
Protection of biodiversity and sustainable land-use in conservation landscapes in South Sulawesi, Gorontalo and East Nusa Tenggara

Part I: Project Information

GEF ID

10913

Project Type

FSP

Type of Trust Fund

GET

CBIT/NGI

CBIT No

NGI No

Project Title

Protection of biodiversity and sustainable land-use in conservation landscapes in South Sulawesi, Gorontalo and East Nusa Tenggara

Countries

Indonesia

Agency(ies)

UNEP

Other Executing Partner(s)

Directorate General of Nature Resources and Ecosystem Conservation (KSDAE) of the Ministry of Environment and Forestry (KLHK), Government of Indonesia

Executing Partner Type

Government

GEF Focal Area

Multi Focal Area

Taxonomy

Focal Areas, Biodiversity, Protected Areas and Landscapes, Community Based Natural Resource Mngt, Biomes, Tropical Dry Forests, Tropical Rain Forests, Mainstreaming, Agriculture and agrobiodiversity, Forestry - Including HC VF and REDD+, Species, Plant Genetic Resources, Threatened Species, Land Degradation, Sustainable Land Management, Community-Based Natural Resource Management, Sustainable Forest, Ecosystem Approach, Restoration and Rehabilitation of Degraded Lands, Land Degradation Neutrality, Land Cover and Land cover change, Forest, Forest and Landscape Restoration, Stakeholders, Private Sector, Capital providers, SMEs, Individuals/Entrepreneurs, Financial intermediaries and market facilitators, Local Communities, Type of Engagement, Partnership, Participation, Gender Equality, Gender Mainstreaming, Gender-sensitive indicators, Beneficiaries, Sex-disaggregated indicators, Women groups, Gender results areas, Access and control over natural resources, Access to benefits and services, Capacity Development, Participation and leadership, Knowledge Generation and Exchange, Awareness Raising, Influencing models, Strengthen institutional capacity and decision-making, Capacity, Knowledge and Research

Sector**Rio Markers****Climate Change Mitigation**

Climate Change Mitigation 2

Climate Change Adaptation

Climate Change Adaptation 2

Duration

72 In Months

Agency Fee(\$)

709,767.00

Submission Date

12/30/2021

A. Indicative Focal/Non-Focal Area Elements

Programming Directions	Trust Fund	GEF Amount(\$)	Co-Fin Amount(\$)
BD-1-1	GET	5,684,749.00	10,750,000.00
LD-1-3	GET	786,484.00	16,533,520.00
LD-1-4	GET	1,000,000.00	11,645,423.00
	Total Project Cost (\$)	7,471,233.00	38,928,943.00

B. Indicative Project description summary

Project Objective

To protect biodiversity and reduce land degradation in Wallacea hotspot through landscape-based conservation action, sustainable land management, and livelihood benefits linked to conservation outcomes.

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount(\$)	Co-Fin Amount(\$)
Component 1: Planning and governance for integrated landscape conservation and reduced land degradation	Technical Assistance	<p>Outcome 1.1 Plans for improved conservation management and reduced land degradation in Wallacea landscape hotspots through ecologically and spatially optimized land and forest management agreed upon.</p> <p>Indicators:</p> <p><i>(1) Ecological habitat requirements and conservation action for (key-stone) species identified</i></p> <p>Target: Species conservation assessment reports for two (2) Threatened species or one (1) fauna/flora group per landscape, focused on KBA/IBA sites</p>	<p>Output 1.1.1 Analysis of impact drivers to ecosystems, and identification of opportunities for landscape and species protection in Key Biodiversity Areas (KBA)/Important Bird Areas (IBA), which guide ecological and spatial context of restoration and habitat protection, measures to address drivers, as well as optimized investments for resilient landscapes and communities</p> <p>-</p> <p>Output 1.1.2: Five (5) spatially explicit Integrated Conservation Landscape Plans (ICLP) adopted by local government, incorporating LDN and key habitat conservation targets, linked to government Medium-term Development Plans for alignment of budgeting and fiscal support (see 3.1.2 & 3.1.3)</p> <p>Output 1.1.3 ICLP-based biodiversity conservation, SLM/SFM and related economic/investment planning is</p>	GET	5,328,976.00	8,896,000.00

(2) # of ha landscape under improved practices (CI 4) for: (i) Biodiversity - breeding, feeding or resting requirements (4.1); (ii) enabling BD through productive agro-forests (4.3) and HCVF protection (4.4)

Target: Total of at least 514,848 ha (Core Indicator 4), consisting of 167,894 ha (KBA), 96,725 ha of Protection forest/Non-KBA, plus 230,094 Areas for Other Land Use (APL) included in five ICLP

(3) Conservation plans for globally threatened or endemic species guide improved area-based conservation action

Target: *at least one (1) multi-species conservation plan each (4) landscape include recommended action related to FMU, SLM and social forestry*

Outcome 1.2 Improved landscape management with conservation outcomes through secure

integrated into 219,896 ha of optimised Forest Management Unit (FMU) plans and boundary decisions, and management capacity established with partners under People, Public, Private, Partnerships (PPPP) agreements (see 1.1.2)

Output 1.2.1: Community social forestry concessions secured, and their development aligned with ICLP objectives for biodiversity conservation, community welfare and more sustainable and productive agroforestry value-chains (bamboo, cacao, sugar palm e.o)

local governance and land tenure as a basis for enhanced agroforestry value-chains in social forestry concessions.

(4) Total # of social forestry concessions granted including for commodity production and access for women, integrating BD objectives.

>30% of concessions led by women

Target: 18; > 100,000 ha (as part of Core Indicator 4)

Specific targets to be defined at PPG stage.

Component 2: Implementation of the ICLP in alignment with local governance, impact financing and community-development	Technical Assistance	<p>Outcome 2.1: Enhanced area-based biodiversity conservation and restoration as well as reduced drivers of biodiversity loss based on the agreed ICLP and KPH management plans</p> <p>Indicators:</p> <p><i>(5) Area-based protection of key species habitat</i></p>	<p><u>Output 2.1.1:</u> Other Effective Conservation Measures (OECM) and community-based Monitoring, Control and Surveillance implemented (e.g. integrated fire management, protection of wildlife habitat for breeding, feeding, resting; encroachment)</p> <p><u>Output 2.1.2:</u> KBA/HCVF forests protected and restored (assisted natural regeneration and enrichment planting) and sustainable</p>	GET	786,484.00	16,533,520.00
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Target: ...x... ha for Babirusa, Anoa, Macaque, 2 bird, 3 tree, 2 bamboo endemics

forest/savannah management on degraded lands for increased soil and woody vegetation health

(6) # of ha of improved land management *for BD and LDN outcomes (same Indicator 2)*.

Target: at least 514,818 ha

Output 2.1.3 Biodiversity is mainstreamed into 219,896 ha FMU implementation including their business plans for BD-friendly investments (informed by the ICLPs), SFM, restoration, social forestry and other area-based conservation modalities

(6) *Degraded high-BD forest within and adjacent to KBAs restored*

Target: 8,661 ha

(7) *Reduction in drivers of BD loss as stated in ICLP/Species Conservation Plans*

Target: 50% reduction in frequency of bushfires, 40% reduction in poaching of key species; 25% reduced illegal encroachment – as against baselines

(8) *FMU/KPH operations improved with biodiversity and SLM outcomes*

Output 2.2.1 Community-based (PPPP) Bamboo agroforestry (and other NTFP commodities) operational, conditional community-BD conservation agreements (ICLP)

Target: 6 KPH-Ls (149,777 ha), 4 KPH-Ps (68,523 h) and 1 KPH-K (1,596 ha) totaling 219,896 ha and investment-ready through feasible value-chains (linked to financing Comp 3)

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Outcome 2.2: Enhanced biodiverse agro-forestry production on Social Forestry Concessions leading to enhanced soil, water and woody vegetation, and community support for protection of biodiversity (outside KBAs)

(9) # agroforestry on social forestry concessions on APL and Production Forest:

Target: 100,000 ha (same indicator 4)

(10) % of population in project sites derive a portion of their yearly income from biodiversity-friendly community-based businesses sourced from <230,094 ha agro-forests

Target: 10% of population, and over 40% is women

(11) Agroforest BD & SLM indexes improving at midterm and end of project

Specific targets to be defined at PPG stage.

<p>Component 3: Sustainable sources of financing for the implementation of integrated landscape conservation and management</p>	<p>Investment</p>	<p><u>Outcome 3.1</u> Public and private investments and fiscal measures enable implementation of ICLP through commodity-based agroforestry value chains, area-based conservation and other landscape interventions benefitting biodiversity and reduced LD</p>	<p><u>Output 3.1.1</u> Blended/impact investments mobilized through agreement with private sector, financiers/banks and local producers (particularly women) to realise livelihood targets and enable biodiversity-friendly business ventures</p>	<p>GET</p>	<p>1,000,000.00</p>	<p>11,645,423.00</p>
		<p><i>(12) % of capitalization for biodiversity-friendly businesses from private sector origin, with > 15% of investments applied to environmental protection and restoration</i></p> <p>Target: 45% capitalisation</p>	<p><u>Output 3.1.2:</u> Mainstream biodiversity and LDN lending criteria and secure new ICLP funding through village and development funds, Regional Incentive Fund, and regional credit unions</p>			
		<p><i>(13) Number of new business ventures led by women</i></p> <p>Target: >30%</p>	<p><u>Output 3.1.3:</u> Implementation of ICLP through facilitating government fiscal mechanism including ecology-based transfers in Provincial (TAPE), District (TAKE) and National (TANE) budgets</p>			
			<p><u>Output 3.1.4:</u> Project-level M&E systems for continuous improvement in meeting biodiversity</p>			

(14) Activating innovative national-level fiscal incentives; based on BD conservation performance at provincial and village levels and leading to increased government budget and lending for regions based on biodiversity conservation and land restoration performance.

and LD outcomes (also linked to Community Biodiversity Monitoring Programmes est. under 2.1.1)

Target: 2 instruments

(15) Target: 50% of funds required for restoring 8,661 ha and establishing 100,000 ha agroforests coming from new public and private investments

	Sub Total (\$)	7,115,460.00	37,074,943.00
Project Management Cost (PMC)			
	GET	355,773.00	1,854,000.00
	Sub Total(\$)	355,773.00	1,854,000.00
	Total Project Cost(\$)	7,471,233.00	38,928,943.00

Please provide justification

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

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount(\$)
Recipient Country Government	Ministry of Environment and Forestry, Directorate General, Nature Resources and Ecosystem Conservation	In-kind	Recurrent expenditures	6,245,040.00
Recipient Country Government	Ministry of Environment and Forestry, Forestry and Environment Instruments and Standardization Agency (prev. Forestry Environment Research Development and Innovation Agency)	In-kind	Recurrent expenditures	1,774,377.00
Recipient Country Government	Balai Besar Konservasi Sumber Daya Alam (BBKSDA) East Nusa Tenggara, a provincial-based Division of Natural Resources Conservation.	In-kind	Recurrent expenditures	2,067,844.00
Recipient Country Government	Balai Besar Konservasi Sumber Daya Alam (BBKSDA) South Sulawesi, a provincial-based Division of Natural Resources Conservation.	In-kind	Recurrent expenditures	1,986,886.00
Recipient Country Government	Division of Natural Resources Conservation (Balai Konservasi Sumber Daya Alam/BKSDA) Gorontalo	In-kind	Recurrent expenditures	1,349,947.00
Recipient Country Government	Provincial Government of South Sulawesi for the Office of Environment & Forestry	In-kind	Recurrent expenditures	5,424,525.00
Recipient Country Government	Provincial Government of South Sulawesi for the Office of Environment & Forestry	Grant	Investment mobilized	1,000,000.00
Recipient Country Government	Provincial Government of East Nusa Tenggara for the Office of Environment & Forestry	In-kind	Recurrent expenditures	2,213,800.00

Recipient Country Government	Provincial Government of East Nusa Tenggara for the Office of Environment & Forestry	Grant	Investment mobilized	1,000,000.00
Recipient Country Government	Provincial Government of Gorontalo for the Office of Environment & Forestry	In-kind	Recurrent expenditures	3,235,810.00
Recipient Country Government	Provincial Government of Gorontalo for the Office of Environment & Forestry	Grant	Investment mobilized	1,000,000.00
Civil Society Organization	Yayasan Bambu Lestari	Grant	Investment mobilized	2,130,714.00
Civil Society Organization	Yayasan Burung Indonesia	Grant	Investment mobilized	500,000.00
Private Sector	Tropical Landscape Finance Facility (TLFF), Agri-3 Fund, others such as financing partnership with IKEA towards Baboo as well as other sustainable commodities/impact finance(1)	Loans	Investment mobilized	9,000,000.00
			Total Project Cost(\$)	38,928,943.00

Describe how any "Investment Mobilized" was identified

Private Sector: The planned impact investment has been identified based on expected feasibility and partnership with financing mechanisms such as Tropical Landscape Finance Facility, Agri3 Funds (resilient forest production landscapes) and sustainable sourcing companies (e.g., IKEA) and other such as World Association of Zoos and Aquariums) who have a strong interest in biodiversity and habitat protection. The specific engagement includes but not limited to capacity development and marketing of commercially attractive commodities such as bamboo, cocoa, coffee, palm sugar, as well as local livelihood products, e.g. sandalwood, vanilla beans, weavings, community eco-tourism, combined with private investments in forest landscape protection and restoration. This will build upon the extensive baseline program by EBF with the provincial government in ENT in the field of Bamboo agroforestry and value chains; the proposed investments through The Tropical Landscape Finance Facility (TLFF)_in Sulawesi in collaboration with Rainforest Alliance (cocoa) or possibly sugar palm in Gorontalo, and other partners under Comp 3. Pre-feasibility analysis during PPG will determine which partnerships and financing has good prospects for the FSP.

Government: The Government of Indonesia has created a grant scheme under the new Environmental Trust Fund (BPD LH) that provides grant for environmental-focused program developed at community lever or proposed by the National Park Management unit. It can match alternative new economic models and environmentally friendly livelihood activities for the financial sustainability of conservation efforts and benefit to surrounding communities' livelihoods. The MoEF has also released a Social Assistance Program to assist communities in and around forest areas, i.e., forest farmer groups and social forestry groups, as well as officers who serve in the environmental and forestry sector who are affected by Covid-19 for USD 69,5M. The House of Representative through Commission IV

has also suggested to add the allocation for MoEF for USD 487M with more allocation to be added to the Social Forestry program. Additional grant Investment would be generated by provincial governments through the work under Output 3.1. and 3.1.3 – Village Funds, Regional Incentive Fund, and regional credit unions, as applied to the targeted landscapes, village and communities. ----- (1) Details to be determined at landscape level during PPG phase, depending on the sites, commodities and market demand, as well as driver pressures, and after the business plans are completed in collaboration with the key players (producers/farmers, banks/investors, TLFF/Agri3, commodity traders or off takers), during project implementation.

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(\$)
UNEP	GET	Indonesia	Biodiversity	BD STAR Allocation	5,684,749	540,051	6,224,800.00
UNEP	GET	Indonesia	Land Degradation	LD STAR Allocation	1,786,484	169,716	1,956,200.00
Total GEF Resources(\$)					7,471,233.00	709,767.00	8,181,000.00

E. Project Preparation Grant (PPG)

PPG Required **true**

PPG Amount (\$)

200,000

PPG Agency Fee (\$)

19,000

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount(\$)	Fee(\$)	Total(\$)
UNEP	GET	Indonesia	Biodiversity	BD STAR Allocation	160,000	15,200	175,200.00
UNEP	GET	Indonesia	Land Degradation	LD STAR Allocation	40,000	3,800	43,800.00
Total Project Costs(\$)					200,000.00	19,000.00	219,000.00

Core Indicators

Indicator 3 Area of land restored

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
8661.00	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)
8,661.00			

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)
514848.00	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)
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414,848.00			
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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)
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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)
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100,000.00			
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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)
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Documents (Please upload document(s) that justifies the HCVF)

Title	Submitted
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Indicator 6 Greenhouse Gas Emissions Mitigated

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
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Expected metric tons of CO ₂ e (direct)	9931819	0	0	0
Expected metric tons of CO ₂ e (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)
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Expected metric tons of CO ₂ e (direct)	9,931,819			
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Expected metric tons of CO ₂ e (indirect)	
Anticipated start year of accounting	2023
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 ₂ e (direct)
Expected metric tons of CO ₂ e (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)
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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	20,349			
Male	30,331			
Total	50680	0	0	0

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

Clarification on Core Indicators: CI 3 Forest restoration ☒ The project will restore through reforestation a total of 8,661 ha fallow land found in High-BD habitats in mainly East Nusa Tenggara Province to Tropical Dry Forest. Fire management will be part of this strategy including specifically the buffer zones around PAs on Sumba island

CI 4 Improved landscape management: ☒ Total area of 5 targeted landscapes - in 3 provinces NTT, South Sulawesi and Gorontalo, is 514,848 ha. These consist of 115,938 ha Tropical Rainforest habitat and 398,910 ha Tropical Dry Forest habitat. ☒ The targeted interventions of the project involve: (a) reduction of the 20-year historic deforestation rates - over the entire landscape area; (b) improved management of the landscapes including the improved production, landscape connectivity and protection of 100,000 ha of bamboo and other NTFP agroforest systems/commodity production in High-BD habitats.

CI 6 Carbon benefits from avoided deforestation & carbon sequestration ☒ Avoided deforestation benefits: As reference on historic deforestation we have used WRI Global Forest watch with the average rate of Primary Forest loss for the period 2002 to 2021: indicated as 11% over the 20 years measurements. Our project would result in a reduction with 20% in this rate in the 'alternative' to an average deforestation rate of 8.8% over the next 20 years (6 project plus 14 post). ☒ GHG calculations have been made based on using the FAO EX-ACT Tool. ☒ Based on this, it is assumed that (a) the project would avoid deforestation of 2,551 ha Tropical Rainforest plus 8,776 ha Tropical Dry Forests in the observed 20-year deforestation rate according to Forest Watch data. In both processes fire for land clearing plays a role. ☒ Rainforests: About 50% of the above avoided deforestation concerns the trend of conversion of Tropical Rain Forest to Agroforestry systems (multi-strata) and the remainder 50% converted to Annual Cropping. In both processes fire for land clearing plays a role. ☒ Dry Forests: About 50% of the above avoided deforestation concerns the trend of conversion of Dry Forests to Agroforestry systems (alley cropping common in NTT) with the remainder 50% of converted to Annual Cropping

☒ Carbon sequestration through improved landscape management: It is assumed (a) that the project would improve protection, landscape connectivity, and agro-forest production improvements/habitat quality over 100,000 ha (30% in Rainforest habitat and 70% in Dry Forest habitat); as well as (b) have carbon sequestration benefit on 1/5 of the targeted landscape area (469,541 ha in alternative scenario with reduced deforestation - consisting improvements in 16,629 ha Rainforest and 57,279 ha Dry Forests habitats, respectively. The project would enable natural forest restoration with a 20% increase in biomass from 40% to 60%) over 20 years; whilst incorporating reduction in fire intensity and area of fire impact. ☒ Carbon sequestration is also generated through reforestation of former Dry Forest on fallow land on a total of 8,661 ha. ☒ Please see details of GHG calculations in the appended EX-ACT Excel sheets.

CI 11 number of beneficiaries: this is estimated as follows: Total 50,680 beneficiaries consisting of female 20,349 person and male 30,331 persons, coming from the following groups and number of people. Most of these come from local communities involved in a.o. the bamboo villages and other NTFP agroforest systems in over 100,000 ha land in the the three provinces, in addition to multiple local government agencies for the multi-sector approach of e.g. integrated conservation development planning and field operations, private sector partners as well as banks/finance institutions, and national government. Note: For link to Aichi Targets pls see Section 7

Part II. Project Justification

1a. Project Description

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

Overview & Environmental Context

This project focusses on 5 key high-biodiversity landscapes located in the Indonesian range of the Wallacea hotspot, to the west of the Weber Line, which is the midpoint at which Asian and Australian fauna and flora are approximately equally represented. This area includes Sulawesi and related islands and the Lower Sunda islands from Lombok to Timor. The Wallace Line marks the western limits of the distribution of marsupial mammals, cockatoos, and several other bird families. The islands support highly diverse biological communities with many unique fauna and flora species - with more than half of the mammals, 40% of the birds and 65% of the amphibians found in Wallacea not occurring outside the hotspot. Many of these species are endemic not only to the hotspot but also to single islands or mountains within it. Such species are highly vulnerable to habitat loss, hunting, collection, and other pressures. As a result, Wallacea has 308 terrestrial and freshwater species classified by the International Union for Conservation of Nature as globally threatened, and many more species for which data is inadequate to allow full assessment of their status.^[1]

Of its fauna, charismatic and formally protected big mammals found in Sulawesi include Babirusa (*Babyrousa sp.*, three species), and the lowland and mountain anoa (*Bubalus depressicornis* and *Bubalus quarlesi*). Sulawesi Island and adjoining islands are home to nine species of tarsiers (*Tarsius sp.*)^[2] and seven species of black macaques (*Macaca sp.*), which are protected by Indonesian law. Sixty-four species of the terrestrial mammals in this region are globally threatened. Mammal distributions follow the division of Wallacea into subregions, with the threatened, endemic mammals all endemic to one of the subregions with one exception, the Babirusa (*Babyrousa babyrussa*), which occurs in Sulawesi and in Buru, Maluku. There are 40 threatened mammals in Sulawesi, and 15 in the Lesser Sundas.^[3] Forty percent of Wallacea's birds are endemic which confirms Indonesia being the world's fourth in bird endemism level^[4]. Sixty-one (61) birds of this hotspot are globally threatened, including 49 endemics. The critical species yellow-crested cockatoo (*Cacatua sulphurea*) is present in 3 of the 4 sites. Also knobbed hornbill *Aceros cassidix*, Sulawesi pitta *Erythropitta celebensis*, Sulawesi hawk-eagle *Nisaetus lanceolatus*, and many others are globally significant species, as detailed in the section below on the targeted conservation landscapes. With regards to reptiles, the region is well-known for Komodo Dragon (*Varanus komodoensis*), occurring on the Lesser Sunda islands of Komodo, Rinca and Flores. However, this project excludes all areas of Komodo and Flores Hawk Eagle habitat, as they are the focus of an already approved UNDP/GEF project.^[5]

The Wallacea region is a hotspot^[6] of biodiversity and overall still has about 45% forest cover, however, the percentage drops to only 15%, or about 50,774 km² when only intact forest in a pristine condition is considered.^[7] Forest ecosystems that underpin the habitat requirements of these species include species of global significance, though research on these forest types are not as prolific as for the dipterocarp species that occur to the west of Wallacea (e.g. on Borneo island). Sulawesi was identified as being one of the top ten places in the world most in need of floristic work,^[8] and it remains one of the islands in the region with the lowest collecting densities.^[9] Monsoon forest is formed in more seasonal climates than evergreen forest; it is the dominant forest type in the Lesser Sundas subregion, which is the driest and most seasonal subregion in Wallacea. Much of this forest type has been cleared for swidden agriculture and, in some cases, for mining and other development.^[10] The very restricted areas of lowland evergreen forests remaining in the project areas, have a high level of tree diversity, yet the market interest in several rare tropical woods occurring here such as ebony (*Diospyros celebica* Bakh.), Cempaka (*Michelia velutina*/*Michelia champaca* and *Michelia* spp.), Agarwood *Aquilaria cumingiana* and *filaria* and *Gyrinops versteegii* (Gilg) Domke, *Pterocarpus indicus*, has led to the decline of species and their listing as vulnerable under IUCN.^[11] For more information on these rare tropical woods, and their potential for integration into agroforestry systems, refer to Annex C. Tropical montane forest in Wallacean region is generally found above 900 meters. Tree species include conifers such as *Podocarpus*. Above about 2,400 meters, the forest is replaced by *Rhododendron* scrub and *Vaccinium* heath mixed with tree ferns and, in the highest areas, grasslands and herbs. Some 20 percent of Sulawesi is within the montane forest biome, including important centers of plant endemism in Latimojong in South Sulawesi (in the proposed project area) and Bogani-nani Wartabone National Park (excluded from the project due to number of programs already operating there) in North Sulawesi. In the drier Lesser Sundas, the *Podocarpus* montane forests give way to *Casuarina* above 2,700 meters, and in the driest regions, such as in Timor-Leste, to black *Eucalyptus urophylla*, which is cultivated widely as an industrial tree crop, but threatened in its endemic home range, such as on Flores Island and surrounding islands the species being critically endangered. The disappearance of important eucalypt populations is primarily the result of land conversion to agriculture and the establishment of more economical crops like macadamia nut trees, cacao, coffee.^[12]

Bamboo species are an important part of the Wallacea forest ecosystem but are notably under researched due to being considered a non-timber forest product and omitted from forest inventories. Bamboo is important to maintaining a healthy forest ecosystem, including the process of natural regeneration, as they fill in gaps in the forest canopy after e.g. wind damage or logging, yet also reduce land degradation such as gulley and soil erosion, and stabilize riverbanks and other dynamic habitats often prone to changes in the forest systems, and as a result are key to sustainable land management, forest regeneration, maintaining biodiversity as well as ecosystem services such as water provisioning services. Planting bamboo has been shown to hold water down to 30 meters, helping the overall forest ecosystem to thrive. The sustainable land management benefits of bamboo agroforestry to restore hydrological condition of grassland and scrubland is found to reduce surface water runoff and increase soil water retention. This benefits watershed buffering capacity, with less risk of rainwater flowing directly into the river, contributing to flash floods. This also reduces risk of erosion,^[13] which is especially important in areas with poor and degraded soils, and for carbon benefits the bamboo provides through carbon dioxide absorption and oxygen production^[14].

A review of bamboo in the Asia-Pacific region found that nearly 450 woody bamboo species may be of conservation concern, but data on these and related conservation strategies are notably lacking.^[15]

There are 105 endemic species of bamboo in Indonesia. Among 39 species of bamboo present on Sulawesi, 22 of those are endemic to Sulawesi (bamboo endemism rate of 56.4%), including *Chloothamnus* sp2, *Dinochloa albociliata*, *D. aopaensis*, *D. barbata*, *D. bungintimbensis*, *D. cordata*, *D. erecta*, *D. glabra*, *D. hirsuta*, *D. karaboensis*, *D. khoonmengii*, *D. kolakaensis*, *D. mekonggensis*, *D. morowaliensis*, *D. multibrachiata*, *D. petasiensis*, *D. sessilifolia*, *D. truncata*, *D. wartabonei*, *Fimbribambusa soejatmiae*, *Racemobambos celebica*, and *Sphaerobambos subtilis*.^[16] Thus, Sulawesi is the center of *Dinochloa* bamboo

diversity in Indonesia, with more species present than in other areas of Indonesia. Gorontalo province in northern Sulawesi contains *D. truncate*, *D. pubiramea*, *D. barbata*, *D. wartabonei*, while South Sulawesi province contains *D. hirsuta*, *Fimbribambusa soejatmiae*, *Racemobambos celebica*[17]. On Sulawesi, bamboo grows in the primary or secondary forests, forest margins, and along the riverbanks. Bamboo provides forage to the endangered endemic Anoa (Dwarf Buffalo), including the Lowland Anoa (*Bubalus depressicornis*) and the Mountain Anoa (*Bubalus quarles*). Babirusa eat bamboo shoots in Sulawesi. *Macaca nigra* also rely on bamboo for food, though this is a much smaller part of their diet than fruits. Sulawesi Woodcock *Scolopax celebensis* relies on the montane forests found between 1,700-2,300 m and the bamboo thickets down to 1,100 m.

There are 19 bamboo species found in the Lesser Sunda Islands (not including Bali), including 6 endemic species: *Bambusa lako*, *Chloothamnus schmutzii*, *Ch. reholttumianus*, *Dinochloa kostermansiana*, *Fimbribambusa rifaiana*, *Schizostachyum purpureum*. These endemic bamboos mostly grow in the forest or forest ridge and conserve soil, such as *Ch. reholttumianus*, which grow in the valley of savannah areas on Sumba.[18] Along these valleys, this bamboo has preserved water resources as well as prevented soil erosion – which is a key feature of Indonesian achieving LDN. Further research is needed to understand the biogeographical relation between bamboo species and forest types in the Lesser Sundas.[19] *Dinochloa kostermansiana* prefers humid and shady areas, and monkeys in the forest eat the young bamboo shoots, as do wild pigs. When these endemic bamboos are depleted due to anthropogenic and wild animal use, it impacts their ecosystem service provision of preventing soil erosion, water conservation, and as an indicator of the location of spring water. While noting the ecological relationship between bamboo vegetation and habitat requirements of the Javan Deer (*Rusa timorensis*), as depletion of bamboo that they rely on negatively impacts this species of deer and pushes them towards village areas in search of food.[20]

Targeted conservation landscapes:

The ecosystem profile for Wallacea was developed by the Critical Ecosystem Partnership Fund between June 2013 and February 2014,[21] The profile lists 560 species in Wallacea that are classified by IUCN as globally threatened, and for most, the key to conservation is protection of adequate areas of appropriate habitat.[22] Key Biodiversity Areas (KBAs) – which is used a core criteria for conservation landscape selection in the proposed GEF project, are those that contribute significantly to the global persistence of biodiversity that may include many unique species or home to one species found either nowhere else or in only a few other places[23]. The CEPF therefore identified important KBAs, where these threatened species are known to survive. There were 251 terrestrial and 74 marine KBAs identified using records of the presence of globally threatened species. The KBAs include Important Bird Areas (IBAs) and Endemic Bird Areas (EBAs). KBAs were summarized into KBA clusters. South Sulawesi was identified by CEPF as one of the top five KBA clusters in Wallacea with high biodiversity values, threats, need of funding and other criteria. Flores and Sumba also scored high across all criteria but were not scored high enough to make it into the top 5 (of 26 KBAs).

In some cases, the protection of discrete areas of habitat in a KBA may not ensure the survival of a species, especially where the species ranges widely over the landscape or occurs at a very low density. To accommodate this, 10 terrestrial corridors were also identified on the basis of overlapping with prioritized KBA clusters (which include Flores Forests, Flores Coast, South Sulawesi). These large areas play a vital role in ensuring connectivity between KBAs. In doing so, they also play an important role in ecosystem functions important for human livelihoods, such as by protecting water supplies and preventing coastal erosion.[24]

For preparation of this PIF, CEPF information on existence of species in specific areas, and their habitat requirements, was corroborated with Provincial KSDA staff and Burung Indonesia, a key partner organization. Current information on key Wallacea species indicates that protected areas in these landscapes only house <50% of the required habitat area for key species.[25] The PIF project sites include 167,894 ha of KBAs, which are mostly forested areas housing much of the remaining habitat and are in most cases less degraded than production forest or areas for other land uses in these landscapes. However, the 149,777 ha of Protection Forest in the project area does not contain biodiversity management objectives for species protection, as many do target watershed management objectives. Similarly, KBA areas also occur in Production Forest. Of further concern is a new priority by the central government to open state forest areas for community production (social forestry model), and in the project area, a significant amount (40%) of these overlap with KBAs. Refer to the Policy, Regulatory & Institutional Context section for more detail.

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Based on our preliminary baseline analysis and selection process, the project includes 5 landscapes in 3 Provinces (Gorontalo, South Sulawesi, and East Nusa Tenggara (ENT)), with a total area of 514,848 hectares. The Project intervention areas includes 319 villages (desa), 10 kabupaten, and a human population of 401,447 (as of 2020), of which there is a sizeable indigenous population, and the estimate of 183,969 indigenous is a low estimate, especially in ENT. Across all sites, the main direct drivers of biodiversity loss are directly affected by habitat change (loss, degradation, and fragmentation), agricultural expansion and overexploitation of forests and agricultural soils, overgrazing, and illegal encroachment. Behind these direct drivers are underlying drivers of poverty, population pressure, lack of government coordination, tenure insecurity, all of which is also intensified due to climate change risks (especially water scarcity). Maps for each site are found in Annex A. Given poverty is a key root cause of land degradation and loss of forests and biodiversity, the project will seek to ensure that 10% of the population in these areas derives a portion of their yearly income from biodiversity-friendly community-based businesses, and special emphasis will be placed on working with women. The targeted conservation landscapes each contain site-specific biodiversity (flora and fauna), endemic bamboos, forest and savannah types, and threats to biodiversity and habitats, land restoration needs, and other possible intervention priorities (to be further refined in the PPG phase), which are summarized in the Project Framework, In Annex A-1 and A-2 as well as Section 1.3 – project alternative.

