Implemented by

Annex 2a

Feasibility study

to the GCF Funding Proposal

Land-based Mitigation and Adaptation through a Jurisdictional Approach in West Kalimantan

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Version 6

Submitted by:

Deutsche Gesellschaft für internationale Zusammenarbeit (GIZ) GmbH

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Abbreviations & Acronyms

Abbreviation	Description
ABKT	Areal Bernilai Konversi Tinggi / High Conservation area
AE	Accredited Entity
AFOLU	Agriculture, Forestry and Other Land Use
AKSARA	Aplikasi Perencanaan dan Pemantauan Rencana Aksi Nasional Rendah Karbon / National Low Carbon Action Plan Planning and Monitoring Application
AMA	Accreditation Master Agreement
AMAN	Aliansi Masyarakat Adat Nusantara / The Alliance of Indigenous Peoples of the Archipelago of West Kalimantan
AMDAL	Analisis Mengenai Danpak Lingkungan / Environmental Impact Analysis
APBD	Anggaran Pendapatan dan Belanja Daerah / Regional Revenues and Expenditure Budget
APBN	Anggaran Pendapatan dan Belanja Negara / State Revenues and Expenditure Budget
APKASINDO	Asosiasi Petani Kelapa Sawit Indonesia / Indonesian Palm Oil Farmers Association
APL	Areal Pengunaan Lain / Non-forest Area
AR6	Sixth Assessment Result of IPCC
ASEAN	Association of Southeast Asian Nations
ASN	Aparatur Sipil Negara / Civil Servant
BAPPEDA	Badan Perencanaan Pembangunan Daerah / Regional Body for Planning and Development
BAPPENAS	Badan Perencanaan Pembangunan Nasional / National Development and Planning Agency
BAU	Business as Usual
BIROEKON	Biro Ekonomi Sekretariat Daerah / Economic Bureau of Regional Secretary
BIROPEM	Biro Pemerintahan Sekretariat Daerah / Government Bureau of Regional Secretary
BKDS	Betung Kerihun Danau Sentarum National Park
BKF	Badan Koordinasi Fiskal Indonesia / Fiscal Coordination Agency of Indonesia
BKPM	Badan Koordinasi Penanaman Modal / Investment Coordinating Board
BKSDA	Balai Konservasi Sumber Daya Alam / Nature Resources Conversation Agency, Technical Unit of MoEF
BLU	Badan Layanan Umum / Public Service Agency
BMKG	Badan Meteorologi, Klimatologi dan Geofisika / Meteorology, Climatology and Geophysics Agency
BMP	Best Management Practices
BMU	Federal Ministry for the Environment, Nature Conservation and Nuclear Safety Germany (now: BMUV: Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection)
BMZ	Federal Ministry of Economic Cooperation and Development Germany
BNI	Bank Negara Indonesia
BP2SDM	Badan Penyuluhan dan Pengembangan Sumber Daya Manusia, KLHK / Human Resources Extension and Development Agency of MoEF
BPDASRH	Balai Pengelolaan Daerah Aliran Sungai dan Rehabilitasi, KLHK / Watershed Management and Forest Rehabilitation Unit of MoEF
BPBD	Badan Penanggulang Bencana Daerah / Regional Disaster Management Agency
BPDLH / IEF	Badan Pengelola Dana Lingkungan Hidup Indonesia / Indonesia Environment Fund
BPDPKS	Badan Pengelola Dana Perkebunan Kelapa Sawit Indonesia / Oil Palm Plantation Fund Management Agency Indonesia
BPOM	Badan Pengawasan Obat dan Makanan Indonesia / Food and Drug Supervisory of Indonesia

BPS	Badan Pusat Statistik / Central Bureau of Statistics
BPSKL	Balai Perhutanan Sosial dan Kemitraan Lingkungan KLHK / Center for Social Forestry and Environmental Partnerships of MoEF
BRG	Badan Restorasi Gambut Indonesia / Peatland Restoration Agency of Indonesia
BRGM	Badan Restorasi Gambut dan Mangrove Indonesia / Peatland and Mangrove Restoration Agency of Indonesia
BRI	Bank Rakyat Indonesia
BRPH	Bina Rencana Pemanfaatan Hutan / Forest Utilization Plan Development
BRWA	Badan Registrasi Wilayah Adat / Customs Agency
BSI LHK	Badan Standardisasi Instrumen Lingkungan Hidup dan Kehutanan / Environmental and Forestry Instrument Standardization Agency
BUMD	Badan Usaha Milik Daerah / Sub-National State-Owned Enterprises
BUPSHA	Bina Usaha Perhutanan Sosial dan Hutan Adat / Directorate of Social Forestry and Cutomary Forest Business Development
CBFM	Community Based Forest Management
CBNA	Capacity Building Needs Assessment
CBT	Competence-Based Training
CDD	Cumulative Dry Days
CEFET	Environmental and Forestry Training Center of MoEF
CF	Community Facilitator
CLUA	Climate and Land Use Alliance
CNA	Capacity Need Assessment
CO_2	Carbon dioxide
COP	Conference of Parties
CoPLI	Community-Based Conservation of Forests and Peatland Landscapes in Indonesia
COVID	Coronavirus Disease
CPO	Crude Palm Oil
CRVA	Climate Risk and Vulnerability Assessment
CSA	Climate-Smart Agriculture
CSAP	Climate-Smart Agricultural Practice
CSF	CPO Supporting Fund
CSO	Civil Society Organizations
CSR	Corporate Social Responsibility
CWD	Cumulative Wet Days
CWP	Community Work Plans
DAK	Dana Alokasi Khusus / Special Allocation Fund
DAU	Dana Alokasi Umum / General Allocation Fund
DBH	Diameter at Breast Hight
DBH-DR	Dana Bagi Hasil Dana Reboisasi / National Sharing Budget on Reforestation
DD / ADD	Dana Desa / Alokasi Dana Desa / Village Fund / Village Fund Allocation
DDPI	Dewan Daerah Perubahan Iklim / Provincial Climate Change Council
DESTANA	Desa Tangguh Bencana / Disaster Resilient Village
DG	Directorate General
DGCC	Directorate-General of Climate Change Controlling
DINAS	Dinas di Lingkungan Pemerintah Provinsi dan Kabupaten / Offices under Provincial or Regency Government
DISBUN	Dinas Perkebunan / Agriculture and Crop Agency
DITJEN	Direktorat Jenderal / Directorate General
DLH	Dinas Lingkungan Hidup / Environmental Agency of Regency

DLHK	Dinas Lingkungan Hidup dan Kehutanan / Environmental and Forestry Agency of West Kalimantan
DMDC	Pusat Data Pengelolaan Bencana / Disaster Management Data Center
DMPTSP	Dinas Penanaman Modal dan Pelayanan Terpadu Satu Pintu/ Investment and Permit Agency of West Kalimantan Province
DNPI	Dewan Nasional Perubahan Iklim / National Council on Climate Change of Indonesia
DPEDC	Directorate-General for Pollution and Environmnetal Degradation Control
DPUPR	Dinas Pekerjaan Umum dan Perumahan Rakyat / Public Works and Settlement Service Office
DRAM	Documen Rancangan Aksi Mitigasi Perubahan Iklim / Climate Change Mitigation action Plans
DSNP	Danau Sentarum National Park
EbA	Ecosystem-based Adaptation
EE	Executing Entity (under GCF)
EEA/ KEE	Ecosystem Essential Areas / Kawasan Ekosistem Essensial (KEE)
EF	Emission Factor
ENDC	Enhanced Nationally Determined Contribution
ENR	Enhanced Natural Regeneration
ERC	Ecosystem Restoration Concession
ERIS	Emission Reduction Intervention Strategy
ERPA	Emission Reductions Payment Agreement
ESIA	Environmental and social impact assessment
ESMF	Environmental and social management framework
ESMP	Environmental and social management plan
ESS	Environmental and Social Safeguards
ETCCDI	Expert Team on Climate Change Detection and Indices
EU	European Union
EUR	Euro
FAA	Funded Activity Agreement
FAO	Food and Agriculture Organization of the United Nations
FAQ	Frequently Asked Questions
FC	Financial Cooperation / Kerjasama Keuangan
FCPF	Forest Carbon Partnership Facility (by World Bank)
FDB	Fasilitas Dana Bergulir / Revolving Fund Facility
FFB	Fresh-Fruit Bunch
FFI	Flora Fauna International
FGD	Focus Group Discussion
FIP-1 ADB	Forest Investment Programme (Asian Development Bank)
FOLU	Forestry and Other Land Use
FOLU Net Sink	Forestry and Other Land Use Net Sink 2030
FOLUR	Food Systems, Land Use and Restoration Impact Programme
FONAP	Forum Nachhaltiges Palmöl / Forum for Sustainable Palmoil
FORCLIME	Forest and Climate Change Programme (GIZ)
FP	Funding Proposal
FPIC	Free, Prior, Informed Consent
FPV	Forest Project V (KfW)
FREL	Forest Reference Emission Level
FRL	Forest Reference Level
FS	Feasibility Study

FSC	Forest Stewardship Council
GA	Gender Assessment
GAP	Gender Action Plan
GAPKI	Gabungan Pengusaha Kelapa Sawit Indonesia / Indonesian Palm Oil Association
GAPKINDO	Gabungan Pengusaha Karet Indonesia / Rubber Association of Indonesia
GAPOKTAN	Gabungan Kelompok Tani / Farmer Association
GCF	Green Climate Fund
GDP	Gross Domestic Product
GEF	Global Environment Facility
GGP	Green Growth Plan
GHG	Greenhous Gas Emissions
GI	Geographical Information
GIS	Geographical information System
GISCO	German Initiative on Sustainable Cocoa
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
GCMs	Global Climate Models
GOI	Government of Indonesia
GoWK	Government of West Kalimantan
GPS	Geographical Positioning System
GRASS	Greening Agricultural Smallholder Supply
GRDP	Gross Regional Domestic Product
GRK	Gas Rumah Kaca / Green Houses gas
GRM	Grievance and Redress Mechanism
HA	Hutan Adat / Indigenous Forest
HCS	High Carbon Stock
HCV	High Conservation Value
HCVF	High Conservation Value Forest
HD	Hutan Desa / Village Forest
HDI	Human Development Index
HGU	Hak Guna Usaha / Certificate of Business
HK	Hutan Konservasi / Conservation Forest
HKM	Hutan Kemasyarakatan / Community Forest
HL	Protection Forest / Hutan Lindung
HP	Hutan Produksi Tetap / Production Forest
HPH	Hak Pengusahaan Hutan / Forest Concession Right
HPK	Hutan Produksi Konversi / Conversion Product Forest
HPT	Hutan Produksi Terbatas / Limited Production Forest
HR	Human Resource
HSE	Health, Safety and Environment
HTI	Hutan Tanaman Industri / Industial Forest Plantation
HTR	Hutan Tanaman Rakyat / Community Plantation Forest
IAD	Integrated Area Development
IBSAP	Indonesian Biodiversity Strategy and Action Plan
ICRAF	International Centre for Research in Agroforestry
ICS	Internal Control System
ICT	Information and Computer Technology
IDEP	Integrated Development and Environmental Programme
IDR	Indonesian Rupee
IFAD	The International Fund for Agricultural Development

IGRK	Inventarisasi Gas Rumah Kaca / Green House Gases Inventory
IJ	Indonesian-Japanese Cooperation
IKI	The International Climate Initiative (Initiative from German Environment Ministry)
IMF	International Monetary Fund
INPRES	Instruksi Presiden / Presidential Instruction
IPB	Institute Pertanian Bogor / Bogor Agricultural University
IPCC	Inter-Governmental Panel on Climate Change
IPL	Indeks Lokasi Prioritas / Location Priority Index
IP	Indigenous People
IPP	Indigenous People Plan
ISPO	Indonesia Sustainable Palm Oil
ITJEN	Inspektorat Jenderal / Inspectorate General
IUP	Izin Usaha Perkebunan / Plantation Permit
JA	Jurisdictional Approach
JE	Jurisdictional Entitiy
JJA	June, July, August
KALFOR	Kalimantan Forest Project (UNDP/GEF)
KEPBUP	Keputusan Bupati / Regent Decree
KEPGUB	Keputusan Gubernur / Governor Decree
KHDTK	Kawasan Hutan dengan Tujuan Khusus / Forest Area for special Purposes
KHUKP	Kawasan Hutan untuk Keamanan Pangan / Forest Areas for Food Security
KHL	Koridor Hidupan Liar / Wildlife Corridors
KK	Kemitraan Kehutanan / Partnership Forest
KKP3K	Kawasan Konservasi Perairan, Pesisir, dan Pulau-pulau Kecil / Marine, Coastal and Small Islands Conservation Areas
KPA	Kuasa Pengguna Anggaran / Power's of Budget Users
KPH/ FMU	Kesatuan Pengelolaan Hutan / Forest Management Unit (FMU)
KPHK	Kesatuan Pengelolaan Hutan Konservasi / Conservation Forest Management Unit
KPHL	Kesatuan Pengelolaan Hutan Lindung / Protection Forest Management Unit
KPHP	Kesatuan Pengelolaan Hutan Produksi / Production Forest Management Unit
KPI	Key Performance Indicator
KSA	Kawasan Suaka Alam / Sanctuary Reserve Areas
KSDAE	Direktorat Jenderal Konservasi Sumber Daya Alam dan Ekosistem / Nature Resources and Ecosystem Conservation
KTH	Kelompok Tani Hutan / Forestry Farmer Groups
KUPS	Kelompok Usaha Perhutanan Sosial / Social Forestry Business Units
KUR	Kredit Usaha Rakyat / People's Business Credit
LAPAN	Lembaga Penerbangan dan Antariksa Nasional / National Aeronautics and Space Administration
LCCR	Low Carbon and Climate Resilience
LCDI	Low Carbon Development Indonesia
LDV	Least Developed Villages
LE	Large Enterprises
LPHD	Lembaga Pengelola Hutan Desa / Village Forest Management Institution
LTKL	Lingkar Temu Kabupaten Lestari / Indonesia's Sustainable Regencies Association
LTS	Long-Term Strategy
MAM	March, April, May

M&E	Monitoring and Evaluation
MOA	Ministry of Agriculture
MOEF/ KLHK	Ministry of Environment and Forestry of Indonesia / Kementerian Lingkungan Hidup dan Kehutanan (KLHK)
MOHA	Ministry of Home Affairs
MOF	Ministry of Finance of Indonesia / Kementerian Keuangan Republik Indonesia
MoWECP	Ministry of Women's Empowerment and Child Protection / Kementerian Pemberdayaan Perempuan Dan Perlindungan Anak
MRV	Monitoring, Reporting and Verification
MSF	Multi-Stakeholder Forum
MSME	Micro, Small, and Medium Enterprises
MSP	Multi-Stakeholder Platform
NAMA	National Appropriate Mitigation Action
NAP	National Adaptation Plan
NDA	National Designated Authority
NDC	Nationally Determined Contribution
NDPE	No Deforestation, No Peat and No Exploitation
NGO	Non-Governmental Organization
NI-SCOPS	National Inititatives to simulate and scale up Smallholder Climate-smart agriculture in Oil Palm Landscapes in Asia and Africa
NRS	National Registry System
NTFP	Non-Timber Forest Product
OECM	Other Effective Conversation Measures
OJK	Otoritas Jasa Keuangan / Financial Service Authority
OSS	One Single Submission
P3H	Pusat Pembiayaan Pembangunan Hutan / Forestry Finance Centre
PAD	Pendapatan Asli Daerah / Locally Generated Revenues
PBCC	Provincial Body on Climate Change
PBPH	Perizinan Berusaha Pemanfaataan Hutan / Forestry Utilization Business Permit
PDASRH	Pengelolaan Daerah Aliran Sungai dan Rehabilitasi Hutan / Watershed Management and Forest Rehabilitation
PEFC	Programme for the Endorsement of Forest Certification
PERDA	Peraturan Daerah / Provincial Regulation
PERGUB	Peraturan Gubernur / Governor Regulation
PermenLHK	Peraturan Menteri Lingkungan Hidup dan Kehutanan / Regulation of Ministerial of Environment and Forestry
Permentan	Peraturan Menteri Pertanian /Regulation of Ministerial of Agriculture
PERPRES	Peraturan Presiden / Presidential Regulation
PERSERO	Perusahaan Perseroan/ Limited Company Liabilities
PERUMDA	Perusahaan Umum Daerah / Regional Public Company
PES	Payment of Environmental Service
PHL	Pengelolaan Hutan Lestari / Sustainable Forest Management
PHLHK	Direktorat Jenderal Penegakan Hukum Lingkungan Hidup dan Kehutanan / Directorate General of Environmental and Forestry Law Enforcement
PHU	Peat Hydrological Unit
PIAPS	Peta Indikatif Areal Perhutanan Sosial / Indicative Map on Social Forest Areas
PIPPIB	Peta Indikatif Penghentian Pemberian Izin Baru / Indicative Map of Termination of Granting of New Permits
PIU	Project Implementation Unit

PKTL	Direktorat Jenderal Planologi Kehutanan dan Tata Lingkungan / Directorate General of Forestry Planning and Environmental Management
PMK	Peraturan Menteri Keuangan / Regulation of Ministerial of Finance
PMU	Project Management Unit
PNBP	Pendapatan Negara Bukan Pajak / Non-tax State Revenues
POKJA	Kelompok Kerja / Working Group
POLTEK	Politeknik Pontianek / Politechnicum Pontianak
PoP	Project Proponent
PP	Peraturan Pemerintah / Government Regulation
PPG	Project-Preparation Grant
PPI	Direktorat Jenderal Pengendalian Perubahan Iklim / Directorate General of Climate Change Control
PPKL	Direktorat Jenderal Pengendalian Pencemaran dan Kerusakan Lingkungan / Directorate General of Pollution and Environmental Damage Control
PPNS	Penyidik Pegawai Negeri Sipil / Civil Servant Investigators
PPS	Percepatan Perhutanan Sosial / Social Forestry Permit Acceleration
PROKLIM	Programme Kampung Iklim / Village Climate Programme
PS	Perhutanan Sosial / Social Forestry
PSDH	Provisi Sumber Daya Hutan / Forest Resource Provision
PSKL	Perhutanan Sosial dan Kemitraan Lingkungan / Social Forestry and Environmental Partnership
PSLB3	Direktorat Jenderal Pengelolaan Sampah, Limbah dan B3 / Directorate General of Waste, Hazardous Waste, and Hazardous Materials Management;
PSC	Project Steering Committee
PTC	Project Technical Committee
PUPR	Dinas Pekerjaan Umum dan Tata Ruang / Public Works and Spatial Planning Agency
RA	Rainforest Alliance
RACP	Remediation and Compensation Procedure
RAD	Rencana Aksi Daerah / Regional Action Plan
RAK API	Rencana Aksi Adaptasi Perubahan Iklim Kabupaten / Regency Action Plan on Climate Change Adaptation
RAN API	Rencana Aksi Nasional Adaptasi Perubahan Iklim / National Action Plan on Climate Change Adaptation
RAN GRK	Rencana Aksi Nasional Gas Rumah Kaca / National Action Plan on GHG
RAP API	Rencana Aksi Provinsi Adaptasi Perubahan Iklim / Provincial Action Plan on Climate Change Adaptation
REC	Regional Expertise Centre
RBP	Result Based Payment
REDD+	Reducing Emissions from Deforestation and Forest Degradation, and the role of conservation, sustainable management of forests, and enhancement of forest carbon stocks in developing countries
REFET	Regional Environmental and Forestry Training Center
RENJA	Rencana Kerja Tahunan / Annual agency plan
RENSTRA	Rencana Strategis / Strategic Plan
RIL-C	Reduced Impact Logging Carbon

RKFNET	Rencana Kerja FOLU Net Sink 2030 Provinsi Kalimantan Barat / West Kalimantan Operational Plan on FOLU Net Sink 2030
RKPS	Rencana Kerja Perhutanan Sosial / Social Forestry Work Plan
RKTN	Rencana Kehutanan Tingkat Nasional / National Forestry Plan
RPHJP	Rencana Pengelolaan Hutan Jangka Panjang / Long-Term Forest Management Plan
RPHJPd	Rencana Pengelolaan Hutan Jangka Pendek / Annual Forest Management Plan
RPJMD	Rencana Pembangunan Jangka Menengah Daerah / Mid-Term Development Plan
RPJMN	Rencana Pembangunan Jangka Menengah Nasional / National Medium Term Development Plan /
RPKH	Rencana Pengelolaan Keanekaragaman Hayati / Biodiversity Management Plan
RPPEG	Rencana Perlindungan dan Pengelolaan Ekosistem Gambut / Plans for Protection and Management of Peatland Ecosystems
RSPO	Roundtable for Sustainable Palm Oil
SAFE	Sustainable Agriculture for Forest Ecosystems Project
SAREC	Solidaridad Asia Regional Expertise Center
SASCI	Sustainability and Value Added in Agricultural Supply Chains in Indonesia Project
SBSN	Surat Berharga Syariah Negara / State Sharia Securities
SCAI	Steering Committee on Sustainable Agriculture of Indonesia
scPDSI	Self-Calibrated Palmer Drought Severity Index
SDG	Sustainable Development Goal
SE	Surat Edaran / Circular Letter
SEGAR	Sustainable Environmental Governance Across Regions Project-USAID Project
SekBer	Sekretariat Bersana
SES	Social and Environmental Safeguard / Pengaman Sosial dan Lingkungan
SETJEN	Sekretariat Jenderal / Secretariat General
SIPPEG	Sistem Informasi Perlindungan dan Pengelolaan Ekosistem Gambut / Information System on Protection and Management of Peatland Ecosystems
SF	Social Forestry
SFM	Sustainable Forest Management
SIGN	Sistem Informasi Gas Rumah Kaca Nasional / National Green House Gasses Information System
SILIN	Silvikultur Intensif / Intensive Silviculture
SIS	Safeguard Information System
SHF	Smallholder Famers
SK	Surat Keputusan / Decree
SKKNI	Standar Kompetensi Kerja Nasional Indonesia / Indonesian National Occupational Competency Standards
SNKI	Strategi Nasional Keuangan Inklusif / National Strategy for Financial Inclusion
SMART	Spatial Monitoring and Reporting Tool
SME	Small and Medium Enterprises
SMEL	Small, Medium, and Large Enterprises
SNAL	Solidaridad Network Asia Limited
SOP	Standart Operasional Prosedur / Standard Operating Procedure
SPBK	Sistem Peringatan Bahaya Kebakaran / Fire Danger Rating System

SPE-GRK	Sertifikat Pengurangan Emisi Gas Rumah Kaca / Certificate of GHG Emission Reduction
SPEI	Standardised Precipitation and Evapotranspiration Index
SPM	Standar Pelayanan Minimum / Minimum Standard Services
SPPL	Surat Pernyataan Pengolaan Lingkungan / Statement Letters of Environmental Management
SPORC	Satuan Polisi Hutan Reaksi Cepat / Quick Response Unit of Forestry Police
SRAP	Strategi dan Rencana Aksi Provinsi / Provincial Strategy and Action Plan
SRN	Sistim Registrasi Nasional / National Registry System
SSP	Shared Socio-Economic Pathway
STDB	Surat Tanda Daftar Budidaya / Smallholder Cultivation Permit
STRANAS	Strategi Nasional / National Strategy
SUKUK	Sertifikat atau Bukti Kepemilikan Negara / State Certificate or Proof of Ownership
TC	Technical Cooperation / Kerjasama Teknis
TEKAD	Transformasi Ekonomi Kampung Terpadu / Village Economic Transformation Project (in east part of Indonesia)
TERRA	A Collaboration Programme Between BPDLH and Ford Foundation
TFCA	Tropical Forest Conservation Act
TN / NP	Taman Nasional / National Park
TNA	Training Needs Assessment
ToF	Training of Facilitators
TORA	Tanah Obyek Reformasi Agraria / Area object to Agrciultural Reforms
TPB	Tujuan Pembangunan Berkelanjutan / Sustainable Development Goals (SDGs)
TVET	Technical and Vocational Education and Training
TWA	Taman Wisata Alam / Natural Recreation Park
UMP	Universitas Muhammadiyah Pontianak / University of Muhammadiyah Pontianak
UN	United Nations
UNDP	United Nation Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change Convention
UNTAN	Universitas Tanjungpura Pontianak / Tanjungpura University of Pontianak
UPT	Unit Pelaksana Teknis / Technical Implementation Unit
UPTD	Unit Pelaksana Teknis Daerah / Technical Implementing Unit in Regional
USA	United States of America
USAID	United States Agency for International Development
US$	US Dollar
UU	Undang-Undang / State Law of Republic Indonesia
UUCK	Undang Undang Cipta Kerja / Law of Job Creation
VAT	A value-added tax
VDI	Village Developement Index
VSLA	Village Savings and Loans Association
WK	West Kalimantan
WK-SCAI	West Kalimantan Sustainable Agriculture in Indonesia
WPK	Wilayah Pengukuran Kinerja REDD+ / REDD+ Measurement Areas
WTO	World Trade Organisation
YSNI	Yayasan Solidaridad Network Indonesia

Executive Summary

The forests of West Kalimantan are globally acknowledged for their biodiversity importance and are essential for achieving the objectives of the global climate agenda, and the UNFCCC Paris Agreement. Due to the large above- and below- ground carbon pools, the province alone harbours an estimated 6.4% of the tropical forest carbon stocks of Indonesia and is a REDD+ prioritized region by the Indonesian Ministry of Environment and Forestry (MoEF).[1]

Despite government efforts at the national and provincial levels, deforestation and forest degradation remain a major threat to the last intact ecosystems of West Kalimantan. West Kalimantan is the 3rd largest province in Indonesia, with an area of 14.6 million hectares and located at the Indonesian part of the island of Borneo. It is one of the countries deforestation hot spots. Since 1990, the forests in West Kalimantan declined by 26%, from 7.5 million hectares to 5.5 million hectares in 2020. During the same period, average deforestation rates of 80,247 ha/year were observed. The rate of deforestation in West Kalimantan increases over decades, from 70,922 ha/year in 1990 – 2000 period, 74,366 ha/year in 2000 – 2010 to 95,452 ha/year in 2010 - 2020.

According to the West Kalimantan Strategy and Action Plan on REDD+ (*Strategi dan Rencana Aksi Provinsi*, SRAP REDD+), manifold processes and underlying factors are causing deforestation in West Kalimantan. While unsustainable forestry practices are the main contributor to deforestation, accounting for 58%, the conversion into agriculture accounts for 40% (overwhelmingly due to palm oil expansion). Other factors, including crop expansion, settlements, roadway expansion, and mining account for the remaining 2% of deforestation.[2]

Against this background, the project aims to support the Government and people of West Kalimantan in the transition to sustainable and climate resilient management of forests and landscapes at scale. The overall objective is to reduce GHG emissions from deforestation and degradation, enhance forest carbon stocks through reforestation and forest land rehabilitation, improved good agriculture practices, sustainable and community-based forest management and ultimately strengthen the resilience of forest and peat landscapes in West Kalimantan. Activities will address the two main climate risks of (a) increased forest and peat fire due to increased temperatures and droughts and b) reduced agricultural production due to increased drought risk. This will enable a paradigm shift towards climate-resilient and low-emission pathways at the province level.

The Project is comprised of three Components:

Component 1 - Institutional and Regulatory Frameworks

Output 1.1: Strengthened regulatory and institutional framework for the implementation of policies on sustainable and climate resilient forest management

Activity 1.1.1: Inclusion of climate change adaptation in mid-term, spatial, and other regional development plans

Activity 1.1.2: Strengthening mitigation actions through improved REDD+ implementation towards achievement of sub-national Forestry and Other Land Use (FOLU) Net Sink 2030 targets

Activity 1.1.3: Strengthening the institutional framework for coordination of mitigation and adaptation activities from relevant stakeholders and across sectors

Output 1.2: Developed land use plans which consider climate change and identified High Conservation Value (HCV)/High Carbon Stock (HCS) areas

1 https://forestchampions.org/jxd_reports/en_West%20Kalimantan_Indonesia.pdf (All links in this document have been accessed for the last time on 14th of March 2024)

2 Based on provincial land use. Source: Monitoring, Reporting, and Verification (MRV) report on emission reduction of West Kalimantan 2013-2018, 2020.

Activity 1.2.1: Strengthening the regulatory framework and implementation of High Biodiversity and Carbon Areas (i.e. HCV, HCS) on non-state forests land.

Output 1.3: Established and implemented dedicated grant mechanism provides adequate financing and meaningful engagement for Indigenous People (IP) engaged in climate-resilient, low-emission forest and landscape management and further financing mechanisms have been assessed.

Activity 1.3.1: Developing sustainable financial mechanisms to ensure meaningful engagement of IP and support climate-resilient and low emission forest and landscape management in West Kalimantan

Component 2 – Sustainable commodity production and social forestry

Output 2.1: Benefitting local communities produce sustainable agricultural and agroforestry commodities, accessing new markets for sustainable products, while an M&E framework is established that measures environmental compliance and ensures the scalability as well as replicability of sustainable practices.

