea, including the islands of New Ireland, New Britain, and Bougainville and 600 smaller nearby islands and atolls. PNG has a surface area of 462,840 km2 (the largest Pacific island state), a coastline of 5152 km2 sheltered by 40,000 km2 of coral reefs, and 820 km of land border with the Indonesian province of West Papua[1][1].

In 2011 the population of PNG was 7.3 million with an average annual growth rate of 3.1 per cent since the year 2000[2][2]. About 88 per cent of this population live in rural areas. The World Bank notes that the country's economy is dominated by two broad sectors:

the agricultural, forestry, and fishing sectors, which engages most of PNG's labor force (the majority informally).

•the minerals and energy extraction sector which accounts for most export earnings and GDP.[3][3]

Agriculture

While cropland only constitutes 8.4 per cent of the total land area, agriculture is the main source of livelihoods in PNG. There is little downstream processing and poor participation of smallholder producers in value chains and other productive economic activities.

Most PNG agriculture systems are fallow systems, or systems which have evolved from forest fallow systems. Fallow systems involve clearing and cutting forest, some burning of felled vegetation, cultivation of crops, and abandonment of the site to natural processes of regeneration.

Most commercial crops are exported, although the domestic vegetable market is growing rapidly. Agricultural products make up 18 per cent of the country's exports[4][4]. The main export crops grown by smallholders are cocoa, oil palm, Robusta and Arabica coffee, tea and copra. PNG's commercial agriculture is dominated by palm oil as the number one

export commodity, followed by cocoa and coffee. PNG is planning to increase production of key export commodities (palm oil, cocoa, etc.) in the coming years. The project target provinces (Western Highlands Province – WHP and Eastern Highlands Province – EHP) are the two highest provinces for coffee production, they produce more than half of coffee in the country. About 85 per cent of coffee produced in PNG is grown, harvested and partly processed by smallholder growers. Most of the households in the highland provinces depend on coffee as a major source of cash income, as there are no other major alternative cash crops[5][5].

Agriculture accounted for an average of 36 per cent of PNG's GDP between 1995 and 2010, providing income, employment, and livelihood to approximately 70 per cent of the country's economically active population[6][6]. However, its contribution to GDP has declined in recent years, reportedly due to slow sector growth stemming from: (i) domestic markets geographically distant from production areas, and lack of market information; (ii) poor transport and road infrastructure, and high costs of transport; (iii) a complicated land tenure system (lands are mostly under customary ownership and unregistered); (iv) weak research-extension-farmer linkages, exacerbated by limited political support and budget at national and provincial levels; and (v) vulnerability to natural disasters, including tsunamis, droughts, frost (in the Highlands), and volcanic eruptions. These factors have discouraged farmers from investing in their farms, which leads to poor agricultural production and, in some cases, a complete move out of the agriculture and land use sector[7][7].

Biodiversity

PNG has globally significant biodiversity. According to FAO, PNG accounts for the 5 per cent of global biodiversity. The number of plant species is estimated to be in the range of 15,000 to 20,000, which represent about 6 per cent of the world's flora. For animals, it is estimated that PNG has 150,000 species of insects; 314 species of freshwater fishes (82 endemic); 2800 species of marine fishes; 641 species of amphibians and reptiles (328 endemic); 740 species of birds (77 endemic) and 276 species of mammals (69 endemic).

The island of New Guinea has arguably the most complex orogeny in the world[8][8]. The biota of New Guinea has been profoundly shaped by this complex orogeny. The uplift of Central Cordillera has largely isolated biotas of lowland regions to the north and south of New Guinea. It is considered that orogeny and climatic oscillations have been the major drivers that have interacted to generate high montane biodiversity in New Guinea via both localized diversification within montane habitats[9][9] including in WHP and EHP.

Much of PNG is mountainous and covered in tropical rainforest. It is ranked as the third largest tropical forest area in the world after the Amazon and the Congo basin. Terrestrial habitats range from extensive lowlands with rainforest, savanna, grassland, and freshwater swamps to upland montane rainforests and alpine grassland.

PNG's forests are relatively intact with about 78 per cent of forest cover (60 per cent is primary forest), but deforestation and forest degradation have been increasing, primarily due to agricultural expansion (commercial and small-scale), logging and mining. There are critical opportunities within the ongoing expansion to secure globally important biodiversity values

According to PNG Forest Authority[10][10], between 2000 and 2015, 261,528 ha of forest was cleared, with deforestation primarily driven by the conversion of forestland to cropland which accounts for 87 per cent of deforestation. Shifting agriculture is responsible for 63 per cent of the land deforested and commercial agricultural developments, primarily in the form of oil palm are responsible for 30 per cent of the deforested land. The trend in clearance for commercial agriculture has increased in the past decade following the rapid expansion of Special Agricultural Business Leases (SABLs), which were allocated over 5.1m hectares.[11][11]

National Protected Areas (PAs) cover less than 3 per cent of the land area. PAs have been designated under the National Parks Act 1982 and the Organic Law on Provincial and Local Level Government 1995, while Wildlife Management Areas (WMAs) are designated under the Fauna (Protection and Control) Act 1966. WMAs allow clans to formalize their legal control over the fauna resources of their clan holdings, to manage hunting, fishing and harvesting of other resources. Under these three acts there are currently four National Parks, three Provincial Parks and 27 WMAs totaling 605,152 ha.

In recent years the focus of PA establishment has shifted away from exclusionary models such as National Parks towards more inclusive models. Some local communities have also been declaring ad-hoc community conservation areas (both terrestrial and marine) through the establishment of conservation deeds or conservation contracts under contract law, with the help of grassroots NGOs. However, community conservation areas have not yet been formally recognized as part of the national PA network.

The situation is likely to change once PNG's new Policy on Protected Areas is implemented. The Policy notes that the PNG Protected Area Network will comprise:

- **National Protected Areas** including: National Parks (NP), Marine Sanctuaries (MS), National Heritage Areas (NHA) and Special Management Areas (SMA). These areas will be gazetted under national legislation; and
- **Regional Protected Areas** including Community Conservation Areas (CCA) and Locally Managed Marine Areas (LMMA). These areas will be gazetted through provincial government legislation

Furthermore, the Policy identifies that:

- Existing WMAs will be placed in a transitional class of Protected Area under the new legislation (also called WMA) with provisions holding over from the existing legislation but with greater powers of enforcement. No new WMAs will be created
- Existing Conservation Areas will become Community Conservation Areas

An analysis of the PA system conducted as part of PNG's response to the CBD Programme of Work on Protected Areas indicated that many PAs are non-functional due to a lack of funding and technical support.

Project focus

The proposed project focuses on the EHP and WHP, within the Highlands region. The total area of the project's focus is 1.54 million hectares. The area is mountainous with an elevation range from 272 meters to 4,433 meters including Mt Giluwe (sharing the peak with Southern Highlands Province, the second highest mountain in PNG, and numerous mountains higher than 3000 meters.

Province	Area in hectares
Eastern Highlands	1,114,676
Western Highlands	432,998
Total	**1,547,674**

(Source: FAO-NFI project/PNGFA)

Both provinces are heavily populated. The 2010 census indicated a population of 362,850 in WHP and 579,825 in EHP. Population density of WHP is 83.8 person/km2 and EHP is 57.0 person/km2, these densities are many times higher than the national average of 15.8 person/km2. WHP is the most densely populated province (after the National Capital District) followed by Jiwaka Province and Chimbu Province. EHP is the fourth most densely populated province.