The proposed project sites contain five (5) of the 25 nationally recognized critical endangered animal species, including the Maleo *Macrocephalon maleo* found Gorontalo - north Sulawesi, Babirusas *Babyrousa babirussa Linnaeus* found in Gorontalo at Nantu Wildlife Reserve and Boliyohuto mountain; Anoa dwarf buffalo *Bubalus quarlesi*, found in Gorontalo; Celebes crested macaque *Macaca nigra*, which occurs mostly in North Sulawesi but has been sited in Gorontalo; and Sumba hornbill *Rhyticeros everetti* which occurs on Sumba in the project conservation landscape.[26]

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Table: Population in proposed sites

Project Site	Kabupaten	Kecamatan	Village	Of which Adat Village	Population - of which Male/Female	Population – Traditional/Adat communities*[27]
Gorontalo	3	6	8	0	8,427 Male 52%; Female 48%	No existing data
Mt Latimojong	3	11	40	1	53,653 Male 51%; Female 49%	8,124
Sikka	2	14	126	12	210,918 Male 51%; Female 49%	166,035
Alor	1	9	63	1	85,653 Male 50%; Female 50%	9,810
Sumba	1	9	44	0	42,796 Male 52%; Female 48%	No existing data
Total:	10	49	319		401,447	183,969

* Adat means traditional as classified by government

Gorontalo, Sulawesi: The total area of intervention in Gorontalo covers 32,275 ha that consists of 2,222 ha conservation forest, 16,382 ha production forest, 13,671 ha protected forest. with total reported forest loss of 20 ha (likely underestimated). **Endangered fauna:** Maleo *Macrocephalon maleo*, *Macaca nigra* (Critically Endangered - CR), Anoa *Bubalus depressicornis*, Babirusa *Babyrousa babyrussaa*, Sulawesi Babirusa *Babyrousa celebensis*, Heck's Macaque *Macaca heckii*, Yellow-crested Cockatoo *Cacatua sulphurea* (CR), *Cacatua alba* (Endangered -EN), Rhyticerox *cassidix* (Vulnerable - VU), Southeast Asian Box

Turtle *Cuora amboinensis* (EN), Sulawesi Civet *Macrogalidia musschenbroekii* (VU), Blue-faced Rail *Gymnocrex rosenbergii* (VU) and Snoring rail *Aramidopsis plateni* (VU) *Tarsius supriatnai*; **Other fauna of note:** Sulawesi Hornbill *Rhabdotorrhinus exarhatus* (VU) Knobbed Hornbill *Rhyticeros cassidix* (VU), Yellowish-breasted Racquet-tail *Prioniturus flavicans* (NT), Jatna's tarsier *Tarsius supriatnai*, *Tarsius spectrum*, Sulawesi Cuscus *Strigocuscus celebensis*, Rusa *Cervus timorensis*, Squirrel *Prociurillus murinus*, Musang *Viverra zangae* *Lumbricus rubellus*, and at least 49 bird species; **Endangered flora:** *Agathis dammara* (VU), *Diospyros minahassae* (VU), *Syzygium* sp (VU), *Goniotalamus majestatis* (VU), *Petrocarpus indicus*; **Other flora of note:** Giant Tree Rao *Dracontomelum Dao*, Nyatoh (*Palaquium* spp), Rainbow gum *Eucalyptus deglupta*, Kapuraca *Callophyllum* sp, Kayu Aras *Duabanga* sp, Moluccan ironwood *Instia bijuga*, Kalau black ebony *Planchonia valida*, fukugi tree *Garcinia* sp, Namu Palaquium sp, Queen Sago *Cycas rumphii* (NT), Fishtail Palm *Mythic Caryota*, *Livistonia rotundifolia*, endemics *Elmerillia ovalis* and *Diospyros hebecarpa*, *Terminalia celebica*, *Cyrtandra* species such as *Cyrtandra boliohutensis* proposed for IUCN red list, *Palaquium obovatum*, *Grammatophyllum speciosum*, Weeping fig *Ficus benjamina*, Champak *Magnolia champaca*, White Gutta *Palaquium obovatum*, Horsetail tree *Casuarina equisetifoli*, Bayur *Pterospermum javanicum*, New Guinea teak *Vitex cofassus*, Saurauia *Membrek saurauia*, Ghaf *Prosopis cineraria*, *Diospyros confertiflora*, Cedar *Cedrus libani*, Nibung Palm. *Oncosperma tigillarum*, *Callophyllum inophyllum*, Fairy washboard *Ficus variegata*, Golden shower tree *Cassia fistula*. **Endemic bamboo:** *Dinochloa truncate*, *Dinochloa wartabonei*; **Forest types:** Primary and secondary lowland tropical forest; **Threats to biodiversity and related habitat:** Illegal hunting, illegal logging, slash-and-burn clearance, poaching for wildlife trade, gold mining, forest encroachment spreading westward, transmigrant settlement and related expansion, public poverty alleviation program on corn production increased deforestation in protected forest. Much of the primate habitat is outside protected areas. For instance, the vast majority of Heck's Macaca *Macaque hecki* (VU) habitat (which is in the project area) is outside protected areas, yet the forest loss in its habitat range between 2000-2017 was 12%, which was among the higher rates observed across all of Sulawesi.^[28] Potential available habitat has halved from its original range. Main pressures on its habitat in and around Panua NP are conversion to shifting cultivation, influx of transmigration and logging, and land clearing for corn.^[29] Pressures of encroachment is strong from the east into forested areas, and land conversion in the rest of Gorontalo has been high and increasing in recent years. Threats to the Nantu Protected Area include illegal logging, slash-and-burn clearance, poaching for wildlife trade, and gold mining (illegal, using mercury). Corn cultivation was promoted to decrease poverty but has resulted in growing encroachment and deforestation in protected areas in the province. Also, transmigration settlement areas have pushed more population pressure into frontier forest areas, notably around Nantu and Panua. Rates of deforestation were 6.54 times higher outside the park than inside at Nantu, yet at Panua rates of deforestation were 1.12 times higher inside the park than outside.

Future threat: Road infrastructure such as Trans Sulawesi project (rail and road) part of China's Belt and Road Initiative (BRI) which may be built in the north part of the province will increase pressures.

Gunung Latimojong, South Sulawesi: : The total area of intervention in Gunung Latimojong covers 86,663 ha that consists of 50,499 ha protected forest, 7,998 ha production forest, 13,671 ha APL, with total forest loss of 18,491 ha. **Endangered fauna:** Pigmy Tarsier *Tarsius pumilus* (EN), Mountain Anoa *Bubalus quarlesi*, *Tarsius tarsier* (VU), Sulawesi Hornbill *Rhabdotorrhinus exarhatus* (VU), Knobbed Hornbill *Rhyticeros cassidix* (VU), Sulawesi Woodcock *Scolopax celebensis*, *Babyrousa celebensis* (VU), Tonkean Macaque *Macaca tonkeana* (VU), D'Abnera's Tiger *Parantica dabrerai*, Toxopeus" Yellow Tiger *Parantica toxopei* (VU), Spectral Tarsier *Tarsius tarsier*, Endemic frog *Limnonectes arathooni* (VU), Endemic frog *Oreophryne variabilis* (VU), Bear Cuscus *Ailurops ursinus* (VU), Manado fruit-bat *Boneia bidens* (VU); **Other fauna of note:** Geomalia thruth *Geomalia heinrichi*, and Dwarf Sparrowhawk *Accipiter nanus*; **Endangered flora:** *Etilingera chlorodonta* (CR), Himalayan Yew (*Taxus wallichiana*) (EN), *Etilingera cylindrica* (EN), *Etilingera eburnean* (EN), *Etilingera mucronate* (EN), *Etilingera orophila* (EN), *Etilingera spinulosa* (EN), Indonesian Ebony *Diospyros celebica* (VU), Amboina Pitch Tree (*Agathis dammara*) (VU); **Other flora of note:** *Diplycosia celebensis*, *Diplycosia crassiramea*, *Diplycosia gracilipes*, *Gaultheria celebica*, *Gaultheria viridiflora*, *Rhododendron psilanthum*, *Rhododendron scarlatinum*, *Rhododendron nanophyton*; **Endemic bamboo:** *Racemobamos celebica*; **Forest types:** Tropical lowland forest below 900 meters, above which

tropical montane forest. Conifers such as Podocarpus. Above 2,400 meters, rhododendron scrub and vaccinium heath; **Threats to biodiversity and related habitat:** Illegal logging, overutilization of forest products: timber and NTFP. Massive encroachment and cultivation in the protected forest areas. About 23% of the forest cover in this proposed site was lost between 2000-2019.

Sikka Island, East Nusa Tenggara: The total area of intervention in Sikka Island covers 176,414 ha that consists of 15,451 conservation forest, 52,976 ha protected forest, 13,540 ha production forest, 94,447 ha APL, with total forest loss of 6,352 ha. BirdLife identifies this as one of the richest areas and important for Flores biodiversity, and Avibase records 236 species in this district.^[30] **Endangered fauna:** birds - Green-pigeon *Treron floriss*, Yellow-crested Cockatoo *Cacatua Sulphurea*, Chestnut-backed Thrush *Geokichla dohertyi*, Flores Hanging parrot *Loriculus flosculus* (VU) (one of six sites in which it exists^[31]), Tenggara Hill-Myna *Gracula venerata* (EN), Kerivoula flora (VU), *Komodomys rintjanus* (VU), **mammals** - Rusa timorensis (VU), Flying Fox *Acerodon mackloti* (VU), Long-Tailed Macaque *Macaca fascicularis* (VU), Javan Deer *Rusa timorensis*; **Other fauna of note:** *birds* - Yellow-spectacled White-eye *Heleia wallacei*, Olive-headed Lorikeet *Trichoglossus euteles*, Flame-breasted Sunbird *Cinnyris solaris*, Black-fronted Flowerpecker *Dicaeum igniferum*, Green Junglefowl *Gallus varius*, White-rumped Kingfisher *Caridonax fulgidus*, Olive-headed Lorikeet *Trichoglossus euteles*, Sunda Honeyeater *Lichmera lombokia*, Flores Minivet *Pericrocotus lansbergei*, Orange-banded Thrush *Geokichla peronii*, Blue-banded kingfisher *Alcedo euryzona*, White-rumped kingfisher *Caridonax fulgidus*, Lesser coucal *Centropus bengalensis*, Imperial pigeon *Ducula sp*, Spotted dove *Streptopelia chinensis*, Greater Wallacean drongo *Dicrurus densus*, Five-colored munia *Lonchura quincolor*, Zebra finch *Taeniopygia guttatai*, black-naped blue flycatcher *Hypothymis azurea*, Nusa Tenggara *Komodomys rintjanus*, Alor myzomela (*Myzomela prawiradilagae*); **mammals** - Banded pig *Sus vitatus*, Asian palm civet *Paradoxurus hermaproditus*, Landak *Hystrix sp*, Timor monitor *Varanus timorensis*, **Endangered flora:** Ampupu, *Eucalyptus urophylla*; **Other flora of note:** *Santalum album* (VU), *Pterocarpus indicus* (EN), *Gyrinops verstegii* (EN-proposed), Northern yellow boxwood *Planchonella obovata*, Canarium *commune*, Malay Lac Tree *Schleichera oleosa*, *Acacia sp*, *Mangifera timorensis* Aimita *Polyalthia oblonga*, Bale *Disoxylum microcarpus*, Balebura *Turpinia montana*, Blamita *Prunus grisea*, Bla'at *Meliosma sp*, Blewut *Scindapsus sp*, Een *Lepisanthes amoena*, Hen *Toona sureni*, Kurok *Disoxylum brevipaniculatum*, Lamita *Polyalthia pisocarpa*, Lali *Celtis philippinensis*, Mara *Pometia pinnata*, Mara Bura *Pometia pinnata*, Sunga *Rauvolfia javanica*, Betel Plant *Piper sp*, Taur *Pisonia cauliflora*, Ta'u *Anodendron paniculatum*, Tolen *Disoxylum alliaceum*; **Endemic bamboo:** *Fimbribambusa rifaiana*; **Forest types:** Lower monsoon mountain forest dominated by *Eucalyptus urophylla* (EN), tropical dry semi-evergreen forest and tropical dry deciduous forest dominated by *Tamarindus indica* and *Terminalia cattapa*, lowland *Eucalyptus alba* savanna, dry dipterocarp lowland volcanic forest. **Threats to biodiversity and related habitat:** Illegal hunting and forest clearance for agriculture/plantation expansion (cocoa cultivation was a driver, but is decreasing, as production has halved over the past 10 years due to pests and aging cocoa trees^[32]), settlement in conservation areas.

Alor Island, East Nusa Tenggara: The total area of intervention in Alor Island covers 114,414 ha that consists of 2,462 ha conservation forest, 40,529 ha protected forest, 18,283 ha production forest, 53,140 ha APL, with total forest loss of 1,713 ha. A total of 247 species of bird have been observed on Alor^[33]. Researchers note that Alor's endemic avifauna has long been overlooked: recently, the distinct endemic Alor Boobook (or Alor Hawk Owl) *Ninox plesseni* was upgraded to species status on the basis of bioacoustics research, as was the Alor Cuckooshrike *Coracina alfrediana*, thus the island is proposed as an Endemic Bird Area.^[34] **Endangered fauna:** birds - Green-pigeon *Treron floriss*, Yellow-crested Cockatoo *Cacatua Sulphurea*, Chestnut-backed Thrush *Geokichla dohertyi*, Flores Hanging parrot *Loriculus flosculus*, Tenggara Hill-Myna *Gracula venerata* (EN), Kerivoula flora (VU), *Komodomys rintjanus* (VU); **mammals** - Rusa timorensis (VU), Sunda Flying Fox *Acerodon mackloti* (VU), Long-Tailed Macaque *Macaca fascicularis* (VU); **Other fauna of note:** birds - Yellow-spectacled White-eye *Heleia wallacei*, Olive-headed Lorikeet *Trichoglossus euteles*, Flame-breasted Sunbird *Cinnyris solaris*, Alor Boobook *Ninox plesseni*,

Black-fronted Flowerpecker *Dicaeum igniferum*, Blue-banded kingfisher *Alcedo euryzona*, White-rumped kingfisher *Caridonax fulgidus*, Lesser coucal *Centropus bengalensis*, Imperial pigeon *Ducula sp*, Spotted dove *Streptopelia chinensis*, Greater Wallacean drongo *Dicrurus densus*, Five-colored munia *Lonchura quincolor*, Zebra finch *Taeniopygia guttata*, black-naped blue flycatcher *Hypothymis azurea*, Tersiphone paradise *Tersiphone paradise*, Orange-footed scrubfowl *Megapodius reinwardtii*, Timor friarbird *Philemon inornatus*, Bare-throated Whistler flores *Pachycephala nudigula*, Australian golden whistler *Pachycephala pectoralis*, Brown hawk-owl *Ninox scutulata*, Scops owl *Otus sp*, Nusa Tenggara Komodomys *rintjanus*, Alor myzomela (*Myzomela prawiradilagae*), Alor Cuckooshrike (*Coracina alfrediana*); mammals - Banded pig *Sus vitatus*, Asian palm civet *Paradoxurus hermaproditus*, Landak *Hystric sp.*, Sunda Fruit Bat (*Acerodon mackloti*); reptiles - Timor monitor lizard *Varanus timorensis*, **Endangered flora:** Ampupu, *Eucalyptus urophylla*; **Other flora of note:** Indian Almond *Terminalia catappa*, *Canarium commune*, Malay Lac Tree *Schleichera oleosa*, *Acacia sp*, *Mangifera timorensis* Aimita *Polyalthia oblonga*, Bale *Disoxylum microcarpus*, Balebura *Turpinia montana*, Blamita *Prunus grisea*, Bla'at *Meliosma sp.*, Blewut *Scindapsus sp.*, Een *Lepisanthes amoena*, Hen *Toona sureni*, Kurok *Disoxylum brevipaniculatum*, Lamita *Polyalthia pisocarpa*, Lali *Celtis philippinensis*, Mara *Pometia pinnata*, Mara Bura *Pometia pinnata*, Sunga *Rauvolfia javanica*, Betel Plant *Piper sp*, Taur *Pisonia cauliflora*, Ta'u *Anodendron paniculatum*, Tolen *Disoxylum alliaceum*; **Endemic bamboo:** *Fimbribambusa rifaiana*; **Forest types:** Lower monsoon mountain forest dominated by *Eucalyptus urophylla* (EN), tropical dry semi-evergreen forest and tropical dry deciduous forest dominated by *Tamarindus indica* and *Terminalia catappa*, lowland *Eucalyptus alba* savanna, dry dipterocarp lowland volcanic forest. **Threats to biodiversity and related habitat:** Around Gunung Muna, illegal hunting, bush fire, and land clearing. Around Tuti Adagae IBA, threats include settlements in the conservation area, wood collection for housing, and poaching of fauna for trade.

South-easter Sumba, East Nusa Tenggara: The total area of intervention in Southern Sumba covers 108,082 ha that consists of 44,647 ha protected forest, 6,094 ha production forest, 57,341ha APL, with total forest loss of 4,289 ha. Sumba contains 316 species of birds, 10 of which are endemic[35]. In this specific project area: **Endangered fauna:** birds - Yellow-crested Cockatoo *Cacatua sulphurea* (EN), Sumba Hornbill *Rhyticeros everetti* (EN), Citron-crested cockatoo *Cacatua sulphurea citrinocristata* (CR), Murphy's Crow *Euploea caespes* (EN), Red-naped Fruit-dove *Ptilinopus dohertyi* (VU), Sumba Green-pigeon *Treron teysmannii* (NT); **Other fauna of note:** Sumba buttonquail *Turnix everetti*, Sumba Green-pigeon *Treron teysmannii*, Red-naped Fruit-dove *Ptilinopus dohertyi*, Apricot-breasted Sunbird *Nectarina buettikoferi*, Red-headed Myzomela *erythrocephala*, Sumba Flycatcher *Ficedula harterti*, Sumba boobook *Ninox rudolffi*, Murphy's Crow *Euploea caespes*, Sumba Cicadabird *Edolisoma dohertyi*, Yellow-spectacled White-eye *Heleia wallacei*; **Endangered flora:** Sandalwood, *Santalum album* (VU); **Other flora of note:** Hog plum *Spondias pinata* Merr., *Alstonia scholaris*, *Canarium oleosum*, *Cinnamomum zeylanicum*, *Myristica littoralis*, *Toona sureni*, *Sterculia foetida*, *Schleichera oleosa*, and *Palaquium obovatum*, Malay Lac Tree *Schleichera oleosa*, Ironwood *Eugenia sp*, manera *Aglaia eusideroxylon*, mayela *Artocarpus glaucus*, White Cheesewood *Alstonia scholaris*, Hard milkwood *Alstonia spectabilis*, Khirni *Manilkara kauki*, Kaduru Bara *Palaquium obtusifolium* Burck., *Palaquium obovatum* *Myristica littoralis*, *Calophyllum soulattri*, *Tarenna incerta*, *Aglaia leucophylla*; **Endemic bamboo:** *Schizostachyum purpureum*, *Dinochloa kostermansiana*, *Chloothamnus reholtumianus* (VU); **Forest types:** Monsoon semi-deciduous forest and monsoon evergreen forest; **Threats to biodiversity and related habitat:** Logging, burning vegetation for shifting agriculture and hunting wildlife, logging for housing and firewood, livestock grazing in forests.

Primary Environmental Problems and Root Causes

The root causes of unsustainable land use and biodiversity loss are due to a range of factors. Apart from South Sulawesi, East Nusa Tenggara and Gorontalo are amongst the poorest provinces in Indonesia subsequently ranks No. 3 and 5 of the list released by Indonesia's Central Bureau of Statistic in 2021.^[36] The 3 provinces are also less developed than larger islands such as Java and Sumatra and contain a low development index and yet show high income inequality

determined by education, wealth, and the employment sector^{10,11} so it creates unequal opportunity and low resiliency of the communities in comparison to their peer in other regions. With limited development options, exploiting resources for development without the balance of the environment and wildlife is often inevitable. On top of that, rapid population growth and massive infrastructure development drive by economic objectives oftentimes caused negative impacts toward the key biodiversity areas and its endemic species. Habitat loss and ecosystem degradation in the forest and conservation areas have occurred due to unsustainable practices such as illegal logging, firewood collection, forest fires and land encroachment for mining and agriculture activities. Deforestation have threatened wild ecosystems in Latimojong area particularly related with the cultivation of high value commodities such as coffee and cloves while Gorontalo's illegal gold miners have caused harms both to the wildlife and human ecosystem. These challenges need to be resolved together with the problem of resources and landscape management in the targeted areas to ensure the continuity of community welfare and the preservation of ecosystems including conservation of key biodiversity species.

The root causes of biodiversity loss and land degradation in the targeted project areas include:

a) Rapidly Growing Human Population:

The total land area of Flores Island, NTT, is 13,112 km²[38], 6,705 km² of which are forested. However, forest loss and land degradation in NTT are rapidly occurring and which are closely linked to agricultural expansion, excessive grazing of livestock, use of chemical fertilizers, and highly destructive techniques for clearing land (e.g. 'slash and burn'). In 2019, NTT had a population of over 5 million and an annual population growth rate of 1.67% (BPS, 2019). While agricultural productivity is increasing to support the ongoing growth of the local population, with 800,980 tons produced in 2018, the peoples of NTT are still exposed to food security issues (e.g. food shortages).

Therefore, a growing human population and the need to increase agricultural practices to remedy food security issues is putting direct pressure on local wildlife through the removal of habitat, affecting many vulnerable and endangered endemic species.

South Sulawesi is the sixth most populous province in Indonesia with the population of 9,073,500 in 2020. Its economy depends on agriculture, fishing, and mining of gold, magnesium, iron and other metals. South Sulawesi is the sixth most populous province in Indonesia with the population of 9,073,500 in 2020. Its economy depends on agriculture, fishing, and mining of gold, magnesium, iron and other metals. Gunung Latimojong recreation forests is the highest mountain in South Sulawesi with a height of 3,478 meters above sea level. It is mostly located in Karang Village, Baraka sub-district of Enrekang Regency that consists of 12 sub-districts with an area of 1,786.01 Km² whereas 84.96% of the area is dominated by hills/mountain areas and therefore, Enrekang is one of the famous coffee-producing areas in Indonesia.

Gorontalo province located on the north of Sulawesi island has a population of around 1.1 million people, an area of 1,221,544 ha, including forests over approximately 826,000 ha, and has been designated as a 'conservation province' by the Minister of Environment and Forestry due to its particular biodiversity values. Nantu Boliyohuto Wildlife Reserve (SMNB) is one of the last intact forests in Sulawesi that have high biodiversity, endemic and salt-lick species which are globally important. Based on its rich diversity with 149 bird species it has been designated as the 228th Important Bird Area (IBA). However, its human

poverty rate is a major cause of environmental degradation and biodiversity loss. Many transmigrants and local communities conduct unsustainable practices such as harvesting timber and non-timber forest products irresponsibly opening palm oil plantations on forest land not allocated for that, including overlapping permits which cause serious negative environmental impacts such as floods, landslides, and ground water loss.

b) Limited Economic Opportunities:

Each of the targeted landscapes faces different challenges when it comes to economic opportunities. East Nusa Tenggara is one of the least developed provinces in Indonesia and is primarily based on subsistence agriculture, fisheries and seaweed production. Most farmers grow rice for food self-sufficiency purposes as well as corn, cassava, sweet potatoes, and peanuts. Cash crops are also grown on small holdings such as coconut, cocoa, cashew, candlenut, and coffee. Alongside agriculture, fisheries make up a large portion of the local economy, with tourism steadily growing as an alternative livelihood to traditional forms of income generation. The limited economic opportunities available and persistent food insecurity issues have led to hunting in designated protected areas including wildlife reserves, and species being offered for the global illegal wildlife trade as a means to supplement their financial needs.

Gorontalo has become the transmigration destination since 1950s, yet there are no actual figures of the household number of transmigrant communities which are mainly located in six locations: Pangea SP 2 and SP 4 villages in Boalemo District, Puncak and Ayumolingo villages in Gorontalo District, Deme Village in North Gorontalo District, and Marisa 5B village in Pohuwato District. However, the transmigration program has been stalled by the local government since 2015, noting the insufficient skills set brought by transmigrants, that might cause further challenges for the province^[39]. With limited economic opportunities for the communities but born with rich natural resources, i.e., gold, many inhabitants, both the native and transmigrant communities, are becoming illegal miners, especially for those who live near the river areas, which locally has led to very serious land degradation and forest loss.

In comparison with the two previous locations, Enrekang District where the Gunung Latimojong mountain is located provides huge economic opportunities related to agriculture. With a total area of 1,784,93 Ha and with a hilly and mountaineous topography, the district has great potential for plantation and agricultural crops. Enrekang is famous for its export quality coffee and cloves as well as main vegetable supplier for South Sulawesi regions especially Makassar city. The area also boasts highly demanded local produces such as chocolate, pepper, vanilla, patchouli, etc. According to the Ministry of Agriculture's 2020 production data, Enrekang sits at the 5th position as the main producer of horticulture crops in Indonesia. Therefore, key threats to biodiversity species as well as leading to land degradation in areas surrounding Gunung Latimojong are largely due to the unregulated hunting and illegal wildlife trade, as well as forest encroachment and conversion for agricultural and settlements. Habitat loss is inevitable in the area that harms the population of key biodiversity species of Sulawesi.

More details on the socio-economy of the targeted provinces is found in Annex A-1.

c) Land and forest degradation due to encroachment, traditional land-use as well as expansion of crop production

In East Nusa Tenggara (ENT), the dry, seasonal climate, and natural forest types which are dry deciduous monsoon forests, with semi-evergreen forests in the moister areas (mostly on mountain slopes) were heavily logged 20-30 years ago. Large areas were converted to pasture, and are now grassland ecosystems. The semi-evergreen and montane forests- more restricted in extent, though less affected than dry forests have also suffered from logging for timber, fuelwood collection and conversion to agriculture. On Sumba – ENT, about 60% of the island's forest cover was cleared between 1927 and 1990, leaving forest fragments only. Similarly, the lowlands of Sulawesi have recently suffered rapid forest loss. Over the past 20 years, in some areas, such as the remaining lowland forests on Flores - ENT, habitat is being heavily degraded by exploitation for firewood and building material. In some moist forest areas throughout the region, timber and rattan collection is intense, especially near settlements and wherever habitat has been fragmented into small patches. Sulawesi lost over 67% of remaining humid lowland forest to timber production and expansion of agriculture, the latter still continuing up to today. Extensive forests remain in the mountains, but large areas have been cleared or degraded by largely uncontrolled encroachment for agriculture. Logging and (illegal) gold mining have recently occurred inside protected areas, such as in Gorontalo, Sulawesi. Once selective logging has been concluded there are frequently pressures to convert the forest status from production forest to conversion for agriculture or plantations. Near the coast, forest has been replaced with coconut, banana, cacao, and oil palm plantations. Inland, forest on rich alluvial soil is liable to be converted to agricultural fields. Some villages and land development schemes – such as the large World Bank sponsored rice irrigation schemes of the 1970-1980's in lowlands in North Sulawesi, are close to protected Maleo nesting grounds. The primates on Sulawesi are of global significance, and the diminished forest cover of their habitat as well as continued poaching for bushmeat (North Sulawesi) is of critical concern, particularly in primate hybrid zones.^[40]

Land degradation impacts significantly on agricultural production and family income. The main drivers of land degradation are poor management techniques such as inappropriate soil conservation practices, overgrazing, slash-and-burn shifting cultivation, exacerbated by an increasing population.^[41] Though some attempts have been made to mitigate these problems, none have sufficiently addressed people's involvement in solutions that affect their farming practices, ensuring it can work alongside indigenous local knowledge, and also provide improved livelihood options through agroforestry, value chain development and market access. Traditional and intensive livestock grazing is a problem in some areas. On Sumba, excessive grazing pressure has severely inhibited regeneration in lowland forest and savannah. In areas with a relatively dry climate and seasonal rainfall, mainly in East Nusa Tenggara, dry-season fires are used to clear land and to encourage new growth. These often burn out of control and damage or destroy forests, especially where these are already fragmented. Although periodic fires are a natural phenomenon, they now occur so frequently that vegetation has little chance to recover, and uncontrolled fire on relatively small areas of valuable forested and cultivated land are substantial.^[42] Fire management programmes for remaining forest and grasslands are necessary.

East Nusa Tenggara is one of three national priority regions (provinces) selected as Indonesia's Land Degradation Neutrality (LDN) hotspot.^[43] The national target for LDN is projected at a reduction of degraded land by 27.5 million hectares in 2040, assuming no additional degradation of land (in ha) during the period 2015 to 2040. In East Nusa Tenggara the total degraded land area was 1,356,757 ha by 2009, of which 299,291 ha were in forest land and 1,057,466 ha were in non-forest land.^[44] Those estimates are likely far higher now, over a decade later. Factors leading to land degradation include impacts of overgrazing and bush fires; low rates of topsoil development due to fire hazards; landslides and erosion due to previous land clearings and water run-off; as well as the subsequent high sedimentation rates downstream owing to severe erosion and floods. The islands are characterized by hilly topography (26–46% slope), with

young sedimentary rocks, the often thin layers of topsoil and rocky soils and volcanic parent materials, resulting in high erosion sensitivity and land degradation in case of unsustainable practises . Additionally, there is low vegetative cover, low infiltration rates, and high runoff and risk of flooding. The dry season in East Nusa Tenggara is nine months and rainy season three months but with high erosivity.

Productivity of farmland and land carrying capacity in East Nusa Tenggara Province shows a general downward trend year after year, with an increasing human population and land degradation.^[45] Land productivity is very low, thus requiring many inputs from farmers to maintain production.^[46] While agricultural land has decreased significantly in the province, from being 57% of total land area in 2007, to only 29% in 2017, productivity of farms has also fallen. This is influenced by population growth that is increasing in urban areas as well as the conversion of agricultural lands for urban use, putting more pressure on the remaining farmlands to maintain needed production levels and which led to soil degradation, overexploitation of ground water (which is already restricted) and other LD aspects. In some areas, encroachment is ongoing into protected areas and in protected forests (Hutan Lindung); whilst specifically Sumba, Sikka, and Alor show having degraded areas within KBAs.

Policy, Regulatory & Institutional Context related to Biodiversity conservation (BD) as well as Sustainable Land Management (SLM) and Land Degradation (LD).

Indonesia has applicable legal frameworks at Central, Provincial, and local levels that informs the conservation and use of biodiversity, sustainable land management and addressing land degradation.

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Key Elements of the Legal and Regulatory Framework for Biodiversity at the Central (National) Level:

- Law No. 5 of 1990 on Conservation of Biological Natural Resources and Their Ecosystems.
- Law No. 12 of 1992 on Plant Cultivation System.
- Law No. 5 of 1994 on Ratification of the United Nations Convention on Biological Diversity.
- Law No. 41 of 1999 on Forestry.
- Law No. 32 of 2004 on Regional Government.
- Law No. 4 of 2006 on Ratification of the International Treaty on Plant Genetic Resources for Food and Agriculture
- Law No. 26 of 2007 on Spatial Planning.
- Law No. 27 of 2007 on Management of Coastal Areas and Small Islands.
- Law No. 32 of 2009 on Environmental Protection and Management.
- PermenLHK No. 18/2020 on Protected Flora and Fauna

- PermenLHK No. 9/2021 on Social Forestry Management
- Strategic Plan of the Directorate of Biodiversity Conservation 2020-2024, Ministry of Environment and Forestry
- Climate Resilience Development Policy 2020-2045

Key Elements of the Legal and Regulatory Framework for Biodiversity at the East Nusa Tenggara and South Sulawesi and Gorontalo Provincial Levels:

- Strategic Plan of the East Nusa Tenggara Provincial-level Division of Natural Resources Conservation 2020-2024
- Strategic Plan of the South Sulawesi Provincial-level Division of Natural Resources Conservation 2020-2024
- Regional Regulation of the Regency of Enrekang No. 14/2011 on Spatial Planning of the Regency of Enrekang 2011-2031
- Regulation of the Regency of Enrekang No. 1/2019 on the Enrekang District Development Plan 2018-2023
- The decision of the Regent of Enrekang No. 698/Kep/XI/2019 on the Recognition of the Customary Law Communities of Pasang in Regency of Enrekang.