Activity 2.1.1: Scaling up a sustainable land and forest-based business model of West Kalimantan

Activity 2.1.2: Implementing and upscaling the adoption of proven approaches for reducing emissions and enhancing the sustainability and climate resilience of smallholders in key commodity supply chains (including agroforestry)

Activity 2.1.3: Enhancing multi-stakeholder dialogue and platform for low-emission and climate-resilient agriculture and private sector investment

Activity 2.1.4: Greening Agricultural Smallholder Supply Chains in Kapuas Hulu through the Co Funding of the Greening Agricultural Smallholder Supply (GRASS) project

Activity 2.1.5: Improving sustainable landscape management and smallholder palm oil market inclusion (NISCOPS cofinancing)

Component 3 – Management, protection and rehabilitation of forest and peatland ecosystems

Output 3.1: Capacitated FMUs and private sector actors incentivized to engage in implementing climate informed protection and sustainable management of forest and peat ecosystems

Activity 3.1.1: Supporting Forest Management Unit Organizations in the development and implementation of climate-informed forest management plans for FMU Units, including fire management.

Output 3.2: Supported Local Communities able to receive land use rights and implement different social forestry schemes

Activity 3.2.1: Advancing social forestry implementation including building awareness of local communities of climate risks and risk-reduction practices

The implementation period will be of 7 years and consists of a phased approach. The first 1-2 years will focus on strengthening enabling conditions, preparing for implementation in the selected regencies and enhancing the institutional frameworks for sustainable landscape planning and management (Component 1). This will form a strong foundation for an efficient and effective implementation and upscaling of sustainable land and forest management and agriculture-based commodities investments in the field under Components 2 and 3. Outputs and respective activities build on proven approaches including lessons learned for successful

implementation at scale from the Executing Entities (EE) of the project, namely: GIZ, Solidaridad (SNAL) and MoEF; all being active in West Kalimantan for many years.

The project activities will cover the province of West Kalimantan and implementation on the ground will focus specifically on five priority regencies that have been selected by the provincial government through its interdisciplinary REDD+ working group based on the importance for achieving the objectives of the project. The proposed project location includes the priority area defined by the REDD+ working group (referred to as *Wilayah Pengukuran Kinerja* - WPK REDD+) and FOLU Net Sink 2030 which is determined based on a Location Priority Index (*Indeks Lokasi Prioritas*, IPL) developed within their REDD+ strategy. The five regencies are covering 69.21% of total West Kalimantan area (10.5 m ha), 82% (4.45 m ha) of the forested area of West Kalimantan and 71.2% (49.714 ha) of the contribution of annual deforestation in West Kalimantan. The area consists of the regencies of 1) Kapuas Hulu, 2) Ketapang, 3) Kubu Raya, 4) Sanggau, and 5) Sintang regencies.

The project is expected to result in annual emission reductions of 2.3 million tCO2eq from deforestation, forest degradation and enhancement of forest carbon stock in West Kalimantan. Over the project life span of 7 years a total of 16.05 million tCO2eq will be targeted.

The project is expected to result in direct adaptation benefits through increased resilience of 680,108 people (of which 50% are women) who reside in approximately 200 villages by strengthening their awareness of climate change risk and risk reduction practices. In addition, direct beneficiaries will be supported to implement climate-resilient and low-emission agriculture and forestry practices. An estimated 14,000 farmers will be involved in sustainable agriculture practices under Component 2. In addition, under Component 3 ecosystem functions will be ensured through social forestry measures on 200,000 ha and integrated fire prevention within concession areas and further large peat areas will be introduced.

1 Country Profile

1.1 Overall Country Profile

Indonesia is an archipelagic country located in Southeast Asia stretching approximately 5,120 km across the equator[3], from Sumatra in the west to Papua in the east (see Figure 1). The country has more than 17,000 islands[4] with a total land area of 1.9 million square km. The largest islands are Sumatra, Kalimantan, Papua, Sulawesi and Java. Most of Indonesia is coastal lowlands, with the larger islands having mountains in the interior, most of them volcanic. Average elevation is 367 m above sea level with the highest peak Puncak Jaya at 4,884 m in Papua.[5]

Indonesia lies on the Pacific Ring of Fire and is tectonically very active. There are 120 active volcanoes[6] along the chain of islands whose periodic eruptions can be disruptive to life and property, while simultaneously providing fertile soils that support intensive agriculture. Most of the arable land is located on Java, Sumatra, Sulawesi and Nusa Tenggara. The east coast of Sumatra, a substantial proportion of Kalimantan and Papua, and much of the northern coast of Java are covered by marshes, swamps and mangrove forests.

The climate is mainly humid tropical with low seasonal variation. Temperatures average 28°C in the coastal area, 26°C inland, and about 23°C in the higher mountains.[7] The rainy season occurs between November and April, leaving May through October typically dry.[8] Mean annual precipitation is 2782.29 mm.

[3] https://journal.ugm.ac.id/ijg/article/view/54247
[4] https://jurnal.ugm.ac.id/ijg/article/view/12792
[5] https://www.worlddata.info/asia/indonesia/index.php
[6] https://volcano.si.edu/volcanolist_countries.cfm
[7] https://iklim.bmkg.go.id/publikasi-klimat/ftp/brosur/LEAFLETINGGRISB.pdf
[8] https://climateknowledgeportal.worldbank.org/country/indonesia/climate-data-historical

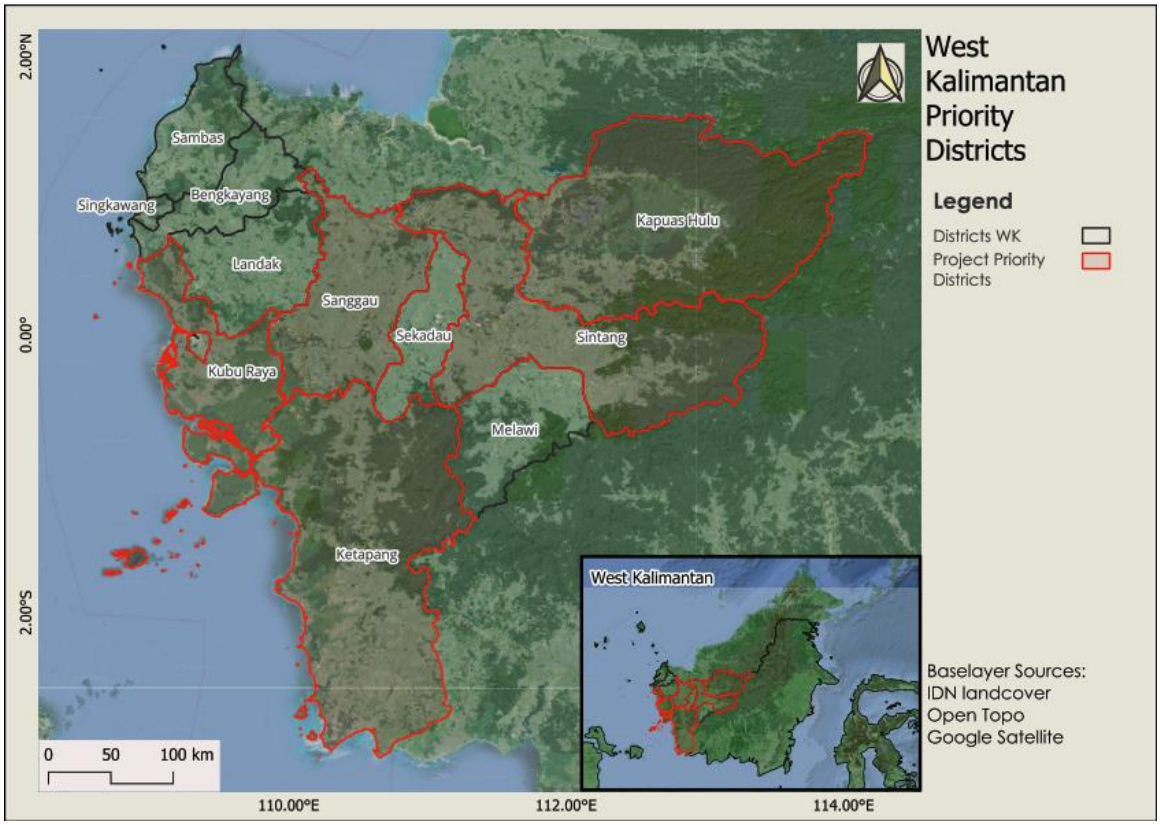
Figure 1: Indonesia topographic map and location of West Kalimantan

The country is divided into 38 provinces[9], which in turn are divided into regencies (*kabupaten*) and cities (*kota*), which are again divided into sub-districts (*kecamatan*), and finally villages (*desa*) and urban communities (*kelurahan*).

The project area, West Kalimantan province, is the third largest province in Indonesia. It is located on the island of Borneo below the Malaysian territory of Sarawak to the north. The province has a land area of 147,307 km² (Figure 2).[10] The province consists of 12 regencies and two cities Pontianak and Singkawang. The five priority regencies to be addressed by the project are: Kapuas Hulu, Ketapang, Kubu Raya, Sanggau and Sintang and make up substantial 69.21% of the entire province. West Kalimantan has been one of the Indonesia´s deforestation hotspots.[11]

[9] https://jakartaglobe.id/news/indonesia-adds-four-new-provinces-to-38-overall
[10] BPS-Kalimantan Barat Province. 2022. Provinsi Kalimantan Barat dalam angka 2022.
[11] https://www.wri.org/blog/2019/07/indonesia-reducing-deforestation-problem-areas-remain

Figure 2: Project area location in West Kalimantan



1.2 Socio-economic Profile

1.2.1 Demographic and social context

Indonesia has a population of 270.2 million (133.5 million female, 136.6 million male) according to the 2020 national census[12,13]. The country has a relatively young population, with 70.72% in the productive age group between 15 to 64 years. The population growth rate is declining and averaged 1.25% per year from 2010 to 2020. Approximately 56.1% of Indonesia's population resides on Java, the most populous island with a population density of 1,171 people per square km. Population density on the other islands beyond Java and Bali is low, ranging from 9 to 290 people per square km in the different provinces. Urban population has been rising steadily from 18.3% of the total population in 1973 to 57.9% in 2022.[14]

Regarding the project area, the 2020 census registered 5.41 million people residing in West Kalimantan, 2,630,277 females and 2,784,113 males. The population density is low, with 37 people per square km[15] and the population growth rate was 1.56% in 2019. The population is mostly rural with 69.8% or 3,067,798 people living in the countryside in 2010.[16] About 69% of the population is in the productive age group between 15 and 64 years, similar to the proportion at the national level.

[12] https://setkab.go.id/en/statistics-indonesia-releases-2020-census-results/
[13] https://unstats.un.org/unsd/demographic-social/meetings/2021/egm-covid19-census-20210209/docs/s03-04-IDN.pdf
[14] Urbanization in Indonesia 2021 Published by Aaron O'Neill, Jan 26, 2023
https://www.statista.com/statistics/455835/urbanization-in-indonesia/
[15] Badan Pusat Statistik, Jakarta, 2021.
[16] https://www.citypopulation.de/en/indonesia/kalimantanbarat/admin/

Indonesia´s human development index (HDI) which considers both income and life quality, has risen steadily from 67.7 in 2012 to 72.91 in 2022[17], with Indonesia ranking 107 out of 189 countries globally. Since 2014, the adult literacy rate has been over 95%.[18]

People living below the poverty line decreased from 17.4% in 2003 to 9.54% or 26.16 million people in 2022.[19] To lift people out of poverty, the Government of Indonesia (GoI) is promoting economic development of at least 5% per year in order to reduce the poverty rate to less than 4% by 2025.[20]

In West Kalimantan, poverty rates declined from 9.1% in 2010[21] to 6.73% in March 2022 according to the Central Bureau of Statistics (*Badan Pusat Statistik*, BPS).[2223] In 2022, West Kalimantan had 2,031 villages, with no more villages considered "least developed village" according to a national categorization.[24] The province has made great strides improving the Village Development Index[25] and reaching 586 independent villages, 549 advanced villages, 802 developing villages and only 94 disadvantaged villages and no more the least development village (see footnote for explanation of different index categories).[26]

West Kalimantan has a medium HDI at 68.63 points in 2022, ranking it 30th out of the 34 Indonesian provinces and consequently significantly lacking behind the national average.[2728] From a peak of 8.61% in 2005, the unemployment rate declined to 2.53% in 2014, and then hovered between 4.06 to 5.82% from 2015 to 2022, similar to national level averages. Adult literacy rate was over 95% in 2020.[29]

Indonesia is culturally very diverse with many different ethnic groups, languages, beliefs and customs. The 2010 census recorded 1331 ethnic groups in Indonesia.[30] With subsequent regrouping, 633 major tribal groups were identified. The largest groups are the Javanese (40.05% of the total population) and the Sundanese (15.5%), both residing pre-dominantly on the island of Java.

West Kalimantan resembles this cultural diversity, main ethnic groups in West Kalimantan include the Dayak (35%), Malay (34%), Javanese (10%), Chinese (8%), Madurese (6%) and Bugis (3%). Dayak and Malay ethnic groups are also considered the two indigenous peoples of West Kalimantan. Within the Dayak and Malay manifold sub-groups exist that are described in detail in Annex 6 including the Indigenous Peoples Plan (IPP) of the project.

1.2.2 Macro-economic context

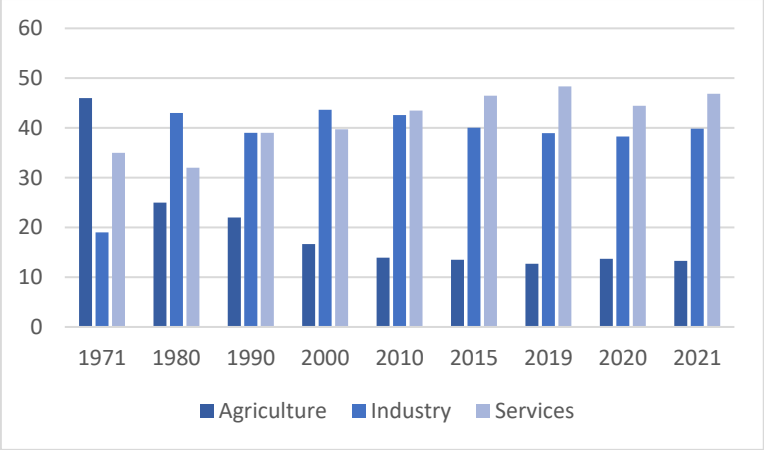
[17] https://dataindonesia.id/ragam/detail/indeks-pembangunan-manusia-ri-naik-jadi-7291-pada-2022
https://dataindonesia.id/ragam/detail/indeks-pembangunan-manusia-ri-naik-jadi-7291-pada-2022
[18] https://data.worldbank.org/indicator/SE.ADT.LITR.ZS?locations=ID
https://data.worldbank.org/indicator/SE.ADT.LITR.ZS?locations=ID
[19] https://www.statista.com/statistics/962950/indonesia-share-of-people-living-below-the-poverty-line/
[20] EDC. https://drive.google.com/file/d/112yD5S9hQqQkv7hVMRugejqvdXCDYgHd/view
[21] https://jatim.bps.go.id/indicator/23/344/1/persentase-penduduk-miskin-menurut-provinsi-.html
[22] https://kalbar.bps.go.id/pressrelease/2022/08/01/1156/jumlah-penduduk-miskin--maret-2022--di-kalimantan-barat-mencapai-350-25-ribu-orang--6-73-persen-.html[22] https://kalbar.bps.go.id/pressrelease/2022/08/01/1156/jumlah-penduduk-miskin--maret-2022--di-kalimantan-barat-mencapai-350-25-ribu-orang--6-73-persen-.html.
https://jurnal.bpskalbar.com/index.php/jsa/article/download/5/1
[23] https://jurnal.bpskalbar.com/index.php/jsa/article/download/5/1
[24]https://kalbarprov.go.id/berita/gubernur-sutarmidji-raih-penghargaan-tuntaskan-zero-desa-sangat-tertinggal-di-wilayah-kalbar.html
[25] Village Development Index is a framework used by the Government of Indonesia to measure at which levels the village development is progressing. Levels are categorized into independent villages, advanced villages, developing villages, disadvantaged villages, and least-development villages. There are 52 indicators measured, which fall under 3 aspects: social, economic, and environmental.
[26] https://pontianakpost.jawapos.com/kubu-raya/1462741508/penambahan-desa-mandiri-kalbar-berikan-kontribusi-besar
[27] Since the end of 2022, Indonesia has 38 provinces with 4 new provinces in the Papua Island. Data collection is only available from 2023 for new provinces.
[28] https://www.bps.go.id/en/statistics-table/2/Mjg4IzI=/-2010-version--per-capita-gross-regional-domestic-product--by-province.html
[29] https://datacatalog.worldbank.org/dataset/indonesia-database-policy-and-economic-research
[30] https://www.bps.go.id/news/2015/11/18/127/mengulik-data-suku-di-indonesia.html
https://www.bps.go.id/news/2015/11/18/127/mengulik-data-suku-di-indonesia.htmlhttps://www.bps.go.id/news/2015/11/18/127/mengulik-data-suku-di-indonesia.html
https://www.bps.go.id/news/2015/11/18/127/mengulik-data-suku-di-indonesia.html

Indonesia is an emerging market economy and the largest economy in Southeast Asia. It is classified as a middle-income country and is a member of the G20 forum for international economic cooperation where it assumed the presidency in 2022. The economy recovered from the Asian financial crisis of 1997 and had accelerated GDP growth of 4–6% per annum from then onwards.[31] GDP rose from EUR 104.84 billion[32] (US$ 115.32 billion) in 1998 (at current prices) to EUR 686.6 billion (US$ 755.26 billion) in 2010 and EUR 1172.73 billion (US$ 1290 billion) in 2022.[33] Economic growth was slowed by the COVID-19 pandemic in 2020-21, but the country has since recovered with growth rates above 5%[34] following high exports due to strong commodity prices and removal of COVID restrictions.

GDP per capita in 2010 was IDR 28,778,170 (EUR 1692.83)[35] at current prices and more than doubled to IDR 62,258,080 (EUR 3,662.24) in 2021.[36,37] From a peak unemployment rate of 11.2% in 2005, it declined steadily over the years to 5.2% in 2019. After a brief spike during the COVID pandemic to 7.1% and 6.5% in 2020 and 2021, the unemployment rate dropped again to 5.5% in 2022.[38]

Indonesia is a country rich in natural resources (forest products, minerals, fossil fuels and fisheries), and much of its economy depended and still depends on their extraction and use along with forest plantations and estate crops on the extensive land base. Though absolute values are on the rise, the agriculture sector's (agriculture, forestry and fisheries combined) share of GDP has declined continuously from 46% in 1971 to 13% in recent years (Figure 3). The share of the industrial sector (mainly manufacturing, mining and construction) rose sharply by 126% from 1971 to 1980 and fluctuates around 40% since then. The share of the service sector rose more gradually and occupies the dominant position since about 2010, contributing 47% of the GDP in 2021.

Figure 3: Percent of GDP by economic sector[39]



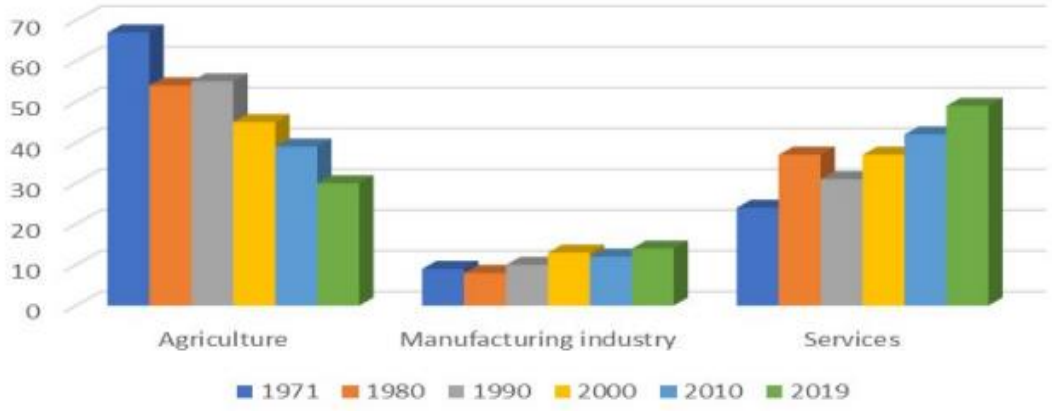
According to data from the National GDP, the forestry subsector's GDP share has been less than 1% (about 0.66-0.8%) since at least 2010 (BPS) and was about 3-4% prior to that.[40] However the true share of the forestry sector to GDP is likely much higher when not only including economic activities directly related to the production of timber and Non-Timber Forest Products (NTFPs) but also value added as part of the manufacturing process and the sectors contribution to tourism, transport and other services. MoEF in cooperation with the Central

[31] https://www.macrotrends.net/countries/IDN/indonesia/gdp-growth-rate
[32] To convert US$ into EUR, the following exchange rate is used: 1.1 US$ = 1 EUR
[33] https://www.imf.org/en/Countries/IDN
[34] https://www.indonesia-investments.com/news/todays-headlines/economic-update-indonesia-impressive-5.72-growth-rate-recorded-in-q3-2022/item9573
[35] To convert IDR into EUR, the following exchange rate is used: 17,000 IDR = 1 EUR
[36] https://www.bps.go.id/en/statistics-table/2/Mjg4IzI=/-2010-version--per-capita-gross-regional-domestic-product--by-province.html
[37] https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?locations=ID
[38] https://www.imf.org/en/Countries/IDN
[39] Sources: https://unctad.org/system/files/official-document/BRI-Project_RP07_en.pdf (1971-1990), www.bps.go.id (2000-2021)
[40] https://journal.ugm.ac.id/jieb/article/download/6313/18142 https://journal.ugm.ac.id/jieb/article/download/6313/18142

Bureau of Statistics (BPS) and supported by Forest and Climate Change Programme (FORCLIME) developed recently a new methodology aimed at complementing the calculation of the forestry subsector's contribution to the national GDP to better account for all up- and downstream activities of the sector by using Forestry Satellite GDP, subcategories of economic activities that were previously not considered in the forestry subsector GDP [41]. The methodology revealed that the contribution of the forestry sector to the national economy at current prices was around four times higher than previously assumed by the conventional calculation methodology. In relative numbers, the forestry sector contributed on average 2,85% to national GDP between 2015 and 2020.

Reflecting the decreasing share of output, the share of the agricultural sector in employment declined continuously from 67% in 1971 to 30% in 2019 (Figure 4).[42] The industrial sector expanded its share in employment from 9% in 1971 to 14% in 2019, and the services sector from 24% to 49%. The industrial sector does not absorb as much labour as the agriculture and service sectors, which could be an effect of the use of labour-saving technology, promotion of small and medium-sized enterprises (SMEs), and foreign direct investment in the service sector (such as transportation, telecommunication, trade, finance and tourism).

Figure 4: Share of employment by sector (1971 - 2019) [43]



Indonesian exports increased by 35.2% from 2017 (EUR 153.46 billion worth; US$ 168.8 billion) to EUR 207.46 billion (US$ 228.2 billion) in 2021[44]. Palm oil, coal and petroleum gas were the top commodities, with 26.6% of the export value in 2021. Bulk (71.6%) of Indonesia's exports by value went to other Asian countries while 12.3% worth went to North America and 9.9% worth to Europe. Agriculture, Forestry and Other Land Use (AFOLU) product exports added up to EUR 41.37 billion (US$ 45.51 billion). Besides palm oil (EUR 24.27 billion worth; US$ 26.7 billion), other AFOLU-based exports include natural rubber and rubber products (EUR 3.64 billion; US$ 4 billion), coconut and other such oils, laminated wood, wood pulp, coffee, hydrogenated fats and oils, shaped wood, cocoa products, cotton yarn, nuts, wood carpentry, paper, turtle eggs, birds' nests, and miscellaneous vegetable products.

West Kalimantan

West Kalimantan's Gross Regional Domestic Product (GRDP) grew steadily from IDR 86 trillion in 2010 (EUR 5.06 billion) to IDR 194 trillion (EUR 11.41 billion) in 2018 and IDR 231 trillion (EUR 13.588 billion) in 2021. The province ranked 17 out of 34 provinces in terms of its GRDP in 2021. Its GRDP growth rate of 4.78% is relatively high compared to that of other provinces. GDP per capita in 2020 was IDR 39,622,240 (EUR 2,327) at current market prices,

[41] Policy brief on Green GDP (forclime.org)
https://www.forclime.org/documents/Briefing%20Note/English/Policy%20brief%20on%20Green%20GDP_English.pdf
[42] https://unctad.org/system/files/official-document/BRI-Project_RP07_en.pdf
[43] Source: https://unctad.org/system/files/official-document/BRI-Project_RP07_en.pdf; BPS 2020.
https://unctad.org/system/files/official-document/BRI-Project_RP07_en.pdf
[44] https://www.worldstopexports.com/indonesias-top-10-exports/#:~:text=Located%20mostly%20in%20Southeast%20Asia,around%20the%20globe%20in%202021

relatively low compared to the national average of IDR 57,289,590 (EUR 3,365), placing West Kalimantan 23rd out of 34 provinces.[45]

The service sector (55.25%) was the largest contributor to the GRDP, followed by the agricultural sector (21.24%), the manufacturing sector (16.49%) and then the mining sector (7.02%) Table 1[46]. Contribution of agriculture, mining and manufacturing has been rising over the last years, while the service sector´s contribution has fallen. The relative contribution of the forestry subsector has been falling, although still considerably higher in 2021 (1.12%) than on a national average (0.7% in 2020[47]), while that of the plantation (estate crop) subsector has been rising. A lot of the primary commodities produced in the province are exported. In 2021, the total value of goods exported was EUR 1.71 billion (US$ 1.88 billion).

Table 1: Gross Regional Domestic Product at Current Prices by industry in West Kalimantan (2017-2021)

	2017		2021	
Sector	**Billion Rupiah**	**% contribution**	**Billion Rupiah**	**% contribution**
1. Agriculture Sector	36,026	20.3	49,126	21.24
- **Agriculture (Plantation crops)**	31,026 (17,894)	17.48 (10.08)	42,917 (27,159)	18.55 (11.74)
- **Forestry**	2,297	1.29	2,585	1.12
- **Fisheries**	2,702	1.52	3,623	1.57
2. Mining, quarrying	9,675	5.45	16,236	7.02
3. Industrial manufacturing	28,663	16.15	38,138	16.49
- **Wood**	1,656	0.93	1,665	0.72
- **Paper**	78	0.04	91	0.04
- **Rubber & plastic**	1,439	0.81	1,837	0.79
- **Other products**				
4. Service Sector		58.1		55.25
Total	**177,494**		**231,321**	

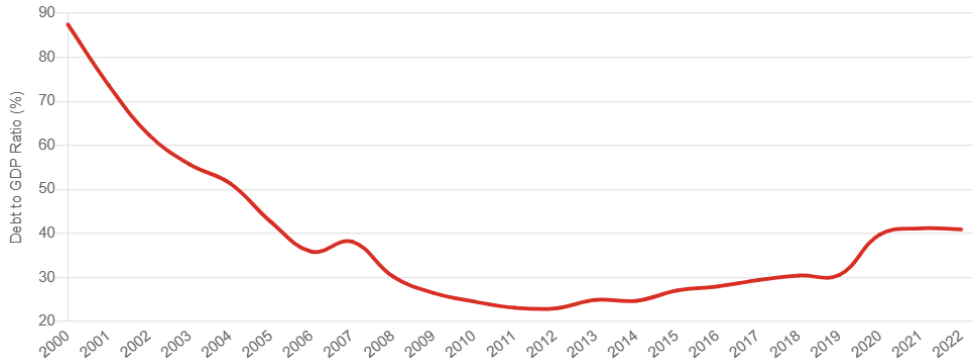
Source: BPS – Kalimantan Barat Province 2021

1.2.3 Fiscal context

Indonesia's Government Debt was 40.90 % of the country's GDP in 2022, having increased gradually from 23% in 2012 to 30.6% in 2019, and rising sharply to 40-41% in the years 2020-22 (Figure 5). The sharp increase in spending in the 2020-22 period was due to removal of the constitutional budget deficit cap of 3% of GDP and provision of stimulus measures to support the economy during the covid pandemic.[48] This included higher health care spending, social protection, corporate tax cuts, credit restructuring, loans to SMEs, expansion of public sector projects, and cash handouts to the poor and to informal sector workers. These measures led to fiscal deficits of 6.2% of GDP in 2020 and 4.6% of GDP in 2021.