The forest cover of WHP and EHP are 41 per cent and 54 per cent respectively, which is substantially lower than the national average of 78 per cent (see Figure. 1). There are about 600,000 hectares of forest in the EHP and about 180,000 hectares in the WHP. The provinces also contain some important wetlands.

Figure 1. Proportion of the land use in the EHP, WHP and national level
(Source: PNGFA 2019 Forest and land use change in PNG 2000-2015).

The targeted highlands provinces are home to some of PNG's rarest plants and more than half of the species are endemic. The intact montane forest is largely comprised of *Nothofagus* spp., with most of the lower elevation forest having been cleared for agriculture and timber production in the 20th century. Small patches of *Castanopsis* forest remain at lower elevation.

The forests in the two provinces are home to several IUCN Red-Listed and little-known species including, but not limited to, the central ranges tree kangaroo (VU), Goodfellow's tree kangaroo (EN), eastern long beaked echidna (VU), and New Guinea Pademelon (VU)[12][12].

A land-sea conservation assessment for PNG was conducted in 2016-17[13][13]. The assessment identified most of the area in WHP and a substantial area in EHP as high conservation priority areas.

There are five protected areas in the two provinces covering 274,998 hectares, part of Crater Mountain WMA, Mt. Gavaisuka Provincial Park and Hogave Conservation Area in EHP and Jimi Valley National Park and Baiyer River Sanctuary in WHP.

The total GHG emission caused by deforestation and forest degradation between 2000 and 2013 was 164,314 tCO2e (12,640 tCO2e/year) for WHP and 987,394 tCO2e (75,953 tCO2e/year) for EHP. Subsistence agriculture was the cause of the deforestation and forest degradation in both provinces.

The project will seek to build linkages with adjacent provinces, notably Chimbu, Jiwaka and Enga provinces, by involving key stakeholders in capacity building and knowledge sharing efforts as well as sharing spatial data.

Root causes

The root causes of environmental problems in the highlands are complex and include demographic, economic, socio-political, scientific, technological, cultural, and religious root causes[14][14]. All these root causes operate to variable extent in the areas targeted by the proposed project. For example, the PNG Forest Authority report on forest and land use change in PNG 2000-2015[15][15] noted:

'PNG's forest and land use is complex and in undergoing transitional change. These transitional changes are caused by human activities such as logging, agriculture, infrastructure expansions, fire and mining.'

The most apparent root causes in the target provinces are described below:

Economic root causes – PNG is ranked in the low human development category at 155 out of 189 countries in 2018. Rural populations, particularly in the two targeted highland provinces, are heavily dependent on natural resources and rural livelihoods are based largely on subsistence and semi subsistence agriculture.

Most rural people are poor with limited access to financial capital, value-added markets and livelihood opportunities other than subsistence agriculture. Approximately 87 per cent of the total population of 6.7 million people are employed in subsistence agriculture and/or informal economy activities including agriculture, fishing, community forestry, and artisanal and small-scale mining. Nationwide, an estimated 70.3 per cent of the female rural population depend on subsistence agriculture, this figure is likely to be similar for WHP and EHP but accurate data is lacking.

There is a high dependency on agriculture with shifting cultivation covering over half of the cultivated lands in the targeted landscapes. Cropland occupies 44 per cent of land in WHP and 29 per cent of EHP, significantly higher than the national average of 11 per cent. Most cropland (96 per cent) in the two provinces is under subsistence agriculture and most of these croplands (62 per cent for WHP and 57 per cent for EHP) are shifting agriculture.

As mentioned above, farmers in the target provinces depend on coffee as a major source of cash income[16][16]. Coffee is affected seriously by international coffee price fluctuations. The spread of pest and diseases heavily affects the production and quality of coffee and thus affect cash income of farmers as well.

The export of verified and certified coffees (4C, TK, UTZ and RFA certified), Organic, Fairtrade and Fairtrade Organic coffees has grown steadily in recent years. Exports of certified coffees constitutes 5 per cent of the annual exports of coffee in 2016. The growth in exports of certified coffee is attributed to the increase in the number of licensed and certified coffee farmers, and the increased returns to farmers who are participating in certification programs.

There are few job prospects in rural areas beyond subsistence farming, forcing communities to rely heavily on forest and land resources. For younger people, prospects of job opportunities and sustainable livelihoods remain difficult.

Despite the high biodiversity conservation value of the forest in the target provinces[17][17] [18][18], forest cover is the lowest among all provinces (apart from the National Capital District) in the country[19][19]. Threats to biodiversity and other forest ecosystem services in the EHP and WHP due to natural resource extraction, shifting cultivation and commercial agriculture, all of which are compounded by ad hoc land use planning, are likely to increase with the high population growth rates.

The 1996 Land Act allows the government to lease land owned by communities to companies for commercial development under Special Agriculture Business Leases (SABLs).

The PNG government has ambitious plans to increase agriculture production through a combination of increased productivity (by 60 per cent) and increased land under cultivation (by 180 per cent). These plans are within the context of the potential for PNG's export commodities to see rapid expansion, notably for palm oil, coffee and cocoa which are key elements of the government's long-term strategy to develop a world-class agricultural sector that is responsive to international and domestic markets by 2030. Plans for the cocoa and coffee industry, which are the most relevant for the two highland provinces targeted are focused on improving the productivity of existing plantations while the palm oil sector aims to expand the area under cultivation which poses significant threats to existing forest habitats and species.

PNG has struggled to translate recent achievements in the extractive industrial sector into broad-reaching and more inclusive and equitable socio-economic development outcomes. Chronic law-and-order and land tenure issues, as well as marked constraints of state institutions impede growth[20][20].

Socio-political root causes – The country (including the target areas) has two land tenure systems, the alienated system which adapts the European model where the state owns the land, and the customary system where the local indigenous people have ownership over the land. About 97 per cent of the land comes under the customary system.[21][21]

Under PNG's constitution, the population has legal ownership over the land they have traditionally lived and use the resources. Customary tenure in PNG is complex and comprehensive and land use decisions normally require extensive consultation and building of consensus within the community.

Domestic and international surveys reveal widespread illiteracy, malnutrition, poor health and vulnerability to natural hazards, many of which are expected to escalate with climate change[22][22].

Weak land use planning and poor collaboration between government agencies in the target provinces, coupled with political pressure to capture opportunities to generate value from global demand for PNG's rich natural resources, drives deforestation and ecosystem degradation, resulting in loss of biodiversity and increased greenhouse gas emissions from land use as well as threats to rural livelihoods.

Gender inequity is a significant issue in PNG, and the target provinces. Women are vastly underrepresented at all levels of government limiting their power to influence public policy and voice issues. In rural and urban areas, Papua New Guinean men commonly hold onto their traditional cultural practices, where tribal discipline and power is given to men to have authority over their clan and family members. Men make most of the decisions in the family and control most of the resources, and women are expected to conform to various societal rules and norms, often having their basic rights denied.

PNG's development strategy recognises the need to build opportunities for women and girls to participate in economic, political, cultural and social life at all levels (community, provincial and national).[23][23] The Organic Law on Provincial Governments and Local-level Governments (OLPG&LLG) imposed a mandate on each province to formulate and implement a rolling five-year development plan and rolling annual budget. However, this requirement has not been satisfactorily complied with nationally[24][24] or in the target provinces.