Indonesia is a party to the United Nations Convention to Combat Desertification (UNCCD) and has ratified the Convention by Presidential Decree No: 135/1998, dated 28 August 1998. However, the implementation of the UNCCD in Indonesia is still considered lagging behind UNFCCC and UNCBD, but it gained new momentum in Indonesia when the Land Degradation Neutrality (LDN) target Setting Program - under UNCCD support, analyzed LD trends in the country and suggested draft strategies towards reducing LD and achieving LDN[47]. However Indonesia has not yet agreed on a national unified definition nor unified legal basis on land degradation. The report, whilst providing a summary of land degradation statistics and its causes, is somewhat generalized and lacks clarity with regards National Targets as suggested by the UNCCD- LDN program. In summary, degraded land in Indonesia was 24.3 million ha in 2013 (MoF). It was reportedly caused mainly by inappropriate land utilization, no soil- and water conservation measures applied in areas susceptible to severe erosion, sedimentation, and the degradation of water services (quantity and quality) in the downstream areas; yet omits in these statistics the role of deforestation due to commercial and non-commercial logging, conversion to agriculture and plantation etc. There are 3 provinces identified as Indonesia's land degradation hotspots. These areas are East Nusa Tenggara, East Kalimantan, and North Sumatra Province. East Nusa Tenggara is best known as one of the driest areas in Indonesia, with regular drought impacts.

Land and forest net rehabilitation has been targeted by government at 5.5 million ha in 5 years. The report also states the potential to reduce LD and achieving LDN over an area of 27.5 million ha by 2040 in areas now considered degraded/critical lands in Indonesia. It means that LDN could be achieved in Indonesia in 2040 with assumption there is no additional degraded land (or less than 3.2 million ha during 2015-2040).

Some of the GEF project-relevant Strategies indicated in the National LDN Report include:

- Promotion on site forest management through forest management unit, divided into 3 categories namely conservation, production, and protection Forest Management Unit system.

- Public support and participation are critical for applying and implementing methods of prevention and rehabilitation control.
- Developing a partnership with local institutions and community and non-government organizations for an effective implementation of land degradation control.
- Developing the capacity to be better consolidated, manage and deploy existing financial resources (APBN, APBD) and strengthen the capacity to negotiate with international and national agencies for increased financial support.
- Establishing priorities and development of action plans through active involvement in the decision-making by local communities in the implementation, monitoring and evaluation.
- Full participation of representative community should be engaged in all level activities (planning, implementation, monitoring, and evaluation).
- Raising awareness about good quality environment and sustainable agriculture development.
- Project should concern on long-term security investment through a good and attractive land tenure system.

Additionally, the LDN principle was adopted internationally as well as for Indonesia specifically as SDG Target 15.3 which states '*By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world*' (UN 2015) which subsequently integrated into the UNCCD process during the 12th Conference of the Parties to the UNCCD (COP 12). Government Regulation No. 26/2020 on Forest Rehabilitation and Reclamation has shown the Government of Indonesia's commitment to take more active role in combating land degradation agenda. Other Legal and Regulatory Framework for Land and Forest Rehabilitation at the national level:

- Permen LHK No. 105/2018 on Procedures for Implementation, Supporting Activities, Providing Incentives, Developing and Monitoring of Forest and Land Rehabilitation Activities
- Government Regulation No. 23/2021 on the Forestry Implementation
- PermenLHK No. 7/2021 on Forestry Planning, Changes in the Designation of Forest Areas and Changes in the Functions of Forest Areas, and Use of Forest Areas

Key baseline programs based on policy, regulatory and institutional context in Indonesia that require elaboration in the context of the proposed project are a) Forest Management Unit program and, b) Social Forestry program, and c) National Bamboo Strategy:

Forest Management Unit planning, implementation and investments: A key gap identified in Indonesia's forest governance is the inability thus far to successfully implement forest governance reform. In response, Indonesia has promoted more inclusive and decentralised management of forests through the system of Forest Management Units (FMU – or Kesatuan Pengelolaan Hutan - KPH in Bahasa Indonesia) including inclusive forest management planning and business plan development and implementation. In May 2012, Indonesia's forest area was divided into 600 KPHs, covering 130,680,000 ha of forest land legally classified, and divided into 530 KPHs in production and protection forests and 70 KPHs in conservation forest.[48] In the project area, there are 6

Kesatuan Pengelolaan Hutan Lindung (KPHL) which cover 149,777 ha of protection forest, and 4 Kesatuan Pengelolaan Hutan Produksi (KPHP) which covers 68,523 ha of production forest. KBAs cover a significant portion of the KPHs, but the KPHs were not established with the objective of biodiversity conservation, and do not contain clear provision for inclusion of this management objective in planning. The Government of Indonesia identifies the need to bring biodiversity consideration into the management of forest areas.^[49] Yet it is Provincial governments that have jurisdiction to operationalize proposals for improved management of biodiversity outside protected areas, yet this has only sparsely been applied in Indonesia.

The KPHs themselves need to interpret policies and regulations from different levels of governments, manage ambiguity, negotiate, bargain and exercise discretion to implement the KPHs in local contexts. However, they often lack the means and capacity to do so.^[50] There is a need to address this gap, to facilitate inclusive, multi-stakeholder and cross-sector input, to consider forest utilization that safeguards biodiversity, respects traditional community interests and livelihood needs, and provide for integrated landscape management.

Thus, although the Government of Indonesia is beginning to identify biodiversity values outside protected and conserved areas, there is still more work to be completed to identify those priority areas, and then to develop the capacity to deliver the programmatic responses, for implementation and steering aligned investments. This requires addressing policy incoherence, and the lack of coordination between Central government, Provincial and local governments to align and coordinate on conservation and livelihood priorities. Provincial KSDA's are often at this interface of policy conflicts between Central Government and Local Government, such as in the context of regional development programs. If land management objectives and even status of conservation areas are not clear, conflicts go unresolved, and this is exacerbated by weak law enforcement and lack of awareness of the benefits of ecosystem services in these contexts.^[51]

Social forestry: Social forestry is a new mechanism for decentralized forest management which holds great potential to safeguard biodiversity, if managed for this purpose. Otherwise, there may be great potential to see significant amounts of biodiversity-rich forest area subject to increased harvesting pressure. In the identified project area, 43% of the proposed social forestry area is in protected forests (Hutan Lindung) and 39% of the proposed social forestry area in the project area is in KBAs. Social forestry (perhutanan sosial) is individual or community-based forest management by local or indigenous communities to improve their welfare, and improve social, economic and environmental outcomes through agroforestry and forestry practices. Of benefit for biodiversity and indigenous rights, Social Forestry concessions provide a means to secure tenurial rights for indigenous people, thus helping to fulfill Constitutional Court Ruling No 35 of 2012^[52] regarding customary rights to state forest lands. Both in Indonesia and around the pan-tropical regions, financing and support to secure indigenous people's tenure rights is far from the scale needed. Between 2011-2020, only 11% of funding to projects on indigenous people's empowerment explicitly advance tenure reform and security.^[53] Though recognition of indigenous self-determination and land rights is growing, many cases of legal recognition still lack full authority for indigenous people to govern their lands.^[54] Yet, forest, climate and biodiversity protection is strongest when indigenous people hold collective legal titles to their lands.^[55] Though only 20% of Key Biodiversity Areas are covered by protected areas globally, those that do overlap show almost no engagement of indigenous people, with only 1.01% of these areas being managed by indigenous peoples and local communities, or are nationally designated as indigenous, local, or community lands.^[56] Research indicates that ensuring tenure security and forest rights for the local communities is crucial, and is a far more important factor for successful outcomes than adding hectares to collaborative partnerships with inadequate or short tenurial access.^[57] Indigenous Community Conservation Areas (ICCAs) are embraced by indigenous communities, the CBD and the IUCN as a way to recognize indigenous people's governance for protection and conserved areas, as "other effective area-based conservation measures (OECM)."^[58]

Social forestry schemes currently cover around 1.8 million hectares of forests (about 2% of state forests) in Indonesia. The Indonesian government has prioritised these schemes with a plan to increase social forestry areas to 12.7 million hectares.^[59] Social forestry concession refers to the granting of access and limited tenurial rights for 35-year periods (which can be renewed) for individuals or communities to carry out community-based forest

management. Social forestry schemes include a range of property rights and agreements, including village forests (Hutan Desa) which transfers the forest management rights from the government to the communities at the village level but withholds the ownership rights; forestry partnerships (Kemitraan Kehutanan) which provides cooperation between local communities and forest authorities (government or private) in managing state forests; and customary forests/peoples' forests (Hutan Rakyat), which is the only social forestry scheme that transfers forest ownership rights, thus providing legal certainty and justice for indigenous communities to sustainably own and manage forests to secure their welfare. The options for schemes are vast. The granting of land access must be accompanied with capacity development to implement sound land management. [60]

However, many proposed social forestry areas are either on degraded lands, which are less preferred by some communities, and of concern for biodiversity protection, include Key Biodiversity Areas. Given the leniency by which concessions could be granted under current law, across all forest types including Kawasan Konservasi, there is risk that significant areas of KBAs being further degraded over time, and social forestry concessions being granted for purposes that do not result in environmental, social and economic benefits for indigenous communities.

Bamboo agroforestry. Indonesia's National Bamboo Strategy (close to ratification by 2022) seeks to support this perennial grass useful for the conservation and restoration of critical lands and watersheds, the optimisation and application of traditional bamboo agroforestry systems, while also recognizing the economic potential of bamboo for rural livelihoods. Bamboo agroforestry has been practiced by indigenous people, for purposes of increasing soil fertility, and land restoration, ranging from India and Nepal, [61] down into Southeast Asia and including many places in Indonesia. Though Indonesia is the 3rd largest exporter of bamboo with 2.36% of world exports, it is far behind China (66%) and Vietnam (13%). Bamboo agroforestry systems comprise a maximum of 30% bamboo in area, depending on the site and forest/farm plant species composition. Being perennial grasses, bamboos have higher root length densities than dicotyledon plants and trees. Thus, in mixed species systems, bamboos may out-compete field crops or other tree crops grown in association. As a result, competition with intercropped species needs to be managed, such as by wider spacing, different species choice or using canopy management practices. Bamboo's biogeochemical role in sustaining the productivity of agroforestry systems is documented. [62] Traditional mixed agroforestry systems in Java – including those considered Bamboo agroforest systems, are notable for their high plant diversity, [63] supporting high numbers of flora and fauna, providing wildlife habitats, and supporting key ecosystem services. A global meta-analysis of published research found that floral, faunal, and soil microbial diversity were significantly greater in agroforestry systems as compared to agricultural practices and some forests. Among the soil organisms, arbuscular mycorrhizae fungi, bacteria, and enzyme activities were significantly greater in agroforestry than crop and livestock practices. Agroforestry also creates spatially concentrated high-density biodiversity near trees due to favourable soil-plant-water-microclimate conditions. The greater biodiversity was attributed to heterogeneous vegetation, organic carbon, microclimate, soil conditions, and spatial distribution of trees and plants. [64] Another review of Brazilian agroforestry finds these systems provide up to 45% and 65% more benefits for biodiversity and ecosystem service levels, respectively, than conventional production systems; however, these benefits differ according to the type of agroforestry system. [65] Bamboo agroforestry includes a highly diverse mix of species, including tree crops such as mango, cashew, jackfruit, cacao, yet also annual crops such as wheat, rice, maize, soybean and other legumes, and other food and agricultural crops. The highly diverse Bamboo agroforest systems in Indonesia traditionally may contain a mix with tree crops such as *Santalum album*, *Eucalyptus urophylla*, *Gyrinops vesteggi*, *Pterocarpus indicus*, and many others. Research indicates that agroforestry systems which include *Gyrinops verstepgii* along with other species such as cacao, Robusta coffee, clove, and coconut are the most dominant species mixes on Flores Island, and 23 species are found to be highly compatible in these agroforest systems (including *Pterocarpus indicus*, another CITES listed tree). [66] Another approach is to define

processing and markets for naturally occurring NTFPs from wild trees, such as *Canarium* which grows in East Nusa Tenggara and across to Alor Island. In Gorontalo, the suitability of sugar palm for ethanol production, when mixed in agroforestry systems that include other crops, has been assessed as potentially feasible in mixed plantings (non-plantation format).[67]

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Key Barriers towards long-term solutions

The long-term solution sought by the project is to mainstream biodiversity as well as to reduce drivers of biodiversity loss and land degradation – specifically in landscapes outside PAs identified as KBAs. The forest and grassland areas in the identified landscapes of Sumba, Sikka and Alor in East Nusa Tenggara, and Gorontalo, and Mt. Latimojong in South Sulawesi, face a range of barriers to protecting biodiversity and ecosystem services, while investing in enabling activities for livelihood activities in bamboo and agroforestry, which will need to be overcome. These include:

Barrier 1 – Lack of economic incentives and knowledge by local government to plan, invest and manage high-value BD in conservation landscapes based on species and habitat ecological considerations For many of the key flagship species of flora and fauna in this proposal (e.g. Babirusa, Macaca, Anoa, Cacatua, Maleo fowl, Ebony, Rosewood, Sandalwood) at least 50% of their habitat requirements are outside protected areas, and many of the habitats are found in Hutan Lindung areas that have inadequate biodiversity management and enforcement (though being identified as KBAs or IBAs), with encroachment for agriculture and wildlife poaching a common driver of biodiversity and habitat loss. There is a lack of ecological knowledge and awareness of the importance of these species, and their habitat requirements outside conservation areas, which has resulted in high levels of forest clearance and degradation.

In 2011, KLHK, working with other ministries, estimated that 80% of biodiversity (ecosystems, species, genetics) of significant value is outside the formally gazetted protected area system, as well as forest designated as '*Hutan Lindung*' or Protection Forest (e.g. for their watershed protection function), representing a total area equalling about 105 million hectares. In line with this, a 2018 BAPPENAS study showed that there were 43 million hectares areas outside the above stated protection forests and PA system identified to have high biodiversity. In accordance with the Medium-Term Development Plan (2020-2024) and the Strategic Plan of the Directorate General for the Conservation of Natural Resources and Ecosystems (KSDAE), this is now a key program activity (and performance indicator) for the period 2020-2024 for improved biodiversity protection in these Conservation Areas/Protection Forest,[68] as well as improved management in the 27 million ha of high biodiversity areas outside these. The program is implemented through the inventory of areas with High Biodiversity Value and Key Biodiversity Areas (KBAs),[69] which include Important Bird Areas (IBAs) as the basis of identifying existing habitat requirements. [70] In 2020, KSDAE released the report, "*Inventory report and verification of areas with high biodiversity values outside Nature Reserve Area (KSA), Nature Conservation Area (KPA) and Hunting Parks (TB) in 2020,*"^[71] which represents the first phase of identification of where these areas are, covering 8 million ha, which can then form a basis for designing strategies to address these gaps in biodiversity conservation. This PIF incorporates key findings from that report, focussing on key gap areas identified in the Wallacea region. The means of achieving improved management for biodiversity could be achieved through community conservation areas and partnerships, Other Effective Area-based Conservation Measures (OECMs), new land designations and identification new

KBAs, as well as other mechanisms of benefit to biodiversity conservation. Though Indonesia is beginning to define possible OECMs, all these will require partnerships with local communities, commitment from sub-national governments (especially those that have permitting and land management authority) and building capacity for long-term commitments to biodiversity and conservation outcomes.

KBAs (priority sites for endemic and threatened biodiversity) are often fragmented in the project landscapes and are particularly vulnerable to deforestation if they are small and unprotected.[72]. Though CEPF[73] identified important corridor areas in 2014 to link fragmented KBAs and conservation areas, additional conservation and protection efforts have yet to transform these recommendations for connectivity into larger landscape-scale management objectives such as under the system of FMU forest areas. There is a low level of integration of biodiversity values in the system of Forest Management Units (KPH-L & KPH-P) in areas recognized by the government as KBAs, leading to very suboptimal buffering, connectivity and mainstreaming of biodiversity conservation in conservation landscapes. There is a need to address the institutional capacity of village-based stakeholders to engage in these KPH participation and planning processes, but also to bring inclusive and multi-stakeholder and cross-sector input towards their implementation, to optimize forest protection and utilization that respects traditional community interests and livelihood needs, and integrated landscape management, which is currently lacking.

Barrier 2 - The large gap between national biodiversity priorities and the mainstreaming of biodiversity in landscapes at Provincial level leading to lack of coordination and/or absence of biodiversity objectives in regional land use planning and local government's five-year development plans. The enactment of Law No. 23/2014 on Local Government which was amended through Law No.9/2015 states that the provincial governments have the authority to manage the protected and production forests under their administration with the supervision of the national government. Under this mandate, the provincial government formed district-level FMU/KPH as the regional forest management units. However, the regulation excludes Protected Areas and conservation forests (KPH-K), which are still managed centrally by the national government. On the other hand, the spatial planning which is reflected at the district-level five-year (economic) development plan (RPJMD) must cover all areas within their administration including all forest areas. In this regard, a close-knitted coordination between the provincial's technical management unit (UPTD), the national's technical management unit (UPT) and the local district government is needed with regards all forest and conservation areas located at provincial and regional level. Given the absence of biodiversity conservation objectives and coordinated land use planning process in the development of district's RPJMD, development pressure on the landscape will intensify through i.e. sectors driving forest loss, and eventually lead to further loss and degradation of key habitats for biodiversity.

Barrier 3 – Lack of capacity and technical assistance to communities to enhance social forestry concessions' outcomes for biodiversity and sustainable land management benefits: The Indonesian government has identified a target to increase social forestry areas to 12.7 million hectares, from the 1.8 million hectares that exist today. However, the process of obtaining a social forestry scheme permit is onerous and technically difficult for local communities, with up to 26 necessary steps that involve agencies/actors at village, district, provincial and national levels, and can take up to 3 years to complete. There is a lack of knowledge of how to simplify licensing procedures while maintaining institutional and ecological safeguards. These safeguards include preparing and enforcing a management plan and agreeing on specific plans for increasing timber stock and conserving ecologically fragile areas. [74] Furthermore, the complexity of finding approvals across central, provincial and district governments has been challenging, [75] and one review found that by 2014, only 20–30% of permit applications approved by KLHK received final approval from the regents (at the district level) and governors (at the provincial level).[76] Social forestry concessions provide an opportunity to address adat land tenure conflicts, and many adat communities do not view social forestry concessions solely to engage in forestry activities, but rather they view it to obtain greater tenure security of their ancestral lands (this is important in all proposed project sites except Gorontalo in areas that are subject to transmigration pressures). Many adat communities practice their own customary land management systems

which respect biodiversity values and sacred forest areas, but due to tenure insecurity and lack of formal legal recognition, they lack rights and authority to carry out these biodiversity-friendly land management objectives. In many of the proposed project sites, the government has identified possible social forestry concessions in KBAs in protection forests, which means that if these concessions were granted for purposes of timber/wood fuel production, it would compromise both the biodiversity- as well as sustainable forest management outcomes in these biodiversity-rich protection forests. Thus, these are areas that are prioritized for interventions that can address tenure conflict, while working with adat communities to strengthen local biodiversity management, stop encroachment into these areas, and define options for how communities can derive livelihoods from biodiversity-rich landscapes without compromising the biodiversity values (such as through NTFPs, ecotourism, bamboo shoot harvesting). The entry point of social forestry allows for better spatial planning and field delineation with communities and will require land management plans in Hutan Lindung.

Provincial KSDA's report that one of the barriers they face concerns conflicts with communities over land rights. This conflict with communities comes from historic unresolved land claims rooted in the process of incorporating land under customary management in the forest estate, and is also supported by a lack of understanding by the community about the ecological, economic, and socio-cultural functions of the forest and a lack of capacity by KSDA to engage with communities on these issues.^[77] Though Central government has defined this social forestry target, KLHK and its sub-directorates and Provincial KSDAs do not have the additional fiscal and human resources to carry out this goal. Communities often lack the technical and administrative capacities to propose areas and develop the longer-term management plans for what they will do with the land. Therefore, intermediaries such as NGOs can play an important role in providing such technical assistance. However, research shows that collaborative partnerships for biodiversity protection *without* long-term (e.g., 35 year, with option for renewal) tenure access and forest rights is shown to be less effective, as it does not meet community needs for tenure security and as a basis for their longer-term investments in livelihood options, management, stewardship. Thus, tenure security is a solution to this barrier.

Barrier 4 – Insufficient financial incentives for local communities to engage in sustainable forest management and biodiversity conservation while pursuing livelihood activities that are biodiversity-friendly: Economic incentives for village-level enterprise has largely worked against conservation in the past. Overall, government development programs have favored agricultural commodity production, rather than sustainable agricultural and forest production. In many of these landscapes, encroachment for agricultural production (and in some areas grazing) is a significant threat to biodiversity values, but people lack the knowledge and the skills to pursue alternative income opportunities. In all of these landscapes, market incentives (through commodity prices and demand) have pushed production beyond sustainable limits, resulting in high levels of deforestation, monocropping (particularly around Gunung Latimojong) and land degradation. In Gorontalo, this is further complicated by the number of transmigrant communities that have been settled near conservation areas. There exist slow and inefficient value chains for alternatives to ecologically depleting commodities, there is poor market access and a lack of coordination and cooperation in government responses, and any existing private sector activities are small and isolated (such as vanilla production on Alor). There is a lack of mainstreaming performance measures related to biodiversity and sustainable land management into government development plans, budgets, and programs, which then define public finance available for such activities, and prioritize those over depleting and exploitative activities. There has been an absence of finance to support restoration of degraded areas. The lack of clear land tenure rights challenges local communities to access finance for more biodiversity-friendly livelihood alternatives to commodity production (usually collateral is linked to assets, including land). There is a need to build capacity to enable investment-ready community-level enterprises and business planning to support biodiversity-friendly businesses, but there is a lack of sources of finance for such enabling conditions that can kick-start business development and build capacity. There is a need to motivate and align private sector investments that support biodiversity-friendly business models. Related to that, there is a need for the establishment and demonstration of successful conservation partnership

between local government, communities and private sector that can mobilize finance. There is also a need to blend and sequence different sources of finance (grants, development finance assistance, Village Fund allocations, central government allocation through covid economic recovery that seeks to support forest sector SMEs and cooperatives) to achieve coordinated investments in landscapes to promote livelihood benefits while safeguarding biodiversity.

1.2) The baseline scenario and any associated baseline projects

Government of Indonesia Social Forestry program: Indonesia learned seeing the concept of social forestry as an effective means to support more sustainable and equitable development, and that the success or failure of good forest management often rests with the communities living in and around the forests itself. Decree No. 83 on Social Forestry provides for a careful process towards issuing Village-, Community-, and Community Forest Plantation licenses for local use, management, planting and/or protection of forests and their products with main aim of generating enhanced community benefits from forest management, environmental protection and commercial development of the concessions, and which are valid for a period of 35 years (Arts. 53(1) & (3)). Social forestry concessions provide an opportunity to address adat land tenure conflicts, and many adat communities do not view social forestry concessions solely to engage in forestry activities, but rather they view it to obtain greater tenure security of their ancestral lands (this is important in all proposed project sites except Gorontalo in areas that are subject to transmigration pressures). Many adat communities practice their own customary land management systems which respect biodiversity values and sacred forest areas, but due to tenure insecurity and lack of formal legal recognition, they lack rights and authority to carry out these biodiversity-friendly land management objectives.

Many of the social forest concessions are situated inside the Forest Management Units – as part of the State Forest estate discussed above – yet also outside the FMUs. Much of the government baseline funding for the FMUs concerns support to the establishment of social forestry concessions. The House of Representative through Commission IV has suggested to add the allocation for MoEF for USD\$ 487 million with more allocation to be added to the Social Forestry program, thus it is expected that government budget allocations will increase.

In August 2020, the Green Climate Fund approved a \$103.8 million US results-based payment to Indonesia in recognition of an avoided 20.3 million tons of carbon emissions between 2014 and 2016. The vast majority of this payment will be channelled to support and expand decentralized sustainable forest governance in Indonesia, including its *Social Forestry programme* – as key baseline programme for the GEF project, that will benefit the GEF project through in-kind support on assisting communities to access tenure on a minimum of 99,000 ha. Under this landmark programme, 12.7 million hectares of Indonesia's State Forest estate, or 10 %, have been designated for Adat (indigenous) or local community management. The programme formalizes respect for customary or collective tenure rights and provides funding for sustainable forest management, community-based conservation initiatives and forest and landscape restoration activities, among others. Social Forestry is commonly viewed as a forest production program (e.g. woodlots for timber and fuelwood production, timber for export), and not as a means to protect biodiversity. Without piloting social forestry concessions with communities that prioritize biodiversity protection (priority areas for OECMs) and conservation, BD will continue to be an outlier in this national program seeking to boost rural timber production.

On top of that, Indonesia also received U S\$17 million in grant funds from Climate Investment Funds for public sector support to assist communities in: *Indonesia: Community-Focused Investments to Address Deforestation and Forest Degradation*, submitted by the Government of Indonesia and Asian Development Bank (ADB) ^[78] This is a source of in-kind support for the GEF project.

National Forest Management Unit program (FMU): The Directorate General of Watershed Management and Protected Forest -KLHK is responsible for coordinating those FMUs involving Protected and Conservation Forests and allocates \$6,938,566 each year for the improvement in planning of forest management in Indonesia (note 'production' FMUs are under a different directorate general). Provincial government are mandated and in the lead on the establishment and management of their FMUs. National guidance by the MoEF advises Provincial governments to incorporate biodiversity considerations as a FMU management objective, but there is no strict requirement and as a result this seldom being applied. Given the large overlap between FMUs and landscapes identified as KBAs, this represents a technical gap and missed opportunity to strengthen biodiversity conservation in the landscapes outside actual protected areas – and which is the mandate of e.g., the Directorate general KSDAE - KLHK. Provincial authorities lack capacity to address this, and the complex mediation between policy levels and economic demands (competing objectives, driver pressures) has resulted in low adoption of biodiversity into FMU processes. In the alternative, the project will enable mainstreaming biodiversity into FMUs covering a total of 219,896 ha. This includes 11 FMUs, each receiving US\$385,000 in Indonesian government funding, resulting in US\$4,235,000 in aligned co-financing for FMUs that incorporate biodiversity and restoration of degraded land objectives through GEF incremental support, along with additional means to implement the plans via EBF and other project partners, and mobilizing additional private sector investment. The project will demonstrate how this can be replicated across more FMU processes in Indonesia.

The Directorate General of Nature Resources and Ecosystem Conservation (KSDAE) of KLHK - especially its Directorate on Essential Ecosystems has the national mandate to implements programs, as per the 2020-2024 Medium-Term Economic Development Plan (RPJMN) which identified the potential for 'ex-situ' biodiversity conservation and sustainable utilization in over 43 million ha outside the national protected area system. In preparation to its implementation the Ministry of Environment and Forestry directed KSDAE to conduct the detailed National Inventory and Verification of potential high biodiversity value areas (reference to KBAs – see previous explanation) and which resulted in detailed data for 8 million ha ecosystems in 2021; with follow up inventories to be conducted the coming years through recurrent government funding. This represents a modest baseline program to Component 1 of the proposed GEF project.

The area of KBA identified for the three targeted project Provinces amount to over 1 million hectares, to which a total of US\$35,237 has been made annually to the provincial branch offices of KSDA for the 3 provinces towards conducting additional and more detailed inventories and (ex-situ) conservation planning work.[79] To maximize effective use of these modest government resources compared to the 1 million ha targeted for better biodiversity conservation outcomes, the GEF proposal seeks to augment this with additional funding, to provide technical assistance as well as to focus and link the work with identified mitigation of main drivers of biodiversity loss in the five landscapes, including through development of highly-biodiverse agroforest systems, species conservation programs and habitat restoration and protection.

The national program by Ministry of Environment and Forestry including specifically its Forestry and Environment Instruments and Standardization Agency/BSI-LHK (previously Forestry Environment Research Development and Innovation Agency/FOERDIA) is running national research, development, and implementation programs on conservation of natural resources – including biodiversity, sustainable forest management, forest products processing, social and economic policies of forestry and environment and climate change. These activities are supported by recurrent state budget of and other development grants including GEF-6 & 7, ITTO, ACIAR, AFOCO and international research institutions such as CIFOR and ICRAF with current total allocation of USD

38,304,504 annually. BSI-LHK ensures standards and monitoring of aspects related to forest sustainability, environmental health, and community welfare in the utilization of natural and forest resources, by increasing the quality of human life in national forest programs (e.g. social forestry, bamboo agroforestry, protected area management, ex-situ conservation).

Multiple thematic baseline programmes exist, which this project will align with and seek to build upon:

Strengthening of Social Forestry in Indonesia (SSF) is funded with US\$109 million via the World Bank, of which \$14 million is from GEF (GEF ID 9600), implemented between 2020 – 2025. This programme seeks to strengthen policy and institutions to make progress on Indonesia’s social forestry targets, and support community capacity, piloting specific schemes and developing tools for scaling. Pilots cover 300,000 ha in 11 FMUs in: South Lampung District, Lampung Province; Lima Puluh Kota District, West Sumatra Province; Dompu, and Bima Districts, West Nusa Tenggara; Sigi District, Sulawesi Tengah; and West Halmahera District, Maluku Province. The geographic reach is beyond State Forests to also include private lands, for example, technical assistance for harvesting and managing private and community-owned forests. Of relevance to this PIF, the SSF will support the MoEF in developing and harmonizing the relevant national policies, regulations, and procedures to expedite implementation of the GOI’s Social Forestry Program. Also, the project seeks to strengthen the policy framework for decentralized fiscal transfers, including, for example, through the Revenue Sharing Fund for Reforestation and Village Fund mechanisms. The project would support the Ministry of Finance (MoF) and the Ministry of Villages Development of Disadvantaged Regions and Transmigration (MOV), to facilitate the incorporation of social forestry as one of the key activities eligible for receiving future relevant DBH and Village Fund financing. This proposed project will likely benefit from the investments in institutional strengthening ranging from national level to provinces and even local levels; the establishment of village associations (*lembaga desa*) and farmers groups; and pilots developed on land tenure and use rights to village associations, farmers groups, and communities.

Forest Programme III – Sulawesi, funded by Kreditanstalt für Wiederaufbau/ Entwicklungsbank (KfW) for US \$14 million, implemented between 2015 – 2023, has developed capacity and agroforestry demonstration plots that this project can build upon. The project, which has thematic significance to the GEF project, operates in a different Province in Sulawesi from this proposed GEF project. The project implements biodiversity and watershed conservation within the framework of the national REDD+ strategy in Central Sulawesi’s Lore Lindu National Park, and surrounding areas. There is research from the project that could pertain to this GEF project, in the areas of research on biodiversity conservation and climate change, capacity development with government agencies, and strengthened law enforcement for forest and biodiversity protection. The project has sought to increase effectiveness of conservation forest management and biodiversity conservation efforts outside PAs (though the project is mostly in Loru Lindu NP). Biodiversity monitoring has been developed (forest stand and key-species), and an agroforestry pilot (400 ha of conventional mono-culture cocoa plantations shifted to mixed agro-forestry system in 20 villages). This GEF project will seek lessons learned from the pilots. The project is overseen by the Directorate of Conservation Area Planning (RKK) under the Directorate General of Natural Resources and Ecosystem Conservation (KSDAE), and one of the implementing units is the Sulawesi Social Forestry and Environmental Partnership Center (BPSKL), which could be a suitable partner for some activities in this PIF, and this will be explored in the PPG phase.

Forest Programme IV (Watershed Mamasa/Sulawesi), funded by the Kreditanstalt für Wiederaufbau/ Entwicklungsbank (KfW) for US \$24 million between 2019-2026, is an on-going thematic baseline project. The primary purpose of the project is to complement the 126 MW Bakaru II Hydroelectric Power Plant program, supported by KfW. Thus, the project is in the Mamasa watershed, a catchment area requiring restoration at the outlet of the Bakaru Project, and also including the Gandang Dewata National Park (TNGD) area. Thus, the project seeks improved watershed management (in the Mamasa Watershed) with reduced sedimentation indicators, strengthening forest management in selected FMUs at project sites. The increased effectiveness of FMU management and community empowerment is of interest to this GEF project, though implementing in different landscapes and FMUs. Further, the capacity-building of the Forest Programme IV with the South Sulawesi Natural Resources and Ecosystem Conservation Center (BBKSDAE) could be of aligned benefit to the GEF project.

Forest Investment Program I (FIP I): Community – Focused Investment to Address Deforestation and Forest Degradation, by the Asian Development Bank, invests US\$ 17 million to support REDD+ implementation in Sintang and Kapuas Hulu District, West Kalimantan Province (2016 to 2022). Project outputs that relate to this GEF project include agroforestry systems in 1,880 ha, assisted natural regeneration on 6,000 ha in select FMUs, community-based forest fire management on 106,576 ha, community-based forest management on 17,000 ha, and ecotourism as an incentive to protect forests. Another one is fiscal policy and fund allocation between national level and sub-national levels, but the primary activity is quite different from the proposed GEF project as UNDP is utilizing these FIP funds to define the benefit-sharing mechanism for West Kalimantan so that it exists when Green Climate Fund (GCF) releases Performance Based Payment (RBP) for REDD+, as West Kalimantan is a target location for the RBPs. Thus, the fiscal policy portion of the project has less applicability to this project, yet it will seek lessons learned from the project components that are relevant to our field interventions (particularly the agroforestry and assisted natural regeneration activities).