[45] https://www.bps.go.id/en/statistics-table/2/Mjg4IzI=/-2010-version--per-capita-gross-regional-domestic-product--by-province.html
[46] BPS-Kalimantan Barat Province. 2022. Provinsi Kalimantan Barat dalam angka 2022.
[47] Policy brief on Green GDP (forclime.org)
https://www.forclime.org/documents/Briefing%20Note/English/Policy%20brief%20on%20Green%20GDP_English.pdf
[48] https://group.atradius.com/publications/country-report/indonesia-solid-gdp-rebound-downside-risks-loom.html

Figure 5: Indonesia Debt to GDP Ratio (%)



Source: IMF, World Economics (Current Market Prices)
https://www.worldeconomics.com/grossdomesticproduct/debt-to-gdp-ratio/Indonesia.aspx

In 2022, the fiscal deficit reduced to 2.38% of GDP due to an export boom, high global commodity prices, economic recovery from the pandemic, and increased VAT and tax collection.[49] The budget deficit is expected to be less than 3% in 2023 as well.[50]

The current position of government external debt is considered safe and manageable in terms of short-term refinancing risk, with approximately 99.7% dominated by long-term maturities.[51] Indonesia´s vulnerability to shifts in investor sentiment is also mitigated by sound monetary policies, a resilient banking sector and the fact that pre-pandemic annual budget deficits were low.[52]

1.3 Forest Sector Profile

1.3.1 Forest land status

About 64% of Indonesia's land cover area or 120.3 million hectares is currently designated as national forest area (*Kawasan Hutan*) under the jurisdiction of the Ministry of Environment and Forestry (MoEF); the remaining area is classified as non-forest area or "other land use" (*Areal Penggunaan Lain - APL*)[53].

Indonesia's national forest area is divided into three functional categories:

- Production Forest (*Hutan Produksi*, 68.8 million hectares);
- Protection forest (*Hutan Lindung*, HL, 29.6 million hectares);
- Conservation forest (*Hutan Konservasi*, HK, 21.9 million hectares).

Production forest area is currently (as per GR 23/2021)[54] subdivided into:

- Permanent Production Forest (*Hutan Produksi Tetap*, HP, 56 million hectares);
- Convertible Production Forest (*Hutan Produksi yang Dapat Dikonversi*, HPK, 12.8 million hectares)

The conservation forest area is categorized into:

- Sanctuary Reserve Areas (*Kawasan Suaka Alam*, KSA); KSA consist of Strict Nature Reserves (*Cagar Alam*, CA) and Wildlife Sanctuaries (*Suaka Margasatwa*, SM).

[49] https://www.reuters.com/markets/asia/indonesias-2022-fiscal-deficit-seen-249-gdp-president-2022-12-21/
[50] https://setkab.go.id/en/govt-to-maintain-2023-state-budget-deficit-below-3-percent/
[51] https://www.bi.go.id/en/publikasi/ruang-media/news-release/Pages/sp_2424722.aspx
[52] https://group.atradius.com/publications/country-report/indonesia-solid-gdp-rebound-downside-risks-loom.html
[53] https://kemlu.go.id/download/L1NoYXJlZCUyMERvY3VtZW50cy9Eb2t1bWVuX0luZm9ybWFzaS9UaGUlMjBTdGF0ZSUyMG9mJTIwSW5kb25lc2lhJTIwRm9yZXN0JTIwMjAyMCUyMEV4ZWN1dGl2ZSUyMFN1bW1hcnkucGRm
[54] PP No. 23 Tahun 2021 (bpk.go.id)

- Nature Conservation Areas (*Kawasan Pelestarian Alam*, KPA). KPA consist of National Parks (*Taman Nasional*, TN), Nature Recreation Parks (*Taman Wisata Alam*, TWA) and Grand Forest Parks (*Taman Hutan Raya*, Tahura).

West Kalimantan

In West Kalimantan, 55.5% of the land area, equalling nearly 8.2 million hectares, is designated as forest area (Table 2). The largest part of the forest area is allocated for production forest (4.4 million hectares), which further categorized into permanent production forest (2.1 million hectares), convertible production forest (0.2 million hectares) and limited production forest (2.1 million hectares). Protection forest, nature conservation area and strict nature reserve have the size of 2.3 million hectares, 1.2 million hectares and 0.3 million hectares, respectively.

Table 2: Forest and land status in West Kalimantan by regency

Districts	Other Landuse	Permanent Production Forest	Convertible Production Forest	Limited Production Forest	Total Production Forest	Protected Forest	Sanctuary Reserve Areas	Nature Conservation Areas	Total Protected and Conservation Forests	Grand Total
KAPUAS HULU	759,326	188,194	30,730	390,717	**609,641**	819,742		943,598	**1,763,340**	3,132,306
KUBU RAYA	491,743	135,634	24,821	66,658	**227,113**	138,529		-	**138,529**	857,386
KETAPANG	1,244,738	590,048	71,820	614,449	**1,276,318**	292,358	148,181	22,048	**462,588**	2,983,643
SINTANG	907,654	136,683	17,841	608,745	**763,269**	456,360		70,472	**526,832**	2,197,755
SANGGAU	745,001	343,885	4,974	61,053	**409,912**	96,925	1,579	-	**98,504**	1,253,418
KOTA SINGKAWANG	47,303	5,185	1		**5,186**		2,480	-	**2,480**	54,968
KOTA PONTIANAK	11,819				**-**			-	**-**	11,819
LANDAK	598,864	117,877		11,585	**129,462**	54,111	54,708	2,157	**110,975**	839,302
MELAWI	268,788	187,133	2,280	283,762	**473,175**	228,920		42,037	**270,957**	1,012,920
MEMPAWAH	116,814	51,795	2,367	17,243	**71,405**	3,540		-	**3,540**	191,760
SAMBAS	428,480	92,705	4,911	11,191	**108,807**	26,663		30,384	**57,047**	594,334
BENGKAYANG	347,360	64,503	17,600	46,615	**128,718**	33,531	39,073	1,745	**74,349**	550,427
SEKADAU	424,880	114,059		15,565	**129,624**	66,398		-	**66,398**	620,902
KAYONG UTARA	155,108	83,281	7,644		**90,926**	75,364	3,201	86,157	**164,722**	410,756
Total Province	**6,547,878**	**2,110,983**	**184,989**	**2,127,584**	**4,423,556**	**2,292,442**	**249,223**	**1,198,597**	**3,740,262**	**14,711,696**

The proposed GCF project places a focus on five priority regencies with significant forest resources. Total forest area in these five priority regencies (Kapuas Hulu, Kubu Raya, Ketapang, Sintang and Sanggau) represents 42.7% of province land areas and 76.9% of the remaining forest area in West Kalimantan. The forest area in the priority regencies is dominated by protection forest (1.8 million hectares), limited production forest (1.7 million hectares) and production forest (1.4 million hectares).

1.3.2 Forest cover and types

Indonesia's forest definition submitted to the UNFCCC is: *land area of more than 0.25 hectares with trees higher than 5 meters at maturity and a canopy cover of more than 30 percent*. Besides, Indonesia has adopted a working definition of forest: "a *land area of more than 6.25 hectares with trees higher than 5 meters at maturity and a canopy cover of more than 30 percent*." This working definition has been used for mapping purposes in the submission of the 2nd FRL in 2022[55]. So, both definitions are reported in FRL/FREL documents submitted to UNFCCC.

As per this working definition, about 50.9% or 95.56 million hectares of Indonesia's territory was covered by forest in 2020 (down from nearly 84 percent in 1950[56]), most of it in Sumatra,

[55] https://redd.unfccc.int/media/2nd_frl_indonesia_final_submit.pdf
[56] L. W. Hannibal. 1950. Vegetation Map of Indonesia. Planning Department, Forest Service, Jakarta, in: Forest Policies in Indonesia. The Sustainable Development of Forest Lands. (Jakarta, Indonesia: International Institute for Environment and Development and Government of Indonesia, 1985). Vol. 3, Ch. 4.

Kalimantan, Papua and Sulawesi.[57] Based on canopy cover and forest condition, forests are classified into three types as primary forest, secondary forest and plantation forest.

As depicted in Table 3, forest cover includes 88.41 million hectares in the national forest area and 7.15 million hectares in non-forest area or APL. About 28% of the permanent production forest areas, and 19-20% of the conservation and protection forest areas do not have forest cover. These lands are barren, covered by shrubs and grasses, or used for agriculture, estate crops, settlements, and other activities. About 6.37 million hectares of the land with forest cover in the National Forest area is in convertible production forest and can therefore be legally converted to other land use in the future.

Table 3: Extent of land cover in Indonesia in 2020

No.	Land cover	Forest area (million hectares)						Non-forest area (APL)	TOTAL	%
		Permanent forest				HPK	TOTAL			
		HK	HL	HP	TOTAL					
I	**Forested**	**17.49**	**24.16**	**40.34**	**81.99**	**6.42**	**88.41**	**7.15**	**95.56**	**50.90**
	A. primary forest	12.56	16.10	14.33	42.99	2.53	45.52	1.48	47.00	25.03
	B. secondary forest	4.82	7.79	21.64	34.25	3.85	38.10	5.02	43.12	22.96
	C. plantation forest	0.11	0.28	4.37	4.76	0.04	4.80	0.65	5.45	2.90
II	**Non- forested**	**4.39**	**5.40**	**15.69**	**25.48**	**6.37**	**31.85**	**60.34**	**92.19**	**49.10**
Total		**21.87**	**29.56**	**56.03**	**107.47**	**12.79**	**120.26**	**67.49**	**187.75**	**100.00**
% forested area		**80.0**	**81.7**	**72.00**	**76.3**	**50.2**	**73.5**	**10.6**	**50.90**	

HK – Conservation Forest, HL – Protection Forest, HP – Permanent production forest, HPK – Convertible production forest.

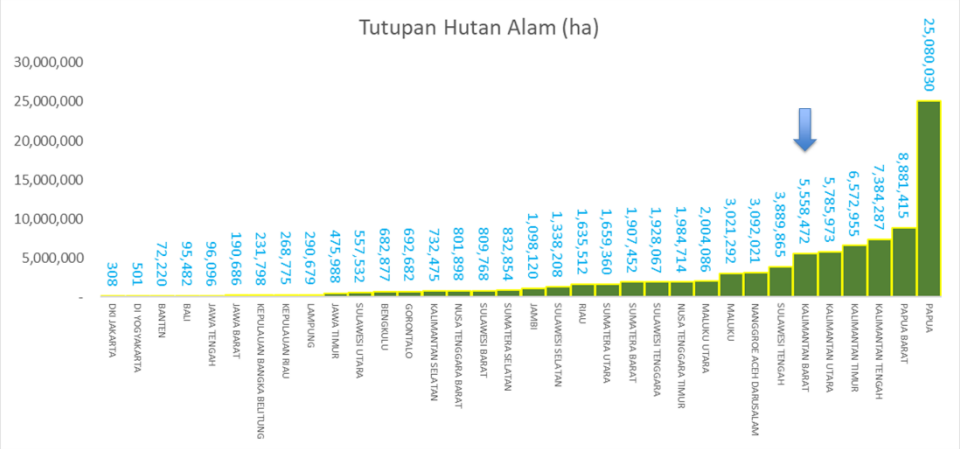
Source: MoEF 2021. As per GR 23/2021, Limited production forest (HPT) was merged into Permanent production forest (HP).

West Kalimantan

West Kalimantan is the fifth province in Indonesia with the largest remaining natural forests with total forested area of 5.6 million hectares in 2017, after Papua, West Papua, Central Kalimantan, East Kalimantan and North Kalimantan.

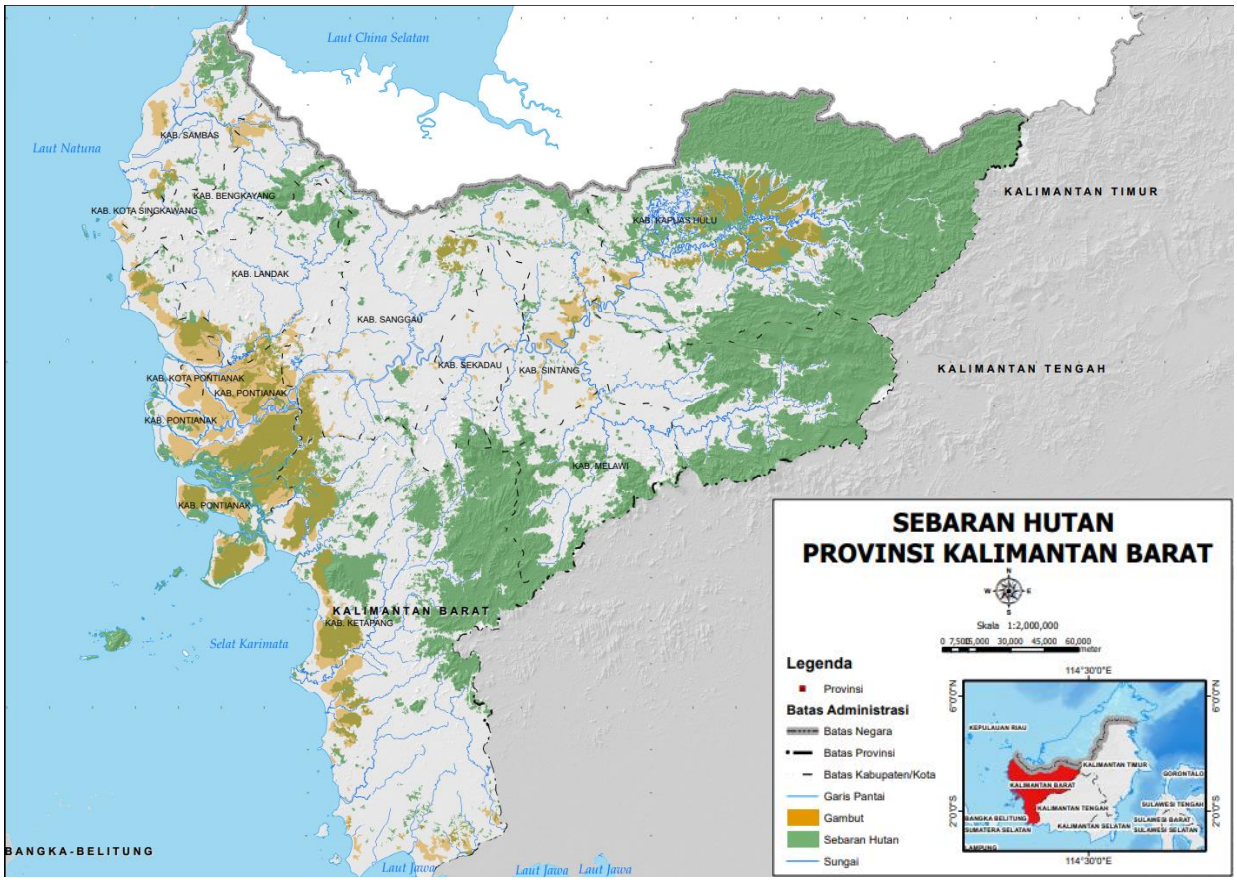
[57] https://sigap.menlhk.go.id/sigap-trial/files/download/2-booklet-pdtk-2021_indo.pdf

Figure 6: Natural forest area Indonesian provinces (ha)



Based on forest and land cover map 2020, produced by MoEF (see Table 4), 5.5 million hectares of West Kalimantan Province still covered with natural forest (37.5% of total West Kalimantan land area). This makes West Kalimantan one of the remaining forest-rich provinces in Indonesia and constitutes its importance within the context of the national FOLU Net sink 2030 strategy and the contributions achieve the climate change goals of the Nationally Determined Contribution (NDC).

Figure 7: Forest cover 2020 (green) and peatland (orange) distribution of West Kalimantan



The remnant forest is mostly located in the focus regencies Kapuas Hulu (2.22 Mha), Ketapang (0.95 Mha) and Sintang (0.91 Mha) – see Table 4 below). Most of the natural forest is dominated by dryland

forests, both primary and secondary (2.2 million hectares and 2.1 million hectares). Secondary swamp forest is abundant with a total area of 1.1 million hectares. Mangrove forests cover an area of 116,000 hectares with largest concentration in Kubu Raya Regency.

Table 4: Remaining forest cover of West Kalimantan by Regency in 2020 (in hectares)

Districts	Primary dryland forest	Secondary dryland forest	Secondary mangrove forest	Secondary swamp forest	Grand Total
KAPUAS HULU	1,314,943	504,492		403,953	2,223,389
KETAPANG	182,979	578,023	2,570	188,980	952,551
KUBU RAYA		4,947	89,029	205,969	299,945
SANGGAU	10,142	51,215		65,414	126,771
SINTANG	391,766	491,306		27,225	910,297
KAYONG UTARA	20,531	57,903	17,318	127,198	222,950
LANDAK	35,639	35,525		21,733	92,896
MELAWI	171,766	242,290		858	414,914
MEMPAWAH		4,896	855	35,220	40,971
SAMBAS		49,563	6,625	45,457	101,644
SANGGAU	10,142	51,215		65,414	126,771
SEKADAU	34,808	14,802		2,599	52,208
KOTA SINGKAWANG		1,504		3,670	5,174
Grand Total	**2,208,933**	**2,062,991**	**116,396**	**1,133,575**	**5,521,895**

Source: Spatial analysis of MoEF forest and land cover map (2020)

Indonesian legislation differentiates between Forest land and forest cover, with the former being an area that should be forest at a given point and the latter being the actually observed forest cover. Only 60% of total forest land in West Kalimantan (equal to 5.5 million ha) was covered with forest in 2020[58]. However, this contributes to 91.8% of the remaining forest cover in West Kalimantan. The remainder is forest cover outside the defined forest land (APL), which amounts to 0.45 million hectares, which equals 8.2% out of 5.5 million ha forest cover in West Kalimantan. The largest forested area was protected forest, limited production forest and nature conservation areas, with total area of 1.7 million hectares, 1.4 million hectares and 1.1 million hectares, respectively (see the following Table 5).

[58] Forest and land cover map 2020 (MoEF)

Table 5: Forest cover in various forest function in West Kalimantan in 2020 (in hectares)

Districts	Other Landuse	Permanent Production Forest	Convertible Production Forest	Limited Production Forest	Protected Forest	Sanctuary Reserve Areas	Nature Conservation Areas	Grand Total
KAPUAS HULU	201,209	116,740	14,528	313,251	732,215	-	852,430	**2,230,374**
KUBU RAYA	51,685	79,805	10,885	52,993	105,452	-	-	**300,820**
KETAPANG	62,212	219,053	23,734	384,797	231,736	2,978	15,538	**940,048**
SINTANG	43,706	15,097	376	415,345	371,551	-	68,844	**914,919**
SANGGAU	11,555	69,970	311	15,894	29,702	1,186	-	**128,619**
KOTA SINGKAWANG	1,375	2,793	-	-	-	1,005	-	**5,174**
KOTA PONTIANAK	-	-	-	-	-	-	-	**-**
LANDAK	14,175	16,422	-	2,745	19,111	38,727	859	**92,039**
MELAWI	6,883	36,969	603	171,703	158,819	-	40,446	**415,423**
MEMPAWAH	5,678	31,323	645	2,987	369	-	-	**41,001**
SAMBAS	16,725	41,182	3	3,939	18,837	-	21,938	**102,625**
BENGKAYANG	14,580	6,335	48	7,457	16,415	33,313	818	**78,966**
SEKADAU	3,172	10,626	-	5,450	40,517	-	-	**59,766**
KAYONG UTARA	19,710	66,975	2,645	-	57,323	1,981	74,767	**223,401**
Total Province	**452,666**	**713,291**	**53,779**	**1,376,561**	**1,782,046**	**79,191**	**1,075,640**	**5,533,174**

Source: Spatial analysis of MoEF forest and land cover map (2020)

1.3.3 Peatlands, peat swamp forests and mangrove forests

Indonesia has approximately 14.9 million hectares of peatlands, about 23 per cent of the world's total tropical peatlands.[59] Most of the peatlands are in Sumatra, Kalimantan and Papua. Flooded tropical peatland hosts biodiverse rainforest and fauna, is an effective carbon sink and provides water regulation services among other benefits.

The mangrove ecosystem in Indonesia is one of the largest in the world, with total area of 3.3 million hectares (Peta Mangrove Nasional, 2019). Most of mangrove ecosystem was located in Papua (1.4 million hectares), Kalimantan (736,000 hectares) and Sumatra (666,000 hectares).

However, decades of draining peatlands to provide land for palm oil, paper and rubber plantations, as well as failed agricultural projects, have left vast areas of peatland dried out. Drainage is one of the key causes of peatland deforestation, biodiversity loss and wetland subsidence. Fire has been used by farmers and concessions to cheaply clear land for planting. Drained dry peat is highly flammable, and fires smoulder underground for long periods. Exposed peat and peat fires release substantial carbon and other greenhouse gases. Fires and their toxic haze threaten the health of local residents and have significant economic impact..

The Indonesian Peatland Restoration Agency (*Badan Restorasi Gambut* BRG) was created in 2016 to restore 2.67 million hectares of peatlands and peat swamp forests (900,000 hectares outside concessions and 1.7 million hectares inside concessions). In 2020 they were additionally tasked with restoration of 600,000 hectares of degraded mangroves and the name of the agency was changed to *Badan Restorasi Gambut dan Mangrove* (BRGM). By the end of 2020, BRGM had managed to restore 835,288 hectares of peatland outside concession areas. BRGM carried out its peat restoration efforts in parallel with a similar rehabilitation programme by plantation and pulpwood companies whose concessions include peat landscapes. This private-sector effort managed to restore 3.64 million hectares[60].

For seven priority provinces in Indonesia (Jambi, West Kalimantan, South Kalimantan, Central Kalimantan, Papua, Riau, South Sumatra), MoEF Regulation (Permen LHK 2/2021) assigns

[59] Yuwati, T.W.; Rachmanadi, D.; Pratiwi; Turjaman, M.; Indrajaya, Y.; Nugroho, H.Y.S.H.; Qirom, M.A.; Narendra, B.H.; Winarno, B.; Lestari, S.; et al. Restoration of Degraded Tropical Peatland in Indonesia: A Review. Land 2021, 10, 1170. https://doi.org/10.3390/land10111170

[60] https://news.mongabay.com/2021/01/indonesia-renews-peatland-mangrove-restoration-agency-brgm/

responsibility for peatland restoration activities to the provincial administration in Indonesia, including West Kalimantan. Generic, country wide maps of primary forests and peat exist, however these often do not represent the situation on the ground.

Peatlands and Mangroves in West Kalimantan

As one of the identified priority provinces for peat and mangrove protection, West Kalimantan has more than 1.5 million hectares of peatland which are distributed in all regencies. The largest distribution of peatlands is located in Kubu Raya, Ketapang and Kapuas Hulu Regencies, with a total area of 516,000 hectares (ha), 262,000 ha and 245,000 ha, respectively. More than 76% of peatlands are distributed in the five priority regencies, with total area peatland of 1.2 million hectares.

Figure 8: Area of Peatland in West Kalimantan by Regency

District	Forested	Non Forest	Total
KAPUAS HULU	207,936	36,656	**244,592**
KUBU RAYA	186,390	329,344	**515,735**
SANGGAU	53,394	46,064	**99,458**
KETAPANG	144,860	117,094	**261,954**
SINTANG	11,601	54,154	**65,755**
KOTA SINGKAWANG	2,321	1,638	**3,960**
KOTA PONTIANAK		4,252	**4,252**
LANDAK	13,498	30,134	**43,633**
MELAWI	127	5,557	**5,684**
MEMPAWAH	31,003	41,210	**72,212**
SAMBAS	12,767	45,400	**58,167**
BENGKAYANG	1,603	28,680	**30,284**
SEKADAU	314	9,986	**10,301**
KAYONG UTARA	105,783	26,741	**132,524**
Grand Total	**771,598**	**750,171**	**1,548,510**

Source: Spatial analysis of MoEF forest and land cover map (2020) and Ministry of Agriculture peatland map (2019)

Out of 1.5 million hectares of West Kalimantan peatland, almost 50% of it is still forested in 2020. Most of forested peatland is resided in the five priority regencies, (mostly in Kapuas Hulu, Kubu Raya and Ketapang) with total area of 604,000 hectares, which equals to 78% of province forested peatlands. Kayong Utara is the regency outside priority regencies that still has vast area of forested peatland, with total area of 106,000 ha. Of the 1.5 million ha of peatlands in West Kalimantan, 100% is drained and as such acts as a permanent source of greenhouse gas emissions. In 2020, no primary swamp forest was left and compared to 1990, 86.9% of the area remained secondary forest and 13.1% have been converted.

The total mangrove forest of West Kalimantan in 1990 was 121,913 hectares, mostly secondary mangrove forest already. The largest conversion was to unproductive lands which equals to 8.5% of total 1990 mangrove forests. About 4.6% of it became cultivated lands and built-up areas in 2020.[61] The remaining mangroves forests of West Kalimantan in 2020 was

[61] Numbers based on calculations of the GHG calculation for the project using data from MoEF forest and land cover map (2020) and Ministry of Agriculture peatland map (2019).

117,018 hectares which are distributed in four regencies, Kubu Raya (76%), Ketapang (2%), Kayong Utara (15%), Sambas (6%) and Mempawah (1%).

1.3.4 Forest administration and tenure

Law (Undang-Undang, UU 5/1967) established that all forests and their natural resources are controlled by the state. It recognises two categories of forest tenure - state forest and private forest (small fraction on private lands).

While conservation forests are managed by the national parks´ authorities within the MoEF at national level, provincial governments manage state forests allocated for protection purposes.

Holders of "forest utilization business licenses" (e.g. private companies) can carry out several forestry business activities in protection and production forests.[62] Activities include area utilization, timber/non-timber products harvesting, and/or environmental services utilization such as forest carbon trading (see section 3.5.4 for information on regulation related to carbon trading).

The revised UU 41/1999 included for the first time Hutan Adat (HA) - customary forest as part of state forest (see section 1.3.4.2. for detailed information on customary forest management schemes). With the social forestry policy in 2007, communities have been given permits to manage state forests through various management or co-management schemes.[63] Further since the Constitutional Court ruling 35/PUU-X/2012 and Permen LHK P.32/Menlhk-Setjen/2015, indigenous communities can be officially recognized as holding independent forest tenure for customary forests, though granting of such tenure has been slow and complicated (see section 4.2).

Forest concessions, social forestry schemes and forest management units as main elements of forest administration and management are briefly presented in the following sections. Key sector policies and regulations relevant to the project are discussed in more detail in Section 3.2. A comprehensive list of relevant regulations can be found in Appendix 10.2.

1.3.4.1 Forest Concession

During the New Order period from the late 1960s to late 1990s, Indonesia's forestry sector was heavily oriented towards commercial timber production and export-oriented wood processing to drive economic growth. About 652 natural forest concessions were given rights for timber harvesting (*Hak Pengusahaan Hutan*, HPH) over an aggregate area of 69 million hectares of production forest.[64] From the late 1970s through the late-1990s, Indonesia's HPH-holders formally harvested 20-30 million m^3 of timber annually.[65] Indonesia exported large volumes of unprocessed timber until the imposition of a national ban on log exports in 1985. Thereafter, Indonesia emerged as the world's largest producer and exporter of tropical plywood which slowed down in the mid-1990s. In the 1990s, substantial investments were made in pulp and paper production, with conversion forest being allocated to the industry and subsidies provided.[66] Under the New Order regime, the forestry sector ranked second to petroleum and gas in its contribution to GDP. In the latter half of the 1990s, the sector processed about 60-80 million m^3 of timber per year and generated approximately EUR 3.18 billion (US$ 3.5 billion) annually.

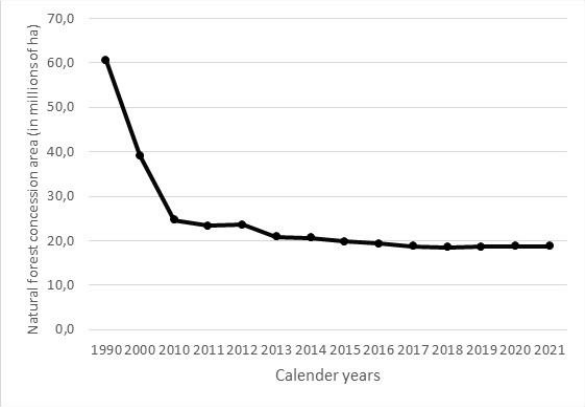
However, from the mid-1990s, the number of natural forest concessions have been declining from to 304 permits covering 25.04 million hectares in 2010, and 261 permits covering 18.8

[62] Forest utilization business licenses are regulated in: GR 23/2021 and MoEF Regulation 8/2021 linked to the Omnibus Law on Job Creation 11/2020 (which now became Law 6/2023).
[63] Arsad Ragandhi, Agus Heruanto Hadna, Setiadi Setiadi and Ahmad Maryudi,* Why do greater forest tenure rights not enthuse local communities? An early observation on the new community forestry scheme in state forests in Indonesia. Forest and Society Vol. 5(1): 159-166, April 2021.
[64] https://www.cifor.org/publications/pdf_files/Books/BBarr0601.pdf
[65] https://www.researchgate.net/publication/24130655_The_Competitiveness_and_Efficiency_of_the_Forest_Product_Industry_in_Indonesia
[66] https://www.cifor.org/publications/pdf_files/Books/BBarr0601.pdf

million hectares in 2021 (Figure 9).[67] The decline was attributed to low log production from selective harvesting and high operating costs which reduced profitability.[68]

Other reasons for the decline include rising competition from other countries across Southeast Asia, tenure conflicts and increased clearing for oil palm and other estate crops.