Technological root causes – Poor access to suitable cost-effective technologies discourages rural Highland people from adopting innovations that would potentially reduce or eliminate harmful forest use and agricultural practices. Digital communications technologies including cell phone technology and internet are improving but remain limited in the Highlands.

Climate change and climate variability are key factors that affect the environment and socio-economic conditions in the planned project sites.

According to PNG's Intended Nationally Determined Contribution (INDC)[25][25], climate change is predicted to exacerbate hazards like coastal flooding, inland flooding and droughts. Moreover, the report notes that natural disasters driven by climatic conditions and gradual shifts in climatic conditions disrupt daily life, cause damage to assets and infrastructure, destroy livelihoods, endanger cultural and ecological treasures, and kill or injure people.

Barriers

Key barriers to delivering improved biodiversity conservation and improved livelihoods include:

Information and knowledge barriers

At all levels, there are substantial gaps in data, information and knowledge and challenges to accessing reliable, accurate, timely and useable information on the environment, agriculture and development activities. Poor quality information and data can lead to poor quality decisions, or be used as a reason for indecision, and represent a barrier to effective landscape management in the highlands.

At local levels, communities in the target provinces often have poor knowledge of markets, weak or no access to investment capital and markets, are unable to take risks to develop business opportunities without significant external assistance.

Information is lacking on how to conduct basic market research and assess market demand for forestry, fishery and agricultural products, how to keep financial records, how to develop properly costed business plans, how to mobilize finance internally and attract external finance, how to develop business models that are structured around a diverse basket of products and can distribute benefits fairly, and how to assess and overcome competition.

Long distances and poor transport infrastructure as well as lack of knowledge of market requirements and opportunities limit effective engagement of rural highland people in domestic and international markets. Rudimentary value chains for small and medium enterprises based on forest, fishery and farm products exist in the project target areas and there are some more developed value chains for agricultural products to build upon, supporting biodiversity friendly, climate resilient, 'green' production.

In terms of organizational relationships and links, there are knowledge gaps in the process of business registration, organizational management, and leadership (including how to resolve conflicts). Guidance is needed on how to organize finance, and how to manage staff roles and responsibilities. Gaps also exist in how to enter contractual arrangements with other business partners, and how to improve negotiation skills.

At all levels, knowledge of government policies and programmes often remains rudimentary. There are conflicting interpretations of different bodies of law – and lack of knowledge about how to engage and with whom.

Forestry, agriculture, livestock and fisheries extension programmes exist, but their penetration to rural areas is often poor. Government departments often have limited, or in some cases no, means to access communities due to lack of transport.

Governance barriers

PNG has comprehensive legislation related to the environment, much of which has been informed by past lessons and the findings of various projects and programs. However, policy reforms are often stalled for long periods and once progressed, implementation of policies is often lacking.

The linkages between national policy and local action, via provincial, district and local governance arrangements, are often weak and sub-national staff often have limited knowledge of national policy and priorities.

Coordination between government agencies at national level and between national agencies and provincial governments often depends on the good-will of individual public servants and formal coordination mechanisms are generally lacking.

Land use governance structures and regulatory frameworks remain weak and comprehensive land use planning has not been implemented. For example, in the target provinces forest clearance for agriculture is ad hoc, and often occurs without national or provincial level knowledge, planning, zoning or inputs.

Although the government of EHP and WHP recognize the importance of an integrated approach to land use planning, in practice there is a lack of focus on this issue. No up-to-date long-term land use plans exists in the targeted provinces. Whilst it is widely acknowledged that the rights of customary landowners must be protected, and their free prior and informed consent secured in land use planning exercises, how this achieved varies from place to place.

Whilst customary land management offers great potential for sustainable land use, it is also complex and can require long time periods when actors external to the clans seek to support changes.

Capacity and capability barriers

Government agencies at all levels are often under-staffed and lacking in logistical support and budget. At local levels, there are low levels of literacy and inadequate awareness of rights and responsibilities under national and provincial policy.

Table 1 Summary of Threats, Root Causes and Barriers in Eastern and Western Highlands Provinces

	Threats	Consequences	Root causes	Barriers

Ecosystem health	Climate-related: · Fires · Droughts · Floods · Severe weather Agriculture expansion Overharvesting and destructive harvesting Invasive species	Biodiversity change and loss (increased threat to species, loss and degradation of habitat, loss of genetic diversity) Soil erosion Changes to hydrological systems Changes to micro-climate Loss of ecosystem services Increase in greenhouse gas emissions from land use	Poverty and high dependence on natural resource use Unsustainable economic activity (lack of alternative livelihoods and dependence on natural resources, agriculture expansion, forestry and fishery activities)	Inadequate knowledge, data and information to inform good decision making Governance including lack of land use planning Weak capacity and capability Market barriers for small and medium enterprises based on forest, fishery and farm products
Socio-economic wellbeing	Climate-related: · Droughts · Floods · Severe weather Ecosystem degradation Poorly planned and implemented economic development	Increasing risks to agriculture Loss of livelihoods and reduced food security		

1.2 The baseline scenario or any associated baseline projects

PNG has numerous programs, projects and traditional practices that are relevant to the proposed project. The following section summarizes the relevant programs and projects in PNG.

Customary landowners are very aware of local conditions, challenges and opportunities and have a very strong influence over land use decisions. Gaining the support of customary owners through highly participatory, consultative processes for landscape scale land use planning and actions and related market opportunities is critical to the success of the project.

The government has been using an integrated land use planning and management approach involving the participation of customary landowners to conserve biodiversity. This approach has been supported by several projects funded by GEF and other donors. Accordingly, the proposed project is designed to forge direct links with relevant local-national level initiatives to ensure cross learning, capacity building and realization of opportunities for collaboration.

There are several biodiversity conservation projects that will be implemented concurrently with the proposed project. Neighbouring provinces to WHP and EHP have been well supported by biodiversity conservation projects, but the target provinces of the proposed project have largely missed out on projects and other initiatives despite the high conservation value and the high risk for biodiversity. Supporting thee target provinces will fill this gap and enable the government to support biodiversity management from the highlands to the north coast of the main island of PNG.

Initiatives that are seeking to address land-use planning, sustainable agricultural production and forest management, and strengthening of protected areas management are outlined below:

Baseline initiatives	Areas of Synergies with the Project
Support to Rural Entrepreneurship, Investment and Trade in Papua New Guinea (STREIT PNG) Agency: FAO Timeframe: 2019-2024 (under development) Amount: 85 million EUR Objectives: · Develop three specific sustainable, market oriented, competitive and prosperous rural activities in selected areas of the Sepik region (East Sepik and part of Sandaun Provinces) · Establish strong and efficient value chain enablers, focusing on support services, infrastructure, policy and regulatory environment, especially in the Sepik region	The proposed project will seek opportunities to utilize STREIT project biodiversity friendly and climate resilient value chain methodology, FFPO training and communications skills. Opportunities for farmer to farmer exchange visits
Technical support to PNG Forest Authority to implement a multi-purpose National Forest Inventory Agency: FAO Timeframe: 2014-2019 Amount: 7.75 million EUR Objectives: · Conduct remote sensing-based assessment to determine the most appropriate stratification and number of plots per strata for the actual field measurement collecting data on timber volume, non-timber forest products, flora and fauna, soils and forest litter.	The proposed project will expand lessons learned in implementing the multi-purpose national forest inventory (NFI), including biodiversity assessments within tropical rainforests. It will explore other relevant sectors such as agriculture for potential to expand the lessons of the NFI. The Satellite Land Monitoring System (SLMS) will be improved through more effective integration of two different geospatial methodologies (point sampling and wall-to-wall mapping) which will eventually enhance the quality of the national ETF reporting. Moreover, the existing SLMS software and hardware will be further upgraded by integrating mitigation and adaptation data from agriculture and land use sectors not only limited to geospatial data as the system currently displays.