BioCF plus-ISFL Jambi Sustainable Landscape Management Project (Pre-Investment and Investment Phase), implemented between 2020 – 2026, is funded by the World Bank at US\$13 million, plus \$5 million in additional investments, which is hoped to also enable an Emission Reduction Payment Agreement (ERPA) as part of the BioCFplus ISFL Indonesia Program, projected to include up to US\$70 million in results-based payments for verified ERs. The Project aims to reduce land-based GHG emissions in Jambi Province, through strengthening policy and institutions, implementation of sustainable land management practices, and results-payments distributed in accordance with the agreed-upon benefit sharing mechanism. The geographic focus is Jambi, with a core objective of strengthening provincial governance institutions for effectiveness in implementing REDD+ objectives at the Provincial level (which was also identified as a key underlying driver of forest loss in Jambi). The institutional strengthening and cross-sectoral coordination the project will engage to improve action to address primary drivers of emissions from land use in Jambi should offer transferrable lessons learned for other Provinces facing similar challenges. Though the focus on peatlands does not pertain to this GEF project, the capacity building provided for local stakeholders in identifying and improving management in priority HCV, HCS, or KEE areas, including with adat communities, are relevant to this GEF project. There also appears to be a FMU strengthening component, which may have lessons learned to share with the GEF project. The 150 village groups expected to benefit from the project in the areas of agriculture, plantation, and agroforestry intensification and diversification, and value chain development (most related to palm and rubber production) are of interest to the GEF project, as Bio-CF seeks to introduce new financing mechanisms in Jambi Province, with provincial government, working through Bappeda and Parliament, to develop a provincial regulation (*Perda*) for green investment. This model may be transferrable to the Provinces serviced in the GEF project.

Strengthening Forest Area Planning and Management in Kalimantan / KalFor, funded by GEF via UNDP, invests US\$8.6 million (plus \$50 million in co-financing) in the Heart of Borneo between 2017-2025. The project intends to develop a framework to maintain the forest, biodiversity and ecosystem functions, of Kalimantan's lowland and montane areas to compete with the growth and development of the estate crop sector, linking national and provincial (West, Central and East Kalimantan) government levels. The project design has similarities to this GEF project in pursuing an integrated package of co-operation including estate crop dialogue platforms, forest safeguarding plans, identification of priority areas for protection from estate crop agriculture (no go areas), enhanced mapping and demonstration of approaches—including regulatory and incentive-based ones—to delivering change in line with such plans. The project's process of pursuing OECM designations in partnership with local communities has proven effective so far, and is a model KLHK believes holds potential for other landscapes such as those in this GEF project. The Land Suitability and Risk Indicator Mapping Process may provide a methodology that would be applicable to the planning envisioned in this GEF project. The project is also developing innovative ways of using financial incentives (and eliminating disincentives), designed to help reduce deforestation and forest fragmentation driven by estate crop development, in four districts in Kalimantan. Those may be replicable in the landscapes this GEF project targets.

Sustainable Farming System in Asian Tropical Landscapes (SFITAL) Program, implemented by World Agroforestry Centre, covers multiple countries, but has a pilot on sustainable cocoa management in North Luwu Regency, South Sulawesi Province. Partners include the International Fund for Agricultural Development (IFAD) (providing funding); Mars, Incorporated and Rainforest Alliance-UTZ. The project seeks to apply sustainable agricultural management systems in entire landscapes rather than in segregated and differently administered and managed areas. Of relevance to the GEF project are the direct interventions with cocoa growers, in a landscape north of where the GEF project seeks to work, yet linked value-chains for cocoa (a major driver of forest clearing and land degradation historically, yet holding potential for more sustainable and biodiverse agroforestry). The GEF project will seek to learn from research and interventions seek to create partnerships, and conduct landscape planning towards sustainable agriculture and value chains at district level. A key output sought is a district-level sustainable cocoa development roadmap.

Provincial non-GEF Funded baseline programs:

- East Nusa Tenggara (ENT): The Governor signed a Governor Decree on establishment of a collaborative management forum for KEE in Flores (GD No.267/KEP/HK/2020) to ensure that areas outside protected areas that are of high biodiversity importance are managed as Essential Ecosystem Areas (or KEEs) and allocated \$4,2M to achieve the objective over the coming years.
- The Indonesian Ministry of Environment and Forestry, with a support from Germany's BMZ conducted a feasibility study in Sikka district for Forest Programme V, a Social Forestry Support Programme, to harmonize rural economic development with the reduction of greenhouse gas emissions and biodiversity conservation through sustainable forest management. The Government of Indonesia allocates approximately \$7M per year to support the work on Social Forestry Program across Indonesia.
- Environmental Bamboo Foundation has worked with communities in ENT since 1993 on bamboo as an environmental and economic solution for rural communities. More recently, EBF has established 20 bamboo villages in ENT, supporting bamboo-agroforestry systems over at least 40,000 ha (2000 ha per bamboo village) and livelihood improvements, based on a larger landscape-scale conservation vision. The Province of ENT has committed IDR 10 billion or approximately US \$690K to support the Bamboo Village concept, nurseries, planting and working with women's groups to propagate bamboo.^[80] The MOU between the Provincial government of ENT and EBF has just been signed by the Governor of ENT and valid for 5 years (2021-2026) that allows EBF to work

with the Province on the program formulation, budgeting process and policies, which falls under the forestry and village development sectors. In 2021, The provincial development planning agency (Bappeda) and respective agencies (*dinas*) have discussed the concept of bamboo village to be integrated to the workplan of forestry and village development sectors. Related to this, the Bamboo Agroforestry Village Campus has been established since 2021 in Ngada Regency, which serves as the centre of excellence providing technical assistance to 200 bamboo village communities in ENT, a.o through the development and implementation of bamboo field school curriculum and providing technical assistance in bamboo production in multi-species agroforestry systems over an estimated 400,000 ha.

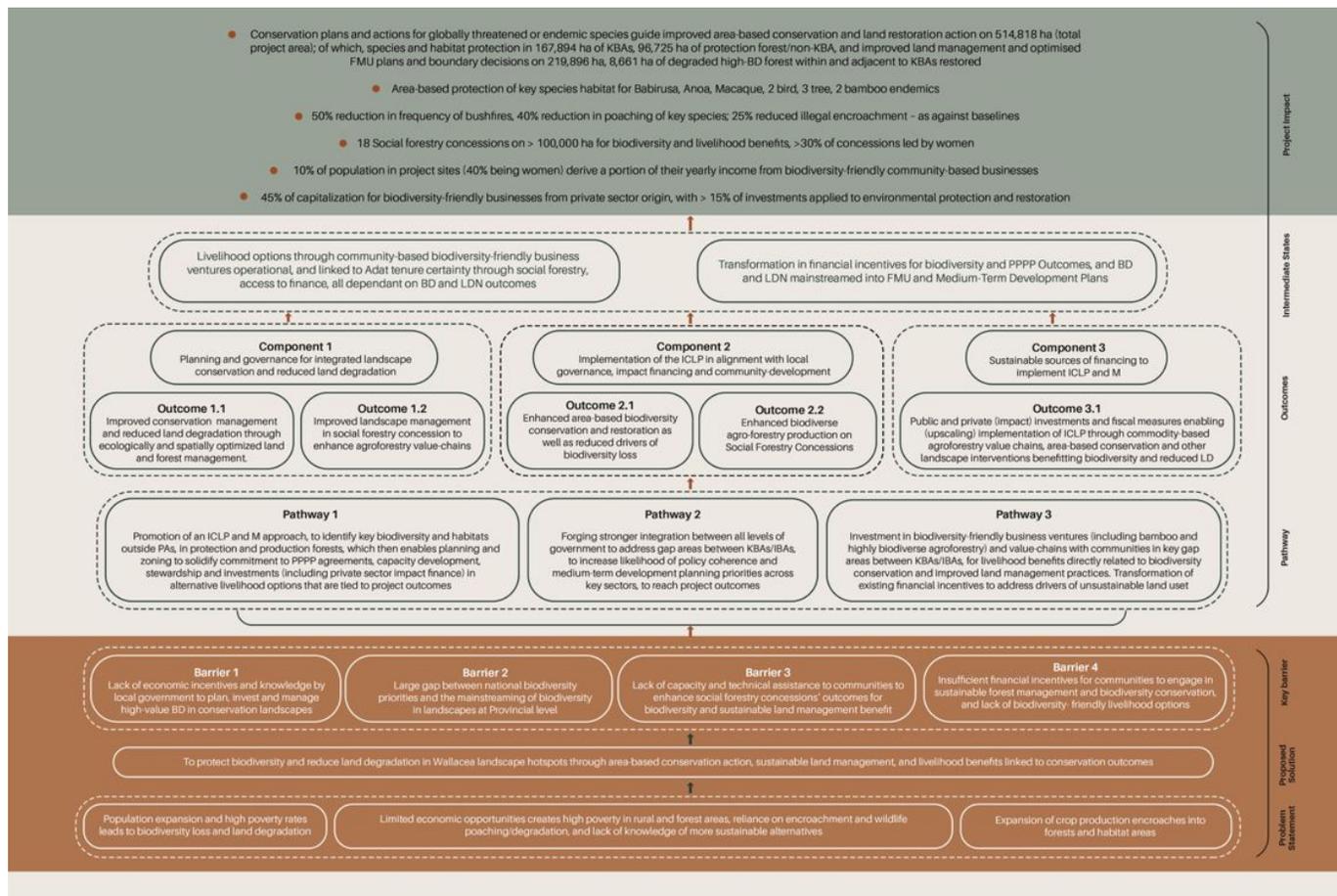
- *South Sulawesi*, the Governor has an annual allocation of \$9M to support the implementation of 16 Forest Management Unit under its administration. The 16 FMUs are responsible for FMU management planning and business development, as well as day-to-day forest management at the grassroots level
- Burung Indonesia has worked extensively in the Province of Gorontalo to protect threatened tropical forests through “Forest of Hope Program (Program Hutan Harapan)” since 2009, and more recently has received \$100,000 annually through IKI funding for working with communities adjacent to Panua Strict Nature Reserve. Together with the Forest Management Unit (FMU) Region III Pohuwato, Burung Indonesia has facilitated the development of eight Social Forestry concessions, five of which have received business permits from the Ministry of Environment and Forestry covering an area of 2,085 ha. The permits will allow 3,479 families, who are members of forest and village farmer groups, the right to manage and use the forest in a sustainable manner including in support of bird conservation.

Private sector finance and impact financing in the land sector (agriculture and forestry). In Indonesia, there are several impact financing platforms available, most of which are developed in collaboration with major international banks—for example the Tropical Landscape Finance Facility (supported by BNP Paribas (French)) and Agri3 (supported by the Rabobank (Netherlands)). In addition, there are smaller fintech platforms emerging, such as Crowde (see: <https://crowde.co/>), which provides farmers with access to microcredit. There are two main gaps in delivery of finance to the land use sector that these actors are seeking to fill: a) First, financing for activities in the relatively under-developed regions of Indonesia, such as ENT and Sulawesi, is a challenge, mainly due to investment risk and the lack of equity supplied by possible project proponents; and b) Secondly, de-risking investment opportunities through guarantees of higher risk investments, especially those sized US\$5 million and under, which is a focus of TLFF by seeking to establish a fund (targeting potential investment opportunities in the US\$1 to 5 million range). TLFF seeks to link the fund to a grant fund (providing grants to US\$350,000) for potential high impact projects that will reduce impacts on forests, while enabling them to reach bankability (such as national Indonesian banks). This GEF project will work with local companies as well as village owned companies (BUMDes) to develop their capacity to access TLFF and other impact funds, providing them with access to technical assistance to meet international ESG standards, including biodiversity and social inclusion. UNEP also works with other international investors to establish similar funds targeting small projects in marginal areas in Indonesia. Currently, there is US\$10 million in confirmed impact/sustainable landscape finance, committed for the Flores Island sites. TLFF is assessing the ongoing business development in Gorontalo palm sugar production, with a possible investment range of between US\$ 5 to 10 million, and shade-grown cacao in South Sulawesi, with grant-based initiatives, but no impact finance investments have been confirmed yet. However, there is greater potential to mobilize an impact investment for South Sulawesi for bamboo-based shade-cacao agroforests, and TLFF has had initial discussions with Olam for the potential shade cacao investments. In addition there are some small scale voluntary carbon market carbon financing activities, which were maturing but are now halted to await the outcome of the GoI implementation of the regulation, "the Economic Value of Carbon," which introduced result-based payments, for initiatives that result in carbon reduction, as an instrument in the carbon trading mechanism, on top of the carbon tax that the Indonesian parliament passed in October 2021.

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

To address the above-mentioned challenges and barriers, the proposed project aims to implement integrated conservation landscape plans based on ecological and spatial criteria to strengthen the mainstreaming and area-based biodiversity protection in landscapes identified by the government as Key Biodiversity Areas including under Protected Forest status, Production Forests as well as Conservation Forests under the prevailing Forest Management Unit scheme as well as forest under local management jurisdiction (APL), many of which contain proposed social forestry concession areas. Working with local communities the project seeks to build biodiversity stewardship and 'other area-based conservation measures' at landscape scales, through People, Public, Private Partnerships (PPPP), connecting commitments to address drivers of biodiversity loss to tangible investments in livelihood improvements through biodiversity-friendly business ventures such as bamboo and other NTFP agroforestry.

Intervention Logic – Theory of Change



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

Pathway 1: This pathway advocates that an assessment of the drivers of ecosystem loss (both direct and indirect) and identification of response measures is completed, alongside (selected) species ecological /life cycle analysis and their habitat/ecological flows/needs as a planning basis for any area-based interventions. These two analyses inform integrated landscape planning as a means to identify what steps can be taken to address drivers across different sectors, while also developing more in-depth plans for each key species, and also how actions to promote livelihood outcomes helps address drivers and improve biodiversity for the selected species. This is done across the project landscapes, with a focus on protection and production forests (mostly in KBAs, but also outside them). These processes enable planning and zoning to solidify stakeholder commitment to biodiversity conservation and anchor the accessing of technical and capacity assistance to longer-term land management, stewardship and investments in alternative livelihood options – combined with direct (impact) investments in biodiversity and forest habitat conservation and restoration.

Pathway 2: This pathway advocates that forging stronger integration between all levels of government that have an influence in governance of gap areas between KBAs/IBAs will increase likelihood of both policy coherence and related medium-term planning priorities across key sectors, which will increase the likelihood of enhancing ecosystem services and conservation of endemic species and species of high biological value and carbon sequestration.

Pathway 3: This pathway proposes that if the project invests in developing value-chains for biodiversity-friendly business ventures (including bamboo and highly biodiverse agroforestry) with communities in key gap areas between KBAs/IBAs, local people will derive livelihood benefits directly related to biodiversity conservation and improved land management practices. Thus, drivers of unsustainable land use will be addressed, and new finance modalities such as blending and sequencing financial support to producers can transform the incentives motivating land use in these Provinces.

The project approach is to deliver necessary activities to achieve its overarching project objective 'To protect biodiversity and reduce land degradation in Wallacea landscape hotspots through area-based conservation action, sustainable land management, and livelihood benefits linked to conservation outcomes', organised under three components and that are responsive to the primary environmental problems, root causes and barriers identified.

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Component 1: Planning and governance for integrated landscape conservation and reduced land degradation

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This component develops a basis through planning, to then implement actions under Component 2, to reverse the primary impacts of biodiversity loss and land degradation in project area KBAs and IBAs– due to logging, illegal encroachment into forests for agriculture expansion and grazing (in ENT), also those due to underlying drivers of poverty, lack of awareness of the value of ecosystem services and easy willingness to pursue short-term profit at the expense of forests, lack of awareness of income generation options that do not degrade the ecosystem, poor tenure rights, poor land governance most notably in Protected Forests - which are key to maintain habitat.

There is a need to slow the rates of degradation of key forests and wildlife habitat, which may increase as social forestry concessions are now granted in Protected Forests (and most so far lack biodiversity and conservation interests). There is a need to mitigate suboptimal land utilization, mainly from agriculture and animal livestock management in eastern Indonesia project sites, and the establishment of cash crop plantations in Sulawesi, through the development and implementation of Integrated Conservation Landscape Plans (ICLP) with communities and key stakeholders in the landscapes, develop conservation plans for species of high biological and/or conservation value, and development of methods to mitigate the biggest threats in these habitats (e.g. fire, poaching, etc.), and plans for biodiversity-friendly alternative livelihood opportunities.

A key partner in these efforts in ENTT, South Sulawesi and Gorontalo are the DINAS (No 3. Department for Environment and Forestry at the provincial level) and BAPPEDA (planning) as well as the Ministry of Agriculture. A key technical and project partner is Burung Indonesia, particularly related to avifauna species and habitat in all the sites, and their significant presence and on-going project in Gorontalo, which is near to this PIFs proposed site.

Outcome 1.1: Plans for improved planning and management of Conservation Landscapes for key species through agreed habitat connectivity and restoration, more sustainable forest management, and agro-forestry value-chains

Integrated landscape planning provides a mechanism to identify biodiversity values, and potential for land restoration alongside the current land uses that are exerting pressure on these lands. Integrated landscape planning also provides a forum for convening key stakeholders (communities, cooperatives, village and regency governments, forest managers) in a collective process of planning, leading to improved management strategies and plans. The purpose of this activity is to build the knowledge of drivers of biodiversity loss, knowledge of biodiversity values with key stakeholders, forge agreed solutions to reverse encroachment, poaching and fire pressures, and pursue livelihood options that will safeguard biodiversity values. It also forms the basis for the establishment of Public, Private, People Partnerships (PPPP) multistakeholder conservation partnerships, as a means to carry out participatory and inclusive planning and related agreements on management outcomes.

Three outputs provide the planning basis for actions described under Component 2:

Output 1.1.1: Analysis of impact drivers to ecosystems, and identification of opportunities for landscape and species protection in Key Biodiversity Areas (KBA)/Important Bird Areas (IBA), which guide ecological and spatial context of restoration and habitat protection, measures to address drivers, as well as optimized investments for resilient landscapes and communities This output contains two activities which form a crucial basis for the Integrated Conservation Landscape Plans:

- a) assessment of the drivers of ecosystem loss (both direct and indirect) and identification of possible response options and measures, alongside (selected). The driver analyses will include consideration of the political economy of drivers, particularly underlying drivers, which includes international investment for infrastructure (such as in Gorontalo), the profitability of export cash crops, and cultural practices of degrading land clearing;
- b) Species ecological /life cycle analysis and their habitat/ecological flows/needs as a planning basis for area-based interventions. The focus will be on at-risk flora and fauna at each site, including endemic and migratory bird species. The project will support species baseline assessments (and update those that already exist, at site levels, such as for Babirusa and Anoa), develop management plans including associated monitoring programs, training and capacity building, and implementation of monitoring to be able to report on change in the status of the selected species at the mid-term review and project completion. This forms a basis to set targets for minimum ecological thresholds or ecosystem service functions (e.g., habitat integrity, genetic and seed stocks of endemic species, HCV forest areas, watershed functions, etc.). Landscape and species protection analysis in the KBA/IBAs and surrounding areas, to confirm priority species and locally specific conservation action, the needed ecological and spatial context of habitat protection and restoration, and optimised land-use investments for resilient landscapes and -communities.

Output 1.1.2 Five (5) spatially explicit Integrated Conservation Landscape Plans (ICLP) adopted by local government, incorporating LDN and key habitat conservation targets, linked to government Medium-term Development Plans for alignment of budgeting and fiscal support (see 3.1.2 & 3.1.3) : The above two analyses on drivers and species/habitat and ecological system requirements inform integrated landscape planning as a means to identify what steps can be taken to address drivers across different sectors, while also developing more in-depth plans for each key species, and also how actions to promote livelihood outcomes helps address drivers and improve biodiversity for the selected species. The target is to complete five (5) Integrated Conservation Landscape Plans

– ICLP (spatially explicit), which cover the entire project area of 514,818 ha. The ICLPs include prioritized recommendations for how to address drivers and threats, and identification of spatially explicit hectare requirements of key species habitat/landscape under improved conservation planning for their breeding, feeding or resting requirements, of which 167,894 ha is in the already identified KBAs which lack adequate protection, 96,725 ha of Protection forest which does not contain KBAs, plus 230,094 ha of Areas for Other Land Use (APL). The ICLPs will identify high biodiversity value areas as Zone 1, defined as areas requiring OECM and greater biodiversity protection, and Zone 2 areas as those that are either a) of less importance for biodiversity but are important as corridor areas, and require improved forest management, and b) areas that do not contain GEBs and are suitable for bamboo-based and other agroforestry commodity and livelihood opportunities that are aligned with biodiversity objectives in the adjacent areas. The five ICLPs will be integrated into Indonesia's Village Medium-Term Development (RPJMDes) and Provincial Medium-Term Development Planning (RPJMD), agreed to by District authorities, and bound by terms of PPPP multistakeholder conservation agreements – including conflict management.

By aligning with the RPJMDes and RPJMD, the project also activates public finance (e.g., Dana Desa, others), to align sectors and create pathways to direct currently unaligned resources towards conservation. These resources are crucial to address the poverty alleviation aspects, which cut across a range of ministries. The strong Provincial support from Nusa Tenggara Timor, including significant committed co-finance over eight years, sets the political will necessary to engage such a cross-sectoral process, and builds the framework for a process that will be replicable and scalable to the other landscapes and jurisdictions and beyond. Further, the villages (Desa) the project will engage are crucial for the linkages to village-level medium-term development planning (RPJMDes) and village Sustainable Development goals (SDGs Desa), which provides a means to measure performance at village, provincial and national levels.

Output 1.1.3 ICLP-based biodiversity conservation, SLM/SFM and related economic/investment planning is integrated into 219,896 ha of optimised Forest Management Unit plans and boundary decisions, and management capacity established with partners under PPPP agreements (see 1.1.2) : Biodiversity conservation and related economic/investment planning is integrated into 219,896 ha of optimised Forest Management Unit plans and boundary decisions, and management capacity established with partners under the PPPP agreements, and to be based on the ICLP agreed. This will include bringing the ICLP spatial plans into the multi-stakeholder participatory processes within each KPH, conducting additional forest management planning, and integrating the biodiversity-friendly business plans into KPHs. This will involve close cooperation with KLHK's KPH Unit, other KLHK DGs, provincial and district governments for implementation. The Directorate General of Nature Resources and Ecosystem Conservation (KSDAE) of KLHK recognizes the importance of innovative conservation partnerships and agreements to help extend its reach in areas of the country where its staff has limited capacity and mandate for implementation of comprehensive integrated ecosystem management approaches, particularly when incorporating areas outside the protected area network and/or landscape level, which is under the jurisdiction of provincial governments (indeed as part of KPH system). These partnerships would involve both local communities, corporate sector, local government as well as NGOs and scientific institutions for support. However, significant areas of forest, including KBA/HCVF, is also under different local government status and authority. Thus, commitments that bring in different sectors, at provincial and local village government levels under a coherent approach is necessary and is currently lacking. Thus, this output seeks to ensure that globally threatened or endemic species conservation plans guide improved conservation landscape management, through FMU/KPH plans, which include sustainable forest management and social forestry. This outcome seeks to create provincial, village and landscape-level governance and guidance through key existing government mechanisms—medium-term development plans and forest management unit plans— to protect biodiversity and ecosystems services, restore key habitats and connectivity, as well as identify, budget for, and invest in sustainable practices in livelihood activities.

Outcome 1.2: Improved landscape management with conservation outcomes through secure local governance and tenure as basis for enhanced agroforestry value-chains in social forestry concessions

This outcome has just one *Output 1.2.1: Community social forestry concessions secured and their development aligned with ICLP objectives for biodiversity conservation, community welfare and more sustainable and productive agroforestry value-chains (bamboo, cocoa, sugar palm etc.)*, and works with local communities, through the PPPP agreement process, and based on the ICLP, to promote traditional/adat tenure security, safeguard biodiversity values (including through integration of the species plans as per outcome 1.1) and link the communities' commitment to improved management to their accessing new investments and technical support to carry out plans for biodiversity-friendly livelihood business ventures. The project will support adat communities to participate and have capacity in integrated landscape planning and biodiversity-friendly business plans, specific to their sites, and assist them in their applications to acquire 35-year social concessions to enable these activities, both in Zone 2/sub-set (a) areas of Hutan Lindung in which the project will define OECMs to protect biodiversity values (and associated local stewardship – see 2.1.1), and in the Zone 2/sub-type (b) areas that are deemed through ICLP to not have GEB values. As mentioned previously, with social forestry being proposed across 43% of the Hutan Lindung areas in the proposed project site (not counting Gorontalo, which does not have proposed social forestry concession in the project area), this is potentially about 83,000 ha that is at risk of being targeted for increased forestry operations (50,260 ha of which is in KBA areas), unless provisions are negotiated with communities to pursue social forestry plans with a vision for biodiversity conservation, and work with them to define economic opportunities outside these areas, such as in APL and production forest. In summary, this outcome seeks to demarcate and secure tenure/land titles on a minimum of 100,000 ha of social forestry concessions for development - as part of Comp 2 and 3, of high-biodiverse agroforest systems targeting e.g. bamboo, cocoa and sugar palm commodity production as the 'economic- mechanism' to secure stronger biodiversity conservation commitment and actions by local actors and based on agreed conservation commitments prior to any project investments (see Comp 2).

Component 2: Implementation of the ICLP in alignment with local governance, impact financing and community-development

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This component seeks to implement and operationalize the plans produced under Outcome 1.

Outcome 2.1: Enhanced area-based biodiversity conservation and restoration as well as reduced drivers of biodiversity loss based on the agreed ICLP and KPH management plans

This outcome will protect lowland tropical, tropical dry deciduous, monsoon semi-deciduous forests in the project sites, which are the key habitats for globally significant biodiversity in these landscapes, through PPPP conservation agreements to establish Other Effective Area-based Conservation Measures (OECMs) over a majority of the 167,894 of KBA (including 43% of Hutan Lindung). These will be informed by the Integrated Conservation Landscape Plans of Outcome 1.1, and will be accompanied by commitments to both protect biodiversity as well as take-part in biodiversity-friendly livelihood activities and investments

through these joint agreements, if communities agree to no additional encroachment, poaching, fire for land-clearing both to expand plantations (e.g. commodities in Gorontalo, South Sulawesi), and other key drivers of BD loss, with the majority of livelihood activities to occur outside of this zone. These are the Zone 1 high-biodiversity areas on current Hutan Lindung for which current management is lacking and encroachment pressures compromise biodiversity values. Targets include conservation of high biological value species such as Babirusa, Anoa, Macaque, 2 bird species, 3 tree species, 2 bamboo endemics, as well as key pollinator species (of which 4 bird and 2 lepidoptera). Any establishment of social forestry areas in this zone will be for purposes of safeguarding biodiversity and enabling adat tenure recognition and stewardship of these lands and supporting them with livelihood options on adjoining lands in Zone 2. For degraded areas in these conservation areas, consideration will be given to the suitability of bamboo assisted regeneration, which is allowed for under current law allows for[81]

The project will develop activities to target the specific direct and underlying drivers of biodiversity loss, which vary according to the landscape, but generally all include habitat encroachment for agriculture and grazing, wildlife poaching, fire, and in some landscapes, infrastructure development, commodity-driven agriculture, etc. An assumption is that through the partnerships and livelihood activities, the commitment and reward through economic incentives (as per components 1.3 and 3) will change the driver patterns. Nevertheless, specific activities to address drivers will be determined in the ICLP, and these would likely include local guardian watchmen programs for MCS related to species conservation programs, development of alternatives to fire as a land management tool, and other measures.

Based on the species protection plans created under 1.1. the project will support the development of Community Monitoring, Control and Surveillance – MCS (forest guardians), as a means to build local commitment to area-based biodiversity stewardship, and to address threats to biodiversity loss that occurs (e.g., illegal logging, bush fire where applicable). Especially in adat communities, these on-the-ground biodiversity monitoring programs allows them to create jobs for local stewardship of their customary lands, while also providing government with local stewards and capacity that would not otherwise be present for this purpose. While the creation of Community MCS programs will be established with GEF funding, the project will also identify how communities can acquire the necessary funding for on-going operations, after the project ends, so that MCS continues as part of their social forestry stewardship activity. These are part of *Output 2.1.1: Other Effective Conservation Measures (OECM) and community- based Monitoring, Control and Surveillance implemented (e.g. integrated fire management, protection of wildlife habitat for breeding, feeding, resting; encroachment)*

Output 2.1.2: KBA/HCVF forests protected and restored (assisted natural regeneration and enrichment planting) and sustainable forest/savannah management on degraded lands for increased soil and woody vegetation health: For Zone 2 lands including areas that are on Areas for Other Land Use/Areal Penggunaan Lain (247,599 hectares) or Production Forest/Hutan Produksi (48,856 hectares), the PPPP conservation agreements will enable implementation of the outputs related to agreed integrated landscape plans on land identified as suitable to be: a) gazetted as Hutan Konservasi, Kawasan Konservasi or Hutan Lindung, or OECM approaches, based on high-biodiversity values, and b) those areas that are suitable for bamboo-based and other agroforestry commodity and livelihood opportunities that are aligned with biodiversity objectives in the adjacent areas. A significant amount of the Zone 2/sub-type (b) area deemed suitable for bamboo-based and other agroforestry and livelihood opportunities would be potentials for adat social forestry concessions.

A portion of Zone 2 lands will be prioritized for land restoration activities, most likely at the Sikka, Alor, and Sumba sites, where land degradation in and outside of KBAs will be addressed through assisted natural regeneration, with bamboo and other commodities agroforestry, which allows for transition to natural ecosystem representation. East Nusa Tenggara is one of three national priority sites for LDN, thus 8,661 ha of degraded land have been identified as priorities

but will be reconfirmed in the PPG phase.

Output 2.1.3 Biodiversity is mainstreamed into 219,896 ha FMU implementation including their business plans for BD-friendly investments (informed by the ICLPs), SFM, restoration, social forestry and other area-based conservation modalities: A core objective is to bring conservation/biodiversity, and aligned economic/investment planning into the KPH process where applicable with regards to existing KPH-P, KPH-L and KPH-K. The project will engage 6 KPHs covering 219,896 ha hectares and 4 KPHs covering 68,523 hectares. One key target is the reduction of drivers of biodiversity loss as stated in ICLP/Species Conservation Plans, such that there is a 50% reduction in the frequency of bushfires (especially in NTT), a 40% reduction in poaching of key species; and 25% reduction in illegal encroachment, measures against project baseline scenario. While KPHs were intended to bring about transformation of forestry development, prioritizing biodiversity, tenure arrangements and the aspirations of local communities through an optimised landscape or watershed approach, many planning processes are on-going and capacity in all relevant areas can be weak. Thus, operationalizing the ILM planning outputs to motivate implementation and investment is crucial. Key Provincial partners include the DINAS LHK (Department for Environment and Forestry at Provincial level for protection forests (Hutan Lindung) and production forests (Hutan Produksi), and the district government under authority of Ministry of Home Affairs which oversees forests found in Areal Penggunaan Lain (APL). For tribal communities, they have a special interest in a significant amount of area on the APL, and these are priorities for demarcating tribal forest areas, and for Forest Management Unit (FMU) planning.

Outcome 2.2: Enhanced biodiverse agro-forestry production on Social Forestry Concessions leading to enhanced soil, water and woody vegetation, and community support for protection of biodiversity (outside KBAs):

Output 2.2.1 Community-based (PPPP) Bamboo agroforestry (and other NTFP commodities) operational, conditional community-BD conservation agreements (ICLP) and investment-ready through feasible value-chains: seeks to develop community-based (PPPP) business ventures in bamboo and other NTFPs agroforestry systems, based on ICLP mapping of site suitability, and to render them operational and investment-ready, with value-chains and market access developed under Comp 3 incremental support, including targeting marketable commodities such as bamboo, sugar palm, cocoa, coffee. Business models based on marketable bamboo and other agroforestry commodities will be promoted in Zone 2/sub-type (b) areas (these are distinct from the Zone 2/sub-type (a) areas which contain KBAs and IBAs with inadequate protection, that will be proposed for increased biodiversity protection as part of the project). Zone 2/sub-type (b) therefore are the areas that are well suited to agroforestry systems targeted marketable commodities such as bamboo (ENT), cacao (South Sulawesi, Gorontalo), sugar palm (Gorontalo, ENT) with local communities, while also targeting improved area-based conservation outcomes of habitats - key to the lifecycle of species targeted for conservation, that exist in these areas (such as Cacatua, hornbills, babirusa, anoa, macaca, etc.). This will build upon the extensive baseline program by EBF with the provincial government in ENT in the field of Bamboo agroforestry and value chains; the proposed investments through The Tropical Landscape Finance Facility (TLFF) in Sulawesi in collaboration with Rainforest Alliance (cocoa) or possibly sugar palm in Gorontalo, and other partners under Comp 3.