Figure 9: Natural Forest Concession (HPH) area in millions of hectares, 1990 - 2021



Sources: MoEF (2019), MoEF (2022).

Licensing of industrial timber plantations (*Hutan Tanaman Industri,* HTI) was promoted since the late 1980s for fibre for the growing pulp industry.[69] Conversion Forest was allocated to areas where remaining degraded forests could be used prior to establishing new plantations. By 1990, there were four million hectares licensed as industrial timber plantations. In 2010, the numbers had risen to 236 HTI permits covering 9.36 million hectares[70], and to 312 permits in 2022. Log production from industrial timber plantations from 2018 to 2021 was higher than the annual targets and HTI provided the most forest concession revenue for the government. However, 27 percent of the HTIs have no management activity in the field because of social conflicts over resource use, weak financial performance, and the production capacity gap between plantation forests and downstream industries.[71] Yet, as Indonesian pulp producers expand operations to meet growing demand from China and supplier concessions are re-activated, recent data on deforestation driven by the development of pulpwood plantations in 2022 indicates a trend reversal with Kalimantan being the hotspot[72].

In a move from timber-based forest management to restoration and multi-use forest management, the then Ministry of Forestry issued Ecosystem Restoration Concession (ERC) licenses from 2004 onwards (Permenhut 159/Menhut-II/2004).[73] It recognised three types of forest resource use: “area use” such as for ecotourism and conservation, for ecosystem services such as carbon sequestration and water services, and for production and sale of Non-timber forest products (NTFPs). Licenses were for a period of 60–100 years and license holders could choose to harvest timber once “ecosystem balance” was attained, i.e., timber volumes reached legally harvestable levels and biodiversity and environmental safeguards were met. In total, 16 licenses were awarded to ten license holders, covering an area of 623,075 hectares, about 21% out of the targeted 3 million hectares.**[74]** Ecosystem restoration business plans remained largely aspirational, and most concessions made only limited progress toward realizing revenue streams from carbon markets, non-timber forest products,

[67] MoEF. 2019. Statistik Lingkungan Hidup dan Kehutanan 2018. Jakarta; MoEF. 2022. Directorate General of Sustainable Forest Management Statistic (2021). Jakarta.
[68] MoEF. 2022. The state of Indonesia’s forests 2022. Towards FOLU net sink 2030.
[69] https://www.cifor.org/publications/pdf_files/Books/BBarr0601.pdf
[70] Ministry of Forestry 2010 cited in: https://www.researchgate.net/publication/283008170_Preventing_the_risks_of_corruption_in_REDD_in_Indonesia/figures?lo=1
[71] MoEF. 2022. The state of Indonesia’s forests 2022. Towards FOLU net sink 2030.
[72] https://trase.earth/insights/deforestation-surge-ends-a-decade-of-progress-for-indonesia-s-pulp-sector
[73] https://esajournals.onlinelibrary.wiley.com/doi/full/10.1002/fee.2265
[74] MOEF 2018. https://esajournals.onlinelibrary.wiley.com/doi/full/10.1002/fee.2265#fee2265-bib-0018

and ecosystem services.[75] They faced various setbacks such as tenure conflicts, encroachment issues, fires and high costs of restoration interventions.

In early 2022, the government revoked 192 logging, mining, and plantation permits covering a total area of 3,126,439 hectares on the ground that most of the companies holding such permits have failed to comply with the provisions set forth in the permits, such as failure to carry out operational activities, inability to prepare work plans or abandonment of the areas.[76] Around 28.8% of natural forest concessionaires no longer conduct activity in their concessions.[77]

MoEF is promoting rehabilitation activities and intensive silviculture techniques (*Silvikultur Intensif*, SILIN) to improve natural forest productivity in concession areas. Further since 2021 as per Government Regulation (PP 23/2021) and Permen LHK 9/2021, all concession licenses are changed to Forestry Business Permits allowing them to implement multiple forestry businesses to enhance the scope for sustainable utilisation. The goal is to effectively manage production forests for a diverse range of timber and non-timber forest products and ecosystem services including food, renewable energy, ecotourism, agroforestry, silvopasture, silvofishery, carbon, biodiversity and water.[78] It also seeks to be more inclusive of local communities, resolve conflicts and enhance livelihoods.

West Kalimantan

In West Kalimantan, there were 3,096,984 hectares allocated to forestry concessions as of 2021 with 25 natural forest logging concessions, one Ecosystem Restoration License concession (*Ekosistem Khatulistiwa Lestari*) and 49 HTI.[79] Log production originating from natural forest concessions in 2021 was 177,413 m^3 and industrial plantation forest 672,799 m^3.[80] Most logs come out of industrial plantation forests rather than natural forest concessions. Processed wood production in West Kalimantan consists of sawn timber, plywood, pulp, wood chips and veneer. Plywood production has continued to decline over the past 5 years and was 184,300 m^3 in 2020.[81] The timber economy is no longer the backbone of economic growth in West Kalimantan. On the one hand, this is an opportunity to develop intangible benefits from forests, but on the other hand, forests that cannot generate direct economic benefits will increasingly encourage people to convert them to more profitable commodities (for now, palm oil and rubber).

1.3.4.2 Social Forestry

Local communities have been managing land and forest resources using their own customary tenure systems in a large proportion of the statutory forest zone (state forest) for generations.[82] There were 40,859 villages (about 40% of total villages in Indonesia) located within and around the forest zone. Non-recognition of existing local tenure and land use systems marginalised indigenous people and restricted their access to forest resources leading to widespread poverty and conflicts.

Acknowledgement of community forest-related rights began with the Ministerial Decree (SK Menhut 47/KPTS-II/1998) recognizing centuries-old agroforestry systems in Krui. The government then revised UU 5/1967 into UU 41/1999 providing local communities with forest management licenses under different schemes, while retaining land ownership with the State. Subsequently, constitutional Court Ruling No. 35/PUU-X/2012 (issued in May 2013)

[75] https://www.jstor.org/stable/26986363.https://www.jstor.org/stable/26986363. Restoration concessions. Rhett D Harrison, Tom Swinfield, Asep Ayat, Sonya Dewi, Mangara Silalahi and Ika Heriansyah Source: Frontiers in Ecology and the Environment, DECEMBER 2020, Vol. 18, No. 10 (DECEMBER 2020), pp. 567-575
[76] https://news.mongabay.com/2022/03/fate-of-mine-plantation-concessions-revoked-by-indonesia-to-be-finalized-soon/
[77] MoEF. 2022. The state of Indonesia's forests 2022. Towards FOLU net sink 2030.
[78] MoEF. 2022. The state of Indonesia's forests 2022. Towards FOLU net sink 2030.
[79] https://phl.menlhk.go.id/static/file/statistik/1664940352-Statistik%20Ditjen%20PHL%20Tahun%202021.pdf
[80] https://phl.menlhk.go.id/static/file/statistik/1664940352-Statistik%20Ditjen%20PHL%20Tahun%202021.pdf
[81] BPS-Kalimantan Barat Province. 2022. Provinsi Kalimantan Barat dalam angka 2022.
[82] https://www.cifor.org/publications/pdf_files/WPapers/WP223Siscawati.pdf 2017

recognized full communal ownership over customary forests, by declaring them as no longer being part of the State Forest estate but to be categorized as private forests. Permen LHK 9/2021 linked to the Omnibus law provides the updated details on Social Forestry Management within the country.

There are five key formal social forestry schemes as follows:

- **Village forest (*Hutan Desa or HD*)** - Village Forest permits are given to village institutions for 35 years for managing production and protection forest areas not managed by logging companies or government agencies. The Director General of Social Forestry and Environmental Partnerships (*Direktorat Jendera Perhutanan Sosial dan Kemitraan Lingkungan,* Ditjen PSKL) within MoEF issues the village forest decree and oversees its implementation. Communities are only permitted to appropriate NTFPs and environmental services from the village forest.
- **Community-based forestry (*Hutan Kemasyarakatan* or HKm)** - HKm permits are given to community groups for 35 years for rehabilitation of production and protection forest zones. Ditjen PSKL issues the HKm decree and oversees its implementation. The allocation of a forest area is carried out by the Watershed Management and Forest Rehabilitation Unit (*Balai Pengelolaan Daerah Aliran Sungan dan Rehabilitasi*, BPDASRH) of MoEF in close coordination with the Forest Planning Division of MOEF and local government. There are two types of permits for HKm, a) HKm management permit (*Izin Usaha Perkebunan*, IUP-HKM) for the protection of forest zones where communities are only permitted to harvest non-timber forest products (NTFPs), and b) Permit for Timber Business in production forest zones where the groups can harvest timber and NTFPs.
- **Hutan Adat (HA)** - Customary Forest is a forest that is in the territory of customary law communities and can be officially recognized as a private forest following: (a) Recognition of the existence of customary law communities through Provincial Regulations (*Peraturan Daerah*, PERDA), and (b) Determination by the MoEF on customary forests. The regencies need to pass a regional regulation on customary law communities, as a pre-condition for the designation of customary forests by MoEF.[83].
- **Community-based timber plantation (*Hutan Tanaman Rakyat,* HTR)** - The HTR scheme is granted to community groups for 35 years in production forest zones, in order to establish community timber plantations for timber-based industries and improve the welfare of community groups. The Directorate General of Sustainable Production Forest Management within the MoEF oversees HTR. The community groups can develop forest plantations for timber and can harvest timber.
- **Partnership** (***Kemitraan Kehutanan,* KK**) - This programme is a collaborative partnership between incensed logging or timber plantation companies (state-owned or private) and local communities for forest resource management in production forest zones. The Directorate General of Sustainable Production Forest Management within the MOEF is responsible for Kemiteraan. The companies receive the timber benefits and local communities get NTFP use rights. State-owned and private companies are now obliged to implement this programme, and provincial level forestry agencies and the MOEF are responsible for resolving any conflicts.

The government committed to distributing 12.7 million hectares, or about 10% of state forests to local communities through various social forestry schemes[84], and an additional 28 million hectares of land may be officially claimed as customary or *adat* territory.[85] However, the official licencing process for most schemes is challenging and bureaucratic.

[83] https://bhl-jurnal.or.id/index.php/bhl/article/view/148
[84] https://jurnal.ugm.ac.id/jikfkt/article/view/24865
[85] https://conbio.onlinelibrary.wiley.com/doi/10.1111/csp2.189

Until October 2022, 7694 social forestry licenses were issued to 1.13 million households for 5 million hectares, 39 percent of the target.[86] This included 2.01 million hectares of Hutan Desa, 0.92 million hectares of HKm, 0.36 million hectares of HTR, 0.61 million hectares of KK and 1.2 million hectares of Hutan Adat (108,576 hectares designated and 1,088,149 hectares indicative).[87]

Each new community forest programme requires substantial effort, time and funds for training, capacity building, and planning for effective implementation.[88]

Specific investment and guidance in line with local land use types, livelihoods, and other characteristics is needed to ensure positive environmental and social outcomes beyond the recognition of land rights. Data on the status of development of the social forestry areas and businesses indicate that about 46.6% of the areas are in the blue category (they only received the license) with no further developments yet (DG PSKL in Suharjito et al., 2023).[89] About 43.5% are in the silver category (made a social forestry business group *Kelompok Usaha Perhutanan Sosial* - KUPS and business plan), 9.4% are in the gold (started production business) and 0.6% in the platinum (have clear markets and investment funds) categories. Social forestry business groups and post-license business development needs to be strengthened.

Various positive outcomes have been noted in relation to social forestry development. In the 2015-2018 period, secondary forest cover improved to resemble mature forest; in more than 39,800 hectares of HD and more than 25,055 hectares of HKm (Wahyu et al., 2020). Social forestry has had an economic impact on on-farm business (agroforestry) and environmental services (ecotourism) and provides a multiplier effect to households (Suharjito *et al*. 2023). Development of social forestry-based off-farm business has also had a positive economic impact, though not yet significant enough.

Recent developments have improved the development of social forestry with the Center for Social Forestry and Environmental Partnerships of MoEF (*Balai Perhutanan Sosial dan Kemitraan Lingkungan KLHK*, BPSKL) having provincial sections in place that are closer to communities and are familiar with the local context, target groups and intermediaries. Budget lines for extension agents to support the process were also emerging. Furthermore, Perdirjen PSKL P.1/PSKL/KELING/KUM.1/1/2019 on social forestry extension guidance[90] stipulated that non-government actors could also support social forestry development if supervised and monitored by the government. Additional supporting guidance in this regard include Decision Head HR Training Center LHK 64/2020 regarding training curriculum for post-permit social forestry programme assistance[91], and DJ PSKL Extension Role Model Guide.[92] Government support has shifted now from social forestry licensing to post-license support. Additionally, the the Presidential Regulation (Peraturan Presiden, PERPRES 28/2023) on Integrated Planning for the Acceleration of Social Forestry Management[93] would theoretically allow budget allocation of other sectors to be used for social forestry development and it promotes inter-sectoral coordination.

[86] http://pskl.menlhk.go.id/berita/437-capaian-perhutanan-sosial-sampai-dengan-1-oktober-2022.html
[87] https://www.antaranews.com/berita/3204705/klhk-150-hutan-adat-telah-diakui-oleh-nergara
[88] https://conbio.onlinelibrary.wiley.com/doi/10.1111/csp2.189
[89] Suharjito D, Rahayu NH, Kartika N, Arsyad AA, Meilantina M. 2023. Perhutanan Sosial: Sinergi Lintas Sektor dan Multi Pihak. Bogor (ID): IPB.
[90] http://www.bpskljawabalinusra.net/wp-content/uploads/2019/03/P.1_PSKL_KELING_KUM.1_1_2019.pdf
[91] https://bdlhkpekanbaru.bp2sdm.menlhk.go.id/wp-content/uploads/2022/11/64-Pendampingan-Program-Perhutanan-Sosial-Pasca-Ijin.pdf
[92] https://www.scribd.com/document/512362850/Panduan-Role-Model-Pendampingan-PS
[93] https://jdih.maritim.go.id/perpres-no-28-tahun-2023 https://jdih.maritim.go.id/perpres-no-28-tahun-2023

It should be mentioned that West Kalimantan is the province with the highest social forestry coverage with 572,199 hectares covered by 224 licenses as of September 2023 (Table 6)[94].

Table 6: Social forestry licensing schemes (no and area in ha) in West Kalimantan until September 2023

Regency/City	Social Forestry Scheme											
	HD		HKm		HTR		KK		HA		Total	
	No.	Area	No.	Area	No.	Area	No.	Area	No.	Area	No.	Area
BENGKAYANG									4	635.00	**4**	**635.00**
KAPUAS HULU	30	111,178.00					3	45,799.51	1	9,480.00	**34**	**166,457.51**
KAYONG UTARA	11	19,065.00									**11**	**19,065.00**
KETAPANG	20	69,477.00	2	3,816.00			1	2,342.00			**23**	**75,635.00**
KUBU RAYA	31	132,356.00			1	700.00					**32**	**133,056.00**
LANDAK	2	5,580.00							2	1,110.00	**4**	**6,690.00**
MELAWI	14	22,607.00	1	224.00					5	22,918.00	**20**	**45,749.00**
MEMPAWAH	5	8,728.00			3	832.73					**8**	**9,560.73**
SAMBAS	8	15,874.00	7	4,613.00	1	892.00					**16**	**21,379.00**
SANGGAU			11	9,193.00	29	1,099.68			4	7,139.00	**44**	**17,431.68**
SEKADAU			3	3,520.00					1	40.50	**4**	**3,560.50**
SINTANG	21	63,592.00							3	9,388.00	**24**	**72,980.00**
Total	**121**	**384,865.00**	**24**	**21,366.00**	**34**	**3,524.41**	**4**	**48,141.51**	**20**	**50,710.50**	**224**	**572,199.42**

Source: Rehabilitation and Community Empowerment Division, West Kalimantan Office (Sept 2023)

1.3.4.3 Forest Management Units

For improved governance and integrated sustainable management of the country's forest resources, forest areas are divided into Forest Management Units (FMUs or *Kesatuan Pengelolaan Hutan KPH*) based on PP 6/2007. An FMU is a legally established entity with clear and permanent demarcated boundaries on the ground.[95] An FMU might cover different types of forest functions and will be named as Conservation Forest Management Units (*Kesatuan Pengelolaan Hutan Konservasi*, KPHKs), Protection Forest Management Units (*Kesatuan Pengelolaan Hutan Lindung*, KPHLs) or Production Forest Management Units (*Kesatuan Pengelolaan Hutan Produksi*, KPHPs) depending on the dominant forest function of the FMU area. The management of the FMUs will be based on long-term and short-term management plans with different kinds of management approaches for each type of area.

An FMU also comprises forestland managed by other owners such as HPH licenses for natural production forest; HTI licenses for industrial plantation forest; HTR licenses for community plantation forest, mining concessions, etc.; village, community or customary forests; village license areas (HKMs); and areas of various sizes not subject to licenses.

Article 21 of PP 6/2007 permitted certain areas (*Wilayah Tertentu*) whose situation and conditions were not yet attractive for third parties to develop their utilization businesses, to be assigned to the head of the FMU to organize forest utilization. A significant proportion of the state forest area remained unlicensed, and FMUs could potentially utilise them. Further,

[94] Kepala Bidang Rehabiiltasi dan Pemberdayaan Masyarakat. Dinas Lingkungan Hidup dan Kehutanan Prov. Kalbar. Pontianak, 6 September 2023. Presentation material entitled Peran Perhutanan Sosial dalam mendukung pencapaian Net Sink 2030.

[95] http://forclime.org/bioclime/bioclime.org/index.php/en/bioclime-s-topics/fmu-and-forest-management.html http://forclime.org/bioclime/bioclime.org/index.php/en/bioclime-s-topics/fmu-and-forest-management.html

Permen LHK 49/2017 allowed for FMUs to cooperate on forest utilisation with license holders as well.

However, the possibility for FMUs to directly manage forest resource utilization in areas that have not been licensed or cooperate on forest utilisation with license holders has been overturned with the issuance of the Omnibus Law on Job Creation UU 11/2020 (Now UU 6/2023) and related PP and Permen LHK 8/2021. The FMU organization as a regional technical implementation unit (*Unit Pelaksana Teknis Daerah*, UPTD) has now purely a facilitation and administration function, facilitating forest and forest product utilization by business permit and social forestry license holders and attracting investments. FMUs can be described as emerging public service providers for local communities and a control and monitoring institution for forest land.[96]

By May 2012, the Indonesian forest estate was sub-divided into a total of 600 FMUs, covering 130.68 million hectares of then legally classified forest land, 530 FMUs in production and protection forest and 70 FMUs in conservation forest.[97] As of August 2022, following a restructuring process 549 FMUs had been officially designated, with 382 of them having approved long-term management plans (*Rencana Pengelolaan Hutan Jangka Panjang*, RPHJPs).[98] Significant support is still needed to make FMUs operational, including the provision of sufficient human resources (competent and skilled staff), funds, methods, materials and equipment (see also section 4.2).[99]

As per PP 23/2021 and Permen LHK 8/2021, FMUs being the Regional Technical Implementation Units, have many tasks and obligations to support sustainable forest management on the ground and help meet 2030 FOLU net sink goals. These include, inter alia, preparation of forest management plans; coordination of forest management planning with license holders; and facilitating the implementation of policies related to inventory, rehabilitation, utilisation, social forestry management, development of social forestry business groups, capacity building, tenure conflicts, facilitating investment growth, promotion of forest products and markets, monitoring and implementing forest fire suppression, and carrying out forest rehabilitation forest protection, and mitigation of disasters and climate change.

There are other new policy developments linked to FMUs that have to be followed through:

- Previously, FMUs were authorized to only manage state forest areas. Provincial governments can now also authorize FMUs to manage High Conservation Value Areas (HCVA) outside state forest areas and provide services in non-forest areas.
- FMUs are the smallest key units on the ground for implementing Indonesia's FOLU net sink 2030 operational plan.
- The new Permen LHK 8/2021 linked to the Omnibus Law states that forests outside forest areas can become part of the closest KPH management area by considering the similarity of ecosystems, administrative boundaries, and range of forest management services.

The Decree of the Director of Forest Utilization Plan (*Bina Rencana Pemanfaatan Hutan*, BRPH) (SK Dir BRPH 16/BRPH/PKPH/HPL.0/12/2022) published the results of an assessment of FMUs for the effectiveness of their operations. The criteria, inter alia, cover a number of social forestry licenses facilitated, conflict resolution, community economic development, state of forest resources, forest condition, budgets and staff. The assessment was a voluntary self-assessment but did not explain the purpose and consequences of the evaluation which possibly led to diminished participation. Only 71 of the 549 FMUs (13%) submitted an assessment and only 46 FMUs (8%) were rated as "effective".

[96] https://www.forestdigest.com/detail/1026/perubahan-substansial-kehutanan-uu-cipta-kerja https://www.forestdigest.com/detail/1026/perubahan-substansial-kehutanan-uu-cipta-kerja
[97] http://forclime.org/bioclime/bioclime.org/index.php/en/bioclime-s-topics/fmu-and-forest-management.html http://forclime.org/bioclime/bioclime.org/index.php/en/bioclime-s-topics/fmu-and-forest-management.html
[98] https://rphjpkph.menlhk.go.id/portal.php/berita/detil/10 https://rphjpkph.menlhk.go.id/portal.php/berita/detil/10
[99] http://journal.unhas.ac.id/index.php/fs/article/view/772 http://journal.unhas.ac.id/index.php/fs/article/view/772

Adequate budget, human resources, infrastructure and clarity of area boundaries are central issues in FMU management (Nugroho et al., 2023a).[100] But limited budget support and missing capacities are the two key barriers (see section 4.2) to be overcome to make FMUs effective and achieve sustainable forest management on the ground.

1.3.5 Contribution to the economy and livelihoods

Since about 120.3 million hectares or 64% of the national territory is designated as state forest, there is concern that the percentage contribution to GDP of the forestry sub-sector has stagnated at less than 1%.[101,102] Prices for forest products have shown a downward trend, particularly since 2020, falling by 4.3% in 2020 and a further 3.1%in 2021. Policy measures are being put in place to enhance forestry sector yield and revenue through intensive silviculture practices for timber production in natural forests and a shift from timber focus to multi-business forestry approaches.

However, there has been an overall gross underestimation of GDP contribution of these sectors due to exclusion of the value added through processing. When processing value is added, for products such as wood, paper, rubber products, furniture, pharmaceutical and botanical products, the total forestry subsector contribution rises from 0.66% to approximately 2.6% of the GDP in 2021.[103] A study commissioned by the Ministry of Environment and Forestry (see Eichhorn (2023))[104] arrives at similar results for 2020. Adding in contributions from forestry-based industries (1.37%), trade in forestry products (0.64%), and net tax on forestry products and forestry-based businesses (0.03%) resulted in increased forestry sub sector contribution from 0.70% to 2.75%.

In 1991, forest production was valued at EUR 10.73 billion (US$ 11.8 billion), contributing about 10% of Indonesia's GDP with the inclusion of added value, and more than 10% of Indonesia's trade exporting wood panels and plywood.[105] Forest sector contribution (including forest industry) to GDP declined from 4.2% in 1994 to 3% in the 1999 crisis, and then again from 4.1% in 2000 to 3.3% in 2009.[106] Including value added, the 2.6% contribution of the forestry sector to the GDP in 2021 does not appear to be that much below the 3.0-4.2% contribution in the previous decades.

Furthermore, though their share has been declining or stagnating as a percentage of Indonesia's GDP, forestry sector production absolute values have risen steadily. Forestry sector GDP from IDR 74 trillion (EUR 4.35 billion) in 2014 to IDR 112 trillion (EUR 6.59 billion) in 2021.[107,108]

In addition, forests provide important ecosystem functions such as watershed, soil management, pollination, or pest management that are difficult to quantify and are usually not captured by markets or official statistics. The World Bank estimated the potential value of forests including ecosystem service contributions in Indonesia to be closer to 15% to 20% of GDP.[109]

Forests are also an important aspect of rural livelihoods in Indonesia. Sunderlin et al. (2000) estimated that at least 20 million people depend on Indonesia's forests for the bulk of their

[100] Nugroho B, Setiajiati F, Rahayu NH, Indarto AM, Meilantina M, Boer R, Rafiuddin A. 2023a. Peran Kesatuan Pengelolaan Hutan Pasca Undang-Undang Cipta Kerja dan Implikasinya. Policy Brief Pertanian, Kelautan, dan Biosains Tropika 5(1): 1 – 3. doi:10.32734/jsi.v7i01.11912
[101] https://www.statista.com/statistics/1018522/indonesia-gdp-forestry-and-logging/ https://www.statista.com/statistics/1018522/indonesia-gdp-forestry-and-logging/
[102] https://en.antaranews.com/news/236617/gdp-contribution-of-forestry-only-066-minister https://en.antaranews.com/news/236617/gdp-contribution-of-forestry-only-066-minister
[103] https://www.bps.go.id/id/statistics-table/2/MTA0IzI=/pertumbuhan-ekonomi--triwulan-iv-2023.html
[104] Eichhorn 2023. GIZ and PusDatin (Data and Information Center)
[105] https://www.fao.org/3/x6953e/x6953e.pdf
[106] https://www.cifor.org/publications/pdf_files/Papers/PCIFOR1303.pdf
[107] Pertanian, Kehutanan, Perikanan - Tabel Statistik - Badan Pusat Statistik Indonesia (bps.go.id)
[108] https://www.statista.com/statistics/1018522/indonesia-gdp-forestry-and-logging/
[109] https://www.oecd-ilibrary.org/docserver/9789264060258-9-en.pdf?expires=1675868449&id=id&accname=guest&checksum=8EC87A3B385013F508339E9E4F733821

livelihoods.[110] Agusti et al. (2020) estimated that rural households living near forested areas derive as much as 22% of their income from forest sources.[111] Moreover, there are informal revenues associated with illegal logging and unreported exports.[112]

In West Kalimantan, forest ecosystems provide climate, food, water, and income services, among others, for around 2.1 million people (50% female) living in 1,277 villages. Forest-dependent communities constitute 62% of all villages in West Kalimantan.[113]

1.3.6 Biodiversity

Indonesia's humid tropical climate and diverse landforms support a wide diversity of ecosystems, flora and fauna. Mangrove and peat swamps and marshes are found along the coast; tropical rain forests in most of the terrain up to 900 m; and subtropical vegetation, such as oak, pine, and hardwoods, are found at higher altitudes.

Also the geographical location between two continents, Asia and Australia, and between two oceans, the Pacific Ocean and the Indian Ocean, results in an extremely high level of biodiversity and endemism (third following that of Brazil and Colombia). The country covers seven bioregions (Sumatera, Java-Bali, Nusa Tenggara/Lesser Sunda, Kalimantan, Sulawesi, Maluku and Papua). It has a great diversity of ecosystems, vegetation types, species and genetic types as detailed in the Indonesian Biodiversity Strategy and Action Plan (IBSAP) 2015-2020.

Natural terrestrial ecosystems include lowland forest and mountain ecosystems.[114] There are seven main types of lowland forest ecosystems which include beach forests, Dipterocarp forests, heath (*kerangas*) forests in low nutrient soils, swamp forests in periodically inundated areas, peat swamp forests with thick organic substrates, karst landscapes, and savanna with scattered trees and shrubs. Mountain ecosystems, mainly in Papua, include lower and upper montane forests, subalpine and alpine forests. The Kalimantan Island contains all these ecosystem types except for alpine forests. Forest ecosystems also include mangrove forests, forest plantations, agroforests and shifting cultivation systems.

Conservation International considers Indonesia to be one of the 17 "megadiverse" countries, with two of the world's 25 "hotspots", 18 World Wildlife Fund's "Global 200" ecoregions and 24 of Bird Life International's "Endemic Bird Areas".[115] It also possesses 10% of the world's flowering species (estimated 25,000 flowering plants, 55% endemic) and ranks as one of the world's centres for agrobiodiversity of plant cultivars and domesticated livestock. Indonesia has a recorded 1605 bird species, 723 reptile species, 385 amphibian species, 720 mammal species, 197,964 invertebrate species and 151,847 insect species among others[116].

Lowland forest, which is the most biodiverse area, is the most threatened forest due to conversion to oil palm, encroachment, unsustainable forest management, infrastructure development, mining, fires, illegal logging and other activities.[117] Major disruption to the mangrove forest is caused by conversion into fish and shrimp ponds, settlements, roads, ports and other infrastructure development, as well as logging for fuelwood. About 1,225 species of Indonesia's fauna and flora are threatened with extinction on a global scale, fourth highest compared to other countries. Indonesia is the largest supplier of wildlife products in Asia, both legally and illegally, and overexploitation is also a major cause of declining species. About 40 million Indonesians living in rural areas rely on biodiversity for their subsistence needs.