Sustainable Financing of Papua New Guinea's Protected Area Network Agency: UNDP Time: 2017-2022 Estimated Amount: 11.3 million USD Objectives: · *To reduce the funding gap for Papua New Guinea's protected areas in order to improve their management*	The project will draw on the expertise of the sustainable financing project to build the capacity of protected area management in the selected provinces and to incorporate viable financing mechanisms into any proposed new national or regional protected areas within the target sites.
Research that is supporting the Development of Localised Climate Information Services in Papua New Guinea Agency: Australian National University Climate Change Institute and Papua New Guinea National Agricultural Research Institute (NARI), funded by DFAT Time: until 2021 Estimated amount not known	The project will draw on the research findings of the Australian National University Climate Change Institute and Papua New Guinea National Agricultural Research Institute (NARI) in relation to strategies and innovative management practices that sequester carbon or reduce greenhouse gas emissions from the land sector while maintaining or increasing on-farm productivity, profitability and/or sustainability. The project will seek to learn lessons from field trials on coffee in the Eastern Highlands that will investigate how coffee can manage carbon. The research may also be extended to cocoa.
Sustainable Wildlife Management (Eastern Highlands, Simbu, Jiwaka Provinces) Agency: WCS and FAO Time: just commenced Estimated Amount: 2.63 million USD Objectives: · *The key purpose of this project is to alleviate unsustainable hunting pressure on wildlife within the Bismarck Forest Corridor through a number of interventions including the provision of alternative protein sources and strengthening of an enabling legal framework PNG that encourages and supports community led natural resource management.* \	The project will draw on the experience and findings of the SWM project including lessons on natural resource management at community and provincial scales, supporting the development of CBOs, helping to develop household incomes and access to protein. The projects will share experience on pressures on valuable wildlife species and forest ecosystems. The project will also asses the relevance of the SWM monitoring of ecological systems and hunting levels and incorporate issues into the project's work on M&E.

Coffee Industry and Strategic Plan (Highlands region including EHP and WHP) FAO, Coffee Industry Corporation	The project will seek to support the objectives of the coffee industry strategic and business plans (2020-24), while mainstreaming biodiversity into production and value chains, including improving productivity, scale of production, information and communication, legal and policy environment and institutional capacity strengthening, insofar as these objectives and approaches support biodiversity friendly and climate resilient aims. It will also seek to apply learnings about improving productivity and market access for male and female coffee farmers and other stakeholders along the coffee value chain.
Forest Carbon Partnership Facility (FCPF) REDD+ Readiness Project Agency: UNDP and FAO Time: 2015-2020 Estimated Amount: 9 million USD Objectives: Strengthen capacities for the efficient management of REDD+, develop a National REDD+ Strategy and increase engagement of diverse stakeholders in this process.	The project will support the action areas identified in the National REDD+ Strategy including: · Strengthened land use and development planning. · Strengthened environmental management, protection and enforcement · Enhanced economic productivity and sustainable livelihoods The National REDD+ Strategy emphasizes the importance of integrated subnational planning through strengthening provincial, district and community level planning which is core to the proposed project.
Strengthening integrated sustainable landscape management in Enga Province, PNG Agency: EU and UNDP Time: 2021-2025 Estimated Amount: EUR 5 million Objectives: Increase sustainable and inclusive economic development of the Enga Province through the development and delivery of an innovative approach to rural development that brings together government systems, private sector and community action to present a model for climate compatible green growth.	One of the targeted provinces (WHP) is adjacent to Enga Province. Environmental and social situations are similar. The project outcomes and approach are very similar, and the duration will mostly overlap. The project will have a close collaboration with the Enga project for efficient and effective implementation.

PNG Biodiversity Programme Agency: USAID Time: 2020-2024 Estimated Amount: USD 20 million Objectives: · strengthen national and provincial level governments to better manage conservation areas, · strengthen capacity and coordination at the provincial-level and build linkages to the National Coordinating Committee, · strengthen coordination through the Provincial Development Planning Process (Madang Province).	The project will collaborate on strengthening national governance for better conservation area management and strengthening on coordination between national and subnational level. Both the project target provinces (WHP & EHP) share the border with Madang Province. Effective collaboration between the projects will enable the ridge to reef biodiversity conservation in north-central part of New Guinea Island in PNG.
Country gender assessment	The project will apply the findings of the Country Gender Assessment of Agriculture and the Rural Sector in Papua New Guinea in relation to planning and programming for the promotion of gender equality and women's empowerment as well as policy recommendations for women to benefit more equally from agri-food value chain interventions.
Improving agricultural statistical capacity for PNG FAO worked in collaboration with DAL and the National Statistics Office (NSO)	The project will seek to incorporate agricultural statistics into the spatial data sets and integrated planning tool with a view to improving policy and planning. There is some reliable baseline from the analysis which will enable policy makers to develop more targeted interventions, in terms of food insecurity and agricultural production. The information will be used by the project to help relevant government agencies to monitor and evaluate the impact of agriculture projects and improve reporting against relevant Sustainable Development Goals.
Promotion of digital agriculture and innovation Department of Agriculture (DAL), the National Information and Communications Technology (NICTA), International Telecommunications Union (ITU) and the Department of Communications and Information Technology, and Energy (DCITE), and FAO	The project will seek to learn lessons from the E-Agriculture related initiatives were piloted in the province of Jiwaka to strengthen local capacities to develop and implement digital agriculture services and solutions Some of these activities included the piloting of the livestock traceability system using the blockchain technology; training on Agromet, a tool for weather forecasts and alerts; and training on AgriTech to promote the digital literacy of women and youth in the communities.

1.3 The proposed alternative scenario with a brief description of expected outcomes and components of the project

An alternative scenario involves mitigating the impacts of land use activities that harm biodiversity and agricultural productivity by improving integrated land use and promoting biodiversity friendly and climate resilient approaches to forest and farm management.

The proposed project supports the development and implementation of decision support tools that enable integrated planning and mitigation of impacts on land use and biodiversity in the target provinces. This approach will support sustainable production landscapes while promoting conservation and sustainable use of forest and wetland ecosystems. The project will promote the development of sustainable value chains from farms and forests that support biodiversity friendly and climate resilient improved livelihoods. The project interventions will be structured around 4 components.