The business models and co-partnership are already developed by EBF and can be adapted to suit the specific locations and commodities. For example, bamboo agroforestry priorities will be defined in these landscapes based on local growing conditions, known site-specific endemic species (e.g. *Fimbribambusa rafaiana* on Alor Island), and local knowledge and agricultural practices. The business models will engage with communities that join the project's PPPP agreements, which outline goals and targets for biodiversity conservation and related commitments to support livelihood activities. Bamboo

agroforestry has high potential to directly address LD problems such as soil degradation, erosion and flooding risk, which is so prevalent in all the proposed project sites, except Gorontalo. Bamboo agroforestry also benefits biodiversity by creating species habitat and food sources. Pending local environmental baseline situation, design of optimal farming systems, as well as commodity market potential, these agroforestry systems will include Bamboo or other targeted global commodities such as cocoa, sugar palm, coffee, in a mix with fruit trees, nuts and understory perennials for year-round food and other useful products (e.g. fibre; sugar, small-scale wood production) - with where applicable bamboo interspersed to a maximum density of only 30-40% of the area. In others Konjac, Moringa, and other species may be suitable for community ventures. Full consideration will be taken to avoid potentially or already proven invasive (alien) species. In Sikka and Alor, the local organisation DuAnyam has established value-chains with woven products from lontar palm,[82] which bamboo agroforestry can help advance. In Gunung Latimojong, innovations with cocoa and coffee may be suitable.[83] In Gorontalo, Burung Indonesia has developed a corn value-chain intervention with farmers, which could be scaled to address this major driver of habitat conversion. There has also been a feasibility assessment of sugar palm for ethanol by BAPPENAS in Sulawesi and Gorontalo, whereby sugar palm is planted in agroforestry systems by communities and tapped at a commercial scale. EBF brings a major source of private sector co-finance in sustainable bamboo products, with strong economic potential, and social/environmental commitment.[84]

Other species to be considered on a site-specific basis are high-value trees that are CITES listed, and for which there are options to restore these species into the landscapes for sustainably managed production that is biodiversity-friendly (e.g. no plantations or monocropping, mosaic agroforestry systems based on endemic species). Both *Gyneros* and *Pterocarpus indicus* are examples and can be integrated into plantings closer to homes (to reduce risk of theft). There are also opportunities to create demand for wild products, thus instigating willingness at local levels to supply these products. For instance, Canarium nuts and oils can provide livelihood opportunities and increase local stewardship of these endemic, wild trees (e.g. no new planting may be required, rather focus is on small-scale processing and market linkages), if connections to markets and limited processing at community levels (e.g. reduces post-harvest losses, bring more value back to the community). Importantly, many efforts to date have failed to define interventions to safeguard and sustainably harvest tree resources and NTFPs in ways that activate communities in a collective effort, in which everyone in the community can take part in and benefit from the endeavour. This increases the likelihood of collective policing (poaching high value timber species is a problem) and community stewardship of the resource, and engages cooperatives in the processing and marketing, so that communities see benefit, rather than the traders and entrepreneurs who often realize a significant amount of the value addition.

This output has a target of 100,000 ha of assisted regeneration, sustainable forest management and agroforestry on social forestry concessions. It is anticipated that GEF incremental support will enable the following outputs over an : a) community-based business plans (for agroforestry, NTFPs, etc.) that are suited to the local conditions and habitats; b) technical assistance to carry out the agroforestry business models; c) support to the community enterprises to be production-ready in ways that safeguard biodiversity values (e.g. training for enterprise staff on best practices such as low-impact harvesting, certification standard best practices); d) support to community enterprises to be investment-ready (e.g. establishing or strengthening the community-level enterprise, building their fiduciary responsibility, training to support their implementation of the business models); and e) value-chain development, and linking producers to markets. Other sources of co-financing will invest in product processing at village levels, product storage, packaging, secondary processing, and other activities that could be financed through loans, on the basis of the grant support de-risking the community-based business model development. It is hoped that 10% of the population in the project area derive a significant amount of their yearly income from biodiversity-friendly business ventures, the majority of whom are women.

Component 3: Sustainable sources of financing for the implementation of integrated landscape conservation and management

Outcome 3.1: Public and private investments and fiscal measures enable implementation of ICLP through commodity-based agroforestry value chains, area-based conservation and other landscape interventions benefitting biodiversity and reduced LD

Output 3.1.1 Blended/impact investments mobilized through agreement with private sector, financiers/banks and local producers (particularly women) to realise livelihood targets and enable biodiversity-friendly business ventures. This output will enable the financial viability of the value chains and deliver on livelihood activities linked to biodiversity conservation and land restoration, namely the commodity-based agro-forest and restoration interventions, related to bamboo, cocoa, sugar palm, and other marketable commodities etc, in partnership with EBF, Rainforest Alliance, TLFF, Burung Indonesia, Agri3 Fund and others. Private sector impact investment will be activated through existing facilities such as the Agri3 (Rabobank) or the Tropical Landscape Finance Facility – based in Jakarta – both catering for private investments in sustainable agriculture, forest protection and landscape restoration, including through key off-take companies^[85] all of which have varying risk/return profiles and time requirements. Project support will follow two main pathways to secure bankable business plans and private investment for sustainable commodity production resulting in improved SLM and BD conservation at both the agro-forest systems as well as at a landscape-level (e.g. related to forest rehabilitation, buffer zones, habitat connectivity, protected landscape elements for ecosystem services), through (i) participatory planning and building capacity for community enterprises to be investment-ready, and which will be the basis to (ii) the development of detailed business/investment plans in partnership with banks/investors, commodity sourcing/off-take companies and impact financing mechanisms such as TLFF, Agri3 and other more recent facilities being established or already available in Indonesia related to e.g. agroforestry commodities or climate mitigation investments. However banks, private investors and/or sourcing companies would not be interested to proceed or take the investment risk as such without knowing that there is adequate market opportunity for the targeted commodity (e.g. bamboo), without being assured that an investment opportunity is feasible, as well as without having access to additional - often grant funds, to pay for the additional costs related to adopting or converting to sustainable production and landscape management practices. The project will therefore support full feasibility design and analysis of any proposed investments - to be based first of all on the PPPP agreements with local producers, government and prospective private sector partners (see Comp 2), and secondly the assessment of market potential of the targeted commodities. Additionally, the so-called 'de-risking' of the commercial investment would need to be secured prior to or in parallel with the actual investment and this is called sequencing of the investment. The project support and main purpose of sequencing is to cultivate the capacity with the project developers, e.g. related to that impact investments will adhere to the terms of the PPPP agreements and social and environmental safeguards, as well as to secure funds to cover these additional costs (de-risking) related to the actual impact investment. Project incremental support will be provided to key partners such as TLFF and Agri3 or the corporate project developers, to conduct full feasibility analysis, the design and adoption of enhanced sustainable production practices related to the proposed commodity investments and related design of business plans, to organise and build capacity of small-holder producers, to clarify and secure land-titles, as well as to build integration with baseline government programs and procedures. No GEF grant funding will be used for core costs of e.g. TLFF or Agri3 nor to use as grant for derisking the actual investment. Instead the project will facilitate the project developers to access available grant and/or loan resources to 'de-risk' their investment available with e.g. the Agr3 fund or other such facilities. Although considered less feasible the project will also engage with government such as the Indonesian Ministry of Cooperatives and Small and Medium Enterprises as well as the Ministry of Investment to look into possible public or national project resources available for de-risking purposes such as Indonesian government commitments in soft loans to farmers and SME's captured under Output 3.1.2. In recap: Output 3.1.1 is to incentivize and upscale agroforestry systems and other sustainable livelihood activities through private (impact) investments that align with biodiversity protection and restoration of

key ecological functions in targeted landscapes. This ensures the business plans developed under Output 2.2.1 are adequately financed and livelihood activities identified in the PPPs succeed. As a result the project will target 45% of capitalization for biodiversity-friendly businesses from private sector origin, with > 15% of investments applied to environmental protection and restoration (the 'impact' aspect of the investment).

Output 3.1.2: Mainstream biodiversity lending criteria and secure new ICLP funding through village and development funds, Regional Incentive Fund, and regional credit unions: This is an opportune time to demonstrate new models and means of activating public investments in livelihood activities that are biodiversity-friendly. By linking the PPP agreements to accessing new forms of public finance to commitment to conservation and biodiversity outcomes, the project seeks to build broad-based commitment to the project goals. The national allocation to Village Funds has grown to Rp 796 trillion (US\$55 billion) in 2021,⁸ but many villages lack the fiduciary skills and oversight mechanisms to qualify and manage the funds. In 2020, Indonesia launched Pemulihan Ekonomi Nasional (PEN)/National Economic Recovery (NER) (Regulation No. 23/2020) to deal with the outbreak of the COVID pandemic in Indonesia. While PEN is oriented to covid recovery, Rp 123.46 trillion (US\$ 9 billion) is geared towards micro-enterprises and SMEs, in the form of interest payment subsidies, and agriculture and forestry are among the selected sectors. The COVID Economic Recovery (PEN) funds provide a unique opportunity to 'grow back better,' with public finance supporting sustainable development. The Ministry of Cooperatives and Small and Medium Enterprises (KEMENKOP) and Ministry of Village, Development of Disadvantaged Regions and Transmigration (KEMENDES) are important partners and sources of co-finance in this process. New potential public sources of finance are being identified and piloted by EBF now, with central government, which may unlock new public finance oriented to community-based enterprise that is biodiversity-friendly. By working with cooperatives, agricultural banks and districts, with strong political of the Province of NTT (which will form a basis to replicate in Gorontalo and South Sulawesi), the project can focus technical and capacity support to deliver outcomes and define how access to finance is linked to environmental performance (biodiversity and no new land degradation objectives) by farmers and SMEs.

Output 3.1.3: Implementation of ICLP through facilitating government fiscal mechanism including ecology-based transfers in Provincial (TAPE), District (TAKE) and National (TANE) budgets: will be defining new models for how to operationalize recent Indonesian ecologically based performance financial incentives: This project component seeks to activate new fiscal incentives by designing and implementing new indicators related to biodiversity through the ecological fiscal transfer mechanism. This new ecological fiscal transfer mechanism is due to the passage of Government Regulation no. 12 of 2019 concerning Regional Financial Management and Government Regulation no. 46 of 2017 concerning Environmental Economic Instruments (IELH) which allows for ecologically-based performance incentives. However, these have yet to be operationalized. These provide for fiscal measures to assist Indonesia in achieving its commitments under Law no. 16 of 2016 for Ratification of the Paris Agreement to the United Nations Framework Convention on Climate Change. This includes ecological fiscal transfers in Provincial (TAPE), District (TAKE) and National (TANE) budgets. This new innovation in finance for biodiversity can also be leveraged through other sources of public finance. This project component envisions also working to define biodiversity indicators to the Regional Incentive Fund (DID), thus building upon a basis already developed with indicators for waste and energy. This component also will explore and develop strategies with regional credit unions to include biodiversity and no land degradation as a lending criteria to support involved cooperatives (government-backed people's business credit program (KUR)). Particularly in NTT (Sumba and Sikka project sites), more than half of the population has joined cooperatives (compared to only 8% across Indonesia), thus cooperatives are a key partner for channelling lending to smallholders based on biodiversity and avoided land degradation criteria.

Output 3.1.4: Project-level M&E systems for continuous improvement in meeting biodiversity and LD outcomes (also linked to Community Biodiversity Monitoring Programmes est. under 2.1.1) The modalities and mechanisms forged and piloted in the various project components will develop proof of concept and the policy/legal basis for replication and scaling to other landscapes in Indonesia. Building the pathways for more communities to pursue these approaches (protecting biodiversity outside protected areas, mainstreaming biodiversity into development and FMU planning, access to finance for biodiversity-friendly business models) for aligned conservation purposes, can be enabled. This can occur first through the piloting and implementation in NTT, Gorontalo and South Sulawesi, resulting in knowledge products being developed. The second pathway is through passage of technical instructions and guidelines on how to activate regulatory decrees, and this would be accomplished in close coordination with partner agencies in the project, and others.

This component also implements the monitoring and evaluation aspects of the project. Importantly, these project-level M&E systems will be linked or aligned as appropriate to other relevant ones for villages, the Provincial governments and the Government of Indonesia, through the Sustainable Development Goals Desa (village) process, Nationally-Determined Contribution to the Paris Climate Agreement, and others. The outcome of this component is development of project M&E and for knowledge to be captured at regular intervals and disseminated for replication and uptake in other landscapes in Indonesia for biodiversity conservation and community livelihoods. Monitoring is a key aspect of the PPPP agreements and will track biodiversity protection and livelihood improvements, to ensure the project is generating returns to the communities. Project M&E at each site is also a part of the Community Biodiversity Monitoring Programmes that are established under Outcome 2.1.1. The site models will demonstrate what types of agreements, integrative governance and finance models can function and scale to other areas.

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

The project is aligned with the GEF-7 Biodiversity Focal Area and the 7 Land Degradation Focal Area in the following objectives (see also Core Indicators for specific BD and LD results):

GEF-7 Programming Directions	Contributions of this project to the Programming Directions
BD-1-1 Mainstream biodiversity across sectors as well as landscapes and seascapes through biodiversity mainstreaming in priority sectors	<p>Output 1.1.1 Analysis of landscape- and species drivers and protection needs in KBA/Important Bird Areas guide ecological and spatial context of restoration and habitat protection, as well as optimised land-use investments for resilient landscapes and -communities.</p> <p>Output 1.1.2: Five (5) Integrated Conservation Landscape Plans – ICLP (spatially explicit) adopted and integrated</p>

into government Medium-term Development Plans, agreed to by District authorities, and bound by terms of PPPP multistakeholder conservation agreements – including conflict management.

Output 1.1.3 ICLP-based biodiversity conservation and related economic/investment planning is integrated into 219,896 ha of optimised Forest Management Unit plans and boundary decisions, and management capacity established with partners under the PPPP agreements (see 1.1.2)

Output 2.1.1: Implemented species conservation plans, new Other Effective Conservation Measures (OECM) and community-based Monitoring, Control and Surveillance (e.g. reduced poaching, fire management, protection of key wildlife habitat for breeding, feeding, resting)

Output 2.1.3 Biodiversity is mainstreamed into KPH implementation including their business plans for BD-friendly investments (informed by the ICLPs), SFM, restoration, social forestry and other area-based conservation modalities

Output 3.1.2: Mainstream biodiversity criteria into village and development funds, Regional Incentive Fund, and regional credit unions, to increase funds to be allocated for biodiversity conservation; and to include biodiversity as a lending criteria

Output 3.1.3: Activating fiscal incentives by designing and implementing new indicators related to biodiversity through the ecological fiscal transfer mechanism. Includes ecology-based transfers in Provincial (TAPE), District (TAKE) and National (TANE) budgets

LD-1-3 (Forest Landscape Restoration - FLR)

Output 2.1.2: High biodiversity degraded forests rehabilitated with reduced LFD, restoration (assisted natural regeneration and enrichment planting), increased soil and woody vegetation, associated carbon sequestration, and sustainable forest/savannah management on degraded lands

Output 2.1.3 Biodiversity is mainstreamed into 219,896 ha KPH implementation including their business plans for BD-friendly investments (informed by the ICLPs), SFM, restoration, social forestry and other area-based conservation modalities

Output 3.1.2: Mainstream biodiversity and LDN lending criteria and secure new ICLP funding through village and development funds, Regional Incentive Fund, and regional credit unions

LD-1-4 (Integrated Landscapes and Resilience – INRM)	<p><u>Output 1.1.2:</u> Five (5) spatially explicit Integrated Conservation Landscape Plans (ICLP) adopted by local government, incorporating LDN and key habitat conservation targets, linked to government Medium-term Development Plans for alignment of budgeting and fiscal support (see 3.1.2 & 3.1.3) .</p> <p><u>Output 1.1.3</u> ICLP-based biodiversity conservation, SLM/SFM and related economic/investment planning is integrated into 219,896 ha of optimised Forest Management Unit plans and boundary decisions, and management capacity established with partners under PPPP agreements (see 1.1.2)</p> <p>Output 1.2.1: Community social forestry concessions secured, and their development aligned with ICLP objectives for biodiversity conservation, community welfare and more sustainable and productive agroforestry value-chains</p> <p>Output 3.1.1 Blended/impact investments mobilized through agreement with private sector, government partners, and local producers to enable biodiversity-friendly business ventures for financial viability of value chains and to realize livelihood activities linked to biodiversity conservation and land restoration</p>

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

This project seeks to mobilize USD 7.5 million of GEF resources of which USD 5.7 million is from the biodiversity focal area and USD 1.8 million from the land degradation focal area, and USD 38.9 million in co-financing. The GEF increment builds on the existing programs undertaken by the Government of Indonesia for biodiversity conservation, maintaining ecosystem services, sustainable land and forest management, and reversing land degradation. In the alternative scenario, the project will enable planning, partnership and governance for integrated conservation landscape management for selected species- and habitat-conservation in priority biodiversity and land degradation hotspots; implement integrated conservation landscape management for biodiversity protection while promoting biodiversity-friendly livelihoods through viable community-based business ventures; and mobilize innovative finance for conservation and biodiversity-friendly agroforestry business models, and manage associated knowledge

Project Component	Scenario without GEF Project	Scenario with GEF Increment
Component 1: Planning, partnership and governance f	In Indonesia, 80% of biodiversity (ecosystems, species, genetics) of significant value is outside the	Through GEF incremental support, analyses on drivers and species/habitat and ecological system requirements inform integrated landscape planning as a me

and governance for integrated conservation landscape management for selected species- and habitat- conservation

of significant value is outside the formally gazetted protected area system. The key flagship species of flora and fauna in this proposal (e.g. Babirusa, Macaca, Anoa, Cacaotua, Maleo fowl, Ebony, Rosewood, Sandalwood) have at least 50% of their habitat requirements outside PAs, and a large percentage of that occurs in 167,894 ha of KBAs in Hutan Lindung areas that have inadequate biodiversity management and enforcement.

Central government recognizes the need to address this yet requires cooperation and participation by Provincial and district government, and key stakeholders, to address biodiversity loss and degradation in these areas. However there is very little additional central budget allocation for this and there is a lack of capacity at Provincial and district levels to do so and policy complexity (competing objectives) has resulted in low adoption of BD into FMUs.

There is a lack of guidance, tools, and capacity to mainstream BD in these KBA areas in district and sector development plans.

Community access to state forest land has been a priority for Gol, but conflicts with communities over land rights persist. There is also a lack of understanding by co-

mmunities inform integrated landscape planning as a means to identify what steps can be taken to address drivers across different sectors, while also developing more in-depth plans for each key species, and also how actions to promote livelihood outcomes helps address drivers and improve biodiversity for the selected species. This will occur across the 514,848 ha of project area in Gorontalo, Gunung Latimojong, Sikka, Alor, and Sumba, in KBA/IBA and surrounding areas. This also establishes species conservation assessment reports for at least 2 threatened species or 1 fauna/flora group per landscape, focused on KBA/IBA

GEF incremental support will result in five spatially explicit Integrated Conservation Landscape Plans (ICLP) will be adopted and integrated into government district-level plans and Medium-term Development Plans, and agreement terms solidified through People, Public, Private Partnerships (PPPP) conservation agreements – including conflict management. Without this investment in PPPP convening and planning, these activities would not be financed.

Improved conservation planning for globally threatened species breeding, feeding or resting requirements on 167,894 ha (KBA), 96,725 ha of Protection Forest/non KBAs, plus 230,094 Areas for Other Land Use (APL)

ICLP-based biodiversity conservation and related economic/investment planning is integrated into 219,896 ha of optimised FMU plans and boundary decisions, and management capacity established with partners under the PPPP agreements, including a) establishment of multi-stakeholder fora and planning; b) forest management planning; and c) translation onto F

	<p>so a lack of understanding by communities about the ecological, economic, and socio-cultural functions of the forest and a lack of capacity by GoI, Provinces and districts to engage with communities to solve these issues.</p> <p>Social Forestry has been viewed as a forest production program, yet this does not reflect the multiple values (including biodiversity protection and tenure security) that many adat communities seek.</p> <p>Further, given that 43% of the proposed SF area in the project is in protected forests and 39% is in KBAs, if SF is viewed primarily as a forest production programme, the project area could see increased biodiversity loss. Poor tenure security leads to increased encroachment, and lack of investment in sustainable practices.</p>	<p>est management planning, and c) transition onto FMU business plans in order to guide conservation and protection, restoration, and agroforestry. This establishes an innovative approach, with GEF incremental support, that can be replicated in other regions in Indonesia.</p> <p>Globally threatened or endemic species conservation plans guide improved conservation landscape management and at least 1 multi-species conservation plan completed in each landscape, with recommended actions through FMU, SLM and social forestry</p> <p>GEF incremental support will enable delineation of Adat community social forestry concessions and their development aligns with ICLP objectives for biodiversity conservation and agroforestry livelihood interventions. This establishes a new model, applicable in other regions of the country, for SFs to include BD and LD objectives, and access public and private impact finance related to those objectives.</p> <p>At least 18 SF concessions, integrating BD and LD objectives are secured on at least 100,000 ha in the project area, focus on supporting women's role in tenure access</p>
<p>Component 2: Implementing integrated conservation landscape management for biodiversity protection while promoting biodiversity-friendly</p>	<p>Land management will likely continue along the historic trends of high impacts on biodiversity and habitat loss, and increased land degradation. There is a lack of local knowledge of the long-term value of ecosystem services to people's livelihoods, and a lack of viable livelihood options that are s</p>	<p>GEF incremental support allows for implemented species conservation plans, new Other Effective Conservation Measures (OECM) and community-based Monitoring, Control and Surveillance (e.g., reduced poaching, integrated fire management, protection of key wildlife habitat for breeding, feeding, resting). Piloting new approaches for OECMs, to safeguard the significant biodiversity outside PAs, is aligned with CBD guidance and increasingly being recognized by GoI as</p>

livelihoods

...are unsustainable. Most agriculture sector or development support has favored habitat depleting methods of production, there are high rates of poverty in these project areas. Habitat loss and ecosystem degradation in the project areas have occurred due to unsustainable practices such as illegal logging, firewood collection, forest fires and land encroachment for mining and agriculture activities. Deforestation has been very high in these landscapes, though over varying time periods.

Land degradation occurs from inappropriate soil conservation practices, overgrazing, slash-and-burn cultivation, pasture burning, and an increasing population. Efforts to address these problems have not sufficiently addressed people's involvement in solutions that affect their farming practices, ensuring it can work alongside indigenous local knowledge, and also provide improved livelihood options

Livelihood opportunities and income generation largely comes from activities that degrade ecosystems, including cash crops such as corn, and agricultural yield increases come from expansion into

...and increasingly being recognized by ... as a solution.

Target species: Babirusa, Anoa, Macaque, 2 bird, 3 tree, 2 bamboo endemics + 4 bird, 2 lepidoptera pollinator species conserved

High biodiversity degraded forests rehabilitated on 8,661 ha with reduced LD and restoration (assisted natural regeneration and enrichment planting), increased soil and woody vegetation, associated carbon sequestration, and sustainable forest/savannah management on degraded lands within and adjacent to KBAs

Biodiversity is mainstreamed into FMU/KPH implementation, including business plans for BD-friendly investments (informed by the ICLPs), SFM, restoration, social forestry, and other area-based conservation modalities

At least 100,000 ha of assisted regeneration, SFM and agroforestry on social forestry concessions

50% reduction in frequency of bushfires, 40% reduction in poaching of key species; 25% reduced illegal encroachment – as against baselines

11 FMU/KPHs operations improved with biodiversity objectives and outcomes on 219,896 ha

Community-based (PPPP) business ventures (BUMDEs) in bamboo and other NTFPs/agroforestry outside of KBAs on APL and Production Forest are rendered operational and investment-ready, and value-chain are developed (linked to financing in Component 2)

	<p>cases come from expansion into forests. Poaching species for sale into wildlife and timber markets is lucrative and poorly regulated.</p>	<p>s are developed (linked to financing in Component 3)</p> <p>10% of population (at least 50% of which is women) in project sites derive a portion of their yearly income from biodiversity-friendly community-based businesses sourced from <230,094 ha agroforests</p>
<p>Component 3: Innovative finance for conservation and biodiversity-friendly agroforestry business models, and managing associated knowledge</p>	<p>There is a lack of mainstreaming performance measures related to biodiversity and sustainable land management into government development plans, budgets, and programs, which then define public finance available for such activities, and prioritize those over depleting and exploitative activities. However, there are new opportunities, most notably the Covid Economic Recovery (PEN) funds to 'grow back better,' but there is a lack of guidance on how this (and other national spending in the project area such as Dana Desa-Village Funds, should incorporate biodiversity and land degradation neutrality as performance measures to access finance. Similarly, agricultural banks lack such performance measures and lending criteria, but there is strong political will (in NTT especially) to address this shortcoming</p> <p>There has been an absence of finance to support restoration of de</p>	<p>GEF incremental finance unlocks private sector finance and de-risks an investment opportunity in biodiversity-friendly business ventures that are linked to Biodiversity (BD) and Land Degradation (LD) outcomes. Sequence investments from the private sector, government partners, and local producers, including women's groups, is necessary, yet relies on grant finance to kick-start the blending and match making of investment vehicles.</p> <p>45% of capitalization for biodiversity-friendly businesses from private sector origin</p> <p>More than 30% of new business ventures led by women</p> <p>Recent fiscal policy reform in Indonesia has opened new opportunities in land use sector finance, however, implementation remains nascent. The project will pilot nationally relevant modalities to mainstream biodiversity criteria into village development funds, Regional Incentive Fund, and regional credit unions, to increase funds to be allocated for biodiversity conservation; and to include biodiversity and LDN as a lending criterion. The project will also design and implement new indicators related to biodiversity through the ecological fiscal transfer mechanism. Includes ecology-based transfers in Provincial (TAPE), District (TAKE) and National (TANE) budgets. Target is 2 instruments</p>

	<p>graded areas.</p> <p>Without capacity building to enable investment-ready community-level enterprises (BUMDes) and business planning to support biodiversity-friendly businesses, biodiversity-depleting and land degrading activities will continue to be favoured. There is a gap between willing private sector impact investment and currently underdeveloped biodiversity-friendly business models.</p>	<p>Project-level M&E systems will seek continuous improvement in meeting biodiversity and LD outcomes—also linked to Community Biodiversity Monitoring Programmes est. under Component 2.</p>
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1.6 Global environmental benefits (GEFTF) and/or adaptation benefits (LDCF/SCCF)

The global environmental benefit and/or adaptation benefits will be achieved through the protection of biodiversity and sustainable land-use in 5 key high-biodiversity landscapes in the Indonesian range of the Wallacea hotspot located in 3 provinces namely Gorontalo, South Sulawesi (Gunung Latimojong) and East Nusa Tenggara (Alor, Sikka, East Sumba) that comprise of 319 *desa* (villages) in 10 *kabupaten* (regency) and inhabited by 401,447 population. A Total area of 514,848 hectares is the direct target of the project and will receive benefit from the improved land management, biodiversity recovery and ecosystem services, which consists of 20,135 hectares of conservation forest, 202,322 hectares of protected forest, and 62,297 hectares of production forest, as well as 230,094 areas for other land uses.

These 5 conservation landscapes contain site-specific biodiversity (flora and fauna), endemic bamboos, forest and savannah types, and threats to biodiversity and habitats, land restoration needs, and other possible intervention. The main direct drivers of biodiversity loss and land degradation are related with habitat change (loss, degradation, and fragmentation), agricultural expansion and overexploitation of forests and agricultural soils, overgrazing, and illegal encroachment. Bamboo species are important part of the Wallacea forest and key to sustainable land management, forest regeneration, maintaining biodiversity as well as ecosystem services such as water provisioning services. And from 450 woody bamboo species, 39 species are found in Sulawesi and 19 bamboo species are found in the Lesser Sunda Island (excluding Bali). There are also 25 critical endangered animal species recognized by the Government of Indonesia and the project will protect at least five (5) species, i.e. Maleo (*Macrocephalon maleo*), Anoa dwarf buffalo (*Bubalus quarlesi*), Celebes crested macaque (*Macaca nigra*) found in Gorontalo - north Sulawesi, Babirusas (*Babirusa babirusa Linnaeus*) found in Gorontalo at Nantu Wildlife Reserve and Boliyohuto mountain; and Sumba hornbill *Rhyticeros everetti* which occurs on Sumba in the project conservation landscape.

The project, through improved landscape management (on a total of 100,000 ha for agroforest production plus 414,848 ha primarily for BD outcomes plus an estimated reforestation on 8,661 ha in Dry Forests habitat would generate a Carbon benefit of -9,931,819 tCO₂equivalent. Full details and clarification on assumptions is given under Section F as well as in Annex B (Core Indicators). Please see also the uploaded EXACT calculations.

Additional benefit will also be received from the biodiversity-friendly community-business noting the fact that poverty is a key root cause of land degradation and loss of forests and biodiversity in the targeted conservation landscapes. The project will therefore ensure that 10% of the population in the targeted areas will derive a portion of their yearly income from the conservation outcome by integrating biodiversity and ecosystem services conservation into development planning processes at provincial level.

In summary these concern:

- 18 agroforests/ commodity/social forestry concessions on > 100,000 ha generating livelihood benefits for target communities;
- >30% of concessions will be led by women (SME enterprise approach)
- 10% of population in project sites (40% being women) derive a portion of their yearly income from biodiversity-friendly community-based businesses.
- 45% of capitalization for biodiversity-friendly businesses would come from private sector origin and come to the benefit of small-holders through 'nucleus estate' approaches where corporate would carry the risk of any loans, technically supports communities through a collaborative program on e.g. BD-friendly commodity production.
- Stable (land) tenure for more than 21,000 farmers, as key basis for sustained welfare

1.7 Innovation, sustainability and potential for scaling up

Innovation: The project seeks to develop innovative solutions to persistent problems in land management which has resulted in biodiversity loss and land degradation in the project landscapes. By addressing poverty and the need for livelihood options that are respectful of traditional knowledge, inclusive of adat communities and women, and provide new revenue streams that are tied to biodiversity and healthy ecosystem outcomes, the project seeks to provide a viable alternative for local people's livelihood improvements that is pegged to performance standards (set in the PPPP agreements and monitored and enforced through the project time period). Innovation is also found in the project approach of analysing both landscape drivers as well as species/habitat and ecological system requirements to inform area-based conservation action as well as integrated landscape planning for developing more in-depth plans for each key species, and also how actions to promote livelihood outcomes helps address drivers and improve biodiversity for the selected species and landscape elements. The project seeks to demonstrate how social forestry concession access can serve adat aspirations for tenure security, and overcoming land conflicts, while also providing biodiversity and forest-based livelihood outcomes. The project will accomplish this through community-based business ventures (BUMDes), which builds local accountability, but also ties livelihood benefits to other community- and village-based incentives such as Village Funds, Covid Recovery Funds, agricultural lenders, and the newly established ecological fiscal transfers at three levels of government. These are new incentive

structures or old ones that lacked biodiversity and LDN objectives. Hence the opportunity to mainstream these values into these financing vehicles, develops precedence and functionality that can be replicated in other landscapes in Indonesia. The project also seeks to define new models for OECMs that are community-driven, affirm adat traditional knowledge and meet high performance standards for biodiversity protection.

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Sustainability: The project seeks to embed the ICLP outcomes (which are then reflected in the PPPP Agreements) into Medium-Term Development Plans (RPJMN), district level plans, social forestry plans in 35-year concessions, and FMU plans, operations and investments. A key objective is to demonstrate modes to bring biodiversity conservation and LDN into FMU processes, in order to influence management objectives over these landscapes and to align economic and investment planning in the FMU process. This is important to embed the ICLP goals into the land management processes at landscape scales, influencing the range of stakeholders operating in these landscapes. These are the planning vehicles that also define public sector (and some private sector) budget allocation and investment. The development of biodiversity-friendly business models and value-chains (mostly accomplished through co-finance) leverages private sector investment and sequences investments in a manner that allows for long-term viability of the business models beyond the timeline of the GEF investment (which is 7 years, but the biodiversity-friendly business models need to be operational for much longer to offset investment costs and generate adequate income for producers). As these livelihood opportunities are tied to BD and LD outcomes, the project is seeking to incentivize biodiversity conservation and good land management directly, and then can layer on additional financial benefits to communities through Village Funds and other public allocations.