[110] Sunderlin, W. D., Resosudarmo, I. A. P., Rianto, E., Angelsen, A. 2000. The effect of Indonesia's economic crisis on small farmers and natural forest cover in the Outer Islands. CIFOR Occasional Paper 28(E). Bogor, Indonesia: CIFOR.
[111] https://iptek.its.ac.id/index.php/ijds/article/download/8331/5300
https://iptek.its.ac.id/index.php/ijds/article/download/8331/5300
[112] https://www.cifor.org/publications/pdf_files/Books/BBarr0601.pdf
https://www.cifor.org/publications/pdf_files/Books/BBarr0601.pdf
[113] Ministry of Villages, Development of Disadvantaged Regions, and Transmigration, Republic of Indonesia, 2018.
[114] IBSAP 2015-2020. https://faolex.fao.org/docs/pdf/ins176625.pdf
[115] https://www.cbd.int/countries/profile/?country=id
[116] IBSAP 2015-2020
[117] https://www.cbd.int/countries/profile/?country=id

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The forests of West Kalimantan are globally acknowledged as a biodiversity hotspot. They are home to 255 bird species including the critically endangered Helmeted Hornbill, 203 plant and tree species including *Shorea johorensis*, 54 mammals including *Orangutan* and *Proboscis* monkey, and 67 herpetofauna including Asian Forest Tortoise.[118]

Indonesia carries out *in situ* conservation through the establishment of conservation areas, and demarcation of High Conservation Value Forest (HCVF) with critical social and environmental importance within concession and APL areas.[119]

Nearly 3.9 million hectares of high conservation value (HCV) areas have been legally set aside in existing logging and pulpwood plantation concessions.[120] The HCVF protection requirement was adopted by the Roundtable for Sustainable Palm Oil (RSPO) as part of its certification system in 2010 (see section 3.2 for further explanation of the HCV requirement).

1.4 Agriculture Sector Profile

Given its vast land areas, fertile soils and favourable climate, Indonesia is one of the world's largest producers and exporters of agricultural products, the key products being palm oil, rubber, cocoa, coffee, tea, cassava, rice, and spices. Land area used for agriculture was a constant 20-21% from the 1960s to mid-1980s, then increased sharply to reach 24.9% in 1990, and continued to rise over the next decades to reach 33.2% in 2020.[121]

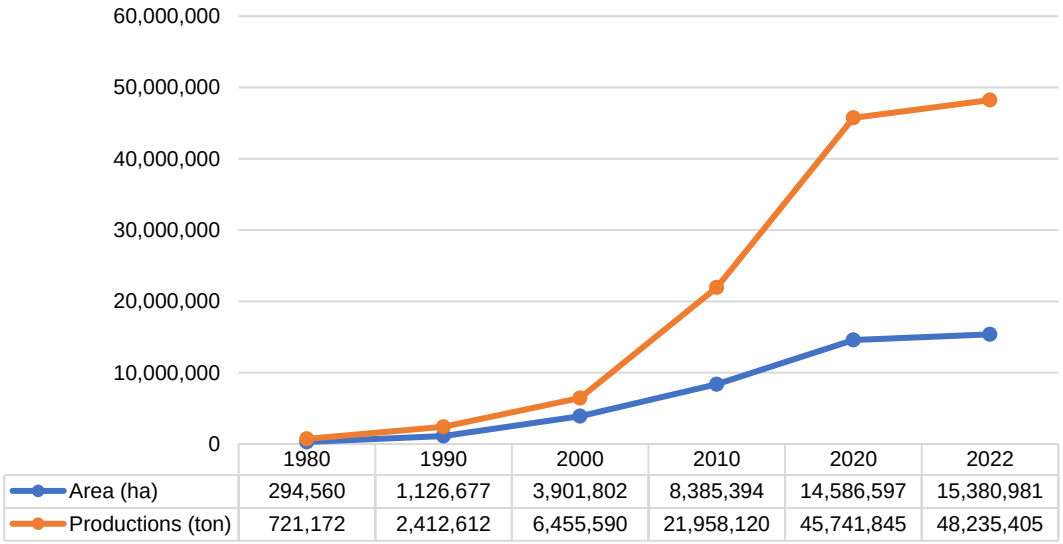
The agricultural sector of Indonesia comprises large plantations (mostly private and some state-owned) and smallholder production modes. The large plantations tend to focus on commodities which are important export products (palm oil and rubber), while the smallholder farmers grow the same estate crops feeding the downstream industry as well as rice, soybeans, corn, fruits and vegetables.

1.4.1 Oil palm

Much of this agricultural land increase from the 1980/90s involved establishment of oil palm plantations - palm oil being an extremely profitable crop used for a variety of products. Oil palm plantations covered 294,560 hectares in 1980, rising to 3.9 million hectares in 2000, 8.3 million hectares in 2010 and 15.4 million hectares in 2022 as depicted in Figure 10. However, geospatial data assessed by the Ministry of Agriculture and the National Aeronautics and Space Administration (*Lembaga Penerbangan dan Antariksa Nasional*, LAPAN) suggest that there were already 16.8 million hectares of oil palm in 2016, with 10.51 million hectares in Sumatra and 5.74 million hectares in Kalimantan.[122]

[118] Fauna & Flora International – Indonesia Programme, 2009. Biodiversity of Ketapang Landscape. Ketapang
[119] https://www.cbd.int/countries/profile/?country=id
[120] https://foresthints.news/minister-spotlights-hcv-areas-in-logging-pulpwood-concessions/
[121] https://data.worldbank.org/indicator/AG.LND.AGRI.ZS?locations=ID
[122] Kementerian Pertanian, LAPAN, Badan Informasi Geospatial and KPK. 2019. Oil palm cover in Indonesia. An analysis of satellite imagery 2014-16.

Figure 10: Increase in area (ha) and production (tons) of crude palm oil over 4 decades in Indonesia



	1980	1990	2000	2010	2020	2022
Area (ha)	294,560	1,126,677	3,901,802	8,385,394	14,586,597	15,380,981
Productions (ton)	721,172	2,412,612	6,455,590	21,958,120	45,741,845	48,235,405

Source: Statistics of Estate Crops 2020-2022, Directorate General of Estates 2022[123]

Production has risen steeply from 721,172 tons in 1980 to 6.5 million tons in 2000, 22 million tons in 2010 and 48.2 million tons in 2022.[124] Indonesia is the largest palm oil producer and exporter in the world contributing 36 million metric tons or 61% of the global production in 2016 and 46 million tons or 62% in 2021.[125] China, India and the EU are the largest importers of Indonesian palm oil. Domestic use of palm oil has increased in recent years (40% in 2020) for consumption and biofuel, and domestic refining capacity has increased significantly.

Around 53% of the plantations are owned by private companies, 7% by state-owned enterprises and 40% by smallholder farmers (around 2.6 million).[126] Further, the palm oil industry employs between 3-4.5 million people, contributes to 4.5% of the GDP.[127] Palm oil cultivation and processing provided income and enhanced the livelihood of millions. It has brought in substantial tax revenue and foreign exchange earnings for the country.

However, palm oil plantation expansion has been one of the key drivers of deforestation, biodiversity loss, peatland draining, fires and greenhouse gas emissions in Indonesia in the last decades. In 2004, the Roundtable on Sustainable Palm Oil (RSPO) for voluntary certification was established as a global standard for the supply chain and business of palm oil. In addition and as a response to environmental issues and global market pressure, Indonesia developed a mandatory national standard for sustainability in the palm oil business – the Indonesian Sustainable Palm Oil (ISPO) certification for all actors small and large-scale (PERPRES 44/2020 and Permentan 38/2020).

In 2022, RSPO reported 2.31 million hectares of certified plantation area in Indonesia and 11.38 million tons of certified palm oil.[128] ISPO certification by 2022 covered 5.45 million hectares with 800 organisations including smallholders, cooperatives and companies, and 38 million tons of palm oil production.[129] RSPO and ISPO certified plantation area totalled 7.76 million hectares, (50% of the total plantation area), and 49.38 million tons of certified palm oil

[123] https://ditjenbun.pertanian.go.id/template/uploads/2022/08/STATISTIK-UNGGULAN-2020-2022.pdf
[124] https://ditjenbun.pertanian.go.id/template/uploads/2022/08/STATISTIK-UNGGULAN-2020-2022.pdf
[125] https://www.sei.org/featured/zero-palm-oil-deforestation/
[126] https://www.bpdp.or.id/uploads/files/Anual%20Report%20BPDPKS%202021%20Ref.%207.pdf
[127] https://www.undp.org/facs/publications/indonesia-glance-country-guide
[128] RSPO-Impact-Report-2022
[129] https://www.indonesiapalmoilfacts.com/ispo/ https://www.indonesiapalmoilfacts.com/ispo/

(higher than the total 48.2 million tons reported in 2022, thereby indicating dual RSPO and ISPO certification in certain plantations[130]).

ISPO certification by smallholders should be supported and strengthened to reduce and halt further illegal conversion and provide incentives for sustainable oil palm and agriculture. Government could incentivize ISPO certified production by smallholders by for example taking over the costs of certification, and other charges and fees.

Other efforts to make palm oil production more sustainable over the years include stricter import market regulations pushing for sustainability (example EU)[131] and 'No Deforestation, No Peat, No Exploitation' (NDPE) commitments by players along the supply chain[132]. Consumer concern regarding the environmental costs of oil palm has resulted in the EU planning to introduce 'certified palm oil free' labels on consumer goods as part of the European Green Deal, as well as to cut out the use of palm oil in EU biofuels by 2030.[133] Indonesia objects to this plan and filed a complaint with the World Trade Organization (WTO). These developments have recently been complemented by the EU Regulation on sustainable products, see also section 4.2). Also key is Indonesia's moratorium on conversion of primary forests and peatlands, moratorium on oil palm permits, as well as the push for HCVF protection in APL and existing concession areas. Deforestation rates including for palm oil conversion have declined considerably in the last few years, and evidence suggests the greatest declines are in supply chains with sustainability commitments.[134]

There are renewed risks however with rising palm oil prices and the growing role of traders with lower levels of public transparency, particularly given that many concessions already hold large areas of licensed land with convertible forests.

West Kalimantan

West Kalimantan is one of the five biggest oil palm producer provinces besides North Sumatra, Riau, Central and East Kalimantan. In 2021, West Kalimantan with 2.07 million hectares of planted oil palm ranked second after Riau.[135] Large private companies accounted for 70.5% of the plantation area, followed by farmers with 28.1% and large state enterprises with 1.3% (Table 7). Palm oil production was 5.63 million tonnes of Crude Palm Oil (CPO) in 2021 with large private enterprises accounting for 79.6% of the volume, farmers 19.8%, and state enterprises 0.6%.

In 2021, there were 373 companies with oil palm business licenses issued for 3.27 million hectares of West Kalimantan, still leaving a sizeable 1.2 million hectares of unconverted natural forest within concession areas.[136] As of December 2021, 72 companies had obtained the ISPO certificate covering 381,486 hectares, still leaving over 301 companies without the mandatory certification.

Table 7: Oil palm in West Kalimantan

Oil palm in 2021[137]	Private corporations		Smallholders		State enterprises		Total
	Hectares/ tons	%	Hectares/ tons	%	Hectares/ tons	%	

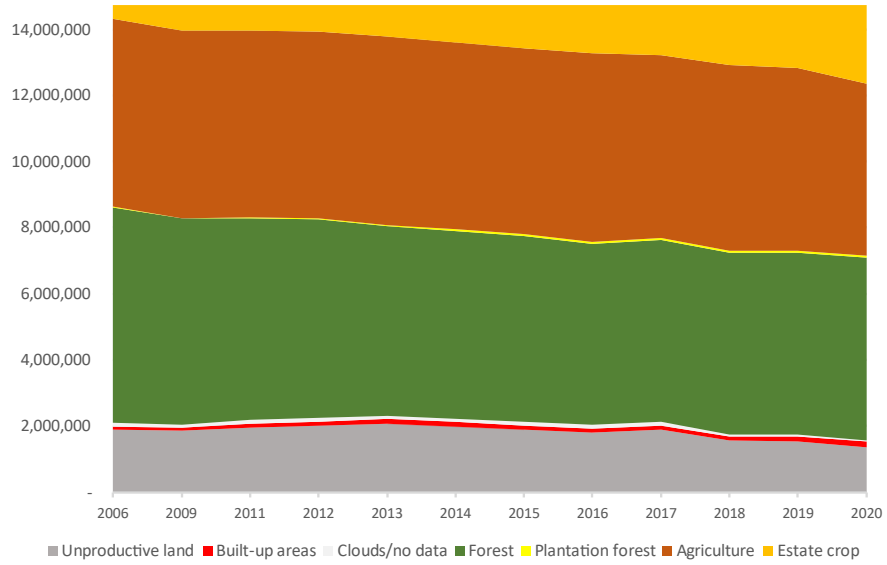
[130] https://ditjenbun.pertanian.go.id/template/uploads/2022/08/STATISTIK-UNGGULAN-2020-2022.pdf
https://ditjenbun.pertanian.go.id/template/uploads/2022/08/STATISTIK-UNGGULAN-2020-2022.pdf
[131] Efficiency of Land Use in Smallholder Palm Oil Plantations in Indonesia: A Stochastic Frontier Approach. Dyah Wulan Sari, Faqih Nur Hidayat and Irawati Abdul. Forest and Society Vol. 5(1): 75-89, April 2021
[132] https://chainreactionresearch.com/wp-content/uploads/2020/04/NDPE-Policies-Cover-83-of-Palm-Oil-Refining-Market.pdf
[133] https://www.statista.com/topics/5921/palm-oil-industry-in-indonesia/#topicOverview
[134] https://www.sei.org/featured/zero-palm-oil-deforestation/#:~:text=Indonesia%20is%20the%20world's%20largest%20palm%20oil%20producer&text=Indonesia%20is%20the%20world's%20largest%20exporter%20of%20crude%20and%20refined,59%25%20of%20total%20global%20exports.https://www.sei.org/featured/zero-palm-oil-deforestation/#:~:text=Indonesia%20is%20the%20world's%20largest%20palm%20oil%20producer&text=Indonesia%20is%20the%20world's%20largest%20exporter%20of%20crude%20and%20refined,59%25%20of%20total%20global%20exports.
[135] https://www.bpdp.or.id/uploads/files/Anual%20Report%20BPDPKS%202021%20Ref.%207.pdf
[136] BHN PAPARAN KADIS- DUKUNGAN TEKNIS SERTI ISPO.pptx - Google Slides
[137] https://www.bpdp.or.id/uploads/files/Anual%20Report%20BPDPKS%202021%20Ref.%207.pdf

Area (hectares)	1,459,592	70.5%	582,270	28.1%	27,910	1.3%	2,070,272
Production volume (tons)	4,483,722	79.6%	1,116,953	19.8%	35,008	0.6%	5,635,683

Source: https://www.bpdp.or.id/uploads/files/Anual%20Report%20BPDPKS%202021%20Ref.%207.pdf.

Based on the forest and land cover change analysis from 2006 to 2020, forested areas in West Kalimantan was decreasing from 6.5 million hectares (44.3%) to 5.5 million hectares (37.5%). However, estate crops have been increasing significantly from 419,000 hectares (2.8%) to 2.4 million hectares (16%).

Figure 11: Land cover change in West Kalimantan from 2006 to 2020



Land cover (Tier 1)	2006	2020	% Change
Agriculture	38.6%	35.3%	-3.3%
Built-up areas	0.6%	1.0%	0.4%
Clouds/no data	0.6%	0.3%	-0.4%
Estate crop	2.8%	16.1%	13.3%
Forest	44.3%	37.5%	-6.9%
Plantation forest	0.1%	0.5%	0.4%
Unproductive land	12.9%	9.3%	-3.6%

Source: Spatial analysis of MoEF forest and land maps from 2006 to 2020.

1.4.2 Natural rubber

Natural rubber is the other significant estate crop and is produced mainly in Sumatra and Kalimantan. Production area rose from 2,317,287 hectares in 1970 to 3,826,191 hectares in 2022, and production volume rose from 802,146 tons to 3,135,208 tons in the same period (Figure 12). Much of the production is exported, 81% in 2020 for a value of EUR 2.74 billion (US$ 3,010 million). Indonesia is the second largest producer of rubber following Thailand.[138]

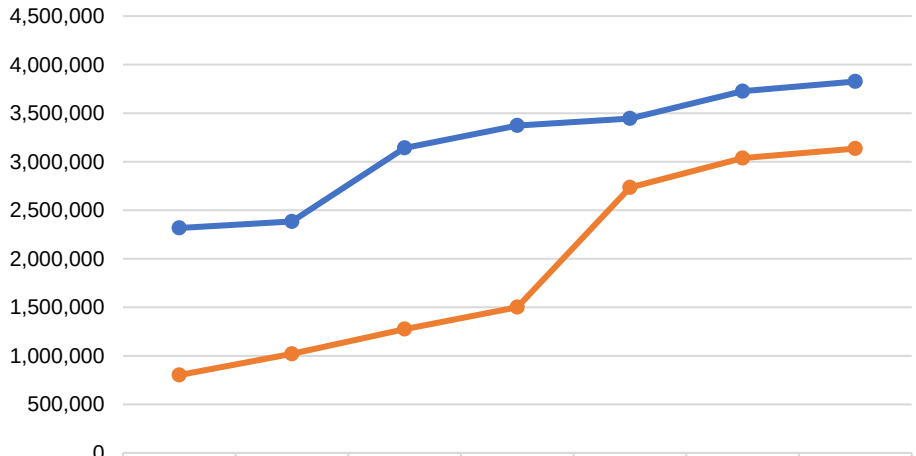
Production is mostly by smallholders, and they held 3.42 million hectares or 90.6% of the area in 2021 and produced 2.88 million tons or 92% of the volume.[139] Rubber plantations are a key

[138] https://www.indonesia-investments.com/business/commodities/rubber/item185
[139] https://ditjenbun.pertanian.go.id/template/uploads/2022/08/STATISTIK-UNGGULAN-2020-2022.pdf
https://ditjenbun.pertanian.go.id/template/uploads/2022/08/STATISTIK-UNGGULAN-2020-2022.pdf

livelihood source for rural communities in parts of Indonesia and at the same time suffer from low productivity and quality oftentimes.

The price of natural rubber has decreased and stagnated. Production and export have declined from the peak production of 3.68 million metric tons and export volume of 2.99 million tonnes in 2017, to 3.0 and 2.28 million tons respectively in 2020.[140,141] Factories are closing and the limited financial capability of farmers has delayed rejuvenation of rubber plants.[142] Indonesia has a fairly large domestic market for natural rubber but downstream rubber processing and integration with industrial supply chains needs to be stepped up.

Figure 12: Increase in area (ha) and production (tons) of rubber over 4 decades in Indonesia



	1970	1980	1990	2000	2010	2020	2022
Area (ha)	2,317,287	2,383,805	3,141,609	3,372,421	3,445,415	3,726,173	3,826,191
Productions (ton)	802,146	1,020,000	1,275,295	1,501,428	2,734,854	3,037,348	3,135,208

Source: Source 143

Natural rubber is the second biggest estate crop in West Kalimantan in terms of both land area and production volume. West Kalimantan with 397,956 hectares of plantations and 251,189 tons of rubber production ranked third in 2020 after Sumatra Selatan and Jambi.[144] Natural rubber is produced mostly by smallholders in West Kalimantan, 283,023 farmers in 2020 with 94% of the plantation area and 99.9% of the production volume (Table 8).

[140] https://ditjenbun.pertanian.go.id/template/uploads/2022/08/STATISTIK-UNGGULAN-2020-2022.pdf
[141] https://www.kompas.id/baca/english/2023/08/11/en-dalam-satu-dekade-terakhir-harga-karet-alam-dunia-cenderung-turun
[142] https://www.kompas.id/baca/english/2023/07/07/en-karet-yang-tak-lagi-indah
[143] https://ditjenbun.pertanian.go.id/template/uploads/2022/08/STATISTIK-UNGGULAN-2020-2022.pdf
[144] https://ditjenbun.pertanian.go.id/template/uploads/2022/08/STATISTIK-UNGGULAN-2020-2022.pdf

Table 8: Natural rubber in West Kalimantan

Natural rubber in 2020[145]	Private corporations		Smallholders		State enterprises		Total
	Hectares/ tons	%	Hectares/ tons	%	Hectares/ tons	%	
Area (hectares)	22,500	5.7%	374,142	94%	1,314	0.3%	397,956
Production volume (tons)	50	0.02%	251,007	99.9%	132	0.05%	251,189

Source: https://ditjenbun.pertanian.go.id/template/uploads/2022/08/STATISTIK-UNGGULAN-2020-2022.pdf

PP 26/2021 on the Administration of the Agricultural Sector and Permentan 18/2021 on Facilitation of Community Plantation in the Surrounding Areas oblige plantation companies to facilitate the development of community plantations on at least 20% of the area they manage. Community plantations that can be facilitated include oil palm, coconut, rubber, cocoa, coffee, tea, sugarcane and tobacco, however, both regulations implicitly emphasize oil palm development. MoA has now developed a strategy for supporting rubber development which includes controlling leaf fall disease, maintaining price stability, utilizing natural rubber for domestic consumption such as for asphalt, increasing production through rejuvenation of mature plantations and intensification of production, expanding rubber plantations outside the forest area with the support of seeds, fertilizers and production facilities (Directorate General of Estates 2023)[146].

1.5 Financial Sector Profile

In Indonesia, payments are mostly made in cash, and a large percentage of the population does not have bank accounts or access to formal financial products and services. They work in the informal sector, or operate micro or small businesses, and hence rely on daily wages and income.

Almost 99.9 percent of Indonesia's firms were classified as micro, medium and small enterprises (MSMEs) in 2019.[147] They employed 96.9% of the labour force and contributed 60.5% of the GDP. Additionally, there are about 210,000 registered cooperatives with a total of more than 36 million members.[148] A Badan Pusat Stastistik (BPS) survey in 2011 showed that 37 percent of the MSMEs found lack of access to credit as a key challenge.

Loans to small and medium enterprises increased by 13.38% per annum between 2011 to 2020.[149] There is a particular increase in long term loans which grew at a rate of 14.54% per annum indicating a higher trust in SMEs. Interest rates on loans are falling yet remain very high compared to other countries. Venture capital finance also increased significantly between 2012 to 2020 with a growth rate of 16.73% per annum. However, accessing finance still remains a challenge for most SMEs.

The Indonesian government has been working to increase financial inclusion.[150] Digitalisation through e-production, e-commerce, e-finance and e-payments is promoted to boost businesses. They launched financial inclusion programmes Laku Pandai and Kredit Usaha Rakyat (KUR). Laku Pandai supports a branchless banking model, while KUR focuses on providing business loans to SMEs. The national strategy for financial inclusion (*Strategi*

[145] https://ditjenbun.pertanian.go.id/template/uploads/2022/08/STATISTIK-UNGGULAN-2020-2022.pdf
[146] https://ditjenbun.pertanian.go.id/strategi-kementan-bantu-petani-dongkrak-produksi-karet-nasional/
[146] https://ditjenbun.pertanian.go.id/strategi-kementan-bantu-petani-dongkrak-produksi-karet-nasional/ (Downloaded: 01/06/2023)
[147] https://www.oecd-ilibrary.org/sites/13753156-en/index.html?itemId=/content/component/13753156-en
[148] https://www.ilo.org/jakarta/whatwedo/projects/WCMS_444105/lang--en/index.htm
[149] https://www.oecd-ilibrary.org/sites/13753156-en/index.html?itemId=/content/component/13753156-en
[150] https://kr-asia.com/serving-the-unbanked-driving-financial-inclusion-in-indonesias-rural-areas-part-2-of-2

Nasional Keuangan Inklusif, SNKI) was launched in 2016. By 2019, the financial inclusion rate reached 76.19% from 67.8%, while the national financial literary rate improved to 38.03% from 29.7%. Indonesia's fintech industry, which began to develop rapidly in 2015, played an important role in this progress.

There is much scope for financial technology (fintech) to reach the large unbanked population and MSMEs and close inclusion and financing gaps given the high internet participation ratio.[151] Fintech approaches could be applied for benefit-sharing mechanisms as in REDD+ or for the channelling of project funds. Current forest emission reduction programmes use top-down mechanisms that channel financial resources through all levels of government, raising concerns about equitable distribution and efficient use of funds and accountability.

New players and startups have emerged to provide fintech services and digital wallets like DANA, LinkAja, GoPay and OVO have become increasingly popular. As an alternative to digital wallets, prepaid cards such as Flazz, E-money, and BRIZZI offer a cashless transaction option for individuals without a bank account or access to a mobile phone. Conditional cash transfers could technically also be transferred to these cards, thus providing an incentive for forest conservation[152]. In 2021, there were 5.451 billion e-commerce transactions, combining for a value of IDR 305.4 trillion (EUR 17.97 billion).[153] There were over 11.7 million fixed broadband subscribers in 2020 and about 231.24 million 4G subscribers. However, rural areas and particularly in provinces outside Java have less coverage. The government tries to improve internet coverage across the country.

[151] https://www.adb.org/sites/default/files/publication/532761/adbi-wp1014.pdf
[152] Eichhorn, Rahmadani_Mobile-money-for-local-benefit-sharing-in.pdf (Discussionpaper 02, 2023, uni-freiburg.de)
[153] https://www.trade.gov/country-commercial-guides/indonesia-financial-services-financial-technology

2 Climate Problem

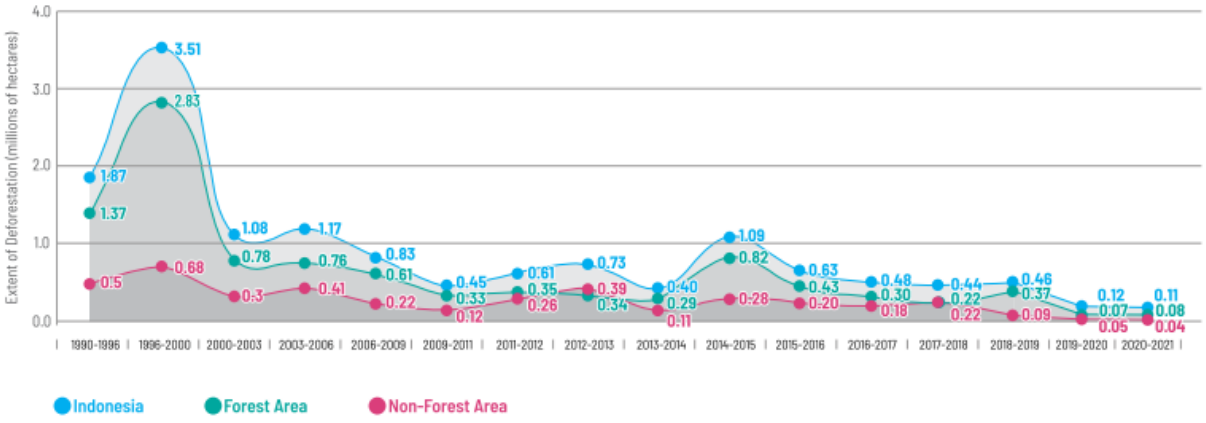
2.1 Deforestation Patterns, GHG Emissions Profile and Future Projections

2.1.1 Deforestation

Deforestation in Indonesia peaked at the end of the 20th century when the country was the world´s largest raw log exporter and plywood producer.[154] As shown in Figure 13, deforestation trends have been generally declining, however not without periods of increasing deforestation rates association to El Niño years with significant wildfires. Within the last years, deforestation rates have declined from 1.09% per annum in 2014-15 to 0.46% in 2018-19 and 0.11-0.12% in 2019-21.[155]

The combined impact of extensive oil palm and timber plantations accounted for over 40% of nationwide deforestation during the period of 2001-2016[156]. The conversion of forests to grasslands, constituting an average of 20% of national deforestation, gained prominence after periods of substantial fire activity, notably in 2016. Small-scale agriculture and plantations also played a role in about 20% of nationwide forest loss, particularly dominating loss outside the major islands of Indonesia.