The Project's theory of change is as follows:

1. **Decision support tools** including spatial data that is validated through field assessments and integrated planning systems enable decision makers to identify priority areas for protection and development, potential areas of conflict, and issues requiring mitigation action. The pathway to achieve this involves improving the quality, type and accessibility of spatial data and building the capacity of key stakeholders, especially customary landowners, to engage in integrated planning. Key actors include customary landowners, local, district and provincial governments, private sector, projects and universities.
2. **Improved agriculture practices and forest/protected area management** supported by enhanced 'green' value chains will provide incentives for customary landowners to protect natural resources and adopt biodiversity friendly and climate resilient practices. The pathway to achieve this involves a) identifying the interests of farmers and forest and farm producer organisations (FFPOs) to develop value chains, b) building capacity of small and medium farm enterprises and c) improving the protection of globally important biodiversity through the effective management of protected areas, including community conserved areas and through improved conservation across the landscape. Key actors include customary landowners, local, district and provincial governments, private sector, NGOs, CBOs, projects and others that provide training.
3. **Improved policy, regulatory frameworks and institutional arrangements** can provide incentives for biodiversity- friendly and climate resilient land use. The pathway to achieve this involves a) identifying gaps and challenges with current policy and arrangements and b) supporting multi-sectoral dialogues. Key actors include provincial governments, national government agencies, NGOs and universities.

Component 1: Strengthening integrated land use planning, coordination and management through improved spatial data and decision support systems

This component will strengthen the linkages between conservation planning and production landscapes by improving access to spatial data (including information on high conservation values, suitability of land for development activities and current and proposed development) and the use of decision support systems that promote integrated land use planning, coordination and management that, in turn, support decision makers to identify opportunities to protect biodiversity, promote sustainable land use and mitigate development impacts.

Outcome 1.1: Investment and land use decision making in EHP and WHP enhanced by using participatory and transparent decision support systems (DSS), backed by comprehensive land use and biodiversity information, and improved access to spatial data

Output 1.1.1: Biodiversity assessments conducted in the (2) target provinces, including forest assessments supplementing the National Forest Inventory

Output 1.1.2: Spatial data including gender disaggregated socio-economic data, customary landowner aspirations, development plans and historical land use and land use change in the two target provinces; key gaps and trends identified

Output 1.1.3: Biodiversity, socio-economic and historical land use and land use change information of the target provinces is made available through CEPA's web-database systems.

Output 1.1.4: Priority areas and species for conservation and mainstreaming biodiversity defined through participatory planning with customary landowners

Output 1.1.5: Participatory land and conservation planning assessments and mapping of 200,000 hectares of priority areas for agricultural improvement, conservation and forest/grassland restoration

Output 1.1.6: Land use monitoring systems for the 2 target provinces established.

Output 1.1.7: Integrated decision support system developed and tested for the Eastern and Western Highlands, based on adaptation of lessons learned on decision support systems elsewhere in PNG

Output 1.1.8: Capacity to undertake integrated planning built amongst 100 women and men at provincial, district and local levels. (10 provincial officers in 2 provinces, 24 personnel from 12 district administrations, and 66 representatives of 33 local level governments)

Output 1.1.9: Integrated decision support system used by stakeholders to identify sites of high importance for global biodiversity for 10 potential Community Conservation Areas (CCA) and other protected areas, areas where deforestation and ecosystem degradation should be avoided, areas for restoration, and areas for economic development.

Output 1.1.10: Integrated land use plans and updated forest plans for the 2 target provinces, that support both biodiversity and climate change objectives, prepared through highly participatory stakeholder processes involving both women and men.

Component 2: Scaling up landscape-level action for integrated conservation & sustainable supply chain development

Under this component, project interventions will address barriers for sustainable production and marketing of biodiversity friendly and climate resilient agricultural and natural resource-based commodities. This component will also seek to promote integrated landscape level action that conserves biodiversity in agricultural lands, forests, grasslands and wetlands including by improving farm and forest management and improving the functionality and management of protected areas (PAs) in the target areas.

Outcome 2.1: Key value chains for sustainably harvested products strengthened/established and financial and market support mechanisms for forest and farm producer organizations made available

Output 2.1.1: Review of the farming and forest use systems (gender disaggregated) of the target provinces conducted and options for gender sensitive, biodiversity friendly and climate resilient practices and approaches identified

Output 2.1.2: 1,000 men and women farmers of the target provinces supported to improve their farming and forest management systems, including forest restoration and agroforestry, and adopt biodiversity friendly and climate resilient practices

Output 2.1.3: 50 assessments of specific values by local women and men farmers and forest and farm producer organisations (FFPOs) conducted, and improvement plans prepared

Output 2.1.4: Customary landowners and their FFPOs (50) have identified and selected preferred forest and farm product value chains and developed bankable business plans for biodiversity friendly and climate-resilient products and their related technologies.

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[1] The project will review and adapt relevant, existing and past efforts in PNG to develop value chains including but not limited to the work of USAID on conservation enterprise to help develop strong theories of change and value chains underlying the activities

Output 2.1.5: Targeted FFPOs (50) have developed their biodiversity friendly and climate-resilient production options into small-scale farm enterprises.

Outcome 2.2: Improved biodiversity conservation in targeted protected areas (including CCAs)

Output 2.2.1: Review of the 5 existing protected areas in the 2 target provinces conducted and improvement plans prepared

Output 2.2.2: Targeted customary landowners (women, men and youth) supported to identify and plan 5 community conserved areas (CCAs) under relevant policies and laws, and to manage their areas effectively

Output 2.2.3: The management effectiveness of 5 existing protected areas, including existing CCA improved.

Component 3: Strengthening the enabling environment and governance structures for integrated landscape/land use planning, coordination and management

This component will address the barriers associated with the land use governance structures and regulatory frameworks in the target Provinces. The emphasis of this component is less on promoting new polices, laws and regulations and more on addressing gaps and overlaps in existing policy and law and encouraging more effective implementation of these policies and laws.

Outcome 3.1: Integrated decision support systems for land use management of the targeted landscapes is enabled by adequate policies and methodologies

Output 3.1.1: Strengthened national and provincial regulatory frameworks (6) for the conservation and sustainable use of multi-functional landscapes

Output 3.1.2: Platforms for improved coordination and land use planning are operating (8 = 2 provincial, 2 district, 4 local)

Output 3.1.3: Review and assessment (2) of the effectiveness of relevant laws, policies, and regulations governing value chains of selected forest and farm products, including an analysis of impacts on women and youth

Output 3.1.4: National and provincial policy and regulations (4) on agricultural, fisheries and forestry commodity trading strengthened to support gender sensitive, biodiversity friendly and climate resilient practices and approaches

Component 4: Effective knowledge management, monitoring and evaluation

Outcome 4.1: Stakeholders and the project benefit from the project's knowledge management and monitoring and evaluation systems

Output 4.1.1: Monitoring and evaluation of project progress on a regular basis using harmonized, gender disaggregated, monitoring and learning approaches (at local and national level)

Output 4.1.2: Knowledge sharing strategy developed and lessons and best practices disseminated in appropriate formats at local and national level

Output 4.1.3: Knowledge exchange network of Farmer Field Schools and Forest and Farm Producer organizations (for both women and men) in the targeted landscapes established and supported for linking to the global and sub-regional knowledge-sharing networks

1.4 Alignment with GEF focal area and/or Impact Program strategies

The proposed project focuses on the GEF's **Biodiversity** focal area - BD-1-1 *Mainstream biodiversity across sectors as well as landscapes and seascapes through biodiversity mainstreaming in priority sectors*, and BD-2-7 *Improving Financial Sustainability, Effective Management, and Ecosystem Coverage of the Global Protected Area Estate.*

For BD 1-1 the project emphasises the entry point of Biodiversity Mainstreaming in Priority Sectors. In support of this focal area, the proposed project includes activities that support:

· Developing policy and regulatory frameworks at national and provincial levels that require the use of mitigation frameworks and provide incentives for biodiversity and climate-positive land use.