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Scaling Up: The main elements the project identifies as levers for scaling include: a) demonstrating modalities to mainstream biodiversity and LDN into FMU planning—this is highly relevant to many other landscapes in Indonesia, a country with 93 million ha of forests, which house globally significant biodiversity outside PAs but have no clear management objectives for biodiversity in the protection and production forests; b) finance as a lever for scaling through defining biodiversity and LDN criteria in public finance mechanisms such as Village Funds (also ties into SDG performance), implementing lending and investment instruments which are tied to biodiversity and LDN indicators, such as with agriculture sector lenders/banks, and defining new models for how to operationalize the newly legislated ecological fiscal transfer mechanism. These two elements are priorities to develop proof of concept and the policy/legal basis for replication and scaling to other landscapes in Indonesia. Building the pathways for more communities to pursue these approaches (protecting biodiversity outside protected areas, mainstreaming biodiversity into development and FMU planning, access to finance for biodiversity-friendly business models) for aligned conservation purposes, can be enabled. This will occur first through the piloting and implementation in NTT, Gorontalo and South Sulawesi, resulting in knowledge products being developed and shared. The second pathway is through passage of technical instructions and guidelines on how to activate regulatory decrees, and this would be accomplished in close coordination with partner agencies in the project, and others.

[1] CEPF, 2014.

[2] Eight of which are protected by law: Regulation of the Minister of Environment and Forestry, Republic of Indonesia, Number P.20/MENLHK/SETJEN/KUM.1/6/2018 About Pland and Animal Protected Species

[3] CEPF, 2014.

[4] <https://ourworldindata.org/birds>

[5] Project: Investing in the Komodo Dragon and other globally threatened species in Flores (IN-FLORES). GEF ID: 10728.

[6] Hotspots with regards to plant diversity are defined as regions of the world with at least 1500 endemic vascular plants and less than 30% of their original primary vegetation cover remaining (ref: Myers, N., R.A. Mittermeier, C.G. Mittermeier, G.A. Da Fonseca, J. Kent, 2000. Biodiversity hotspots for conservation priorities. *Nature*, 403 (6772), p. 853)

[7] Supriatna, J., N. Winarni, A.A. Dwiyaheni, 2015. Primates of Sulawesi: an update on habitat, distribution, population and conservation. *Taprobanica*, 7 (3) (2015), pp. 170-192

[8] David Frodin, Kew Gardens and Cambridge University.

[9] Cannon C. H. , Summers M. , Harting J. R. & Kessler P. J. A. (2007). Developing conservation priorities based on forest type, condition, and threats in a poorly known ecoregion: Sulawesi, Indonesia . *Biotropica* 39 (6) : 747 -759 .10.1111/j.1744-7429.2007.00323.x

[10] CEPF, 2014.

[11] Indonesia Ministry of Forestry and ITTO, 2010. Completion report of ITTO project,

ITTO PD 539/09 REV. 1 (F). Promoting conservation of selected tree species currently threatened by habitat disturbance and population depletion.

[12] Pepe, B., K. Surata, F. Suhartono, M. Sipayung, A. Purwanto, W. Dvorak , 2004. Conservation status of natural populations of *Eucalyptus urophylla*. Food and Agriculture Organisations of the United Nations

[13] Lusiana B, Widodo R, Mulyoutami E, Nugroho DA dan van Noordwijk M. 2008. Kajian Kondisi Hidrologis DAS Talau, Kabupaten Belu, Nusa Tenggara Timur. Working Paper No. 59. Bogor, Indonesia. World Agroforestry Centre.

[14] Van der Lugt P., ThangLong T., King C. 2018. Carbon sequestration and carbon emissions reduction through bamboo forests and products. INBAR Working Paper. INBAR: Beijing, China.

[15] Bystriakova, N., V. Kapos, I. Lysenko, C. Stapleton, 2003. Distribution and conservation status of forest bamboo biodiversity in the Asia-Pacific Region. *Biodiversity and Conservation* 12: 1833–1841, 2003.

[16] Ervianti, D., E. Widjaja, A. Sedayu, 2019. Bamboo diversity of Sulawesi, Indonesia. *Biodiversitas* 20 (1): 91-109.

[17] Widjaja, E., 2021. Summary of endemic bamboo in East Nusa Tenggara and Sulawesi.

[18] Widjaja, E. A. 2019. Spectacular Indonesian Bamboos. Privately published. 188 pp.

[19] Damayanto, I.P.G., I.B.K. Arinasa, I.G. Tirta, E.A. Widjaja. 2020. A New Record of *Chloothamnus Buse* (Poaceae: Bambusoideae) from Sumbawa Island and Notes on the Genus in Malesia. *Floribunda* 6(4): 127–132.

[20] Widjaja, E.A, P. K. D. Kencana, I.P.G.P. Damayanto, D. Ekawati, 2021. Indonesia position letter to conserve bamboo of Wallacea region for the biodiversity and ecosystem services.

- [21] CEPF's process involved more than 400 people representing 316 organizations (including national and provincial government agencies; local, national and international research and conservation organizations, and donors).
- [22] Critical Ecosystem Partnership Fund, 2014. Ecosystem Profile: Wallacea Biodiversity Hotspot
- [23] <https://www.cepf.net/stories/what-key-biodiversity-area>
- [24] CEPF, 2014.
- [25] Based on survey data from Provincial KSDA staff and FMU/KPH Managers in Gorontalo, South Sulawesi and East Nusa Tenggara.
- [26] Decree of the Director General of KSDAE No. 180/IV-KKH/2015 on priority endangered species
- [28] Supriatna, J. M. Shekelle, H.A.H. Fuad, N.L. Winarni, A.A. Dwiyahreni, M. Farid, S. Mariati, C. Margules, B. Prakoso, Z. Zakaria, 2020. Deforestation on the Indonesian island of Sulawesi and the loss of primate habitat, *Global Ecology and Conservation*. <https://doi.org/10.1016/j.gecco.2020.e01205>
- [29] Supriatna, J., Winarni, N., Dwiyahreni, A.A., 2015. Primates of Sulawesi: an update on habitat, distribution, population and conservation. *Taprobanica* 7 (3), 170e192.
- [30] <https://avibase.bsc-eoc.org/checklist.jsp?lang=EN&p2=1&list=clements&synlang=®ion=IDlstmsi&version=text&lifelists=&highlight=0>
- [31] BirdLife International (2021) Important Bird Areas factsheet: Egon Ilmedo.
- [32] <https://www.rikolto.org/nl/project/cacao-flores-indonesie>
- [33] <https://avibase.bsc-eoc.org/checklist.jsp?region=IDIsal&list=howardmoore>
- [34] *Ibid*
- [35] <https://avibase.bsc-eoc.org/checklist.jsp?region=IDlssm>
- [36] <https://www.bps.go.id/indicator/23/192/1/persentase-penduduk-miskin-menurut-provinsi.html>
- [37] Wicaksono, E.;Hidayat, A; Nugroho, A., 2017. The Source of Income Inequality in Indonesia: A regression-based Inequality Decomposition, ADB, No. 667, February 2017. <https://www.adb.org/sites/default/files/publication/229411/adbi-wp667.pdf>
- [38] Central Statistic Bureau-BPS, 2019
- [39] <https://kabar24.bisnis.com/read/20141108/78/271398/pemprov-gorontalo-tetapkan-moratorium-transmigran-mulai-2015>.
- [40] Supriatna, J. M. Shekelle, H.A.H. Fuad, N.L. Winarni, A.A. Dwiyahreni, M. Farid, S. Mariati, C. Margules, B. Prakoso, Z. Zakaria, 2020. Deforestation on the Indonesian island of Sulawesi and the loss of primate habitat,

Global Ecology and Conservation. <https://doi.org/10.1016/j.gecco.2020.e01205>

[41] *Ibid*

[42] Fisher, R., W. Bobanuba, A. Rawambaku, G. Hill, J. Russell-Smith, 2006. Remote sensing of fire regimes in semi-arid Nusa Tenggara Timur, eastern Indonesia: current patterns, future prospects. *International Journal of Wildland Fire* 15(3) 307-317 <https://doi.org/10.1071/WF05083>

[43] Indonesia – Land Degradation Neutrality Report, 2015. https://knowledge.unccd.int/sites/default/files/ldn_targets/2021-02/indonesia_ldn_country_report.pdf

[44] Anwar, S., 2009. Land degradation assessment in drylands in Indonesia. *Watershed Management, MOF*. <http://www.fao.org/3/l1067e/l1067e.pdf>

[45] Putri, R.F.. et al 2021. Analysis of land resources balance in Nusa Tenggara Timur Province. *IOP Conf. Ser.: Earth Environ. Sci.* 686 012006

[46] *Ibid*

[47] Indonesia Land Degradation Neutrality National Report, 2015, (former) Ministry of Forestry, Government of Indonesia

[48] As per Forest Law No. 41/1999 and Government Regulation – PP No. 3/2008

[49] The State of Indonesia Forest 2020, Ministry of Environment and Forestry, 2020

[50] Kim, Y-S, J.S. Bae, L.A. Fisher, S. Latifah, M. Afifi, S M Lee, I.A. Kim, 2016. Indonesia's Forest Management Units: Effective intermediaries in REDD + implementation? *Forest Policy and Economics* 62 (2016) 69–77

[51] Balai Besar Konservasi Sumber Daya Alam Sulawesi Selatan, 2020. Rencana Strategis Tahun 2020-2024.

[52] Constitutional Court of the Republic of Indonesia, 2012. Number 35/PUU-X/2012. See: [Link](#)

[53] New York Declaration on Forests, 2021. Taking stock of national climate action for forests: 2021 NYDF Assessment report.

[54] United Nations (2021). State of the World's Indigenous Peoples: Rights to Lands, Territories and Resources. ST/ESA/375.

[55] IPBES (2019). Summary for policymakers of the global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. <https://ipbes.net/global-assessment>

[56] *Ibid*

[57] Rakatama, A, R. Pandit, 2020. "Reviewing Social Forestry Schemes in Indonesia: Opportunities and Challenges." *Forest Policy and Economics* 111. <https://doi.org/10.1016/j.forpol.2019.102052>.

[58] See: <https://www.cbd.int/doc/c/9b1f/759a/dfcee171bd46b06cc91f6a0d/sbstta-22-l-02-en.pdf>

[59] Peraturan Menteri Lingkungan hidup dan Kehutanan, Republik Indonesia, No. 9, 2021: Pengelolaan Perhutanan Sosial

- [60] Sahide, M, M. Fisher, J.T. Erbaugh, D. Intarini, W. Dharmiasih, M. Makmur, F. Faturachmat, B. Verheijen, A. Maryudi, 2020. The boom of social forestry policy and the bust of social forests in Indonesia: Developing and applying an access-exclusion framework to assess policy outcomes, *Forest Policy and Economics*, <https://doi.org/10.1016/j.forpol.2020.102290>.
- [61] Nath, A.J. R. Lal, A. Kumar Das, 2015. Ethnopedology and soil properties in bamboo (*Bambusa sp.*) based agroforestry system in North East India, *CATENA*, Vol 135, Pages 92-99
- [62] Christanty, L., J.P Kimmins, D Maily, 1997. Without bamboo, the land dies: A conceptual model of the biogeochemical role of bamboo in an Indonesian agroforestry system. *Forest Ecology and Management*, Volume 91, Issue 1, Pages 83-91
- [63] Iskander, J., Iskander, B. S., Partasasmita, R., 2016. Responses to environmental and socio-economic changes in the Karangwangi traditional agroforestry system, South Cianjur, West Java. *Biodiversitas Journal of Biological Diversity*, 17(1).
- [64] Udawatta, R.P., L.M. Rankoth, S. Jose, 2019. Agroforestry and Biodiversity. *Sustainability*. doi:10.3390/su11102879
- [65] Zanetti Freire Santos, P., R. Crouzeilles, J.B.B. Sansevero, 2019. Can agroforestry systems enhance biodiversity and ecosystem service provision in agricultural landscapes? A meta-analysis for the Brazilian Atlantic Forest. *Forest Ecology and Management*, <https://doi.org/10.1016/j.foreco.2018.10.064>.
- [66] Iryadi, R., R. Sutomo and I D P Darma, 2004. Multistoried agroforestry system of Gaharu (*Gyrinops verstepgii* (Gilg.) Domke) in Flores Island East Nusa Tenggara. *IOP Conf. Series: Earth and Environmental Science* 648 (2021) 012024: doi:10.1088/1755-1315/648/1/012024
- [67] Bappenas. 2020. Pendanaan Konservasi Berkelanjutan secara Partisipatif di Taman Nasional Bogani Nani Wartabone: Studi Kasus Pemanfaatan Aren oleh Masyarakat dan Skema Kerja Sama Konservasi. Jakarta, Indonesia: Kementerian PPN/Bappenas.
- [68] Conservation Forest Management Unit (KPHK)(Hutan Konservasi) has the main function of biodiversity conservation for plants and animals and their ecosystems. Whereas, the Protected Forest Management Unit (KPHL)(Hutan Lindung), has the main function of protecting the supporting system to regulate water, prevent flooding, control erosion, prevent seawater intrusion and maintain land fertility.
- [69] As per Critical Ecosystem Partnership Fund, 2014. Wallacea Ecosystem Profile.
- [70] Direktorat Bina Pengelolaan Ekosistem Esensial, 2020. Laporan Inventarisasi dan verifikasi kawasan dengan nilai kehati tinggi di luar Kawasan Suaka Alam (KSA) Kawasan Pelestarian Alam (KPA) dan Taman Buru (TB) tahun 2020.
- [71] Direktorat Bina Pengelolaan Ekosistem Esensial, 2020.
- [72] Voigt et al 2021. Emerging threats from deforestation and forest fragmentation in the Wallacea centre of endemism. *Environ. Res. Lett.* 16 094048
- [73] CEPF, 2014
- [74] Siscawati M, Banjade MR, Liswanti N, Herawati T, Mwangi E, Wulandari C, Tjoa M and Silaya T. 2017. Overview of forest tenure reforms in Indonesia. Working Paper 223. Bogor, Indonesia: CIFOR.

- [75] Sahide, M.A.K.; Supratman, S.; Maryudi, A.; Kim, Y.S.; Giessen, L. Decentralisation policy as recentralisation strategy: Forest management units and community forestry in Indonesia. *Int. For. Rev.* 2016, 18, 78–95.
- [76] Siscawati et al, 2017.
- [77] Balai Besar Konservasi Sumber Daya Alam Sulawesi Selatan, 2020. Rencana Strategis Tahun 2020-2024.
- [78] <https://pubdocs.worldbank.org/en/526161531832144729/1944-XFIPID019A-Indonesia-Approved-Decision.pdf>
- [79] Direktorat Bina Pengelolaan Ekosistem Esensial, 2020. Laporan Inventarisasi dan verifikasi kawasan dengan nilai kehati tinggi di luar Kawasan Suaka Alam (KSA) Kawasan Pelestarian Alam (KPA) dan Taman Buru (TB) tahun 2020.
- [80] Announcement: <https://floresfiles.com/2021/05/26/ntt-siapkan-rp-650-m-budidaya-bambu-vbl-siapa-yang-paling-banyak-bambu-dia-paling-kaya/>
- [81] Peraturan Menteri Lingkungan hidup dan Kehutanan, Republik Indonesia, No. 9, 2021: Pengelolaan Perhutanan Sosial
- [82] <https://duanyam.com/en/empowering-women-and-livelihood-through-craftmanship/#>
- [83] JICA and IFC recently forged agreements with Olam for US\$56 million, plus \$120 million for export promotion and smallholder farmer support in the Sulawesi cocoa value chains for improved coffee sustainability in Sulawesi. This may be an opportunity for future partnership.
- [84] <https://www.ikea.com/ca/en/this-is-ikea/sustainable-everyday/bamboo-and-its-many-sustainability-benefits-pub21ce1a30>
- [85] although not confirmed yet, IKEA has been a long-time partner of the EBF and may be interested to partake in this GEF project in Indonesia.

1b. Project Map and Coordinates

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

Please see map in Annex A.

2. Stakeholders

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

Indigenous Peoples and Local Communities Yes

Civil Society Organizations Yes

Private Sector Entities Yes

If none of the above, please explain why:

Consultations with key stakeholders to socialize the concepts in this PIF, obtain support, and input on feasibility and adjustments, based on stakeholder input, has occurred over 2 years, but intensified over 2021 and into 2022. Key meetings were facilitated by an EBF Senior Advisor who was the former Director General, Watershed and Protected Forest, an Acting Director General for Climate Change, and Director General, Sustainable Management of Production Forests in the Ministry of Environment and Forestry. This facilitation and consultation crossed multiple Directorates within MOEF (KLHK), which resulted in strong alignment between DG Social Forestry, DG of KSDAE, and the DG of Climate Change in support of this PIF concept, and how it would advance their respective portfolios.

EBF has worked closely with Provincial, district, and village government in East Nusa Tenggara, on the bamboo village concept, and since 2020 on the approach described in this PIF. Strong support has come from the Provincial governor, and in turn Provincial government in NTT has facilitated community workshops and meetings, at the village level, on Flores Island.

Further, Provincial level Conservation and Forestry government agencies have also facilitated meetings on this PIF, with the support of the Director General of KSDAE, and these occurred in Sulawesi Selatan and East Nusa Tenggara Provinces. A series of consultations also occurred with Conservation Forest area managers, FMU managers and local communities, to obtain their input on drivers of biodiversity loss, land degradation, key corridors to link conservation areas, and proposed solutions from the local perspective. This PIF was greatly informed by this local input, and the input also helped shape and attune possible response options, as outlined in this PIF. These meetings occurred at all proposed sites.

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

In addition to the consultation conducted and to be continue during PPG, the below consultation with communities will take place.

Ongoing consultations with Aliansi Masyarakat Adat Nusantara (AMAN - a indigenous peoples NGO) and its members from the PIF Provinces has occurred, to share concepts and intentions, particularly on social forestry concessions for adat (indigenous) communities. We expect these consultations to expand and deepen in the PPG phase, in order to meet with all indigenous communities and their representatives at the earliest time. We have been advised that it is important not to do this too soon, as it will raise expectations. Kemitraan, a longer-term CSO partner to EBF, has conducted consultations in South and Central

Sulawesi. Burung Indonesia conducted consultations in Gorontalo (particularly around the Popayato-Paguat KBA) and South Sulawesi also, given their long-term presence in these landscapes. As mentioned in the gender section, significant work has already occurred in NTT with women's associations and at the village level of social forestry and bamboo value chain and livelihood options. TLFF has been consulted since January 2017 and Rabobank Agri3 since 2019.

Institution/organization	Mission/Objectives	Role in PPG and project phase
Instrument Standardization Agency – Ministry of Environment and Forestry (BSI-LHK)	The Instrument Standardization Agency of the Ministry of Environmental and Forestry (former forest research and development agency) is the implementing agency that leads in the project preparation, provides strategic direction, facilitates and coordinates with key stakeholders at the national and sub-national level in soliciting feedback, and makes sure government priorities integrate into the PIF.	National focal agency for forest related research and development with the Ministry of Environment and Forestry
Directorate General of Natural Resources and Ecosystem Conservation (KSDAE)	The lead agency in conservation of natural resources and ecosystem that carries the mandate of providing policy formulation, technical guidance, monitoring and evaluation of the national program implementation of conservation management.	Lead National Executing Agency on the project, and focal agency for biodiversity conservation with the Ministry of Environment and Forestry
UNEP	Direct input in project concept development, review of PIF, consultations with KSDA-E, BSI-LHK, EBF and TLFF.	GEF Implementing Agency for the project.
Yayasan Bambu Lestari	Environmental Bamboo Foundation in promotes endemic bamboo conservation activity, developing sustainable farming and forestry practices. Responsible for data management and conservation status of the endemic flora and fauna, scientific monitoring and management, involvement of local communities in the biodiversity protection and monitoring through awareness and sustainable development projects	Proposed project Lead Service Provider - on behalf of MoEF (NEA), and lead in South Sulawesi and East Nusa Tenggara
Burung Indonesia	Birdlife Indonesia supports conservation action in forest management and ecosystem restoration, poli	Proposed partner for implementation in Gorontalo and provide tea

	orest management and ecosystem restoration, policy advocacy, research and monitoring, information management, conservation awareness, etc. It is also responsible for data management and conservation status of the endemic flora and fauna, scientific monitoring and management, involvement of local communities in the biodiversity	tion in Gorontalo and provide technical assistance for birds conservation in ENT and South Sulawesi conservation landscapes
The Directorate for Biodiversity Conservation (KKH)	The Directorate for Biodiversity Conservation (KKH) under The Directorate-General for Natural Resources and Ecosystem Conservation of the Ministry of Environment and Forestry (KSDAE) is the key technical partner to provide	Key partner within the Ministry of Environment and Forestry
Directorate of Essential Ecosystem Management (BPEE)	One of the key responsible parties to provide policy and technical guidance and coordination for patterning and perpetuating of Essential ecosystem areas (KEE)	Key partner within the Ministry of Environment and Forestry
Ministry of Environment and Forestry – Secretary General representing various DGs	The protection, restoration and conservation of ecosystems, natural resources, and environmental services, environmental management, climate change, protected areas, protection of the environment.	Policy direction and Member of Project Steering Committee Integrating conservation partnership approach into related forest and conservation governance (including FMUs and long-term forest utilization plans)
Provincial Government of East Nusa Tenggara, Gorontalo and South Sulawesi	The leader of provincial level government that provide political support to galvanize the program across regency and districts under their administration and advocate the program to targeted investment by central government.	Member of Project Steering Committee and provincial lead on coordinating government landscape management and related investments. Provincial government has already led consultations at all levels in NTT and across the various geographies in this PIF.
Division of Natural Resources Conservation at the provincial level (<i>Balai Besar Konservasi Sumber Daya Alam</i>)	BKSDA provides instrumental support to share identified challenges, barriers, and solutions regarding biodiversity conservation and shared best practices working with local communities for protecting and	Member of Project Steering Committee and lead on biodiversity conservation interventions in the 5 targeted landscapes – with incre

<i>Servasi Sumber Daya Alam/ BBKSDA</i>) in East Nusa Tenggara and South Sulawesi	working with local communities for protecting endangered species, draft action plan for the implementation of the program BKSDA NTT facilitated a broader stakeholder meeting by inviting relevant actors in Flores island and NTT province during the project preparation.	targeted landscapes – with incremental support through the project and government baseline programs
Directorate General of Budget Financing and Risk Management, Ministry of Finance		Member of Project Steering Committee
Perkumpulan JAPESDA	An identified local civil society organization that might become a potential local partner implementation for their current works and expertise in biodiversity conservation and protection in Gorontalo.	Potential local partner implementation in Gorontalo
Perkumpulan Wallacea	An identified local civil society organization that might become a potential local partner implementation for their current works and expertise in biodiversity conservation and protection in South Sulawesi.	Potential local partner implementation in Latimojong, South Sulawesi
Sulawesi Community Foundation	An identified local civil society organization that might become a potential local partner implementation for their current works and expertise in biodiversity conservation and protection in South Sulawesi.	Potential local partner implementation in Latimojong
Yayasan Ayu Tani Mandiri	An identified local non-governmental organization that might become a potential local partner implementation for their current works and expertise in biodiversity conservation and protection in East Nusa Tenggara.	Potential local partner implementation in Sikka, East Nusa Tenggara
Yayasan Tana Ile Boleng	An identified local non-governmental organization that might become a potential local partner implementation for their current works and expertise in biodiversity conservation and protection in East Nusa Tenggara	Potential local partner implementation in Lewotobi
Yayasan PEKKA (women headed household)	An identified local non-governmental organization that might become a potential local partner implementation for their current works and expertise in wo	Potential local partner implementation in Sikka, East Nusa Tenggara

	men empowerment in East Nusa Tenggara	
Private companies and investment aggregators	Some such as TLFF and IKEA consulted during PIF concept development	In collaboration with PPG team, conduct pre-feasibility assessment and project partnership building to identify, secure and develop plan for sequencing and phasing of finance, with emphasis on impact finance for BD and LD outcomes, as well as sustainable commodity sourcing.

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).

Women play a crucial role in household economic stability and livelihoods in the proposed landscapes, yet in many project areas are under-represented in agricultural cooperatives, local governance, and also in relation to land titling. From the current experience of EBF, women are found to be less active in participating in community-level meetings, making collective decisions, and accessing to leadership roles.^[1] Therefore, participation of women in conservation activities will be promoted, but in ways that are attuned with the social and cultural expectations and dynamics at play (including more women migrating for work). EBF has worked for the past few years in Ngada, Flores, East Nusa Tenggara, to develop its women's empowerment engagement strategy and activities related to a.o social forestry concession access, bamboo propagation, and enterprise development at the village and community level. EBF has produced *Guidelines for Gender Equity in Social Forestry* and *Guidelines on the Approval of Social Forestry Applications* for villages, which emphasizes the role of women in these processes and how decisions can not only include women yet also the youth, as well as support their leadership and diversification of livelihoods. EBF has worked to build leadership capacity for women to be involved in the village development planning consultations, and livelihood and enterprise development, in the bamboo value chain. These activities allow EBF work in partnership with communities and central and provincial governments to implement Minister of Environment and Forestry Regulation Number P.31/MENLHK/SETJEN/SET.1/5/2017 concerning Guidelines for the Implementation of Gender Mainstreaming in the field of environmental and forestry, and also Minister of Village Regulation – PDT Number 13 of 2020 concerning Village Development Priorities in 2021 which states that one of the priorities for Village Development is to achieve the Sustainable Development Goals (SDGs) (gender equality SDG). These activities will be built upon and expanded in the other geographies as part of this PIF, and in partnership with project partners, such as Burung Indonesia. Risks related to potential negative impacts on women must be considered in the project design.

The project will be fully compliant with the GEF and UNEP's Gender Policy. In this regard, the project will have to be genuinely gender mainstreamed throughout implementation and impact evaluation. The Project will seek to institutionalize gender mainstreaming at all levels of intervention and operation with achievement indicators namely: access to, participation, control and decision-making as well as project benefits for women. In its efforts to fully integrate gender mainstreaming, the Project will be guided by the principles that gender elements are important drivers and incentives for achieving global environmental benefits, and in ensuring gender equity and social inclusion. The Project also embraces the fact that the needs, interests, and capabilities of women are contextually different from those of men's, in terms of access, use, and management of biodiversity resources in the project intervention area, the multiple burdens on women and the gender-based barriers faced. women and, as such, should be given special consideration. in ensuring equal access to Project resources and services. A comprehensive Gender Mainstreaming, Gender Analysis and Action Plan and gender mainstreaming indicator-based performance monitoring will be developed for the project during the PPG phase.

[1] Shamier, C., K. McKinnon, K. Woodward. 2021. "Social Relations, Gender and Empowerment in Economic Development: Flores, Nusa Tenggara Timur." *Development and Change* (20211006). <https://doi.org/10.1111/dech.12688>.

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.

Private sector commitment to the project outcomes is crucial to reduce impact of drivers of unsustainable land use, loss of biodiversity through mobilizing commitment to alternative livelihood strategies as well as to invest in landscape protection, restoration, and improved management for conservation outcomes (impact financing Comp 3). Without private sector commitment and investment to the project, the project would be unable to operationalize the biodiversity-friendly business models, which will provide income and livelihood opportunities to local communities, which are directly tied to biodiversity and LDN outcomes.

The Environmental Bamboo Foundation has been developing market driven project pipelines for village level institutions to secure long term contracts for value addition bamboo products through an approved intermediary manufacturing partner. PT Indobamboo Lestari has been a pioneering private sector partner willing to participate in an offtake system that ensures value addition at the village level for forest products that ensure improved land management and certify through FSC certification that the forest products, non-timber in Indobamboo's context is deforestation free and follow the 10 pillars of sustainable forestry management of the Forest Stewardship Council.

Additionally, impact financing through private partners at the district, provincial, national, and international level are key to enable the targeted 100,000 ha of social forestry concessions and agroforestry systems, including marketable commodities at scale such as bamboo, sugar palm, coffee, and cocoa, whilst assuring parallel investments in improved landscapes, forest and biodiversity conservation, restoration and other related measures targeted by the project. Suggested potential partners such as IKEA, TLFF and Agri3 are stated in the Co-finance table; yet PPG will elaborate on this based on proper pre-feasibility assessments and partner identification.

5. Risks to Achieving Project Objectives

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

Risks	Level	Mitigation Strategy
A. External Risk		
Covid-19 pandemic and the fact that numbers of community have not yet take the vaccine might affect and delay the program implementation.	H	<p>Until a herd immunity is achieved in Indonesia, a periodic reinstatement of containment measures must be expected, and the project will require very strict implementation of adaptive management principles adheres to the Government of Indonesia, UNEP and GEF policies and procedures concerning Covid-19 pandemic to ensure the safety of all beneficiaries and project personnel and consultants.</p> <p>Also, delays and challenges are expected during the PPG with regards field mission, local situation analysis, stakeholder/gender analysis, and design consultations with local government. It is suggested – as far as PPG funds allow, that the PPG team includes a full-time domestic consultant -as well as the full back up by EBF, to assure a reasonable level of local engagement and data compilation/analysis.</p>
COVID and co-financing capacity	Low	There is no impact expected on the ongoing and listed co-financing sources and programs
COVID impact to national and provincial stakeholder affecting willingness to participate in the project	Low	The likelihood and estimated impact on ability and willingness to participate due to perceived infection risks is estimated to be low at time of PPG and project operations.
COVID impacts offering opportunity for 'building back better' recovery path	Low	Notwithstanding the likely ongoing impact of COVID on Government programming and funding, it is not expected that this will affect the listed baseline and co-financing projects; and in fact the COVID recovery fund targeted by the project for alignment will help in mitigating local economic impacts by COVID with target communities.