Figure 13: Deforestation trends Indonesia 1980 - 2021



Source: MoEF. 2022. The state of Indonesia's forests 2022. Towards FOLU net sink 2030

One of the instruments used by the government of Indonesia to reduce deforestation was the institution of a nationwide moratorium on new concession licences for oil palm plantations, timber plantations, and logging activity in primary forests and peat lands after May 2011.[157] The moratorium halted the conversion of primary forest and peatland and was made permanent via Presidential Instruction (*Instruksi Presiden*, INPRES 5/2019), until such time that primary forest and peatland governance is improved. The permanent moratorium covers approximately 66.2 million hectares of primary forests and peatlands. There was a 45% drop in deforestation inside moratorium areas in 2018 compared to 2002-2016.[158] Slower patterns of deforestation were observed in moratorium areas between 2011 to 2018, compared to areas without moratorium.[159]

[154] MoEF. 2022. The state of Indonesia's forests 2022. Towards FOLU net sink 2030.
[155] MoEF. 2022. The state of Indonesia's forests 2022. Towards FOLU net sink 2030.
[156] https://iopscience.iop.org/article/10.1088/1748-9326/aaf6db/meta https://iopscience.iop.org/article/10.1088/1748-9326/aaf6db/meta
[157] MoEF. 2022. The state of Indonesia's forests 2022. Towards FOLU net sink 2030.
[158] https://www.wri.org/blog/2019/07/indonesia-reducing-deforestation-problem-areas-remain
[159] https://www.pnas.org/doi/epdf/10.1073/pnas.2102613119

Some studies indicate that the total area subject to the moratorium has decreased over time from 2011 to now and most remaining moratorium sites are in Protected Areas.[160] There are interpretation differences as to what constitutes peatland that falls under the moratorium and the locational and thematic quality of the Permit Moratorium Indicative Map (*Peta Indikatif Penghentian Pemberian Izin Baru*, PIPPIB) was low and not reflecting conditions in the field[161]. Many primary forest and peatland areas were inconsistently ped as not falling under the moratorium and subject to applications for utilisation.[162]

West Kalimantan

West Kalimantan has seen particularly high deforestation rates and heavy logging followed by conversion to timber or oil palm plantations over the last decades.[163] Deforestation and forest degradation remain a major threat to the last intact ecosystems of Kalimantan, particularly in West Kalimantan which is one of the country's deforestation hotspots.[164] Since 1990, the forests in West Kalimantan declined by 27%, from 7.5 million hectares to 5.4 million hectares in 2020. The coastal peat lands are particularly vulnerable.

A deforestation analysis based on the MoEF forest and land cover map from 1991 to 2020 shows an annual deforestation of 80,200 hectares. In this period was West Kalimantan has a different trend of annual deforestation compared to national. The peak of deforestation in West Kalimantan occurred in 2013, while at national level the deforestation peak occurred in the period from 1996-2000. The highest rate of oil palm development in West Kalimantan during the period of 2011 to 2016 explains this different trend. The annual deforestation in West Kalimantan from the first decade (1990-2000) was around 71,000 hectares per year, then increased to 74,000 hectares in the second decade, and further increased to 95,000 hectares in the third decade (2010-2020).

[160] Jaya INS, Hidayat N, Suhadi Z, Rozani A, Rompas A, Nauli M, Jatmiko H, Kurniawan R, Berliani H, Waluyo J, Suwito, Hardiyanto G, Prameswari A, Puteri J. 2015. Analisis Kebijakan Penundaan Pemberian Izin Baru dan Penyempurnaan Tata Kelola Hutan Alam Primer dan Lahan Gambut. Jakarta: Kemitraan, WALHI

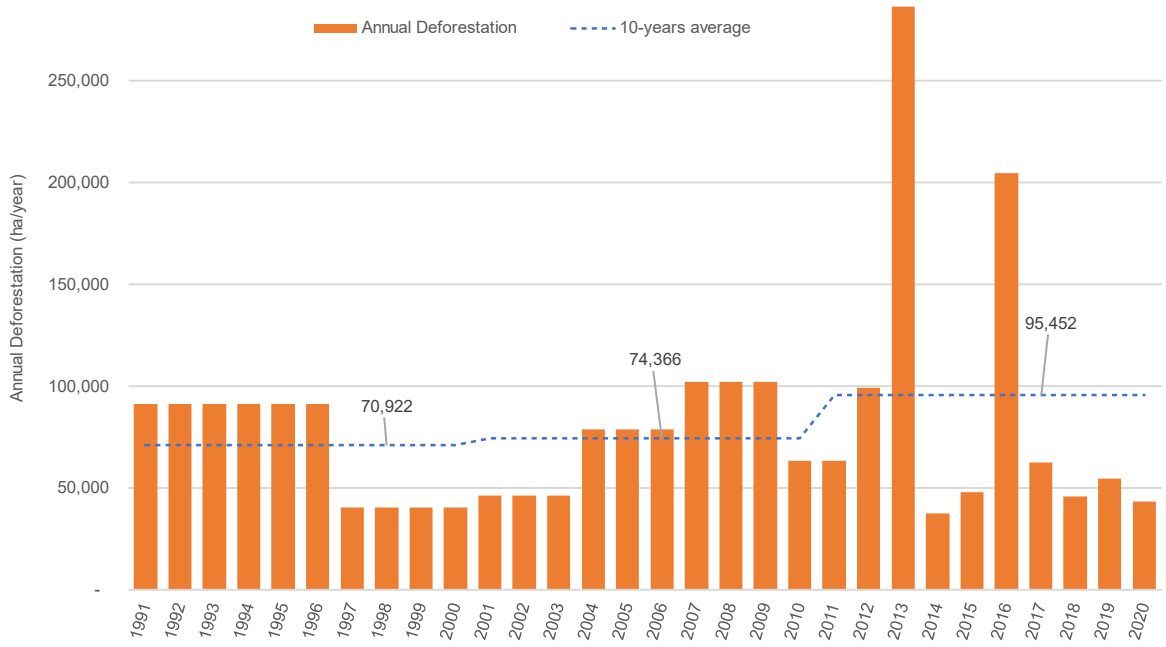
[161] Tartib M. 2021. Analisis yuridis kebijakan penghentian pemberian izin baru atas hutan alam primer dan lahan gambut untuk mewujudkan kesejahteraan rakyat (studi penelitian di Kabupaten Kepulauan Meranti). Menara Ilmu XV (1): 51 – 62.

[162] Zulkarnain D. 2016. Implikasi inpres penundaan pemberian izin baru dan penyempurnaan tata kelola hutan alam primer dan lahan gambut terhadap kegiatan pendaftaran tanah (studi kasus: Provinsi Kalimantan Barat) [tesis]. Yogyakarta: Program Pascasarjana Fakultas Teknik Universitas Gadjah Mada.

[163] https://wri-indonesia.org/sites/default/files/the_state_of_the_forest_chapter_2.pdf https://wri-indonesia.org/sites/default/files/the_state_of_the_forest_chapter_2.pdf

[164] https://www.wri.org/blog/2019/07/indonesia-reducing-deforestation-problem-areas-remain https://www.wri.org/blog/2019/07/indonesia-reducing-deforestation-problem-areas-remain

Figure 14: Annual deforestation in West Kalimantan from 1991 to 2020



Source: Spatial analysis of MoEF forest and land cover map from 1991 to 2020

The forests in the five project regencies are severely threatened by deforestation and forest degradation, with annual deforestation rates of 5,900 hectares in Kapuas Hulu, 27.1 hectares in Ketapang, 8,800 hectares in Kubu Raya, 2,900 hectares in Sanggau and 4 7,000 hectares in Sintang Regency from 1991 to 2020.

A spatial analysis of the 2003 moratorium map and the 2020 forest and land cover map shows that most of the forested areas (3.3 million hectares out of 5.5 million hectares) were put under the license moratorium, due to their function as protected forest or conservation areas (2.9 million hectares), covered with primary forests (97,000hectares) and forested peatlands (249,000hectares). The license moratorium for peatland has a total area of 589 thousand hectares in West Kalimantan which is only one third of the total peatland in West Kalimantan.

Table 9: Area in West Kalimantan under moratorium on peatland, forest land and primary forests

	Peat Moratorium	Forest Land Moratorium	Primary Forest Moratorium	Grand Total
Forested in 2020	249,538	2,924,719	97,259	**3,271,516**
Non Forest in 2020	339,748	804,849	3,160	**1,147,758**
Total	**589,286**	**3,729,568**	**100,420**	**4,419,273**

Source: Spatial analysis of moratorium map (MoEF, 2023) and 2020 forest and land cover map (MoEF, 2022).

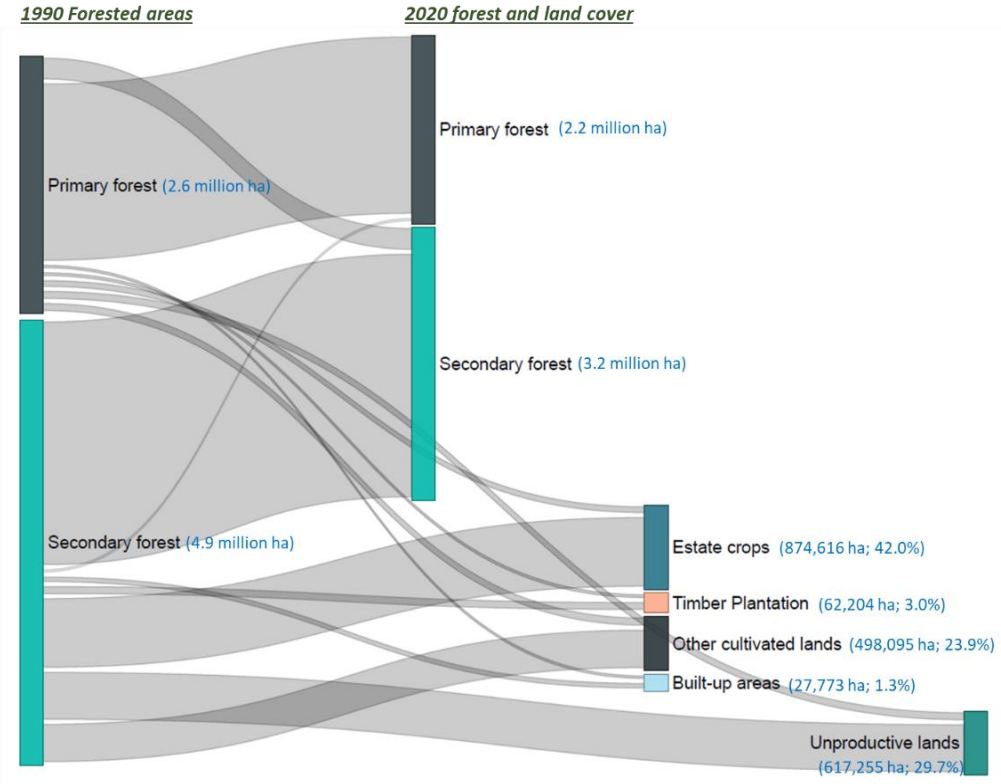
A spatial analysis of the 2003 moratorium map and the 2020 forest and land cover map shows that most of the forested areas (3.3 million hectares out of 5.5 million hectares) were put under the license moratorium, due to their function as forest land (2.9 million hectares), covered with primary forests (97,000 hectares) and forested peatlands (249,000 hectares). The license moratorium for peatland has a total area of 589,000 hectares in West Kalimantan which is only one third of the total peatland in West Kalimantan.

More detailed assessment and accurate mapping is required at field level, along with inclusion of field-identified moratorium areas into the regional land use plans and enforcement of the same by Forest Management Units (FMUs) and other agencies on the ground.

2.1.2 Drivers of Deforestation

Figure 15Figure 15 depicts the transitional change of 1990 forest cover in West Kalimantan to forest and land cover in 2020. Out of 7.5 million hectares of forested areas in 1990, 5.4 million hectares remain forested in 2020. More than 2 million hectares have been converted to other land use, mostly to estate crops (42%), unproductive lands (29.7%), and agricultural lands (23.9%). Timber plantation and built-up areas contribute to only 3% and 1.3%, respectively.

Figure 15: Sankey diagram of forest cover change in West Kalimantan from forested areas in 1990 to 2020



Source: spatial analysis of MoEF forest and land cover maps 1990 - 2020

During the 1970s, 80s and 90s, excessive timber extraction constituted the largest drivers of deforestation and left behind a significant area of unproductive land during the 1990s (68% of deforested area) that lead to abandoned and fire-prone shrublands. In parallel, small scale agriculture was expanding too and accounted for an estimated 23.2% of deforested land. Development of oil palm and other estate crops during this period was insignificant with only 8.3%. Development of oil palm and other estate crops picked up in the period 2000 to 2021, which then were seen both as a solution for the use of the unproductive lands, but started to also expand into vital forest lands and contributed an estimated 28.9% to deforestation in that period. In the last decade, estate crop development has become the largest driver of deforestation. Unproductive land due to excessive timber extraction was reduced but remains with 29.7% contribution to forest cover change in 2020 still significant. This is mainly due do with severe droughts during El Nino years. The development of small-scale agriculture is relatively constant throughout the decades.

From 2011 to 2016 West Kalimantan experienced the highest growth in palm oil plantation area nationally. Of the 1.53 million hectares converted to palm oil plantations between 2000 and 2016, 230,000 hectares (15%) were intact forest and 400,000 ha (26%) were post-1973 logged forests.[165] Currently there are approximately 400,000 hectares of remaining forests

[165] S. Peteru, E.M. Wardani, Y. Laumonier, C. Chan. 2018. “West Kalimantan, Indonesia” in C. Stickler et al. (Eds.), The State of Jurisdictional Sustainability. San Francisco, CA: EII; Bogor, Indonesia: CIFOR; Boulder, CO: GCF-TF.

inside concession areas.[166] The decadal analysis of deforestation shows the dynamic of drivers of deforestation from 1990 to 2020 (Table 10).

Table 10: Drivers of deforestation in West Kalimantan per decade

Land Cover	1990-2000	2000-2010	2010-2020
Estate crops	8.3%	28.9%	42.3%
Timber plantation	0.1%	0.3%	5.3%
Agriculture	23.2%	17.4%	22.6%
Unproductive lands	68.2%	53.0%	28.9%
Built-up areas	0.2%	0.4%	0.8%
Total	**100%**	**100%**	**100%**

Source: spatial analysis of MoEF forest and land cover maps 1990 - 2020

2.1.3 GHG emissions

The world's forests store approximately 861 gigatonnes of carbon, with 44 percent in soil (to one-meter depth), 42 percent in live biomass (above- and belowground), 8 percent in dead wood, and 5 percent in litter. Although, tropical rainforests account for only 30 percent of global tree cover, they contain 50 percent of the world's carbon stored in trees[167]. This may illustrate the importance of Indonesian forests as carbon storage which is even more pronounced with the abundance of peatland. Warren et al. (2017) estimate Indonesia's total peat carbon store to be between 13.6 and 40.5 gigatons[168], which is estimated 30% more carbon than the biomass of all Indonesian forests. However, Indonesia has also contributed to considerable carbon and other GHG emissions through large-scale deforestation, and forest and peatland fires. Deforestation, forest degradation and peat decomposition account for up to 60% greenhouse gas (GHG) emissions in Indonesia.[169]

West Kalimantan forests are essential for achieving the objectives of the global climate agenda, and the UNFCCC Paris Agreement. Due to the large above- and below-ground carbon pools, the province harbours an estimated 6.4% of the tropical forest carbon stocks of Indonesia.[170]

West Kalimantan's emissions from deforestation and forest degradation occurs on both mineral and peat soils. Out of 38 provinces in Indonesia West Kalimantan has the fifth highest level of emissions from deforestation and forest degradation and the third highest emissions level from peat decomposition.[171] Further, taking emissions allocations by the national state to the provinces as a reference, West Kalimantan ranked last of all provinces as it has been overshooting allocations by 140 million tCO2eq. over the period 2013-2017.[172] Due to the extensive peatlands in West Kalimantan, emissions from fires and peat degradation are highly relevant for achieving the national NDC goals. In addition, forest loss in West Kalimantan's watersheds increases the vulnerability of peatlands due to changing water-regimes. Against this background, West Kalimantan is a REDD+ priority region for the Ministry of Environment and Forestry (MoEF) as an area of high emissions reduction potential[173].

[166] Based on provincial land use. Source: Monitoring, Reporting, and Verification (MRV) report on emission reduction of West Kalimantan 2013-2018, 2020.
[167] Forest Carbon Stocks | Global Forest Review (wri.org)
[168] An appraisal of Indonesia's immense peat carbon stock using national peatland maps: uncertainties and potential losses from conversion | Carbon Balance and Management (biomedcentral.com)
[169] https://unfccc.int/sites/default/files/resource/Indonesia-2nd_BUR.pdf
[170] https://forestchampions.org/jxd_reports/en_West%20Kalimantan_Indonesia.pdf
[171] Directorate General of Climate Change of Ministry of Environment and Forestry.
[172] SK_Dirjen_PPI_No_8_Tahun_2019_Penetapan_FREL_SubNasional
decree of Directorat general of climate change control
DJPPI - KLHK - PERATURAN (ditjenppi.org)
[173] https://www.forestcarbonpartnership.org/system/files/documents/MTR-INDONESIA.pdf

Based on the West Kalimantan component of the second national reference level (2nd FRL[174]) submitted to the UNFCCC in 2022[175], historical emissions over the period of 2006-2020 amounted to 29.6 million tCO_{2eq} per year. This significantly overshoots a cap to emission accounting for 7.9 million tCO_{2eq} allocated in 2019 by the federal state to the province of West Kalimantan.[176].

Deforestation contributed most significantly to the FREL with emission of 29.4 million tCO_{2eq} per year, which include emissions from biomass loss due to conversion, biomass burning, peat fires, and peat decomposition, to the extent that the land use change occurred during the reference period. The annual deforestation from the same period amounted to 66,475 hectares per year. Emissions from forest degradation represented only 0.8 million tCO_{2eq} per year, which include emissions from biomass loss, biomass burning and peat decomposition. Carbon removals from forest growing back on previously cleared sites removed -0.6 million tCO_{2eq} per year. This baseline is expected to be the level of emissions with business-as-usual scenario and will be used as the reference level for estimating the emission reduction from the period of 2020 to 2030.

Note: Before the currently valid 2nd FREL, the 1st FREL was in place, covering the period 1990 to 2012. Both are not fully comparable, due to the different scope (notably emissions sources) and emission factors used for the calculation.

2.2 Climate Change Impacts and Risks

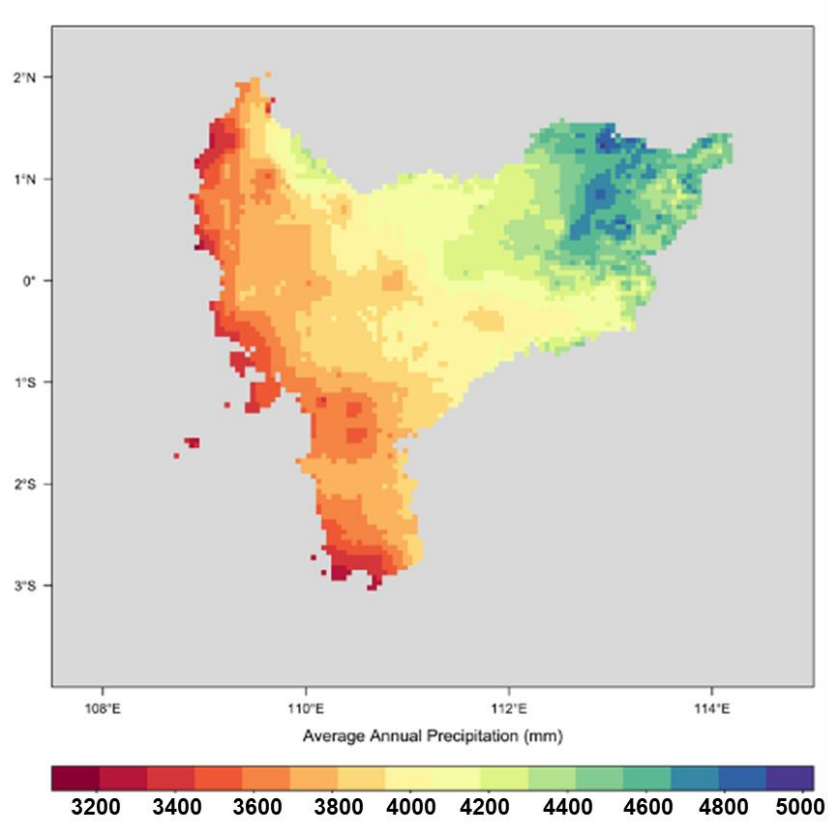
2.2.1 Historical Climate Developments

West Kalimantan is one of the Indonesian provinces situated in the western part of Borneo Island, between 2°08'N and 3°05'S and between 108°0'E and 114°10'E. The province is passed by the Equator line. Thus, West Kalimantan has a tropical climate with high temperatures accompanied by high humidity. The land is almost flat with elevation of about 50 m above sea level and only a small part of the region has mountains, but their altitudes are relatively low and non-volcanically active. The highest mountain is Mount Baturaya in Serawai in the Sintang Regency which has an altitude of 2,278 m a.s.l.

West Kalimantan has two types of rain patterns, namely the equatorial pattern in the north and the monsoon type in the southern region. This condition causes most of the northern region not to be included in the BMKG (*Badan Meteorologi, Klimatologi dan Geofisika*, Meteorology, Climatologi and Geophysics Agency) seasonal zone for seasonal climate predictions. West Kalimantan generally has high annual rainfall with an average in the 1981-2010 period of around 3500 mm. The eastern region is an area with very high annual rainfall, reaching more than 4500 mm, while the lowest annual rainfall occurs in areas along the coast in West Kalimantan. The peak of the rainy season occurs in April and October while the dry season occurs in August. The start of the dry season generally occurs at the beginning of July to the beginning of August, while the start of the rainy season occurs at the end of September to the beginning of November.

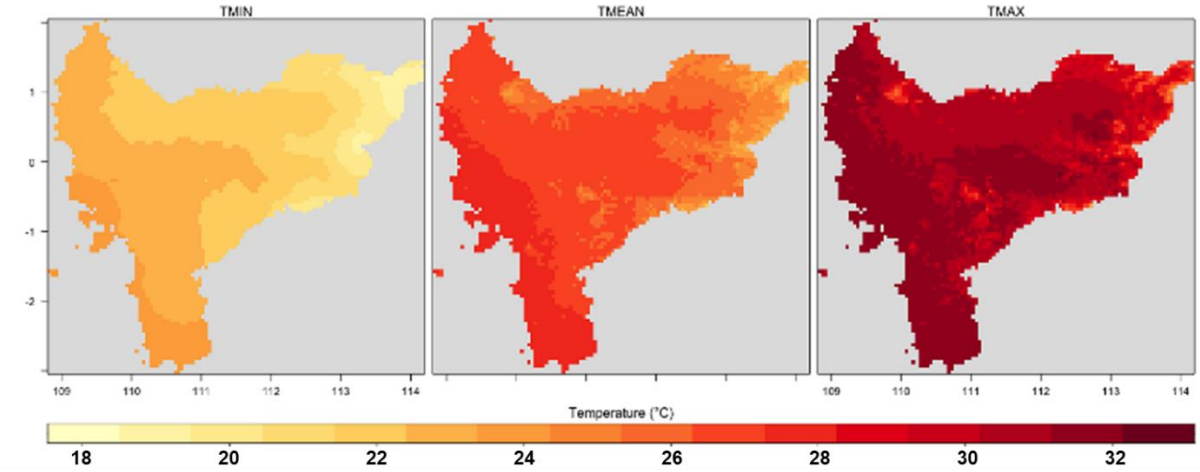
[174] Note that the term FRL is used where carbon removals e.g. from reforestation is accounted for, whereas FREL refers to emissions only.
[175] https://redd.unfccc.int/submissions.html?country=idn
[176] Decree of DG of Climate Change No 8, 2019 on sub-national FREL's buffer.

Figure 16: Distribution of annual rainfall in West Kalimantan



The Climate Risk Assessment (separate Annex) also examines extreme rainfall conditions based on several climate indices defined by the Expert Team on Climate Change Detection and Indices (ETCCDI). There are 4 climate indices, namely Cumulative Dry Days (CDD), Cumulative Wet Days (CWD), RX1DAY and RX5DAY. The results of the analysis show that CDD conditions in West Kalimantan were highest for 22 days which occurred in Ketapang Regency, while other regencies ranged from 10-12 days. The CWD condition shows a different pattern where the longest CWD condition occurs in the northern region (Sambas and Bengkayang Regencies) and the southern region (Ketapang Regency) for 22 days. Other areas show that CWD ranges from 12-14 days. The RX1DAY and RX5DAY indices have a similar spatial pattern where the eastern region (Kapuas Hulu Regency) is the region with the highest index value compared to other regions. The highest RX1DAY value in Kapuas Hulu on average is 50mm while the RX5DAY value is 130 mm. In addition to the index based on ETCCDI, a meteorological drought index was also calculated using Standardised Precipitation and Evapotranspiration Index (SPEI) and Self-Calibrated Palmer Drought Severity Index (scPDSI). The analysis results show that the temporal patterns of SPEI and scPDSI follow the distribution of rainfall. Thus, drought patterns have a high correlation with rainfall events. The duration of the drought and the severity of the drought are influenced by the index time period used.

Figure 17: Spatial distribution of average min, mean and max temperature in West Kalimantan from 1981 to 2015

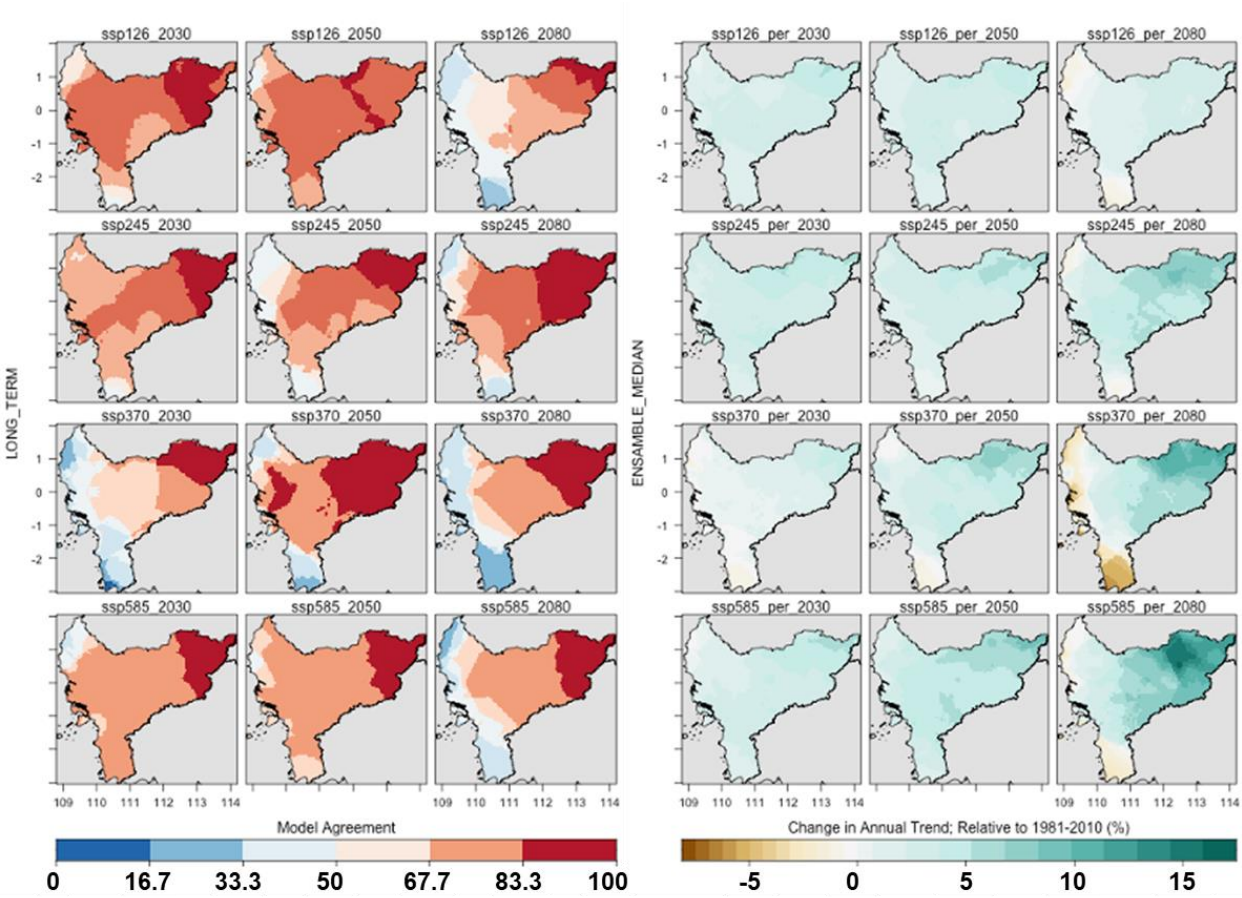


Historical temperature conditions in West Kalimantan generally show that the areas with the highest temperatures are in the western coastal region and the lowest temperatures occur in the mountainous regions in the eastern region. Apart from being influenced by altitude, temperature conditions in West Kalimantan are also greatly influenced by the latitude where West Kalimantan is crossed by the equator. The minimum temperature ranges from 18℃ - 23℃ and the maximum temperature ranges from 29℃ - 32℃ with the average ranging from 24℃ to 28℃. The period from 1981 to 2015, all regions in West Kalimantan experienced an increasing trend of up to 0.6℃. The highest temperature increase trend occurs in the minimum temperature, while the maximum temperature tends to experience a lower increase trend. The temperature anomaly in West Kalimantan shows that the temperature anomaly value since 1985 has experienced an increasing trend until now. This condition indicates that there has been an increase in temperature in the historical period. This condition has an impact on the extreme temperatures that occur in West Kalimantan, where an increasing trend in extreme temperatures also occurs in the same period.