· Spatial and land-use planning aimed at improving how the target provinces address land/wetland/sea and resource use on a landscape scale. It seeks to improve spatial data on biodiversity and economic development and introduce land use planning frameworks that seek to maximize economic production whilst protecting biodiversity.

· Improved production and infrastructure development practices to be more biodiversity and climate positive. The project focuses on economic sectors that have substantial and/or cumulative impact on biodiversity (agriculture (e.g. cocoa and coffee), forestry, fisheries, extractive industries and infrastructure). It will develop and promote mitigation frameworks that use spatial data to identify areas where development impacts should be avoided and areas where development will have minimal, no or positive impact. It will include the development of methodologies, promotion of stakeholder participatory mechanisms and technical capacity building in commodity chain verification and certification, payment for environmental services and biodiversity offsets.

The project will consider the government's plans for the Highlands, including priorities for the protection of biodiversity and climate change adaptation. The development of comprehensive spatial data sets will enable integrated land use planning through the identification of key ecosystem hotspots, key species and critical carbon stocks to be protected and suitable areas for biodiversity friendly and climate resilient agriculture and forest management.

The mainstreaming of biodiversity conservation within forest and farm management will enable sustainable flows of ecosystem services, protect wildlife species and help achieve climate change objectives, whilst also improving livelihoods and food security.

Innovative approaches and practices (including through extension services, farmer fields schools, forest-farm facilities) will support small scale farmers in sustainable intensification of NTFPs, coffee and cocoa to increase production and improve livelihoods. Targeted efforts will focus on strengthening local supply chain enterprises to become more profitable from the development of a commodity industry that is traceable, sustainable and deforestation free.

For BD 2-7 The project acknowledges that most PNG forests and wetlands are managed by customary landowners which places them into the category that GEF describes as indigenous peoples and local communities (IPLCs). GEF's biodiversity strategy notes that GEF support aims to strengthen three elements of a sustainable protected area system: 1) effective protection of ecologically viable and climate-resilient representative samples of the country's ecosystems and adequate coverage of threatened species at a sufficient scale to ensure their long term persistence; 2) sufficient and predictable financial resources available, including external funding, to support protected area management costs; and 3) sustained individual and institutional capacity to manage protected areas such that they achieve their.

The GEF aims to promote the participation and capacity building of indigenous peoples and local communities, especially women, in the design, implementation, and management of protected area projects through established frameworks such as Indigenous and Community Conserved Areas.

Accordingly, in support of this focal area, the project will support:

- Effective protection of the country's ecosystems and threatened biodiversity, notably through regional protected areas (community conserved areas) and policy development, and

- Development of sustained individual and institutional capacity to manage protected areas such that they achieve their conservation objectives, both through the project's work on improving spatial data (component 1), improving management effectiveness and capacity building (component 2).

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

The project will assist national and provincial governments to mainstream biodiversity across sectors in target landscapes and support the implementation of the new Protected Areas Policy by enabling inclusive conservation through regional protected areas, notably community conserved areas. Without the project it is highly unlikely that there will be enough government budget and other resources allocated to the issues identified in the baseline for the two target provinces.

Through improving spatial data, supporting integrated land use planning, enabling value chains and promoting changes to policies and laws, the project is expected to have transformative impact on the conservation of biodiversity and carbon stocks as well sustainable socio-economic development in the targeted landscapes. The project will enable improved livelihoods, mitigate uses of natural resources that lead to deforestation and degradation and potentially create jobs.

By taking an integrated approach to planning and linking this to priorities for conservation and development as well as to improvements to value chains based on biodiversity friendly and climate resilient production, the project will assist stakeholders to address drivers of ecosystem loss and degradation.

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

By applying innovative and integrated approaches in the target landscape and by enhancing enabling policy and planning frameworks, the project has significant potential to generate global environmental benefits, notably the conservation and sustainable use of globally significant biodiversity by mainstreaming biodiversity conservation to harness ecosystem services and safeguard threatened wildlife species and by improving protected area management effectiveness.

Benefits to globally significant biodiversity (to be assessed more in detail during PPG, utilizing METT, supplementary community BD and social/NRM use and access information and Conservation Needs Assessments) include the preservation of EHP's and WHP's intact forests and plant species as well as IUCN Red-Listed wildlife such as the central ranges tree kangaroo (VU), Goodfellow's tree kangaroo (EN), eastern long beaked echidna (VU), and New Guinea Pademelon (VU).

The proposed project directly addresses the conservation of globally significant biodiversity by:

- Supporting the Government at the national level to improve the quality of spatial data and integrated decision support systems and implement the Government's new protected area policy, thereby contributing to PNG's NBSAP and commitments to the CBD Aichi targets.

- Improving information and its flow from local to national level to help the Government at provincial and national levels to better monitor forest resources and enable communities to use information to manage landscapes in ways that conserve biodiversity, build climate resilience and improve livelihoods.

- Supporting provincial, district and local level authorities to improve spatial data and decision support systems to better mainstream biodiversity considerations into land use planning.

- Supporting provincial, district and local level authorities and customary landowners to enhance biodiversity conservation through the expansion and improved management of protected areas, including community conserved areas, and through conservation actions across the landscape outside protected areas.

- Enabling customary land owners and FFPOs to improve the management of high conservation value forests
- Enabling customary landowners to improve forest and farm value cahins for commodities that are biodiversity friendly and climate resilient.

Although the project is not focused on climate change mitigation, it is expected that the project will reduce GHG emissions by an estimated 1.3 million tCO2e during the 10 years after completion of the project through the conservation of biodiversity, reduced deforestation and forest degradation and restoration of degraded forest lands. Additionally, the project is expected to generate adaptation benefits by incorporating measures to increase the resilience of biodiversity, ecosystems and livelihoods to climate change.

1.7 Innovation, sustainability and potential for scaling up

Innovations. The project will introduce innovations at multiple levels via (1) improvements to spatial data quality, completeness and accessibility through technology including land use monitoring systems, and digital services for market information; (2) enhancing governance, regulatory frameworks, policies for and implementation of integrated land use planning and multi-stakeholder coordination mechanisms; and (3) building competencies for accessing value chains for biodiversity friendly and climate resilient commodities.

Sustainability and potential for scaling up. The participatory and inclusive approaches to integrated landscape planning and management in the targeted landscapes are expected to generate success stories and innovative practices that provide incentives for local people to conserve biodiversity and lessons that can be replicated and scaled up beyond the project boundary. The project will draw on successful experience elsewhere in PNG, including integrated planning efforts undertaken in New Britain, and adapt these for the highlands.

The strong involvement of communities and the tangible project outcomes through improved livelihoods will ensure transformational change at scale including an inclusive and sustainable economy.

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[19] PNG Forest Authority. 2019. Forest and land use change in Papua New Guinea 2000-2015.
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[23] Papua New Guinea, *Papua New Guinea Development Strategic Plan 2010-2030*.
[24] Mawuliand and Ogis Sanida, "Provincial Development Planning in Papua New Guinea: An Appraisal."
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1b. Project Map and Coordinates

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

A map of the project is included as Annex A. The Western Highlands is located at 5.6268° S, 144.2593° E and the Eastern Highlands is located at 6.5862° S, 145.6690° E.

2. Stakeholders

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

Indigenous Peoples and Local Communities No

Civil Society Organizations Yes

Private Sector Entities Yes

If none of the above,please explain why:

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

The project will be prepared and implemented in close cooperation with relevant stakeholders at the national, provincial and district level as described below.