B. Environment and Social Risk		
Lack of interest in or resistance to conservation actions by local and customary law communities	M	The project will engage customary law communities' and Indonesian legal frameworks and guidance. Local community level governance, which defines community interest and commitment, may be subject to competing economic interests.
Weak or poor commitment by government agencies	M	Care has been taken to define alignment of the project's objectives with central and provincial government priorities. Nevertheless, there may be competing government priorities and programs, thus finding alignment in all cases may be challenging.
Change of policy in the land use and land use change that favours other sectors	L	<p>It is very unlikely that Indonesia will change national policy with regards land use with a potential impact on social forestry as well as the FMU system - both which are the core of our project, given various recent developments have taken place in Indonesia to strengthen the role and rights of social forestry and their stewards, rather than weaken them. For instance the new Government Regulation 24/2021 arranges for administrative sanctions in case external parties lay claims or would occupy land owned by local communities under traditional right or being part of Protection Forests, and providing economic value and products to these original stewards of the land. This regulation is based on the recent new national OMNIBUS Law which basically streamlines Indonesia's complex regulatory environment. This law eased restrictions in 11 critical areas, including labour law, capital investment, business licensing, corporate tax, and land acquisition; yet also clarifies matters of traditional rights and protection such as PP 24/2021. Additionally the establishment of Ombudsmen at regional administrations further strengthens access for local communities to legal advice and protection - e.g. regarding land titles and usufruct rights.</p> <p>Social forestry (perhutanan sosial) is individual or community-based forest management by local or indigenous communities to improve their welfare, and improve social, economic and environmental outcomes through agroforestry and forestry practices.</p> <p>Social forestry schemes currently cover around 1.8 million hectares of forests (about 2% of state forests) in Indonesia. The Indonesian government has prioritised these schemes with a plan to increase social forestry areas to 12.7 million hectares. Social forestry covers</p>

		<p>social forestry areas to 12.7 million hectares. Social forestry concession refers to the granting of access and limited tenurial rights for 35-year periods (which can be renewed) for individuals or communities to carry out community-based forest management. Social Forestry concessions provide a means to secure tenurial rights for indigenous people, thus helping to fulfill Constitutional Court Ruling No 35 of 2012 regarding customary rights to state forest lands. Also, in the identified project landscapes, 43% of the proposed social forestry area is in protected forests (Hutan Lindung). Protected Forests are included in the national system of FMU, and once the forest management and business plans have been agreed and formally adopted, these must be adhered to by sectors and players (e.g. plantation sector). Anyway, palm oil production, which is the most likely sector which may secure additional support and expansion by the government is not allowed by law in protection forests (HL).</p> <p>Also the present medium term development plan includes the national program of land reform or 'TORA', which is to resolve conflicts related to forest tenure and provide legal land titles for the community through the land reform program, which is an additional assurance that local rights, land use and our project investments will be securely embedded in those programs by local provincial governments.</p>
Wildfire damaging project-assisted agro-forest systems, and forest restoration	M (H i n S u m b a)	Whilst the project will integrate fire management in the PPPP agreements and conservation commitments with communities -as part of the social forestry and agroforestry investments, the project will align with the ongoing program of UNEP on integrated fire management in Indonesia in collaboration with Ministry of Environment and Forestry.
Irresponsible practices of encroachment, illegal logging, timber theft and unregulated hunting.	H	Coordination with local law enforcement
Weak institutional capacity for planning, management and governance in	M	The key partners for implementing the project have been working actively in the identified targeted areas and understand the capacity

targeted areas		of local and regional government. The capacity assessment will also be conducted during the PPG, including coordination with other projects in the area that aims to develop the institution and human capacity.
Environmental and social safeguards put in place by the project are not adequately implemented, resulting in negative impacts on the environment and/or local communities.	M	At the national level, the project specifically aims to increase ESG standards applied by financial institutions. It is, therefore, unlikely that there will be any negative impacts resulting from activities under components 1 and 3. At the local level (component 2), the provincial Roadmap for developing an inclusive, sustainable production landscape will explicitly incorporate ESG safeguards in order to ensure that any additional investments are beneficial to the environment and local communities. It is expected that, by engaging all stakeholders including local government, the private sector, and local communities, the project will lead to increased awareness and visibility of environmental and social issues, and commitment toward sustainability. Nevertheless, careful monitoring will be required during the project implementation to avoid any negative impacts in the medium and long term.
Climate change projections/scenarios potentially affecting the three targeted provinces, the project landscapes and communities related to e.g. agriculture, water availability, flooding, drought and risk of forest fire.		<p>Climate Change and Disaster Risks are rated as Moderate in the UNEP SRIF (safeguards screening), When using the WB Climate Change Knowledge Portal, we see the following scenarios on key CC parameters in Indonesia for the period 2020 -2039 (which resembles the 20-year EXACT calculation basis):</p> <ul style="list-style-type: none"> · <i>Projected Mean-Temperature Anomaly</i> (annual; SSP1-1.9; reference period 1995-2014): +0.51degree Celsius (South Sulawesi); +0.49 C (Gorontalo) and +0.52 C (NTT) · <i>Projected Annual Days with Heat Index > 35°C Anomaly</i> (same reference and period as above): 3.29 (South Sulawesi), 0 (Gorontalo) and 9.89 (NTT) · <i>Projected precipitation change</i> (same reference and period as above: 6% (South Sulawesi), 5.4% (Gorontalo) and 9.4% NTT <p>The recently published WB - Climate Risk Country Profile - Indonesia (2021) summarises the main CC features and risk as follows:</p> <ul style="list-style-type: none"> · Most projections suggest that overall warming could be less than the global average. Warming in the range of 0.8°C–1.4°C is expected by the 2050s in Indonesia. · However, Indonesia is positioned as one of the most vulnerable countries to ext

reme heatwaves according to climate model

- projections. Under all emissions pathways, the likelihood of experiencing conditions that would historically (as based against the baseline period: 1986–2005) class as a heatwave increases dramatically by the 2080s through the end of the century: approximately 71% under the RCP6.0 pathway and 96% under the RCP8.5 pathway
- While precipitation projections suggest an increase in average annual rainfall, there is considerable variability. For example, western Indonesia is projected to experience a significantly increased number of dry days by the second half of the 21st century, under the RCP8.5 emissions pathway.
- However Indonesia remains ranked in the top-third of countries in terms of climate risk, with high exposure to all types of
- flooding, and extreme heat. The intensity of these hazards is expected to grow as the climate changes. For example, the population exposed to an extreme river flood could grow by 1.4 million by 2035–2044.
- Agriculture, especially irrigated Rice production is particularly vulnerable to climate change as global changes in El Niño patterns are likely to impact the onset and length of the wet season. Higher temperatures are also projected to reduce rice crop yields.
- While national-level vulnerability indexes, such as the ND-GAIN Country Index, suggest a reduction in overall national-level climate vulnerability in Indonesia, there is high variation in the potential impacts of climate change at the regional and local levels. Without well planned adaptation and disaster risk reduction efforts at these levels, the poorest and most marginalized communities are likely to experience significant loss and damage as a result of climate change impacts

The report also summarises other observations related to CC risk projection for Indonesia related to land use, human populations and the environment:

- *Fire risks:* Droughts are strongly associated with El Niño Southern Oscillation, which contributes to severe escalation and extension of manmade fire events in Indonesia. Climate change projections point to more frequent and severe droughts and subsequently more forest fires. The project areas in NTT are especially prone to fire which is a cultural feature of land clearing as well as due to extreme seasonal drought and heat patterns. Fire risk is definitely a significant factor to incorporate in our PPG CC risk analysis especially related to enhancements and/or esta

M (to be assessed at PPG)

rate in our TFC risk analysis, especially related to establishment and/or establishment of the Bamboo & NTFP agro-forest systems

- *Flood risks:* Muis et al. (2015)[1] explored flood risk and adaptation strategies in Indonesia under increased climate change and urban expansion. They found high uncertainty around climate change impacts on increased river flood risk but estimated that climate change could amplify coastal flood risk by 19–37% by 2030.
- *Sea level rise:* the targeted project landscapes and intervention areas (bamboo agroforestry) do not specially involve coastal habitats.
- *Water availability:* Climate modelling points to increased water scarcity in Indonesia over the next decades. Indonesia reported in its Second National Communication to the UNFCCC (2010) that 14% of its 453 districts record no months of surplus water. By 2025, this is projected as increase to 20% by 2025, and by 31% by 2050. This will particularly affect sub-humid and semi-arid regions in Indonesia including e.g. the island/landscapes targeted in NTT, where it is projected that agriculture would be affected.
- *Risks to forests and biodiversity:* While human development pressure is likely to remain the dominant threat to species richness and diversity in Indonesia, climate change presents new challenges. A key threat is the potential shift in suitable habitat ranges, as rising temperatures shift ranges away from the equator, and upslope. In island environments, where many species have limited mobility and land area can be very limited, there can be an amplified extinction risk as species become trapped. One study looking at bird communities in Sulawesi highlighted a particular climate-risk to species occupying high elevation areas – reporting potential bird population declines as high as 60% by 2050.[2]

Recap of CC risks to project: the targeted project landscapes are diverse both in their natural features, historic climate, land use, and local types and levels of degradation, as well as in expected CC scenarios. The project does include on-the-ground interventions that are directly affected by potential impacts of climate change such as establishment of nurseries, agroforests and forest restoration; as well as indirectly through increased risk of e.g. bushfires due to drought. The anticipated trends and effect of CC is particularly worrisome in NTT province, which is both poor, highly degraded as well as having a historically dry climate with strong seasonality - which already without CC impacts restricts e.g., the types of crops and agriculture; yet also one of the reasons to invest through the GEF project in more sustainable land-use and communities for landscape-based SLM and BD outcomes. Areas in Gorontalo are well known for seasonal flooding - mainly due to deforestation in the nearby watersheds (e.g. of the Bone river), which is further exacerbated by effects

of high peak precipitation common in this region. CC effects could further worsen that. The anticipated CC parameters and their related risks in South Sulawesi may have an intermediate position between those expected in Gorontalo (wetter and cooler) and NTT (drier and hotter), yet the PPG would need to compile and analyse these data in more detail.

PPG risk assessment: As suggested the PPG will incorporate the following aspects in the Terms of Reference as well as staff expertise on the PPG team, to conduct a proper CC Risk Assessment, specifically for the targeted project landscapes, the proposed project interventions as well as affected communities and production systems, and include the four main elements:

- 1) Identification of the hazards;
- 2) Assessment of vulnerability and exposure;
- 3) Rating of the risk; and
- 4) Identification of measures to manage these risks as part of the project design and interventions.

Suggested or anticipated project mitigation to effects of CC impact:

General approach under the project: The project will target Gorontalo, South Sulawesi and East Nusa Tenggara- that are prone to natural disasters, including those exacerbated by climate change. Through the protection of key biodiversity landscape and sustainable land-use in the forest, the project will contribute towards improved protection of biodiversity as well as reduced negative impacts on forest, leading to improved ecological resilience against potential climate change. Similarly the project focus on improving peoples' welfare increases their economic resilience to the impact of CC to their production systems.

Local communities are already affected by effects of climate change both in e.g. agriculture systems as well as landslides, drought and flooding incidents. The project does target the enhanced resilience of communities through improved protection and quality of natural systems like the planting of mixed bamboo agroforests in targeted landscapes. The detailed feasibility design as well as any required EIA will look into the adaptive capacity of communities (to CC) to avoid any negative impact from project interventions on their well being.

Additionally, the project is likely to increase the capacity of natural ecosystems in the target areas to reduce emission from deforestation as well as sequester carbon dioxide through the (man-assisted natural) restoration and protection of these ecosystems. This is esti

		<p>estimated to amount to a total Carbon benefit of -9,931,819 tCO₂equivalent over 20 years.</p> <p>The PPG will conduct a much more specific and localised assessment of the CC trends, anticipated climate scenarios and CC induced risks to the project landscapes, project interventions as well as targeted communities, and incorporate these in adapted project interventions and resources to properly deal with these.</p>
C. Political and Institutional Risks		
Poor coordination with respective national Ministries/Agencies with the program implementation	M	The program will be introduced to respective Ministries and government agencies to get endorsement for project implementation, and regular coordination meeting will also be conducted to share updates of the program
Gender mainstreaming by the project may be undermined without a proper strategy.	L	The project will have to be genuinely gender mainstreamed, from the initial design phase, through the implementation, and impact evaluation. Particular attention must be paid to addressing all possible information gaps and also addressing how the project will address gender-based power imbalances in communities. The project will develop a Gender Mainstreaming Plan, inclusive of a Gender Action Plan, to ensure that the project is gender-sensitive and minimizes any potential gender risks.

[1] Muis, S., Aerts, J., and Ward, P. (2018). Flood risk and adaptation strategies under climate change and urban expansion: A probabilistic analysis using global data. URL: <https://www.sciencedirect.com/science/article/pii/S0048969715305714?via%3Dihub>

[2] Harris, J. B. C., Dwi Putra, D., Gregory, S. D., Brook, B. W., Prawiradilaga, D. M., Sodhi, N. S., . . . Fordham, D. A. (2014). Rapid deforestation threatens mid-elevational endemic birds but climate change is most important at higher elevations. *Diversity and Distributions*, 20(7), 773–785. URL: <https://onlinelibrary.wiley.com/doi/10.1111/ddi.12180>

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.

UN Environment Programme will be the GEF Implementing Agency for this project. The project will be executed at the national level by the Ministry of Environment and Forestry (KLHK) and its newly formed Environmental and Forestry Instrument Standardization Agency (*Badan Standarisasi Instrumen Lingkungan Hidup dan Kehutanan*/BSI-LHK) who would coordinate closely with the Directorate General Natural Resources and Ecosystem Conservation (KSDAE) and Directorate of Essential Ecosystem Management (BPEE). Yayasan Bambu Lestari is proposed as Lead Service Provider – to KLHK, on day-to-day project management. Other key partners include BAPPENAS (National Planning Agency), Ministry of Finance through the Directorate General of Budget Financing and Risk Management, Yayasan Bambu Lestari, and Burung Indonesia. In addition, the project will work closely with project partners such as BBKSDA South Sulawesi, BBKSDA East Nusa Tenggara, BKSDA Gorontalo, Provincial Government of East Nusa Tenggara, South Sulawesi and Gorontalo who will serve as the Project Steering Committee (PSC) to provide oversight, advisory and support for the project and to ensure representation of stakeholder interests in the project implementation.

The project will follow UN Environment Programme standard monitoring, reporting and evaluation processes and procedures. Reporting requirements and templates are an integral part of the UN Environment Programme legal instrument to be signed by the Executing Agency and UN Environment Programme. The project M&E plan will be consistent with the GEF Monitoring and Evaluation policy.

Coordination with GEF and other initiatives will be ensured through KLHK, UNEP, Yayasan Bambu Lestari and Burung Indonesia who are engaged in related initiatives in Indonesia, including coordination and sharing of lessons learned with other national and sub-national initiatives and GEF-funded projects, such as UNDP's Enhancing the Protected Area System in Sulawesi for Biodiversity Conservation (E-PASS) that aims to effectively managed system of protected areas including the buffer zone in Sulawesi to strengthen the effectiveness and financial sustainability of Sulawesi's PA system to respond to existing threats to globally significant biodiversity. The coordination with similar project might overcome some key barriers during project implementation particularly related with the lack of economic and financial incentives, and gaps between national priorities with provincial level administration on biodiversity conservation. In this regard, the projects will complement each other in strengthening conservation governance from the national to the local government level and mobilizing resources beneficial to achieve the common biodiversity objectives.

The beneficiaries would be the local government of East Nusa Tenggara, Gorontalo and South Sulawesi who will be the decision makers for planning and management of the Key Biodiversity areas. Direct beneficiaries would be local communities, including the customary law communities in these 3 provinces.

Key development partners for the bamboo village program would be the BSI-LHK and KSDAE to support the planning for the conservation of protection of habitat and species, landscape selection, stakeholder consultation, and aligning with provincial development planning. A Technical Advisory Committee (TAC) consisting of KSDAE, Bappenas, CSOs and experts of the lead GEF projects (see below) will therefore be created at the national level to help advising the

UNEP, the PMU and the three Provincial Implementation Units (PIU), in the planning and implementation of the project.

This GEF project seeks to build upon lessons learned, institutional strengthening and capacity development, as well as applicable methodologies and tools from the following recently completed projects in Indonesia:

Forest Programme II (REDD+) - Biodiversity Conservation and Integrated Watershed Development within Indonesia - German REDD+ Programme via Kreditanstalt Fur Weideraufbau (KfW), funded between 2014-2022 with US\$21.9 million. Efforts focused on how to stem deforestation, and implement REDD+. The FORCLIME programme operated since 2011 in three provinces on Kalimantan as an example to see which methods are best suited to stop deforestation. The FORCLIME programme's activities supported the national strategy for developing social forestry. This PIF benefits from those investments by KfW in establishing the wide scope for social forestry. The programme worked with 77 villages covering 460,000 ha in Kalimantan, and initiated joint land use planning, setting rules for land use, defining village borders and established areas for reforestation. Community monitoring to detect and prevent illegal logging has been a key investment. This project will draw upon lessons learned, recognizing the geographic differences, but thematic similarities, particularly on social forestry, land use planning, addressing drivers, land rehabilitation and community monitoring.

USAID LESTARI project – funded by the US government between 2015 – 2020, total amount unknown. The goal was to reduce GHG emissions and conserve biodiversity in carbon rich and biologically significant forest and mangrove ecosystems. BUDGET At the national level, LESTARI's main counterpart was the Ministry of Environment and Forestry Directorate of Conservation Areas. Key subnational partners included forestry agencies in the provinces of Aceh, Central Kalimantan and Papua. LESTARI's key outcomes included improved land use governance, enhanced protected areas management and protection of key species, sustainable private sector and industry practices, and expanded constituencies for conservation among various stakeholders. Of specific relevance to this GEF project, there are a number of project outcomes that this PIF will benefit from, and methods and tools that are transferrable. The project had high success rates with forming multi-stakeholder initiatives, bridging between local communities and local and provincial government by fostering participatory, inclusive, and transparent governance practices. LESTARI created ten public-private partnerships (PPPs) promoting Low Emission Development Strategies (LEDS). This project will seek to learn what practices led to success. The project also had great success with anti-poaching efforts. With regards to improved forest management with FMU's, LESTARI has lessons learned that can be adapted to the GEF project on improved institutional capacity with FMU authorities at the landscape level, though training and forest planning, as well as forms of co-management established with local communities and local monitoring. The models developed to secured rights for land access and management through social forestry schemes in Aceh and Central Kalimantan may be transferrable to the GEF targeted landscapes. There are also useful models developed on co-management agreements with local government to protect traditional forests from deforestation. The policy strengthening LESTARI invested in benefits this GEF project, as 30 national and sub-national public policies introduced addressing climate change and/or biodiversity conservation. The project also demonstrated effectiveness in mainstreaming recommendations and LEDS into Provincial and District Spatial Plans (RTRW), Provincial Development Plans (RPJM) and Agency Strategic Plans (Renstra).

Strengthening Forest Management Unit for Sustainable Forest Management – implemented by FAO between 2016-2019 with US\$280,000. This project focussed on building capacity of the National Agency for Extension and Human Resources Development (BP2SDM) and their related centres, in particular the Centre for Extension and Centre for Education and Training (CET), through piloting of activities in two Forest Management Units (FMUs), in order to strengthen FMU human resources and empower local communities. This GEF project will seek to apply these lessons learned in the planned trainings with FMU managers.

Development of timber and nontimber forest products' production and market strategies for

improvement of smallholders' livelihoods in Indonesia (KANOPPI (2012-2016) and KANNOPI-2 (2017-2021) – funded with US\$1.3 million for KANNOPI-1 and US\$1.7 million for KANNOPI-2 by Australian Centre for International Agricultural Research (ACIAR). The funding supported the partner organizations ICRAF, CIFOR, MoEF-FOERDIA/BLI, University Mataram, University Murdoch, WWF, the Farm Forestry Consortium and Thread of Life. EBF had an activity implementing role in KANNOPI-2. The project sought to align policies on landscape management so that barriers to developing timber and NTFPs value chains are removed. Other outcomes this GEF project benefits from are the research outputs on smallholder agroforestry, including agroforestry innovations, and markets for timber products and NTFPs in Indonesia, and quantified economic and environmental benefits of integrated timber and NTFP production systems, which created evidence for investment in agroforestry development.

Additionally, it would benefit from the ongoing GEF projects, 'the GEF 6 IAP - *Strengthening Sustainability in Commodity and Food-Crop Value Chains, Land Restoration and Land Use Governance through Integrated Landscape Management for Multiple Benefits in Indonesia* (UNDP, FAO)' and the 'GEF 7 FOLUR - *Strengthening Sustainability in Commodity and Food-Crop Value Chains, Land Restoration and Land Use Governance through Integrated Landscape Management for Multiple Benefits in Indonesia* (UNDP, FAO), respectively. Albeit related to other targeted commodities, the project will be able to build upon the enhanced expertise and programming with central government, updated policy decisions, piloted finance mechanisms and improved policy developed as part of the GEF 6 as well as the evolving GEF 7 projects - which both are sustainable commodity driven yet adopting an integrated landscapes approach, supported by strengthened national policy and coordination, as well as application at local jurisdictional level. In addition to their application of integrated landscape planning based on multi-sector analysis, these project are particularly useful for the present project with regards how they developed practical ways of partnership with the private sector, how to secure finance for sustainable commodities - both private and public sources, as well as how they approached in an effective way the incorporation and farmer support systems to a large numbers of low-production small-holders in the contact of local government jurisdiction, programs and co-financing support (note: several of these approaches have already been considered and incorporated in the present project design). It is suggested to seek input from these two projects and their lead agencies during the PPG detailed project deoisng, as well as to invite representatives to the project Technical Advisory Committee (TAC) on the new GEF project, including specifically Ministry of Environment and Forestry, Ministry of Agriculture, and CMEA as part of the technical coordination. In this way formalised collaboration and knowledge exchange can be assured.

7. Consistency with National Priorities

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

Yes

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

National Medium Term Development Plan (RPJMN) 2020-2024: Contains seven development agendas, one being the environment sector, with three national priorities of relevance to the GEF project: 1) environmental quality; 2) increasing disaster and climate resilience; and 3) low carbon development.

The Ministry of Environment and Forestry fulfils the environment and forestry sector pillar of the RPJMN. It has conducted a review of policies and identifies the following as priorities for 2021 and beyond:[1] :

- ensuring a significant reduction in the rate of deforestation and forest and land degradation,
- preventing forest and (peat)land fires (Karhutla) and overcome its negative effects on the environment, health, transportation and economic growth,
- apply the principles of carrying capacity and environmental capacity in the utilization and use of forests,
- aligning the policy direction of the Ministry of Environment and Forestry in accordance with SDG's
- involving the participation of both men and women in access to forest management and assigning responsibilities to all parties involved, in order to sustain forest ecosystems are guaranteed its existence.

In addition, corrective action and strategic reorientation is required for improved forest management, in Indonesia including:

- implement low-carbon development and climate change resilience through forest and land restoration, management and restoration of peatlands, and reducing the rates of deforestation,
- changing the direction of national forest management from mainly wood production towards an eco-system management approach for multiple forest resources and ecosystem services
- implementing community-based forest-based management by providing equitable access to forest management and sustainable utilisation, through social forestry and conservation partnerships,
- resolve conflicts related to forest tenure and provide legal land titles for the community through the land reform program (TORA),
- internalize the principles of carrying capacity and environment capacity into the preparation of the revised national forestry plan (RKTN) as a macro spatial direction for forestry development in 2011-2030,
- preventing loss of biodiversity and damage to ecosystems through area conservation and protection of endangered biodiversity, and
- undertake prevention, mitigation and restoration of damage to natural resources and environment.

Although formally expired, the *Indonesian Biodiversity Strategy and Action Plan (IBSAP) 2015-2020*— is still the strategic backbone for Indonesian biodiversity management, through its vision of “*Indonesian biodiversity preservation and development that contributes to national competitiveness and a fair and sustainable use of resources to improve the welfare of current and future generations* (BAPPENAS, 2016).”

The more recent *Indonesia Sixth National Report to CBD* has strong relevance: The GEF project is consistent with its national targets, specifically:

- **NATIONAL TARGET 2:** Implementation of sustainable management of biodiversity resources in the planning and implementation of national and regional development to improve community economies – Relates to Aichi Target 2 and the integration of biodiversity values into national and local development in Indonesia, including RPJMN, but requires additional action at sub-national levels.
- **NATIONAL TARGET 3:** Realization of incentives and disincentives system in business and the sustainable management of biological resources – it identifies a need to develop an incentive and funding scheme to control anthropogenic impacts on biodiversity.
- **National Target 7:** Improved sustainably managed land for agricultural, plantation and animal husbandry – Relates to the need for mainstreaming and regulation on biodiversity management in sectors to comply with the Aichi Target 7 framework.
- **National Target 11:** The maintenance and improvement of conservation areas (Non-PAs). It recognizes the preservation of natural resources and the environment and disaster management as one of the sub agendas to realize economic independence, with emphasis on sustainable management of protected forest, watersheds, essential ecosystems management, and the expansion and sustainable management of land for agriculture, plantations and animal husbandry.
- **NATIONAL TARGET 12:** Realization of efforts to maintain the populations of endangered species as a national conservation priority – Government has determined 25 priority endangered species (terrestrial) for national conservation, This GEF proposal includes activities to benefit 5 of the 25 national priority endangered animals.
- **NATIONAL TARGET 14:** Improved functionality of ecosystems to ensure the improvement of essential services – It recognizes the importance of preservation of ecosystems inside as well as outside of conservation areas to provide important ecosystem services. Key aligned activities include management and development of essential ecosystem landscapes and increasing production and productivity of environmental-friendly agricultural products.
- **NATIONAL TARGET 15:** Conservation and restoration of degraded ecosystems (Aichi Target 15) to improve the production and ecological functions in support of human prosperity. The program is also expected to provide direct benefits to the community as a source of income from the utilization of restored or enhanced environmental services.
- **NATIONAL TARGET 20:** Identification of resources and improving budget effectiveness in the implementation of sustainable management of biodiversity - the estimated gap for effective BD management is approximately USD\$ 13.5 per ha per year, with a national total of USD 521.9 million annually. This target notes the limited funding for biodiversity coming from biodiversity-based business activities.
- **NATIONAL TARGET 22:** Implementation of various conflict settlement processes related to biodiversity – Recognizing that land use conflict and pressure by communities, in various forms, still pose a major challenge to the management and conservation of biodiversity; and this target seeks integration of biodiversity values into communities and resolution of disputes.

Land Degradation Neutrality National Report (2015) - The national target for LDN is projected at reduction of degraded land by 27.5 million hectares by 2040, with the assumption that there are no additional degraded lands during the period 2015 to 2040. The 3 regions chosen as national priorities are East Nusa Tenggara, East Kalimantan, and North Sumatra Province. East Nusa Tenggara is best known as one of the driest areas in Indonesia, and drought is the main problem, occurring almost every year. The GEF project contributes to the LDN national targets as follows:

- Forest management through the system of Forest Management Units, divided into 3 categories namely conservation, production, and protection FMUs. The GEF project prioritizes landscape-scale planning, management objectives and targeted investment via FMU processes.
- The critical importance of public support and participation towards prevention of LD, and rehabilitation efforts. The project prioritizes local community engagement, training, participation, and stewardship.
- Developing a partnership with local institutions, community and non-government organizations for an effective implementation of LD control. Particularly in NTT, partners in the GEF project were chosen based on their pre-existing relationships with local communities to address land degradation and related livelihood activities.
- Developing capacity to consolidated, manage and deploy existing financial resources (APBN, APBD) and strengthen the capacity to negotiate with international and national agencies for increased financial support. This project seeks GEF support to operationalize new fiscal tools to direct public investment based on biodiversity and reduced land degradation, as well as activating new private investments aligned with this outcome.
- Establishing priorities and development of action plans through active involvement in the decision-making by local communities in the implementation, monitoring and evaluation. Local community monitoring and stewardship are an output of the GEF project, based on the need to develop effective local Monitoring, Control and Surveillance (MCS) for the project PPPP agreements.
- Full participation of representative community should be engaged in all levels of program cycle (planning, implementation, monitoring, and evaluation). This is affirmed in the project design, from PPG phase, to bottom-up approaches with local communities to affirm their commitments, atune project design to local needs, especially considering the barriers local stakeholders face, identification of biodiversity-friendly business entities and value-chains, ensuring community participation in ownership and management of livelihood options and related revenue/income generation, and as per above point, in monitoring and evaluation of PPPP agreement implementation.
- Use best practice knowledge and robust technologies including traditional knowledge and wisdom – The project seeks engagement with adat communities, particularly in NTT where these communities are more in-tact that in other areas of Indonesia subject to immigration/transmigration, and seeks to incorporate their local knowledge of biodiversity and land management practices, while also finding ways to reduce environmental impacts of some such as fire/burning of pasture, through methods that are accepted by communities and proven to be effective. Traditional knowledge (TK) is highly valued in this project and inclusive community engagement will ensure that TK is incorporated into project implementation, monitoring and evaluation.
- Raising awareness about need for environmental quality and sustainable agriculture development – A major contribution of the project through EBF-generated co-finance and NTT Provincial government support are the agroforestry centres of excellence for training and public awareness, as well as farmer field-schools and nurseries which build farmer-to-farmer exchange. This is a proven method to transfer of knowledge to local stakeholders on improved land management and biodiversity-friendly business models, which ties sustainable agriculture/forest development to new sources of income and investment, with performance measures.

- Project should be holistically concern about the unique characteristic of the community in the respective degraded land (integrated and sites special project) – The ICLP process of defining landscape-level plans, in which biodiversity, land degradation, improved forest management, and biodiversity-friendly business models are defined, allows for a holistic view of what has driven degradation activities (economic, technological, etc.) and enables design of intervention to address them at site-specific and landscape-scales.
- Project should concern on long-term security investment through a good and attractive land tenure system – Thus this GEF project seeks to secure social forestry concessions to secure local tenure rights in order to safeguard their investments in biodiversity conservation, livelihoods, and land restoration.

Indonesia Long-Term Strategy for Low Carbon and Climate Resilience 2050 ((Indonesia LTS-LCCR 2050)

In the First NDC to the Paris Climate Agreement, Indonesia set an unconditional target of 29% and conditional target up to 41% compared to business as usual in 2030. Through LTS-LCCR 2050, Indonesia will increase its ambition on GHG reduction by achieving the peaking of national GHG emissions in 2030 with the net- sink of forest and land-use sector, reaching 540 Mton CO₂e by 2050, and with further exploring opportunity to rapidly progress towards net-zero emission in 2060 or sooner. In order to achieve this target, forestry sector will share considerable efforts to maintain increasing trend of net-sink after 2030. In both scenarios, the significant reduction of emission occurs due to significant decrease in deforestation and peat related emission (peat fire and peat decomposition), and significant increase in carbon sequestration from secondary forest and from afforestation and reforestation.

[1] KLHK, 2021. KLHK Work Plan 2021.

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.

Knowledge Management (KM) is a key component of the project. A knowledge management plan for the project that ensures a that, a) the modalities and mechanisms forged and piloted in the project components will develop proof of concept and the policy/legal basis for replication and scaling to other landscapes in Indonesia (crucial for mainstreaming biodiversity into FMU and social forestry implementation), b) that passage of technical instructions and guidelines on how to activate regulatory decrees provide new opportunities for other landscapes in Indonesia, which are disseminated to a range of stakeholders. Particularly working in close coordination with partner agencies in the project, such as Burung Indonesia, who is active in many other biodiversity-rich landscapes in Indonesia, and c) implementing the monitoring and evaluation aspects of the project to develop M&E systems that are linked or aligned, as appropriate, to other relevant M&E systems for villages, the Provincial governments and the Government of Indonesia, through the Sustainable Development Goals Desa (village) process, Nationally-Determined Contribution to the Paris Climate Agreement, and others. Monitoring is a key aspect of the PPPP agreements and will track biodiversity protection and livelihood improvements, to ensure the project is generating returns to the communities. Project M&E at each site is also a part of the Community Biodiversity Monitoring Programs that are established under Outcome 2.1.1. The site models will demonstrate what types of agreements, integrative governance and finance models can function and scale to other areas. The project will develop the tools needed to systematize, extract, and organize the acquired knowledge from project activities, and disseminate the results, lessons, and good practices, with information tailored to different stakeholder groups so that it is accessible, such as through online webinars, seminars, best practices guidance, and other communication strategies.

9. Environmental and Social Safeguard (ESS) Risks

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

Overall Project/Program Risk Classification*

PIF

CEO Endorsement/Approval MTR

TE

Medium/Moderate

Measures to address identified risks and impacts

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

This is likely a moderate risk project that requires further screening of the risk types and areas during the project development phase. Rights, knowledge and concerns of indigenous people would be important to pay attention to. All safeguard information should be fully disclosed and shared with local communities and concerned indigenous people as their involvement will alleviate many other safeguard risk issues associated with this project.

Supporting Documents

Upload available ESS supporting documents.

Title**Submitted**

Indonesia PIF _SRIF- revised 29 Dec 2021 - CLEAN
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Part III: Approval/Endorsement By GEF Operational Focal Point(S) And GEF Agency(ies)

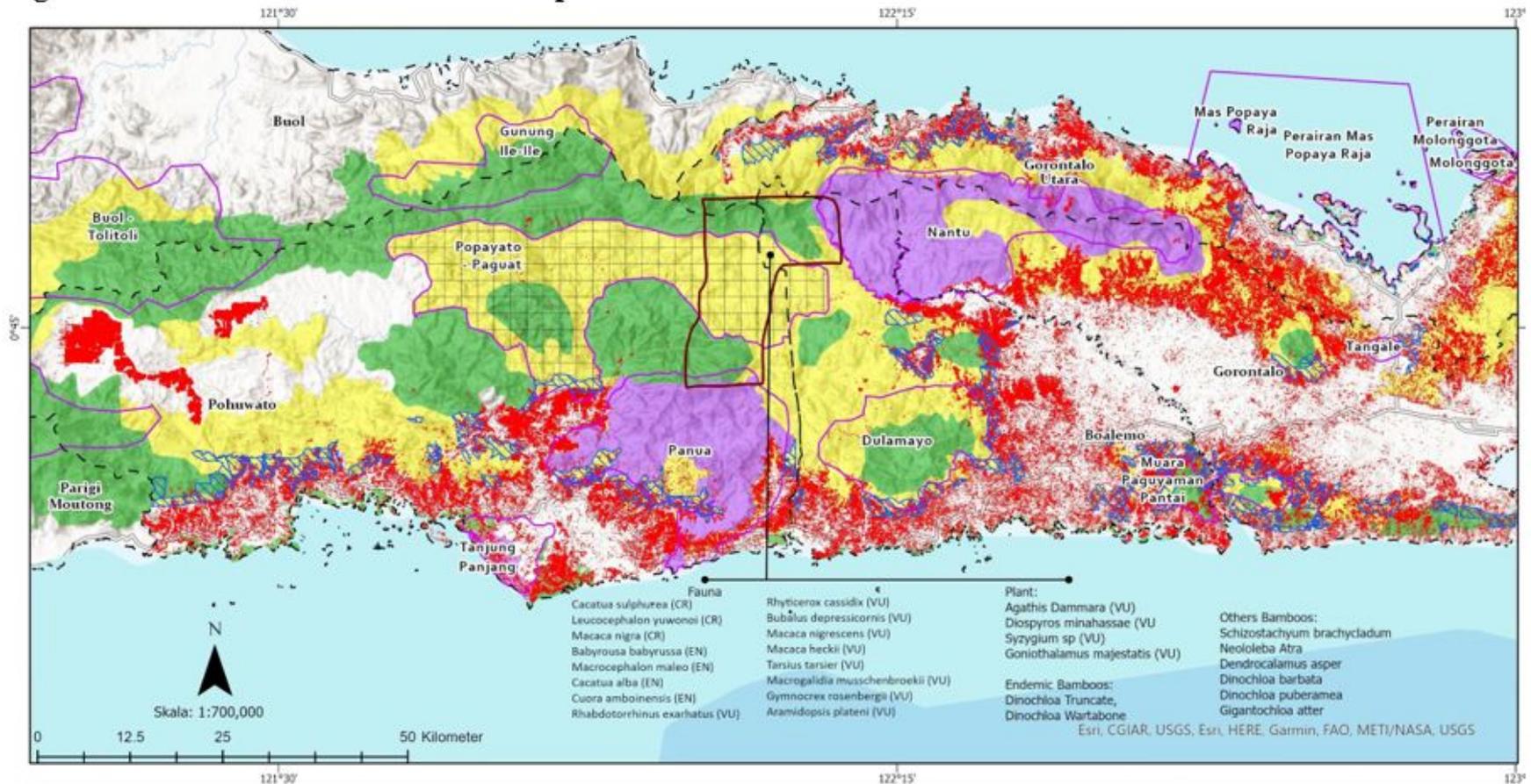
A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S): (Please attach the Operational Focal Point endorsement letter with this template).