2.2.2 Future Climate Projections

The study of climate projections in West Kalimantan was carried out using output from 9 global climate models (GCMs). The 9 climate models used in this study all agree that annual rainfall would increase in the future. Only certain locations in the Ketapang and Sambas Regencies are expected to have a decrease in annual rainfall. The annual rainfall rise in Kapuas Hulu Regency is 15% greater than the baseline condition. Rainfall has decreased by 6% in Ketapang Regency and 3% in Sambas Regency compared to the baseline condition. An increase in rainfall tends to occur during the peak of the rainy season (MAM) and a decrease in rainfall occurs during the dry season (JJA). In the MAM period, more than 70% of the models agree that there will be an increase in rainfall in the future. The opposite condition occurs in the JJA period where more than 70% of the models agree that there will be a decrease in rainfall in the future. The increase in rainfall in the MAM period reached 15%, while the decrease in rainfall in the JJA period reached 20% of the baseline conditions.

Figure 18: Model agreement for projection of annual rainfall (left) and change of annual rainfall (right)



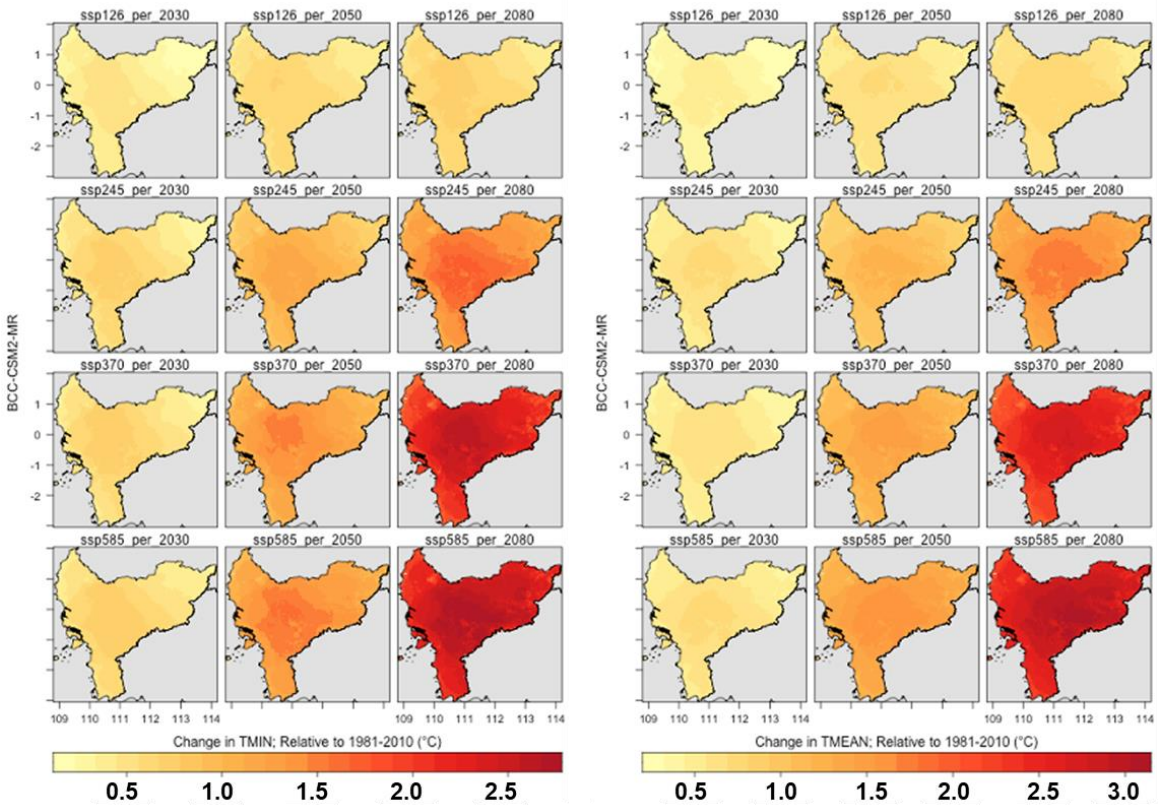
The analytical results reveal that the dry season onset will be delayed by roughly 20% in most regions of West Kalimantan. In some regions, the dry season onset in West Kalimantan would be delayed by up to 60% compared to historical condition. Furthermore, some regions in the Kapuas Hulu Regency show that the dry season would begin roughly 20% earlier than usual. The wet season onset is expected to be delayed by roughly 20% compared to historical condition. This pattern occurs almost in all areas of West Kalimantan except in Kubu Raya Regency which will advance about 12% from historical conditions. The wet season cessation condition is expected to decline by roughly 20% from historical levels.

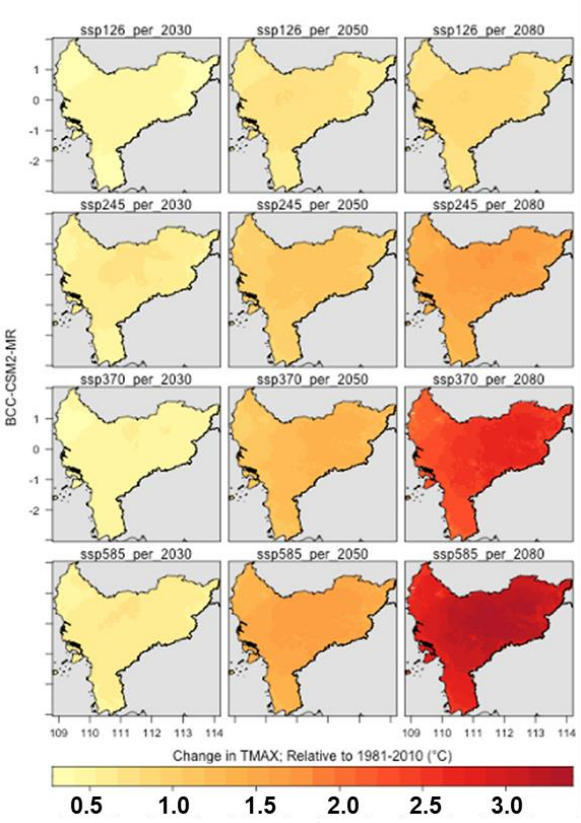
Projections of future CDD using 9 GCMs show that most of the central part of West Kalimantan is projected to experience a decrease in CDD length, such as in Kapuas Hulu, Sintang, Sanggau, and Sekadau Regencies. CDD length is projected to increase in the Ketapang Regency area. The decrease in CDD length is projected to reach 25% of the baseline condition. The projections of future CWD also show the similar condition with CDD, that the most areas in West Kalimantan are projected to experience a decrease in CWD length. The decrease in CWD length is projected to reach 20% of the baseline condition. The projection of RX1DAY in West Kalimantan using 9 GCMs models shows that most of West Kalimantan is projected to experience an increase in RX1DAY. The increase in RX1DAY is projected to reach 35% of the baseline condition. The increase mainly occurs in the 2080s with the SSP585 scenario. The projection of RX5DAY in West Kalimantan using 9 GCMs models shows the same pattern as the projection of RX1DAY where most of West Kalimantan is projected to experience an increase in RX5DAY. The increase in RX5DAY is projected to reach 25% from the baseline condition.

Temperatures are projected to increase significantly in the future, as a result of increased greenhouse gas emissions. The analysis for West Kalimantan region shows the minimum air temperature is projected to increase up to 2.8 ℃ while the maximum temperature is projected

to increase up to 3.4 ℃. The mean temperature will increase by up to 3.2 ℃ in extreme scenarios. Analysis of the maximum temperature of hot extremes shows that the number of days with maximum temperatures greater than the 99th percentile will increase by 70% from current conditions. The increase in extreme temperatures mainly occurs in the southern region and around the west coast of West Kalimantan Province.

Figure 19: Projection of Minimum Temperature (upper-left), Mean Temperature (upper-right) and Maximum Temperature (below) Change in West Kalimantan





2.2.3 Impacts on Climate Change in the AFOLU sector

Currently, most villages in the five target regencies of West Kalimantan Province are exposed to high climate risk. About 199 villages are categorized as villages with high risk, 167 with medium risk, and 12 with low risk.[177] In the future, the occurrence of extreme climate tends to increase in most of the villages of West Kalimantan, which will bring more disasters with more severe damage and loss. The occurrence of fires relates to the occurrence of long dry spells (CDD) and increased temperature. Many villages have been exposed to fires in years that have dry spells of more than 15 days (15-CDD). The longer the CDD, the higher the area affected by the fires. On average, at least about 10% of the village area will be affected by fire when exposed to 15-CDD, and it increased to at least 19% when exposed to 20-CDD, 27% when exposed to 30-CDD, 32% when exposed to 40-CDD and 36% when exposed to 50-CDD.

The probability of occurrence of long CDD is projected to increase in the future. The probability of having 20-CDD will increase in most villages, irrespective of emission scenarios, particularly in the districts of Ketapang and Kubu Raya (Table 11). A higher increase is expected in scenario SSP585, a scenario where the global effort to reduce emissions fails. The probability of having 20-CDD at present is between 3% and 14%, and in the future, it will reach between 5% and 32%, depending on the districts, emission scenario, and the periods. The probability of having 40-CDD at present is almost zero in all villages of the four districts. Nevertheless, it may reach 20%. Without adaptation, the area in villages affected by the fire will increase significantly in the future. In the two districts, the fire that will affect at least 19% of the villages' area at present occurs once every 7 to 8 years, while in the future (2080s), it will occur once every 2-3 years and bigger fires that could affect more than 30% of the villages' area will occur once every 10 years in Kubu Raya and once every 5 to 6 years in Ketapang.

[177] Planning Agency of West Kalimantan Province

Table 11: Probability of having 20-CDD and 40-CDD in villages of the five districts under low and high emission scenarios

	PERIOD	KAPUAS HULU	KETAPANG	KUBU RAYA	SANGGAU	SINTANG
		P(20-CDD)				
Baseline	1995s	3.44%	13.09%	13.53%	7.06%	3.76%
SSP126	2030s	5.24%	16.41%	18.00%	8.34%	5.01%
	2050s	5.53%	16.58%	17.11%	8.10%	6.04%
	2080s	3.66%	18.59%	17.54%	8.00%	4.58%
SSP585	2030s	3.76%	15.21%	15.38%	7.66%	5.71%
	2050s	5.42%	20.09%	18.98%	10.34%	7.20%
	2080s	8.00%	31.29%	31.43%	16.64%	11.83%
		P(40-CDD)				
Baseline	1995s	0%	0%	0%	0%	0%
SSP126	2030s	0%	3.89%	2.78%	1.95%	0%
	2050s	3.35%	5.85%	3.06%	1.94%	0%
	2080s	0%	1.11%	0%	0.%	0%
SSP585	2030s	0%	7.46%	13.55%	0.34%	0%
	2050s	0%	7.14%	13.95%	0.34%	0%
	2080s	0.00%	19.31%	10.00%	9.32%	0%

Note: The climate projection data are ensemble values of nine models

The occurrence of fires caused serious damage in many sectors. The big fire that occurred in 2019 has damaged 151,000 ha of forest in West Kalimantan (mostly peat swamp forest). Over the last five years, total forest loss due to wildfires reached around 300,000 ha[178]. The consequences of fires encompass a range of negative impacts, with economic losses ranging from US$ 50 to US$ 1,200 per hectare of burnt area. The most substantial loss is attributed to the decline in ecological function, while the least significant economic impact occurs in the loss of genetic resources[179]. In addition, fire also has many indirect impacts. Fires also cause health and transportation problems due to the release of smog, creating long-term air pollution and disturbing visibility. The release of much smog haze also reduces PAR (photosynthetic active radiation) levels, thereby reducing crop production,

The increase in temperature and intensity of the dry season due to climate change, indicated by the increase in CDD length, will seriously affect agriculture. With the increase in temperature alone, the region's suitability for many crops will change. Many studies indicate that as climate change progresses, the climate suitability of the crops moves to higher altitudes and latitudes[6]. With every temperature increase by 1^{o}C, the oil palm production will reduce by about 10%[180]. The increasing length of consecutive dry days (CDD) in the future will expose the region to drier dry seasons. Crops exposed to frequent long CDD during the growth phases will suffer from drought stress. Some studies suggest that oil palm produces lower yields as the number of loose fruit increases significantly when it is exposed to CDD for more than 20 days[181]. Rubber trees also produced lower yields when exposed to drought[182]. Many other

[178] https://sipongi.menlhk.go.id/indikasi-luas-kebakaran
[179] http://ejournal.forda-mof.org/ejournal-litbang/index.php/JPSEK/article/view/2742/1995
[180] https://doi.org/10.1007/s11356-020-07601-1
[181] https://jurnalkelapasawit.iopri.org/index.php/jpks/article/view/192/134
[182] https://doi.org/10.18196/agraris.v8i2.14320

crops will be under severe drought stress when they are exposed to longer CDD (30-35 days)[183].

The occurrence of daily extreme high rainfall during the wet season is expected to become more frequent and intense as climate change advances. In five districts, several villages have begun experiencing flooding when daily extreme rainfall surpasses 60 mm (60-Rx1Day). The probability of villages being affected by floods on 60-Rx1Days is approximately 50%, increasing to 65% on 80-Rx1Days. Considering the significant impact of floods on both people and biophysical infrastructure, floods at 60-Rx1Days are categorized as small, while those at 80-Rx1Days are considered large. Extreme rainfall that caused big floods at Delta Pawang Ketapang Regency on 22 February 2022 reached 79 mm[184]. There is a projected decrease in the return period of large floods. Currently occurring once every 7-10 years, it is anticipated that in the future, this cycle will shorten to once every 5-6 years.

Table 12: Return period for small and big floods in villages of the five districts under low and high emission scenarios

	PERIOD	KAPUAS HULU	KETAPANG	KUBU RAYA	SANGGAU	SINTANG
		Small floods (flood cycle in a year)				
Baseline	1995s	4	4	4	4	4
SSP126	2030s	4	4	4	4	4
	2050s	3	4	4	4	4
	2080s	3	4	4	4	4
SSP585	2030s	4	4	4	4	4
	2050s	4	4	4	4	4
	2080s	3	3	4	4	3
		Big floods (flood cycle in a year)				
Baseline	1995s	7	7	8	8	10
SSP126	2030s	7	6	7	7	8
	2050s	6	6	7	6	8
	2080s	6	6	7	7	8
SSP585	2030s	7	7	6	6	8
	2050s	6	6	6	6	7
	2080s	5	5	6	5	6

Floods have inflicted widespread damage on communities, causing significant economic losses and damage to infrastructure. A study conducted in Sikawang City revealed that a major flood in 2016 resulted in economic losses totaling 15.8 billion IDR. Floods in agricultural areas led to various setbacks, including damage to farmlands, decreased crop yields, and challenges in accessing food due to disrupted transport systems and roads. The impact of flood and waterlogging on crop yield has been well documented. The average reduction in crop yields due to waterlogging generally reached 32.9%, depending on the crop type. Notably, waterlogging during the reproductive growth stage (41.90%) resulted in a more substantial

[183] https://doi.org/10.1016/j.ecolecon.2022.107627
[184] https://floodlist.com/asia/indonesia-floods-west-kalimantan-february-2022

yield reduction than the vegetative growth stage (34.75%)[185]. Disturbance on oil palms, when exposed to waterlogging, cannot cause normal respiration as its roots are submerged, causing impaired water and nutrient uptake, delayed frond opening, and reduced carbohydrate availability[186].

2.3 National and Provincial Climate Goals and Priorities

Policies and related action plans for the AFOLU sector are linked to key national policies such as the Enhanced Nationally Determined Contribution (ENDC), the National REDD+ Strategy, the National GHG Action Plan, and the National Green Growth Plan. At the provincial level, these frameworks are associated with the regional GHG Action Plan, Medium-Term Development Plan, and the Provincial Forestry Management Plan 2016-2036.

Indonesia has been a strong proponent of REDD+ at the international level and has committed to strengthen the national and jurisdictional level policy and institutional framework for a landscape approach to forest and land management towards green growth. In its NDC, the Government of Indonesia envisions a progression beyond its existing commitment to emission reductions beyond 2020. Based on the country's most recent emissions level assessment, Indonesia has set unconditional reduction target of 31.89% and conditional reduction target up to 43.20% of the business-as-usual scenario by 2030[187]. REDD+ is an important component of the NDC target from land use sector.[188]

UNFCCC Decision 1/CP.16 enables developing countries to undertake REDD+ activities (reducing emissions from deforestation, reducing emissions from forest degradation, conservation of forest carbon stocks, sustainable management of forests, and enhancement of forest carbon stocks), and receive results-based payments for the same. The finalised 2013 Warsaw Framework for REDD+ provides the complete methodological and financial guidance for REDD+ implementation. Indonesia has progressed from the REDD+ readiness phase (building Monitoring, Reporting and Verification (MRV) and safeguard systems, a FREL, setting up the institutional framework and other requirements) to full implementation since 2015. Indonesia's updated **REDD+ strategy 2021-2030 (*Strategi Nasional*, STRANAS-REDD+)** reflects relevant Conference of The Parties (COP) decisions on REDD+ and guides REDD+ implementation and management in Indonesia to contribute towards achievement of the enhanced NDC target, FOLU net-sink 2030, and other related goals. Its intended users are both national stakeholders as well as international partners supporting REDD+. The reference emissions level is based on the second FRL period 2006-2020.

Six main strategies have been outlined to reduce FOLU emissions: (i) improve forest resources management by establishing and operationalising FMUs for all forest areas; (ii) strengthen sustainable practices in production forest management; (iii) reduce dependency on natural forests for timber and expedite industrial and community-based plantation forest development and use of estate crop timber; (iv) reduce pressure on natural forests to meet agricultural development needs by optimizing spatial planning, using unproductive land, implementing integrated farming or complex agroforestry, and increasing productivity and intensity of plantations; (v) conserve and enhance forest carbon stock through ecosystem restoration of production forests, rehabilitation of degraded land, moratorium on new use permits on peatlands and improvement of peatland management; and (vi) accelerate the adoption of low carbon technology.[189]

In 2022, West Kalimantan established a provincial FOLU Net Sink 2030 Action Plan[190], yet the legal basis for its implementation needs to be established. The Government of West

[185]https://www.researchgate.net/publication/349480781_How_Does_the_Waterlogging_Regime_Affect_Crop_Yield_A_Global_Meta-Analysis
[186] http://opb.mpob.gov.my/index.php/2020/03/29/some-observations-on-the-effects-of-high-water-tables-and-flooding-on-oil-palm-and-a-preliminary-model-of-oil-palm-water-balance-and-use-in-the-presence-of-a-high-water-table/
[187] Enhanced NDC, 2022
[188] First Nationally Determined Contribution, Republic of Indonesia, 2016.
[189] REDD+ national strategy
[190] FOLU Net Sink 2030 Action Plan of West Kalimantan Province, A-09/Renja-Kalbar/09/2022

Kalimantan (GoWK) first pledged to avoid deforestation and degradation in 2012. Since then, the GoWK has been preparing high-level policies and frameworks. This includes the Regional Action Plan on Greenhouse Gas Emissions (*Rencana Aksi Daerah Gas Rumah Kaca*, RAD GRK) [191] and complements sectoral reforms and jurisdictional approaches guiding the implementation of REDD+ in the forest and land use sector.

The GoWK set an ambitious target to achieve a 60% reduction of greenhouse gas (GHG) emissions by 2020 compared to the first FREL (i,e, 8.84 million tCO_2 per year for deforestation and 0.5 million tCO_2 per year for forest degradation). Although the target was set in 2012 and reinforced in 2017 (in the SRAP), the impact of those regulatory frameworks on emissions reductions is so far difficult to assess. Apart from the GoWK target, MoEF allocated emission baseline for reducing deforestation and forest degradation for each province, based on the 1st national FREL. The national allocation for emission baseline from deforestation and forest degradation in West Kalimantan were 7.5 million tCO_2 per year (see Table 11) and 0.8 million tCO_2 per year (see Table 12), respectively.

Analysis on the emission estimates from 2012 to 2020 indicate some progress in reducing overall emissions from deforestation in West Kalimantan against their historical baseline. However, West Kalimantan failed to meet the provincial target and national allocation targets each year, except for the 2017-2018 and 2019-2020 period (Table 13).

Table 13: Emission from deforestation in West Kalimantan[192]

Period of Measurement	million tCO2eq						
	Actual Emission	Historicalbaseline	Performance vs BAU	Provincial Allocation (60% target)	Performance vs Provincial Allocation	National Allocation	Performance vs National Allocation
2012 - 2013	96.79	22.11	-74.68	8.84	-87.94	7.50	-89.29
2013 - 2014	11.87	22.11	10.24	8.84	-3.02	7.50	-4.37
2014 - 2015	14.92	22.11	7.19	8.84	-6.07	7.50	-7.42
2015 - 2016	65.12	22.11	-43.01	8.84	-56.27	7.50	-57.62
2016 - 2017	20.07	22.11	2.04	8.84	-11.23	7.50	-12.57
2017 - 2018	7.85	22.11	14.26	8.84	1.00	7.50	-0.35
2018 - 2019	12.89	22.11	9.22	8.84	-4.05	7.50	-5.39
2019 - 2020	4.63	22.11	17.48	8.84	4.21	7.50	2.87

Source: Report of West Kalimantan emission reduction performance for 2013-2018, 2020 and report for 2018-2020, 2021.

Likewise for emission from forest degradation, West Kalimantan failed to meet the provincial and national allocation targets for four periods 2014 – 2015, 2015 – 2016, 2016 – 2017, and 2018 – 2019 as described in the Table 14 below:

[191] Rencana Aksi Daerah Penurunan Emisi Gas Rumah Kaca Kalimantan Barat, 2012.
[192] The figures do not include GHG emissions from peat decomposition.

Table 14: Emissions from forest degradation in West Kalimantan[193]

Period of Measurement	million tCO2eq						
	Actual Emission	BAU Emission (baseline)	Performance vs hisoerical baseline	Provincial Allocation (60% target)	Performance vs Provincial Allocation	National Allocation	Performance vs National Allocation
2012 - 2013	0.39	1.26	0.87	0.50	0.36	0.80	0.41
2013 - 2014	0.67	1.26	0.59	0.50	0.09	0.80	0.13
2014 - 2015	4.75	1.26	-3.49	0.50	-4.00	0.80	-3.95
2015 - 2016	1.51	1.26	-0.25	0.50	-0.75	0.80	-0.71
2016 - 2017	0.89	1.26	0.37	0.50	-0.13	0.80	-0.09
2017 - 2018	0.02	1.26	1.24	0.50	0.74	0.80	0.78
2018 - 2019	1.88	1.26	-0.62	0.50	-1.38	0.80	-1.08
2019 - 2020	0.00	1.26	1.26	0.50	0.50	0.80	0.80

Source: Report of West Kalimantan emission reduction performance for 2013-2018, 2020 and report for 2018-2020, 2021.

As shown by these figures, although there has been made few overall positive achievements, the reduction performance is inconsistent. Thus, the GoWK is not yet on the right track to fully achieve the emission reduction targets with few exceptions. However, the target will be maintained at such ambitious level until 2030 and contribute 4.7% to the national NDC.[194]

GoWK also supports multiple village-level co-empowerment programmes that are aimed at improving community adaptation and resilience capacities to support the pledge. Policies and frameworks that are established to support GHG emission reductions and sustainable, climate-resilient development in West Kalimantan are described in Chapter 1.

Some of the frameworks are also associated with the National Action Plan on Adaptation (*Rencana Aksi Nasional Adaptasi Perubahan Iklim*, RAN-API)[195]. RAN-API sets four priority sectors (marine and coastal, water, agriculture, and health) and four clusters of adaptation strategies (infrastructure, technology, capacity building, and governance). Strengthening those frameworks, especially at provincial level, is necessary since adaptation considerations are underrepresented in mid-term spatial plans and regional development plans, despite the significant potential for synergies. Although the different plans and strategies have different focuses, climate change adaptation measures need to be mainstreamed into such frameworks. The lack of adaptation consideration in GHG mitigation plans and strategies might lead to maladaptation and jeopardize permanence of emission reductions.[196]

[193] The figures do not include GHG emissions from peat decomposition.
[194] Regional Strategy and Action Plan on REDD+, 2017.
[195] https://lcdi-indonesia.id/wp-content/uploads/2020/05/Executive-Summary-NAP.pdf
[196] Pramova E, Di Gregorio M, and Locatelli B. 2015. Integrating Adaptation and Mitigation in Climate Change and Land use Policies in Peru. Working Paper 184. Bogor, Indonesia: CIFOR.

3 Institutional, Policy and Regulatory Framework

3.1 Institutional Framework of the AFOLU Sector

Table 15 provides an overview of the key government and public sector organizations relevant for the implementation of the GCF project and the management of natural resources more broadly in the country.

Table 15: Overview of relevant institutions

Name of agency	Function	Relevance to Project
National Institutions[197]		
Badan Kebijakan Fiskali (BKF) / Kementrian Keuangan **Fiscal Policy Agency (FPA) in the Ministry of Finance (MoF)**	MoF plays a leading role in climate budgeting and financing. In 2011, MoF established the Center for Climate Change Financing and Multilateral Policy in the Fiscal Policy Agency (FPA) which formulates policy recommendations and monitors climate change financing-related issues. FPA also deals with economic and financial cooperation within the G-20 and other multilateral forums. The agency has been appointed as the Nationally Designated Authority (NDA) for GCF since 2017. It serves as the focal point between Indonesia and the GCF and ensures country ownership. MoF also currently hosts the Indonesia Environment Fund (IEF) known as Badan Pengelola Dana Lingkungan Hidup (BPDLH).	GCF NDA for Indonesia – Project Proponent (PoP)
Badan Pengelola Dana Lingkungan Hidup (BPDLH) **The Indonesian Environment Fund (IEF)**	BPDLH was designed to become the "funding hub" for various funding mechanisms focusing on environmental protection and management in Indonesia, including climate change mitigation and adaptation efforts. It is the first public agency that can incorporate blended financing, receiving funds from multiple sources including international donors, NGOs, private sector and others.	One of the executing entities of the project. The proposed financial mechanism complies with the national BPDLH arrangement.
Kementerian Lingkungan Hidup dan Kehutanan (KLHK) **Ministry of Environment and Forestry (MoEF)**	MoEF is responsible for managing and conserving Indonesia's forests and the environment. MoEF Directorate Generals of high relevance to this project are Sustainable Forest Management (*Pengelolaan Hutan Lestari* , PHL), Forestry Planning and Environmental Management (*Direktorat Jenderal Planologi Kehutanan dan Tata Lingkungan*, PKTL), Climate Change Controlling (*Direktorat Jenderal Pengendalian Perubahan Iklim*, PPI), Social Forestry and Environmental Partnership (*Perhutanan Sosial dan Kemitraan Lingkungan*, PSKL), Watershed Management and Forest Rehabilitation (*Pengelolaan Daerah Aliran Sungai dan Rehabilitasi Hutan*, PDASRH). In 2015, MoEF was appointed by the President as the national focal point to coordinate climate	Project Steering Committee, Provides guidance and support for the project. The GoWK's measures will be a MoEF pilot for replication in the other REDD+ priority provinces in Indonesia. MoEF will also serve as an Executing Entity of the project.