The complex nature of land management and governance in the highlands necessitates the involvement of a diverse range of stakeholders. Extensive consultation with stakeholders was not feasible during the project identification phase and more detailed and broad-based stakeholder consultations will be required during project design, including with customary landowners, local and provincial authorities, private sector, and producer groups. A detailed stakeholder engagement plan should be prepared during the project design phase and updated during the first year of implementation.

Existing projects that are relevant to the proposed project have indicated a willingness and interest in collaboration, including sharing of knowledge, providing opportunities for training and farmer to farmer exchange and cooperation on the development of communication and policy reform messages.

Working with customary landowners will require a considered and respectful approach that may take considerable time and effort by government and project staff. Project activities directly focused on customary landowners or likely to affect these landowners can only be undertaken with their free, prior and informed consent (FPIC). For this reason, it is important that the PPG examine in further detail how FPIC will be implemented with customary landholders, noting the complexity of gaining FPIC in the context of the highlands, and as a consequence it is likely that some outputs of the project will only be feasible towards the end of the project timeline.

Stakeholders	Administrative Levels	Expected roles/responsibilities
· Customary landowners	Local	Customary landowners are the primary focus of component 2 and the agreement of customary landowners is essential for all activities of the project that have the potential to impact their rights and livelihoods.

· Provincial, district and local level governments	Regional and local	Provincial governments in the target provinces are key stakeholders who will play key roles in spatial data collection and preparation of land use plans. Selected district and local government staff will be supported to engage in the provincial level planning and potentially to develop local level integrated land use plans. These stakeholders will also be involved in supporting improved forest and farm use and in identifying policy reforms.
· PNG Conservation & Environment Protection Authority (CEPA)	National	As GEF Operational Focal Point, CEPA ensures the alignment of GEF strategic areas and country priorities as well as performs overall coordination of GEF funded projects and coordination of activities related to biodiversity and protected areas management.
· Papua New Guinea Forest Authority (PNGFA)	National, Regional and District	Co-coordination with project implementation and overall coordination of activities associated with timber production legality, traceability and compliance to national legality standards; data collection on timber production; building capacity of regional and district staff on improving data accuracy, archiving and documentation for national reporting. Key role in forest inventory work undertaken by the project
· Department of Agriculture and Livestock (DAL)	National, Regional and District	Co-coordination with the project and overall coordination on activities related to sustainable agricultural production of key commodities and improvement of value chains
Research institutes/universities: National Agriculture Research Institute (NARI), University of PNG (UPNG), PNG Forest Research Institute (FRI), University of Technology, University of Goroka	National	NARI as a specialized national institution for agriculture research will provide extension research needed for enhancing sustainability of farming system and improving the value chains along with UPNG and FRI
NGOs: TNC, BRC	National, regional and district	NGOs will be engaged in the implementation of the project especially in activities related to capacity building of farmer beneficiaries. Lessons from TNC's work in New Britain will be adapted for the highlands.
Private Sector: PNG Forest Industries Association. Business Council of PNG Coffee Producers Association	National, Regional and District	Private companies will be engaged given their experience with improving the competitiveness of target products in key markets

3. Gender Equality and Women's Empowerment

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

Through cooperation with the government partners, the project intervention will be in line with the GEF Gender Equality Action Plan and the existing policy and strategy on women's empowerment in the country specifically including the National Policy on Women and Gender Equality 2011–2015. The project will ensure that women and youth enjoy equal access to project activities from the preparation to implementation and evaluation.

PNG has very clearly defined gender divisions, which is set in the socio-cultural context of various communities. Ownership and control of assets and resources (including natural resources) and power over decisions is predominantly in the hands of men.

Women's control over use of income and participation in making decisions in the use of income is generally low, especially among rural households.

Environmental degradation and climate change adversely affect women whose livelihoods largely depend on natural resources for food, wood fuel, and water. Overall, women in rural areas are highly vulnerable because of their dependency on natural system, their extremely limited capacity to earn income and engage in markets and their weak capacity to influence both household and community decisions.

The proposed project will seek to promote gender equity and equality in access to and control of natural assets, technologies, services, decision-making processes, products and income from forest/farm landscapes in order to enhance food security, wellbeing and resilience of rural households.

The project will also seek to improve the capacity of key stakeholders to better understand the roles of women and to be more effective at participatory design and implementation of gender-sensitive interventions that are appropriate to local knowledge and skills, resources, time availability, interest, and ingenuity.

As far as practical, budget will be allocated to women's empowerment and to support to women-led Forest and Farm Producer Organizations (FFPOs).

The project will ensure the principle of gender sensitive and gender specific data and information are include in project documentation and publications

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

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

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

generating socio-economic benefits or services for women. Yes

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

Yes

4. Private sector engagement

Will there be private sector engagement in the project?

Yes

Please briefly explain the rationale behind your answer.

The private sector especially in the forestry, cocoa and coffee industries will be involved in the project implementation. This includes supporting the value chains of local SMEs, FFPOs.

The proposed project targets interventions at small scale enterprises with a view to building capacities of the private sector at the local level and linking these enterprises to local and national markets. The direct beneficiaries of this approach are small-scale farmers and value chain actors representing local private sector within the project boundary.

Component 3 is geared towards private sector engagement. It includes a focus on enhancing local private sector capacity and fostering entrepreneurship through value chain development of forest and agricultural products to building biodiversity friendly and climate resilient market chains in vulnerable communities. The interventions aim to link smallholder producers, and particularly women, to markets, introduce sustainable supply chains, and create improved and sustainable revenues from forest and agricultural commodities.

5. Risks

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

The risks that have been identified can be mitigated through effective management by the project and through the support of government staff and the project governance system.

The table below provides an indication of the risks to the project and the mitigation measures that may be required to manage the risks.

Description of risks	Types of risks	Probability and impact (1-5)	Measures to address the risks

Lack of political will to support the project activities	Political	P=4 I=5	Awareness raising among decision makers combined with a strong stakeholder involvement plan.
Lack of coordination among concerned ministries and local government authorities	Political	P=2 I=4	Clear project institutional arrangements that specify roles and responsibilities of those concerned set out by the national guidelines that are supported by the project.
Limited cooperation on data and information sharing among stakeholders	Organizational	P=2 P=3	MoU with the key stakeholders to collect and supply required data and information and requirement for the project to provide compiled data back to data custodians.
Gender mainstreaming hindered by resistance from local, provincial and national stakeholders	Cultural	P=3 I=2	Clear communication on gender equality is one of the key aims of the project. The project includes gender disaggregated data collection for monitoring.
Lack of interest by customary landowners	Cultural	P=2 I=4	Clear stakeholder engagement strategy and effective identification of and negotiation with interested landowners.
Low and/or declining commodity prices (including for coffee)	Economic	P=3 I=4	The project will work in close consultation with other projects and government agencies that are focused on sustainable commodity value chains to identify risks and opportunities with commodity prices and support FFPOs to identify and select commodities and value chains that minimize risk, are climate resilient and biodiversity friendly.
Climate change impacts (such as droughts, floods, extreme weather events) may adversely affect project outcomes	Climate change	P=3 I=3	A detailed climate risk screening will be undertaken at early PPG stage and mitigation measures will be built into the project design in consultation with stakeholders. Generally, the project is anticipated to enhance the resilience of biodiversity and livelihoods to the adverse impacts of climate change.