Name	Position	Ministry	Date
Ms Laksmi Dhewanthi	GEF Operational Focal Point Indonesia	Ministry of Environment and Forestry	12/30/2021

ANNEX A: Project Map and Geographic Coordinates

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

Figure: Gorontalo conservation landscape

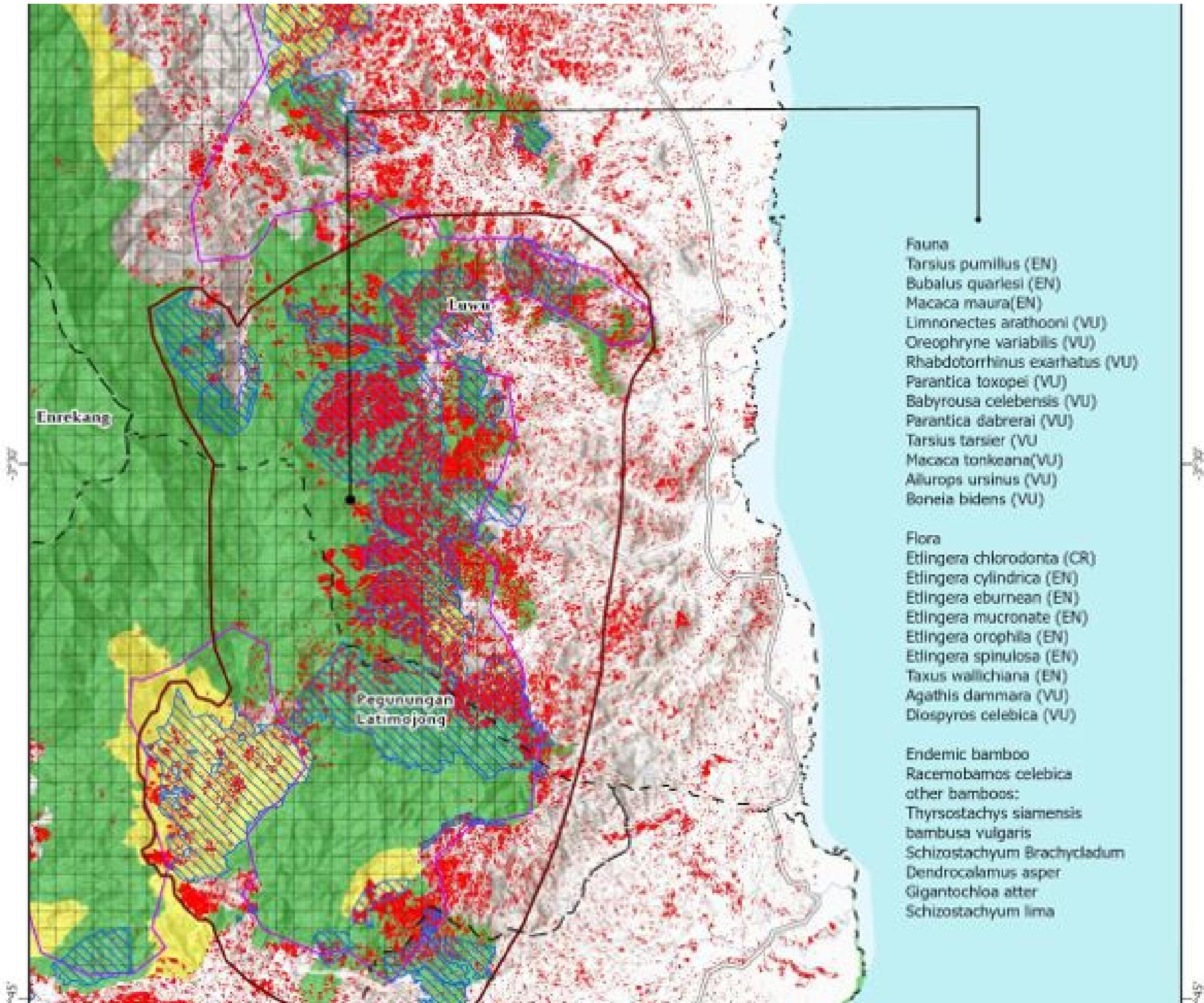


MAP OF KEY BIODIVERSITY CORRIDOR IN GORONTALO PROVINCE



Figure: Gunung Latimojong conservation landscape

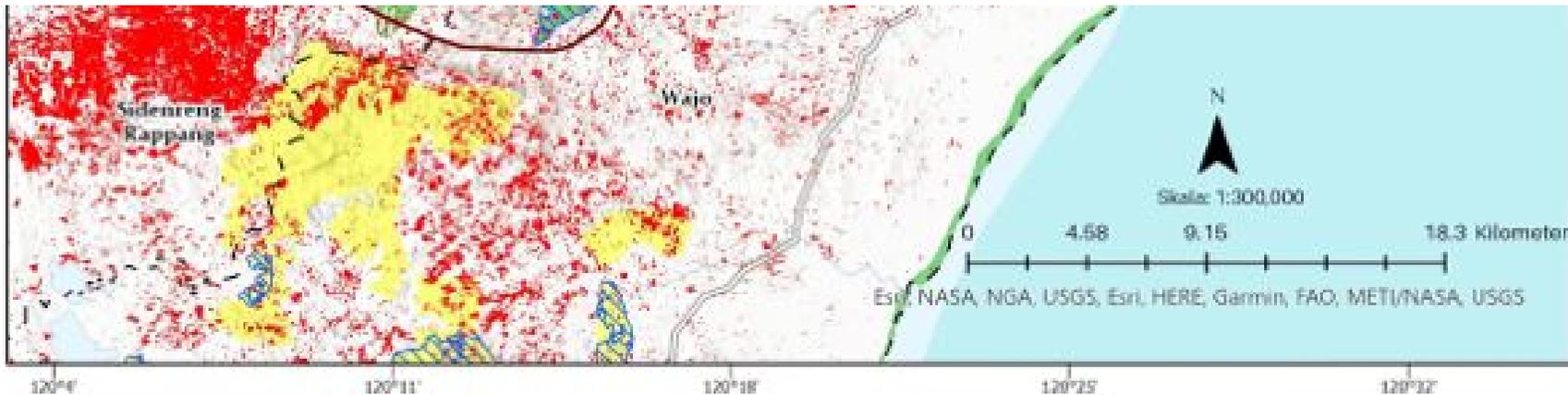




- Fauna**
- Tarsius pumilus (EN)
 - Bubalus quarlesi (EN)
 - Macaca maura(EN)
 - Limnonectes arathooni (VU)
 - Oreophryne variabilis (VU)
 - Rhabdotorrhinus exarhatus (VU)
 - Parantica toxopei (VU)
 - Babyrousa celebensis (VU)
 - Parantica dabrerai (VU)
 - Tarsius tarsier (VU)
 - Macaca tonkeana(VU)
 - Allurops ursinus (VU)
 - Boneia bidens (VU)

- Flora**
- Etilingera chlorodonta (CR)
 - Etilingera cylindrica (EN)
 - Etilingera eburnean (EN)
 - Etilingera mucronate (EN)
 - Etilingera orophila (EN)
 - Etilingera spinulosa (EN)
 - Taxus wallichiana (EN)
 - Agathis dammara (VU)
 - Diospyros celebica (VU)

- Endemic bamboo**
- Racemobamos celebica
 - other bamboos:
 - Thyrsostachys siamensis
 - bambusa vulgaris
 - Schizostachyum Brachycladum
 - Dendrocalamus asper
 - Gigantochloa atter
 - Schizostachyum lima



MAP OF KEY BIODIVERSITY CORRIDOR IN MT LATIMOJONG OF SOUTH SULAWESI PROVINCE

Legend

Regency Boundary

Project Sites 83,083 ha

Land Restoration

Social Forestry

ISA

KBA

ISA

Forest Loss 2000 - 2010 18,491 ha

Land Management

Conservation Area 0 ha

Protected Forest 50,409 ha

Production Forest 7,808 ha

Non Forest Public Land 25,100 ha

Water Body

Data Source:

1. Peta RBI Indonesia Skala 1:25,000
2. Peta Bathimetri Indonesia
3. Balai Konservasi Sumber Daya Alam Sulawesi Selatan
4. Direktorat Bina Pengelolaan Ekonomi Eksternal KLHK
5. Critical Ecosystem Partnership Fund

Inset:



Environmental Justice Foundation
www.environmentaljusticefoundation.org

Figure: Sikka conservation landscape

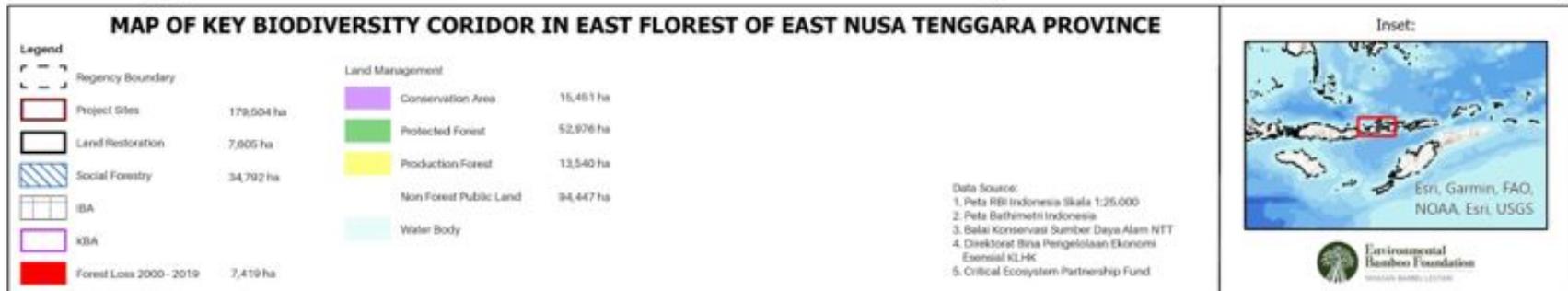
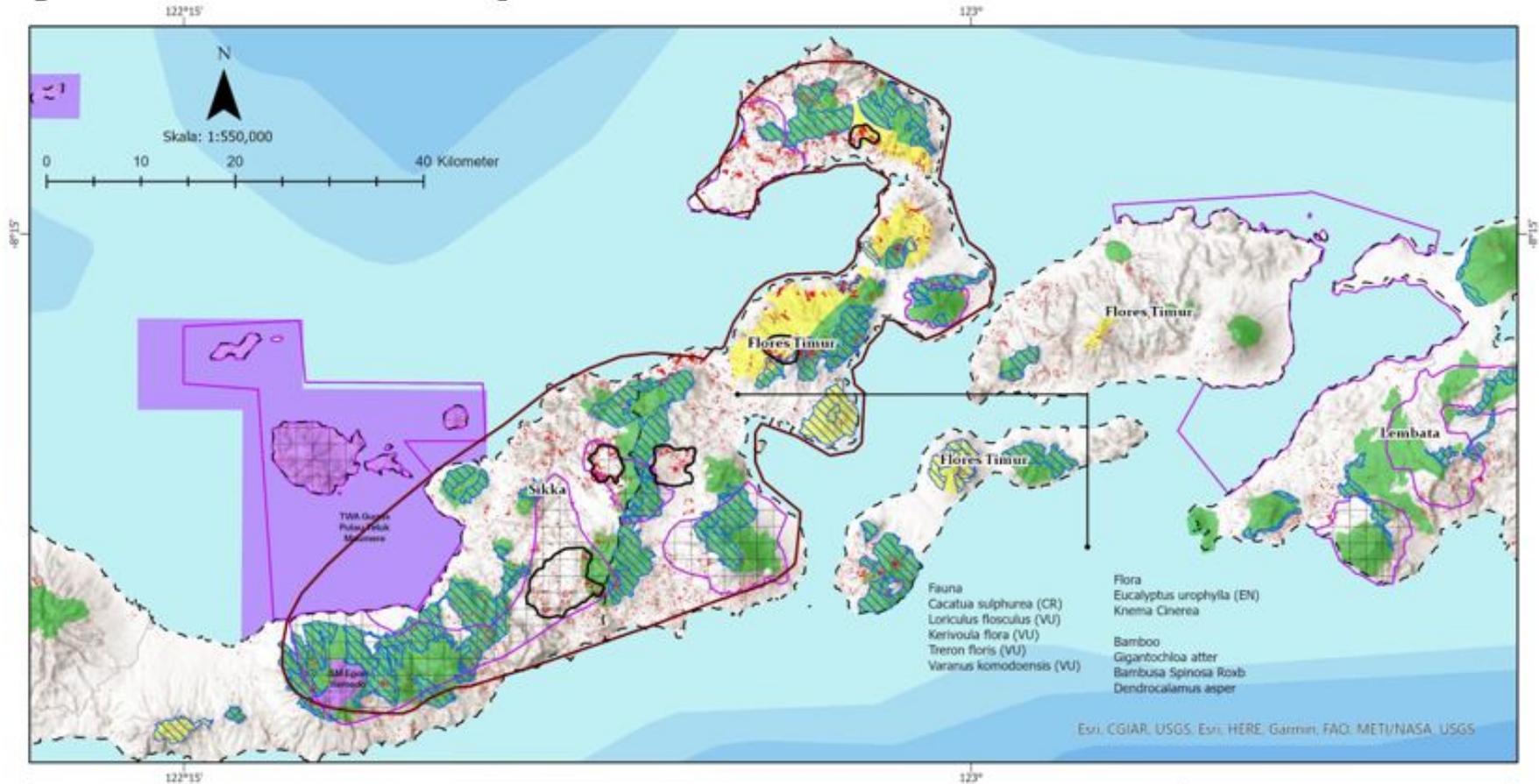
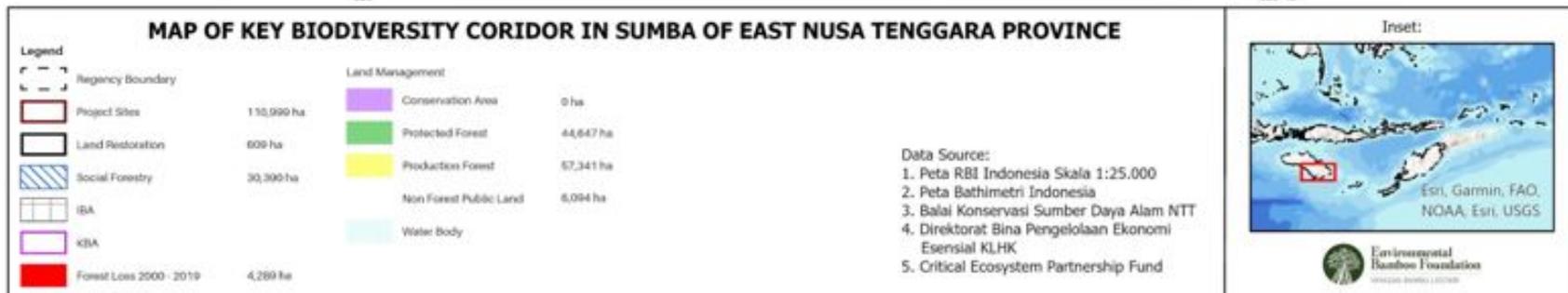
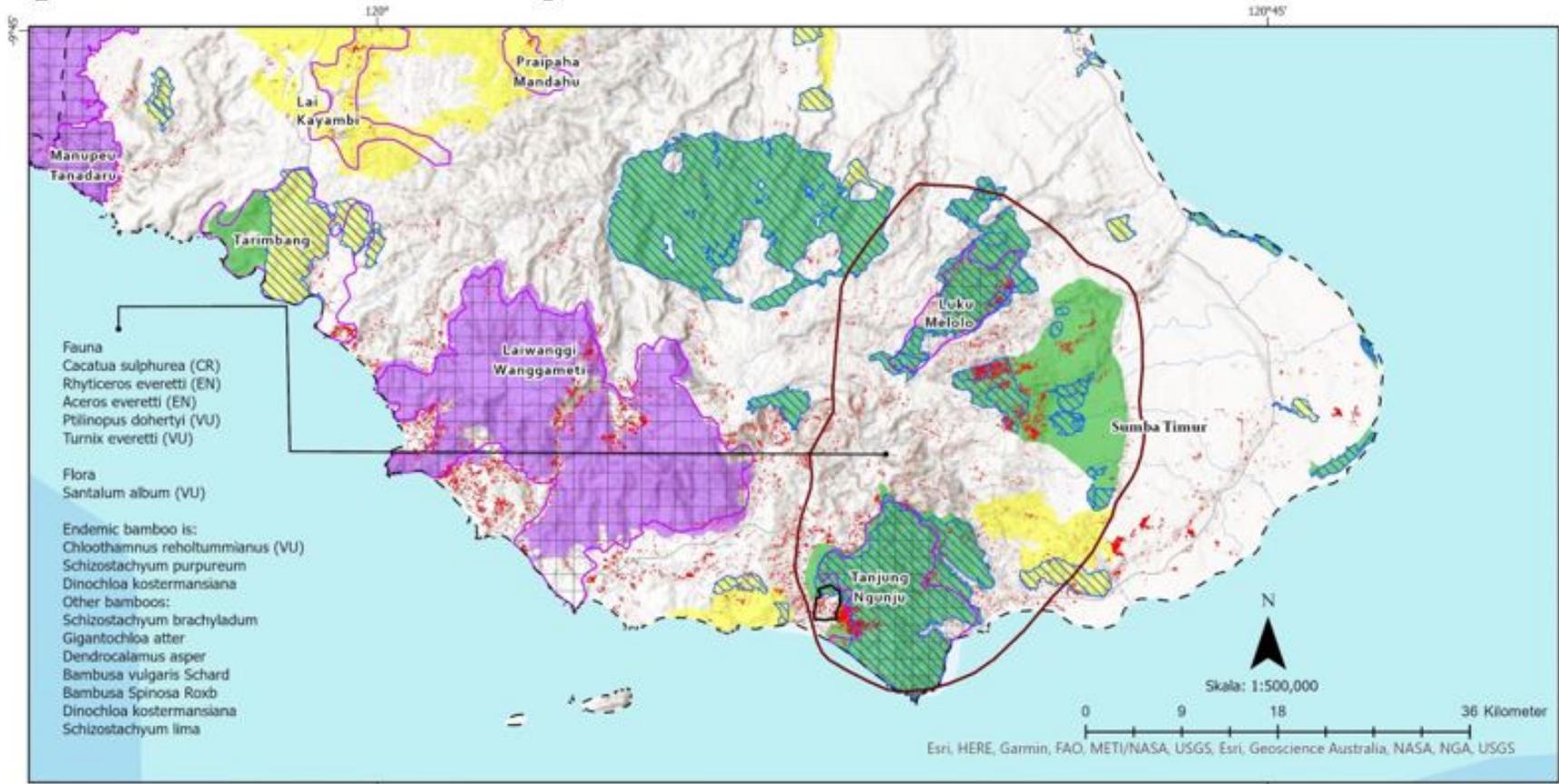


Figure: Sumba conservation landscape



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Gorontalo is one of the provinces in Indonesia located on the north end of Sulawesi island with a population of around 1.1 million people. The total area of the province is 1.2 million ha with a potential forest area of ±826,000 ha and was designated as a conservation province by the Minister of Environment and Forestry. Nantu Boliyohuto Wildlife Reserve (SMNB) is one of the last intact forests in Sulawesi that have high biodiversity, endemic and salt-lick species which is globally important. However, the poverty rates of 15.59% of Gorontalo still very high and listed as the 5th poorest province in Indonesia that leads to major environmental damages and biodiversity loss. So far, there has been insufficient investment in viable alternative, biodiversity-friendly livelihoods as a means to address the current economic drivers based on resource extraction. Transportation and access (which helped to restrict development of inaccessible forest areas) will likely change in this region given the emergence of the Trans Sulawesi project (rail and road) part of China's Belt and Road Initiative (BRI). Palm oil pressures are increasing.

South Sulawesi, location of Gunung Latimojong, is the sixth most populous province in Indonesia (9.07 million in 2020). Its economy depends on agriculture, fishing, and mining of gold, magnesium, iron and other metals. Gunung Latimojong recreation forests are the highest mountains in South Sulawesi, the tallest being 3,478 meters above sea level. The proposed project area is mostly located in Karangan Village, Baraka sub-district of Enrekang Regency, with 12 sub-districts with an area of 1,786.01 Km² whereas 84.96% of the area is dominated by hills/mountain areas. Enrekang is one of the famous coffee-producing areas in Indonesia and due to its topography, the district is the 5th main producer of horticultures in Indonesia.[1] Beside coffee, agricultural cash crops also include cocoa, pepper, Vanilla, cloves, patchouli, and other cash and food crops.

The sites of the Sikka, Alor and lower Sumba island, are characterized by much drier landscapes than on Sulawesi. The province of East Nusa Tenggara is divided into 21 regencies and one independent city with the largest islands of Flores, Sumba, and the western part of Timor Island. The estimated population is 5,456,203 with level of poverty is relatively high and considered as one of the poorest provinces in Indonesia with around 50% of the children suffer from stunting. A significant part of the economic activity in the province involves the development of natural resources, including forestry and numerous local mining ventures. Poverty rates remain some of the highest in the country, at 22.6% of the population on 2015, and child poverty rates running to almost 30%. NTT suffers food security issues, such as food shortages. Nearly all of the districts in NTT fall within the 100 most food insecure districts in Indonesia. The causes of food insecurity are largely climatic. With a long dry season, no major rivers and only a few perennial streams, communities in NTT suffer from water scarcity and are prone to drought. Most food crops in NTT are produced in dryland farming system, with maize, upland rice, peanut, cassava, and sweet potato the most predominant crops, in both total harvest area and total production. Cash crops are also grown on small holding plantations, such as coconut, cocoa, cloves, cashew, candlenut, and coffee. Corn Alongside agriculture, fisheries make up a large portion of the local economy, and tourism is steadily growing. Livestock stocking rates have been steady over the past five years, at about 45,000 head of cattle across the province since 2014.

Site specific proposed interventions

The project seeks to improve biodiversity values and habitat on all of the 202,322 ha of protected forests (Hutan Lindung), 62,297 ha of production forests (mostly through social forestry concessions). The project includes 20,135 of conservation forest (Hutan Konservasi) not as active project site, but rather to help orient biodiversity planning in Sikka and Alor. The project identifies restoration of degraded land on 8,661 ha in the proposed area.

Table: Details concerning Key Biodiversity Areas and Protected Forest (Hutan Lindung) in proposed project sites

Project Site	KBA (Ha) in proposed project site	% of project area that is KBA	% of KBA proposed for social forestry*	Amount (Ha) of Hutan Lindung in project site	% area proposed for social forestry in Hutan Lindung*
Gorontalo	16,183	50%	0	16,382	0
Mt Latimojong	51,368	61%	38%	50,499	38%
Sikka	49,644	28%	24%	52,976	60%
Alor	30,829	24%	4%	40,529	7%
Sumba	19,871	18%	88%	44,647	66%
Totals:	167,894	36%	39%	205,034	43%

*Average percentage based on areas with proposed social forestry concession areas in the project area, which excludes Gorontalo which has none.

Gorontalo, Sulawesi: Priorities for interventions: Focus on improved protection for the HCVF/KBA/IBA connectivity between Cagar Alam Panua and SM Nantu Wildlife Reserve. The area contains Hutan Lindung and Hutan Produksi, and already has significant interventions by partner Burung Indonesia. KPHs the project proposed to engage are: KPHK Nantu, KPHL Unit III Buhuwato, KPHP Unit IV Gorontalo Utara, KPHP Unit V Boalemo, with total hectares of 11,399 ha.

Gunung Latimojong, South Sulawesi: **Priorities for interventions:** Address the habitat and land clearance pressures (much from cocoa and coffee) coming from the eastern lowlands, extending well into this KBA, area that is all Hutan Lindung, and there is no active protection for threatened species. KPHs the project would engage are KPHP Unit V Awota, KPHP Unit V, and KPHL Unit VI, all of which total 53,603 ha.

Gunung Latimojong, South Sulawesi: Priorities for interventions: Improved habitat protection in the IBAs and KBAs, much in Hutan Lindung. This area is also a priority for social forestry as a means to safeguard biodiversity in concession areas that overlap with KBAs, and explore activities to address land degradation in the areas between KBAs (and outside Hutan Lindung). Such activities outside Hutan Lindung would likely include bamboo agroforestry, so stabilize soils in degraded landscapes with endemic bamboo, while also reintroducing endemic tree species that have been depleted from these landscapes. Government proposed social forestry concessions cover significant portions of some KBAs in this landscape. Sikka contain strong customary land management,

indicating high potential to engage local stewardship of biodiversity and habitat values with local adat communities. KPHs the project would engage are: KPHL Unit VII, KPHL Unit VIII - Flores Timur, amounting to 61,340 ha. **Priorities for land degradation activities:** 7,605 ha of degraded land are identified as a high priority for restoration, on either side of the Ili Wengot IBA, and in lowlands between that IBA and SM Egon Ilemedo, mostly within KBA area.

Sikka Island, NTT: Priorities for interventions: Improved habitat protection in the IBAs and KBAs, much in Hutan Lindung. This area is also a priority for social forestry as a means to safeguard biodiversity in concession areas that overlap with KBAs, and explore activities to address land degradation in the areas between KBAs (and outside Hutan Lindung). Such activities outside Hutan Lindung would likely include bamboo agroforestry, so stabilize soils in degraded landscapes with endemic bamboo, while also reintroducing endemic tree species that have been depleted from these landscapes. Government proposed social forestry concessions cover significant portions of some KBAs in this landscape. Sikka contain strong customary land management, indicating high potential to engage local stewardship of biodiversity and habitat values with local adat communities. KPHs the project would engage are: KPHL Unit VII, KPHL Unit VIII - Flores Timur, amounting to 61,340 ha. **Priorities for land degradation activities:** 7,605 ha of degraded land are identified as a high priority for restoration, on either side of the Ili Wengot IBA, and in lowlands between that IBA and SM Egon Ilemedo, mostly within KBA area.

Alor Island, NTT: Priorities for interventions: Improved habitat protection in the IBAs and KBAs. This area is also a priority for social forestry as a means to safeguard biodiversity in areas that overlap with KBAs, and explore activities to address land degradation in the areas between KBAs (and outside Hutan Lindung). Local traditions for sustainable use of resources are strong (Baranusa on Alor have well-defined customary rights management for marine resources), and recent sustainable export commodity production with vanilla.^[2] Agroforestry can stabilize soils in degraded dry landscapes, while also reintroducing endemic tree species that have been depleted from these landscapes. KPH the project would engage is KPHL Unit X Alor – 18,257 ha. **Priorities for land degradation activities:** 448 ha are prioritized for land restoration.

Southern Sumba, NTT: Priorities for interventions: Improved management in the IBA/KBAs and improved management in Hutan Lindung, while improving land management in connectivity between HL areas to stabilize slash and burn. Government proposed social forestry concessions cover almost the entirety of KBAs in this landscape, so this is a priority area to define biodiversity within social forestry goals, while working with communities to define agroforestry livelihood options outside the KBA areas. KPHs the project would influence are KPHL Unit XIV, which is 49,442 ha. Strategy focused on livestock, grazing and fires. Planting bamboo on land currently grazed may not be suitable, but increasing tree-cover on pasture could improve pasture. **Priorities for land degradation activities:** 609 ha are prioritized for restoration in an area adjacent to a KBA (as the highly degraded area within the KBA is now settled with villages).

Annex A-2

Endangered tree species in the project area

There are a number of IUCN-listed trees occurring in the project area that are well-suited to integration into agroforestry systems to encourage their protection and increased abundance in their endemic ranges. *Diospyros celebica* (commonly known as black ebony or Makassar ebony) is a species of flowering tree in the family Ebenaceae that is endemic to the island of Sulawesi, and *D. celebica* is the provincial tree of Central Sulawesi. Five species of ebony are endemic to Sulawesi: *Diospyros celebica Bakh*, *Diospyros eburnea Bakh*, *Diopyros greshoffiana Kds ex Bakh*, *Diospyros polita Bakh*, and *Diospyros venenosa Bakh*.^[3] The ebony tree grows in association with other forest species such as malam *D. macrophylla*, kenari *Canarium odoratum*, binuang *Octomeles sumatrana*, angga *Gluta elegans*, medang *Dehaasia paniciflora*, Andolia doromoga *Cananga odorata*, Aga *Ficus variegata* an Siuri *Koordeosiodendron pinnatum*. The fleshy fruits of ebony are preferred by hornbills, monkeys, and weasels.^[4] Agarwood *Aquilaria cumingiana* and *filaria* and *Gyrinops versteegii* (Gilg) Domke, listed in CITES Appendix II, also grow in the project area, and the former species highly prized for incense, perfume and medicinal use, notably after the heartwood is infected with a fungus, thus producing an aromatic resin. Due to the market values for agarwood (also called Eaglewood, and locally referred to as Gaharu), these trees suffer over exploitation. Indonesia is one of the largest producers globally, selling to the largest buyers Saudi Arabia, United Arab Emirates (UAE), and others. Sustainable harvesting and management of Agarwood is lacking in natural forest areas, and there is a lack of organized cultivation efforts, although *Aquilaria* and *Gyrinops* trees are grown in mixed community farms and gardens within its natural range in the project areas, though populations are decreasing and considered endangered.^[5] CITES allows artificially propagated sources to be traded subject to permits being issued.^[6] There is a need to safeguard natural populations of wild agarwood to protect its genetic diversity, and this is of national significance for Indonesia.^[7] Recent rDNA sequencing of *Pterocarpus indicus* species in Indonesia indicates slightly higher genetic variation between certain populations of *P. indicus* on Flores and Timor islands, caused by different species growing on different islands.^[8] Recent research also identifies high genetic variation of *Gyrinops versteegii* on Flores Island.^[9]

[1] Ministry of Agriculture's 2020 production data.

[2] Vanilla producers association of Alor Islands Vanilla, Asosiasi Petani Vanili Kepulauan Alor (APVKA), includes over 400 farmers, processors, traders and exporters, regional planning and development agencies and cooperatives.

[3] Allo, M.F. 2020. Ebony (*Diospyros celebica Bakh*) conservation. IOP Conf. Ser.: Earth Environ. Sci. 522 012018

[4] *Ibid*

[5] Sutomo, S., Iryadi, R., Sumerta, I. M., 2021. Conservation Status of Agarwood-Producing Species (*Gyrinops versteegii*) in Indonesia. Biosaintifika: Journal of Biology & Biology Education, 13(2), 149-157.

[6] Sukenti, K. et al, 2021. Ethnobotanical study of *Gyrinops versteegii* (Gilg.) Domke from Lombok Island, West Nusa Tenggara, Indonesia as an effort in supporting the conservation of agarwood-producing species. Indian Journal of Natural Products and Resources (IJNPR).

[7] Sitepu, I., E. Santoso, M. Turjaman, 2011. Identification of Eaglewood (Gaharu) Tree Species Susceptibility. Indonesia Ministry of Forestry and ITTO, ITTO PD425/06 Rev. 1 (I)

[8] Danarto, S.A. et al, 2021. The genetic diversity of angšana (*Pterocarpus indicus*) in Purwodadi Botanical Garden Indonesia revealed by rDNA ITS. IOP Conf. Ser.: Earth Environ. Sci. 914 012005.

[9] Irsyad, A., Rindyastuti, R., Yulistyarini, T., Darmayanti, A., Daryono, B. 2020. Genetic variation of agarwood producing tree (*Gyrinops versteegii*) from Pongkor, Manggarai District, Flores Island, Indonesia using ISSR molecular markers. *Biodiversitas Journal of Biological Diversity*. 21. 10.13057/biodiv/d210208.