The project has been screened against environmental and social risks and has been rated 'moderate risk' in line with FAO's Environmental and Social Safeguards (see certification in annex). The risk level will be further re-confirmed at PPG stage. The Agency will make sure that any potential adverse environmental and social impacts will be duly identified and mitigation measures included in the CEO Endorsement package. In addition, as explained above, the project will ensure free, prior and informed consent (FPIC) for customary landholders.

6. Coordination

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

The proposal is for FAO and UNDP to be joint implementation agencies. This will help with coordination with other GEF projects and other environment and climate change projects. Consistent with the 'Delivering as One' approach FAO and UNDP, in cooperation with pilot country governments, will develop approaches that enhance the coherence, efficiency and effectiveness of the UN at country level and reduce transaction costs for host countries. The project will embed staff within CEPA and in the two target provinces to build capacity of government staff over the life of the project. Both FAO and UNDP already have good linkages with many of the relevant projects in PNG and these linkages will be strengthened to ensure sharing of lessons and coordination of activities with GEF and other relevant projects.

The Conservation and Environmental Protection Authority (CEPA) is proposed as the lead executing agency. CEPA will work in close collaboration with the PNG Forest Authority (PNGFA), the Climate Change and Development Authority (CCDA), and the Department of Agriculture and Livestock (DAL) as well as the Provincial Governments of EHP and WHP.

The project will consider supporting provincial level roundtables, as have been developed for other provinces with GEF support, to engage provincial level actors.

Gaining the approval of targeted customary landowners for project activities is a prerequisite for the project. The project will apply clear free, prior and informed consent (FPIC) and ensure that all relevant government and project staff involved in the delivery of project outputs have the appropriate capabilities for FPIC and for working with customary landowners at clan and household levels.

7. Consistency with National Priorities

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

Yes

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

The government of PNG has made strong commitments to protect its rich natural resources and ecosystems while promoting sustainable food systems to ensure the livelihoods of its people. These objectives are integrated into PNG's Vision 2050 (2009), which recognizes the great potential of its natural resources to improve the country's socioeconomic development through 7 strategic focus areas. This is translated into economic policies and sectoral interventions through PNG's Development Strategic Plan 2010-2030.

In order to pursue more integrated green growth, PNG has launched an ambitious Strategy for Responsible Sustainable Development for Papua New Guinea (StaRS 2014), which prioritizes green agriculture, conservation of forest and biodiversity and SME development. The project is aligned with PNG's Vision 2050 and its Green Growth Strategy (STaRS 2014).

Furthermore, PNGs Medium Term Development Plan III 2018-2022 strives for inclusive Economic Growth including with renewed focus on agriculture and key commodities.

The project will support the PNG's Development Strategic Plan 2010-2030 gender goal - *all citizens, irrespective of gender, will have equal opportunity to participate in and benefit from the development of the country.*

PNG is a global leader in promoting the REDD+ mechanism and its National REDD+ Strategy provides the strategic direction and overall framework to address drivers and emissions from deforestation and landscape degradation. PNG has endorsed its first Protected Areas Policy, which offers sustainable finance schemes to communities engaged in biodiversity conservation.

The National REDD+ strategy offers sustainable finance schemes to communities engaged in biodiversity conservation. The project supports PNG's REDD+ strategy in the following areas:

- Strengthened land-use and development planning – by assisting with the development/updating of provincial integrated land use plans
- Strengthened environmental management, protection and enforcement – by strengthening conservation planning and strengthening access to information and increasing community and land holder awareness of their legal rights and requirements for environmental management and development planning
- Enhanced economic productivity and sustainable livelihoods – through the development of biodiversity friendly and climate resilient agriculture and strengthening and expansion of extension services and support to rural communities.

The project supports the goals of PNG's National Biodiversity Strategy and Action Plan[1], notably:

- Goal 1- To conserve, sustainably use, and manage the country's biological diversity
- Goal 2 - To strengthen and promote institutional and human capacity building for biodiversity conservation, management and sustainable use
- Goal 3 - To strengthen partnership and promote coordination for conserving biodiversity.

The project contributes to the PNG Policy on Protected Areas by supporting the following pillars:

1. Protected Areas, Governance and Management – by supporting customary landowners in their initiatives to establish effective protected areas on their lands

2. Sustainable livelihoods for communities– by building capacity, supporting and empowering communities, customary landowners and protected area staff to sustainably manage the protected areas

4. Managing the Protected Area network – by supporting the establishment of a relevant, comprehensive, adequate, representative and resilient PNG Protected area Network, in the target provinces, according to the range of reserve types and network design principles established in this Policy.

The project will support PNG's plans for agricultural development including the Cocoa Industry Strategic Plan and the Coffee Industry and Strategic Plan. If practicable, the project will consider providing support to improve farming practices in and near the Kuk World Heritage site, with a view to protecting the outstanding universal values of the site.

In its Nationally Determined Contribution (NDC, 2016), PNG stated that adaptation is a high priority for the country. The NDC identifies nine prevalent hazards listed below.

1. Coastal Flooding and Sea Level Rise
2. Inland Flooding
3. Food Insecurity caused by crop failures due to droughts and inland frosts
4. Cities and Climate Change
5. Climate Induced Migration
6. Damage to Coral Reefs
7. Malaria and Vector Borne Diseases
8. Water and Sanitation
9. Landslides

This proposed project will address the items #2, #3, #8, and #9 above by assisting the most vulnerable people to implement biodiversity friendly and climate-resilient practices. Appropriate land use planning and monitoring, biodiversity and forest conservation and ecological restoration will reduce the risk of flooding and landslides, and maintain the water quality and steady supply. Support to the farmers on value chains for sustainably harvested products and climate-resilient practices will improve food security against the impacts of climate change.

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[1] Government of Papua New Guinea, "Papua New Guinea National Biodiversity Strategy and Action Plan."

8. Knowledge Management

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

The project will adopt two core knowledge management approaches: 1) Dissemination and maintenance of on-line based database and learning forums; and 2) Promotion of a knowledge sharing culture and coordination with key stakeholders.

To successfully implement these approaches, the project plans to employ a national communication specialist who will develop a communications and knowledge management strategy within the first six months of the project inception. The strategy will draw on the extensive experience in knowledge management and communication of CEPA, UNDP and FAO as well as other project partners.

The communication and knowledge management strategy will seek to maximize the potential for lessons learned by the project to be used to:

•Adapt project management and implementation.

- Influence national, provincial and local approaches to planning and land use practices.
- Inform key policy processes at national and provincial level to accelerate and improve policy reforms, including through supported targeted, highly focused, multistakeholder policy workshops.

The national communication specialist will produce key knowledge products in locally acceptable formats using electronic materials for webpage, ICT, radio, paper, or other appropriate means.

Knowledge products will be in English and Tok Pisin and translated into local languages and/or visual communications for people with low literacy levels.

The project will promote a culture of knowledge sharing and coordination for data collection and analysis in PNG. This includes promoting enhanced coordination among line ministries, provincial and local governments, and grass root actors working together towards improved transparency in spatial data for the agriculture, forestry and land-use sectors.

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

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

Name	Position	Ministry	Date
Gunther Joku	Managing Director	Conservation and Environment Protection Authority	3/16/2020

ANNEX A: Project Map and Geographic Coordinates

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