[197] https://fiskal.kemenkeu.go.id/nda_gcf/publikasi/dokumen-country-programme-indonesia-untuk-gcf

Name of agency	Function	Relevance to Project
	change efforts, including the climate change negotiation process. All organizations dealing with climate change, including the National Council on Climate Change (*Dewan Nasional Perubahan Iklim*, DNPI) and the REDD+ Agency were merged within a Directorate General on Climate Change (PPI) in MoEF. PPI has issued a national GHG inventory system and a national registry system for all climate actions. It oversees REDD+ and GCF implementation.	
Badan Perencanaan Pembangunan Nasional (Bappenas) **Ministry of National Development Planning**	Bappenas as the planning agency leads climate policy formulation, budgeting, financing, and monitoring and evaluation. It hosts the Secretariat of the National Action Plan for Reducing Greenhouse Gas Emissions (*Rencana Aksi Nasional Gas Rumah Kaca*, RAN-GRK) and the National Action Plan for Climate Change Adaptation (*Rencana Aksi Nasional Adaptasi Perubahan Iklim*, RAN-API). Bappenas leads the formulation of the national medium-term development plan (*Rencana Pembangunan Jangka Menengah Nasional*, RPJMN) outlining the government's priority programmes and targets including mainstreaming of SDGs and the climate change agenda. It builds synergy between planning and budgeting at central and regional levels.	Project to link and to work closely with Bappeda in the planning processes for green development, and Bappenas provides oversight. The project's adaptation actions will need to be monitored and aligned with BAPPENAS-AKSARA national MRV system and impact reporting.
Direktorat Jenderal Perkebunan / Kementerian Pertanian **Directorate General Plantations / Ministry of Agriculture**	The Ministry of Agriculture is responsible for implementation of climate policies, strategies and priorities in the agricultural sector. The Directorate General of Plantations oversees oil palm and other estate crops and is responsible for ensuring low-emission and climate-resilient plantation development and management. Promotes sustainable oil palm development and requires mandatory certification of plantation business actors to the Indonesian Sustainable Palm Oil (ISPO) standard.	Project will work with Agriculture Service at provincial and regency levels, and the Ministry of Agriculture provides oversight and is responsible for incentives/disincentives to alter behaviour of private sector and for technical extension work.
Badan Restorasi Gambut dan Mangrove (BRGM) **Peatland and Mangrove Restoration Agency**	The peatland restoration agency (*Badan Restorasi Gambut Indonesia*, BRG) was established in 2016 to restore high-priority degraded peat areas in seven provinces following devastating forest and peat fires in Indonesia. In 2020, its role was expanded into a Peatland and Mangrove Restoration Agency (*Badan Restorasi Gambut dan Mangrove*, BRGM) to coordinate and facilitate degraded peatland and mangrove restoration and improve community welfare. BRGM reports directly to the President's Office.	West Kalimantan is one of BRGM's priority provinces. Project will seek to work with them for peatland and mangrove restoration issues.
National (CEFET) and Regional Environmental and Forestry Training	Based on the MoEF regulation 15 of 2021, concerning the organization and work procedures of the MoEF, the duties of the	(1) Development of policies and standards with due regard to human-resource capacity development within the

Name of agency	Function	Relevance to Project
Center (REFET) in Bogor	Environmental and Forestry Human Resources Education and Training Center are: Organizing education and training for the governmental environmental and forestry staff at national and provincial levels. This comprises among other responsibilities: - the preparation of education and training plans, programmes, and the implementation of trainings of apparatus (under MoEF, provincial government and regency government) and non-apparatus (private sector, civil society organizations and local communities) staff; - the preparation of the formulation of technical policies for the implementation of human resources training; - preparation of learning and training materials for the implementation of vocational education and training; - monitoring, evaluation and reporting on the implementation of the vocational education and training; The regional training center BPLHK Bogor (REFET) and Pusat Diklat SDM LHK (CEFET) in Bogor are responsible for the vocational education and training of forestry staff in West Kalimantan.	forestry sector with a focus on climate change mitigation; (2) Improving individual capacities: Development of training programmes for personnel of Forest Management Units (FMU) in the field of social forestry, climate change mitigation in the forestry sector and leadership and management through in-person training and blended learning. This also includes tailor made and needs based trainings for local communities (e.g. in Non-Timber Forest Product (NTFP) processing, business development and marketing).
Provincial Level		
Pemerintah Provinsi Kalimantan Barat **Provincial Government of West Kalimantan (GoWK)**	GoWK in 2013 pledged to reduce emissions from deforestation and forest degradation to 60% by 2020 and later it was extended to 2030 to support national targets. GoWK has since prepared regulatory and institutional frameworks to support the REDD+ implementation, including the Provincial Strategy and Action Plan on REDD+ (SRAP REDD+), the REDD+ Working Group (POKJA REDD+), Forest Reference Emissions Level (FREL) synchronised with national FREL, an MRV System, National Registration System (SRN), Safeguards Information System (SIS) and technical guidelines for calculating carbon stocks. The main problem faced is the lack of adequate budget for implementing the plans prepared.	GoWK is a project beneficiary and key stakeholder that will guide and direct the project and monitor outcomes.
Kelompok kerja REDD+ (Pokja REDD+) **Provincial Working Group REDD+**	The REDD+ Working Group is a multi-stakeholder institution with government, academic, NGO, and donor agencies as members formed in 2012 through a governor's decision and revised in 2017 and 2022. It assists the Provincial Government of West Kalimantan to formulate action plans and strategies for reducing greenhouse gas emissions, especially from the deforestation and forest and peatland degradation. It partners with local, national and international organizations. It	The Provincial Working Group will take on the central project coordination role among stakeholders and provide technical assistance to the regency. It will implement M&E of the jurisdictional plans and frameworks, oversee project activities at site

Name of agency	Function	Relevance to Project
	coordinates all mitigation, adaptation, and knowledge exchange activities implemented by public and private entities including communities. It also monitors and evaluates all activities related to GHG emission reduction in the province. However, there are critical gaps in the ability of REDD+ Working Group to act as the key REDD+ institution. This includes funding, capacity and authority gaps with Pokja REDD+ still acting as an ad hoc institution 11 years after its formation.	level and measure sustainability impacts. It will be critical for the project to enhance the institutional arrangement for this Provincial Body including amending the legal framework, building capacity and ensuring sustainable funding.
Dinas Lingkungan Hidup dan Kehutanan (DLHK) **Provincial Environment and Forestry Service**	DLHK is a forefront REDD+ institution that leads project implementation with 17 FMUs at the site level related to forest management, including community empowerment.	Project Management Unit at provincial government level will be led by DINAS LHK.
Badan Perencanaan Pembangunan Daerah (BAPPEDA) **Provincial Planning Agency**	BAPPEDA facilitates the deep integration of REDD+, adaptation polices and project frameworks with provincial and regency plans, including sectoral agency plans.	BAPPEDA will co-lead and coordinate regency agencies. BAPPEDA involve in regency and village planning processes including spatial planning and budget allocations from counterparts.
Dinas Perkebunan (DISBUN) **Provincial Plantation Agency**	DISBUN leads sustainable palm oil plantation practices.	Should be involved in extension work and implementation of best practices.
Pekerjaan Umum dan Penataan Ruang (PUPR Kalbar) **Public Works and Spatial Planning Agency**	PUPR is committed to reducing carbon emissions through developing green infrastructure and implementing sustainable construction. PUPR leads to spatial integration for emission reduction, including land-use monitoring and enforcement.	Lead in the works of province spatial planning in development of province midterm planning
Aliansi Masyarakat Adat Nusantara (AMAN Kalbar) **The Alliance of Indigenous Peoples of the Archipelago of West Kalimantan**	AMAN is the umbrella organization for indigenous people in Indonesia, with a chapter in West Kalimantan. They work towards a just and prosperous life for indigenous people in Indonesia. This includes, rights, education, capacity building, maintaining their customary wisdom to protect natural resources, and democratic decision-making processes.	Project partner and ensuring effective involvement and benefit of customary communities in the province and will be part of the PMU IP, Gender, & Youth Advisory Council
Women's organisations	The project will seek synergies and collaboration with women's organisations in West Kalimantan to support the gender mainstreaming activities outlined in the Gender Assessment and Gender Action plan. This collaboration may include, but is not limited to	Support gender mainstreaming activities; strengthen the role of (indigenous) women and

Name of agency	Function	Relevance to Project
	the following identified organisations: Pusat Pengembangan Sumberdaya Wanita (PPSW) Borneo; Gemawan; Dian Tama; Pemberdayaan Perempuan Kepala Keluarga (PEKKA)	secure equal participation and benefit sharing.
Kesatuan Pengelolaan Hutan (KPH) **Forest Management Units (FMU)**	Led by the province, site-level forest management is being implemented through 17 recently established FMUs in the province responsible for managing 6.9 million ha of state-forest areas. The FMUs currently face limitations in terms of staff capacities, resources and governmental budget allocation. After establishment of FMUs country wide MoEF has established an Evaluation scheme for FMUs. Only one FMU in West Kalimantan, Kubu Raya, was declared effective in terms of its operations according to the MoEF assessment (SK. 16/BRPH/PKPH/HPL.0/12/2022). The FMU of 339,784 ha (289,504 ha under permit holders and 50,280 ha unlicensed) receives an annual average of IDR 1.4 to 1.6 billion (EUR 82.35 million – EUR 94.12 million) per year or ± IDR 5,000 (EUR 0.29) per ha from the Regional Revenues and Expenditure Budget (*Anggaran Pendapatan dan Belanja Daerah*, APBD) Reforestation Fund Revenue Sharing (*Dana Bagi Hasil Dana Reboisasi*, DBH-DR) and General Allocation Fund (*Dana Alokasi Umum*, DAU) from National Government. FMU in general face problems with forest and peatland fires, declining APBD budgets and insufficient funding. Providing sufficient budgets are allocated there are new opportunities emerging with the. need to extend management to many APL areas which are prime habitat for orangutans and proboscis monkeys, and lack of additional incentives to maintain its status as an effective FMU.	The project will support 10 FMUs in the selected 5 regencies through capacity building to develop and implement climate-informed forest management plans and strengthen the resilience of forest ecosystems and communities. These trainings will be closely coordinated and implemented with the support of the national and regional training centers (CEFET and REFET; see above).
Universitas Tanjungpura Pontianak (UNTAN) **Tanjungpura University of Pontianak**	The local university UNTAN is specialized in project knowledge management, and it is foreseen that newly developed technology inventions by UNTAN will be used within the project and may be upscaled and additional action research conducted. The facilities and services within the university's existing educational forest (20,000 ha) shall be used for training purposes within the project.	UNTAN will support project implementation on topics related to knowledge management and research development., coordinated through the REDD+ Working Group.
West Kalimantan Steering committee on sustainable agriculture in Indonesia (WK SCAI)	A multi-stakeholder partnership launched by the Governors' Climate and Forests Task Force of which the government of West Kalimantan is a member. WK SCAI seeks to advance sustainable agricultural commodity production at a jurisdictional scale. WK SCAI is expanding the recognition of smallholder rights by formally recognizing production with Plantation Business Registration Certificates for Cultivation.	Project will seek coordination of activities related sustainable agriculture.

Name of agency	Function	Relevance to Project
Regency Level		
Pemerintah Kabupaten **Regency governments**	Regency government facilitates and oversee the project implementation and closely coordinate with provincial agencies and counterparts for specific activities under their authority among others sustainable agriculture management, adaptation measure, socio-economic empowerment at village level, including issue related to high conservation value.	Targeted regency governments engage as Project beneficiaries and key actors in project implementation.
Badan Perencanaan Pembangunan Daerah (BAPPEDA) **Planning Agency**	BAPPEDA facilitates the deep integration of adaptation policies with regency district plans, including sectoral agency plans. Command line under Head of District.	BAPPEDA will lead and coordinate regency agencies. BAPPEDA involve in regency and village planning processes including spatial planning and budget allocations from counterparts.
Dinas Lingkungan Hidup (DLH) **Regency Environmental Agency**	DLH leads the development and implementation of regency adaptation plan at site level	Dinas LH will lead the environment issue includes in support the project to figure of the environment status at regency government level
Dinas Perkebunan (DISBUN) **Plantation Agency at regency level**	DISBUN leads sustainable palm oil plantation practices.	Should be involved in extension work and implementation of best practices, including ISPO certification initiative
Pemerintah Desa **Village government**	The village governments engage in field project implementation through the development of comprehensive natural resources management plans, including the capacity improvement for village government staff, land use planning, social forestry management and village index improvement.	Project beneficiaries and key actors in project implementation
Lembaga Pengelolaan Hutan Desa/Adat **Adat/Village forest management institutions**	Under social forestry schemes, Village Forests (Hutan Desa) are implemented by communities through village forest management institutions which are encouraged to form a village forest business group that gradually becomes part of an existing village-owned enterprise (*Badan Usaha Milik Desa*, BUMDes). Customary forest (Hutan Adat) is another social forestry schemes are implemented by communities in protecting their customary forest and land through permits and managing the areas.	Project beneficiaries and key actors in project implementation
Community cooperatives, groups, and enterprises	Community cooperatives, farmer's groups or community-based enterprises are organizational models for the internal governance of smallholders at community level. This includes Social Forestry Business Groups (*Kelompok Usaha Perhutanan Sosial*, KUPS) for HKm,	Project beneficiaries and key actors in project implementation

Name of agency	Function	Relevance to Project
	HTR or KK. Women's groups will also be specifically identified, targeted, and supported by the project.	
Private sector	Natural forest and industrial timber plantation concessions *(Perizinan Berusaha Pemanfaataan Hutan*, PBPH), agricultural plantation companies (small, intermediate and big), Mining companies, Indonesian Palm Oil Farmers Association (*Asosiasi Petani Kelapa Sawit Indonesia*, APKASINDO); Indonesian Palm Oil Association (*Gabungan Pengusaha Kelapa Sawit Indonesia*, GAPKI); Association of Indonesian Rubber Companies (*Gabungan Pengusaha Karet Indonesia*, GAPKINDO), Payment of Environmental Service (PES) investors and Corporate Social Responsibility (CSR)	This project engages with the private sector, including guiding investment plans and investing and providing co-funding in the green scheme and sustainable supply chains to support the project outcomes.

3.2 Capacity Needs Assessment and Capacity Development Strategy

The capacity development strategy builds on the successful approach applied by GIZ projects in the region and its trustful collaboration with governmental institutions involved in Technical and Vocational Education and Training (TVET) in the agricultural and forest sector. It aims to support human-resource capacity development both at the national and the sub-national level in order to improve natural resource management that benefits local communities and contributes to their welfare, while contributing to the conservation of forests. A key feature of these interventions will be digitalization including e-learning to facilitate and scale the impact of all trainings. Drawing on several years of experience in strengthening the e-learning infrastructure in the forestry sector at national level, this project will focus these efforts on West Kalimantan, considering the specific skills and needs in terms of capacity development for the design of tailor-made interventions that will create lasting positive impacts.

Capacity Building Needs Assessment (CBNA)

Forest sector

Sustainable forest management in West Kalimantan faces different capacity constraints at various levels. Among governmental agencies such as the provincial forestry service (Dinas Kehutanan), FMUs (Forest Management Units), and regional Technical Implementation units UPTs (Unit Pelaksana Teknis), the level of individual capacity of forestry staff in carrying out the tasks under their mandate is still limited. These limitations range from forest planning and technical capacity in GIS and remote sensing to management and leadership skills. Local communities, as another key stakeholder in sustainable forest management at local level, also need capacity building, especially to implement the national social forestry policy and the related use of non-timber forest products. They also need to increase their organizational skills as part of forest farmer groups and business groups such as Social Forestry Business Groups (Kelompok Usaha Perhutanan Sosial - KUPS).

At the institutional level, FMUs and the provincial forestry service often face budgetary and organizational constraints, which limit the resources they can allocate for training. They also often do not have a capacity development plan for their personnel. As a result, long-term forest management plans (RPHJP) that have been prepared often cannot be implemented optimally due to limited human resources and budgets. Hence, current capacities are inadequate to

comply with the responsibilities of these institutions. Governmental training institutions, especially the national and regional environment and forestry training centres (CEFET and REFET), have a limited number of experienced trainers especially for the topics of climate change mitigation, carbon markets, value chain development of NTFPs, including business development. These limitations are also reflected at organizational level where only limited training modules for these topics are available. Training institutions also need to explore other funding sources for training and manage these funds efficiently, because available training budgets are decreasing, while the number of people who need to be trained is increasing. If future training methods will build on e-learning approaches, efforts are also needed to convert teaching materials, which are mostly in the form of presentation materials, into more interactive training media that stimulate the learning process of participants who want to do independent learning.

At the policy level, there is a lack of clarity regarding the role and duties of FMUs after the Job Creation Law (No. 11 of 2020 on Job Creation). This also affects the unclear working relationship between FMUs and the provincial forestry service, UPTs, and other stakeholders. Besides, the policy framework regarding capacity building needs adjustments to reflect the government's ambition to reduce GHG emissions and fight corruption in the forestry sector. Policies, protocols, and standards need to be developed or updated to reflect the need to build the needed capacity for GHG mitigation in the forestry sector. Finally, political steering is also needed to cater for the needs local communities who depend on the support of MoEF and the regional government, as these institutions can provide field facilitators, permit facilitation, business development facilitation etc.

Agricultural Sector

Similar to the forest sector, the *agricultural* sector in West Kalimantan faces various challenges in achieving sustainable commodity production in the landscape. Nevertheless, the economic structure of west Kalimantan in the first quarter of 2023 was dominated by the agriculture, forestry, and fishery sector (22.09%)[1] and West Kalimantan is the province with the fourth largest palm oil industry after Riau, Central Kalimantan, and North Sumatera[2]. This shows the importance of palm oil and its contribution to economic growth in West Kalimantan. However, sustainable practices in West Kalimantan are still not mainstreamed, which is indicated by the low number of companies with ISPO certification in 2020 with only 16.12%[3]. Smallholders, who manage 25,7 % of palm oil plantations in West Kalimantan show an even lower rate with under 1% of RSPO certification.

Lack of socialization of the Regulation of the Minister of Agriculture no. 38 of 2020 about the implementation of the Certification of Sustainable Indonesian Palm Oil Plantations and the related obligations of palm oil growers by 2025 is one of the reasons the adoption of ISPO certification in West Kalimantan is still low. At the smallholder level an additional reason is the limited number and skills of extension staff from the agricultural authorities to improve good agriculture practices of smallholder farmers to meet the requirements of sustainable commodity standards. Furthermore, the land status, and legal aspects of smallholder palm oil farming is also becoming an issue, as the new EU deforestation regulation requires so called *operators* who import forest risk commodities into the EU to prove sustainable practices by providing the geo location of farms as part of supply chain transparency. Furthermore, organizational weaknesses of smallholder farmers and limited numbers of active cooperatives in West Kalimantan are another problem for smallholders in receiving a sustainability certification.

The Governor Regulation no. 3/2022 about the provincial action plan of sustainable palm oil (2022- 2024) serves as the provincial level implementation of the national sustainable palm oil action plan, which was enacted by the president regulation no. 6/2019. This regulation mandates regencies in West Kalimantan to develop regency action plans for sustainable palm oil production. Even though there are several regencies who already have developed such a

plan, only a few have implemented it due to budget limitations at the regency level. Some regencies argue that one of the main obstacles is that in some regencies the estate crop agency (*Dinas Perkebunan*) is a sub-division under the agriculture and livestock agency (*Dinas Pertanian dan Perternakan*) in the regency level, which has the consequence that the regencies don't have sufficient funds to develop and implement regency sustainable palm oil action plans. However, this plan is a requirement on regency level to access the CPO Supporting Fund (CSF) of the Palm Oil Plantation Fund Management Agency (*Badan Pengelola Dana Perkebunan Kelapa Sawit,* BPDPKS), which was established in 2015 to support sustainable palm oil development programmes. Consequently, besides awareness raising and capacity building, horizontal and vertical exchange formats as well as policy advocacy are required to overcome these interinstitutional barriers. This will enable regency governments to develop regency action plans for sustainable palm oil production, which will facilitate the access to the required funding for the implementation of these plans.

Capacity Development Strategy - Supporting capacity development on various levels

The strategy focuses on capacity development on individual, organizational and society & system level:

1) **Improving framework conditions:** Development of policies and standards with due regard to human-resource capacity development within the forestry and agricultural sector with a focus on climate change mitigation including carbon markets as well as sustainable production of forest risk commodities. In addition, horizontal and vertical dialogue and exchange formats between the actors involved aim to build effective collaboration for overcoming interinstitutional barriers and to build a solid understanding of existing regulations.
2) **Improving training institutions:** Strengthening of the management capacities of training and educational institutions particularly the Center of Environment and Forestry Education and Training in Bogor (CEFET), the Regional Environment and Forestry Training Center (REFET) in Bogor and other potential training institutions. Agricultural training institutions on regency and province level (e.g. *Dinas Perkebunan* or *Balai Penyuluhan Pertanian/BPP* as well as the municipal training center in Mensiau) will be supported to coordinate trainings and improve training modules on sustainable agriculture and value chain traceability. E-learning will be a key component of capacity building in both the agricultural and the forestry sector to scale trainings, reduce costs, and build on past achievements.
3) **Improving individual capacities:** Development of training programmes for personnel of government authorities at province and local level (*Dinas Kehutanan*, UPTs, and FMUs) in the field of social forestry, elaboration of RPHJPs, corruption prevention, climate change mitigation and adaptation in the land-use sector, including through carbon markets, and leadership and management through in-person training and blended learning. Similarly, agricultural producers and government employees of regency and province authorities and agencies of MoA will be targeted by specific trainings. These trainings aim to empower government personnel in the forest and agricultural sector to comply with their duties according to the existing regulations. In addition, trainings for famers and local communities will focus on institutional strengthening of Forest Farmer Groups, technical forest management, and business development of Non-Timber Forest Products (NTFP) including the elaboration of feasibility studies, business planning, financial management, digital marketing or harvesting and processing. Agricultural extension staff will be trained in sustainable farming and the sustainable production of forest risk products to provide adequate assistance to smallholder farmers. In addition, a number of "model farmers" will be trained (e.g. very capable farmers with leadership skills) and will serve as multipliers for surrounding farms. At the same time, farmer field schools will scale capacity building to reach a significant number of local land users. Training needs assessments

will be conducted before the implementation of these measures to make sure that the activities are aligned with the needs of the participants of the trainings. In order to ensure women's equal participation during the project, the needs of female household members are taken into account when designing the training measures. Female-dominated activities, such as vegetable growing, are given special attention and training contents tailored to women are developed. In addition, female “model farmers” and other leaders are prioritized when working with target groups, intermediaries, and partners.

Alignment with government regulations

This assistance is in line with the Government of Indonesia’s policy to improve human-resource capacities within the forestry sector as outlined in MoEF’s National Medium Term Development Plan (Rencana Pembangunan Jangka Menengah Nasional - RPJMN) for the 2020 – 2024 period, including “the enhancement of qualified and competitive human resources”, as one of the four development agendas under this plan.

Forestry and agricultural education and training programmes developed and supported by the project apply the Competence-Based Training (CBT) approach in accordance with the Indonesian National Qualifications Framework (Kerangka Kualifikasi Nasional Indonesia - KKNI), as stipulated under Presidential Decree No. 8 of 2012 and Indonesian National Occupational Competency Standards (*Standar Kompetensi Kerja Nasional Indonesia,* SKKNI) for the forestry sector. Under the CBT approach, education and training programmes focus on the development of competencies (skills) in accordance with competence standards for each respective position. Some existing SKKNIs for the forestry sector need to be reviewed and adjusted with the current policies and regulations from the government (e.g. SKKNI for FMU personnel, and SKKNI for local government apparatus in forestry sector).

Supporting (governmental) training institutions and collaboration with other actors

Supporting governmental institutions engaged in TVET on different levels has been an effective approach to harmonize and comply with existing regulations and identify specific training needs. In addition, local universities, civil society organisations and local communities can provide specific knowledge and capacities for targeted trainings. Therefore, this project aims to continue this successful approach, which has been implemented under GIZ’s FORCLIME[4] and SASCI[5] projects for many years. In fact, capacity development in the agricultural sector will be covered mainly by GIZ’s GRASS project, which is considered co-funding to this project as well as by Solidaridad as an executing entity of this project with a sound expertise in agricultural capacity development for sustainable farming practices at smallholder level. To strengthen capacities in a coordinated and sustainable manner, the project will collaborate with established training institutions responsible for capacity building in West Kalimantan.

For strengthening TVET in the forest sector, the project will collaborate mainly with the National and the Regional Environmental and Forestry Training Center (CEFET and REFET) in Bogor. The latter training centre has the mandate to conduct trainings for government forestry staff in West Kalimantan. Besides CEFET and REFET, the project will seek collaboration with other training institutions (government, university and civil society) for human capacity development in forestry sector, if these can provide specific inputs that are relevant for the trainings. These may include for example:

Human Resources Development Agency of West Kalimantan Province (Badan Pengembangan Sumber Daya Manusia Provinsi Kalimantan Barat) for management and leadership trainings for FMU heads or community leaders.

Local universities in West Kalimantan to support trainings of forestry specialists and integrate specific technical knowledge from the region into curricula of governmental training centers,

while strengthening collaboration and exchange between these institutions. Universities can also support the project on business development training for the Forest Farmer Groups (social forestry).

Civil society organizations (CSOs) and community groups (e.g. the association of honeybee farmers in Danau Sentarum). Some of these actors have experience in institutional strengthening of farmer groups and on NTFP processing (honey, tengkawang, rattan etc.). The project will collaborate with these actors to facilitate knowledge exchange and practical trainings.

For strengthening TVET in the agricultural sector, the project will collaborate with the municipal training center in Mensiau, Kapuas Hulu, West Kalimantan, where demonstration sites and tree nurseries shall be further developed. The project draws on proven training modules from the SASCI project and from Solidaridad. Where necessary, additional training modules tailored to local conditions, needs and target groups will be developed together with scientific partners (International Centre for Research in Agroforestry, ICRAF and Integrated Development and Environmental Programme, IDEP). This helps ensuring the economic viability of the chosen approach.

3.3 Development and Climate Policies, Plans and Strategies

Related policies that underline the political will to mutually address GHG emissions and poverty in rural forest areas as a main underlying cause for deforestation and forest degradation are:

1) **Social Forestry Initiative,** launched in 2007, has significantly increased under the current administration of President Jokowi. The Presidential Regulation on Acceleration of Social forestry (PERPRES 28/2023) issued in 2023 is reinforcing this policy by providing a supportive intersectoral framework for the future. The 'National Medium-Term Development Plan' (2015 - 2019), for example, aims to grant Social Forestry licenses over 12.7 million ha all over Indonesia (1.4 million ha in West Kalimantan) seeks to transform large forest areas into legally recognized forms of community tenure. The correlation between social forestry in avoiding deforestation and supporting poverty alleviation has been well-documented in Indonesia, although targeted efforts are needed to ensure its sustainability and fully fledged implementation (Santika *et al.* 2017, Santika *et al.* 2019, Erik *et al.* 2020, Friedman *et al.* 2019, and Nurdwiansyah *et al.* 2020). The Provincial MRV report 2013-2018 further shows the success of social forestry (village forest and community forest) in avoiding deforestation by around 80% in three years after licenses were granted.[198] In Jambi, agroforestry as one of the social forestry programmes, enables the local community to not rely on only one product, but to diversify their incomes to safeguard their livelihoods due to unpredictable climate effects. Indeed, robust forest institutions, capacity building, and business models are key to ensuring the sustainability of the interventions and impacts.
2) **Desa Proklim (the "Climate Change Village")** is a village-led programme to respond to climate change at the local level. Desa Proklim is a national-based programme focusing on implementing mitigation and adaptation programmes at the village and community level. At national level, The National Mid-Term Development Plan 2019-2024 targets 20,000 villages to be settled until 2024, and GoWK targets 10 villages annually. The implementation of PROKLIM Programme has 3 main components: adaptation, mitigation and sustainability. Adaptation includes activities to control, handle and anticipate various natural phenomena such as drought, floods, sea level rise, abrasion, erosion, ribs and landslides. It also includes activities to increase food security and control climate-related diseases. Mitigation measures include activities such as; waste management, solid and liquid waste; use of new energy and

[198] The previous allocation was state-owned for protection and production areas. Under the social forestry license, forest functions are still state-owned forest. Indigenous/local community only has right to access and manage the forest.

conservation of renewable energy; agricultural cultivation with low GHG emissions; increased vegetation cover; as well as activities related to preventing forest and land fires are incorporated. Lastly, in the sustainability component, PROKLIM programme needs to incorporate analysis of benefits, policies, self-sufficient, gender, community groups, external support, etc to ensure the programme sustainability. To receive PROKLIM status, villagers with assistance of relevant agencies within regency or province levels need to prepare a proposal to MoEF through the respective directorate as the selection committee. The selection committee will assess activities that have been implemented in the village against indicators within 3 PROKLIM components.

3) **Moratorium Policy under Presidential Instruction (INPRES 5/2019) on Conversion Prohibition of Primary Natural Forests and Peatlands,** issued in August 2019. The moratorium, which covers around 66 million hectares of primary forest and peatland, was first introduced in 2011 and has been renewed regularly as part of the efforts to reduce emissions from fires caused by deforestation. It has proven to be able to lower the deforestation rate in Indonesia, achieving a 45% drop in deforestation inside moratorium areas in 2018 compared to 2002-2016[199]. Other moratorium policies are also implemented under INPRES 8/2018, including the moratorium on oil palm plantation permits, and the market-based initiative under NDPE. A robust support at the Province level is necessary to support the national moratorium policy, and transparently monitor policy implementation and enforcement at the field level.

Below is an overview of key national and local strategies and plans relevant for the proposed project.

3.3.1 National level

Indonesia's economic planning led by the National Development Planning Agency (BAPPENAS) follows a 20-year development plan, from 2005 to 2025. It is divided into five-year medium-term development plans called *Rencana Pembangunan Jangka Menengah Nasional* (RPJMN), each with different development priorities. These plans include climate change mitigation and adaptation, as well as low carbon development as a priority strategy.

The current National Medium Term Development Plan 2020-2024 aims to transform Indonesia into a high middle class income country with a fair and sustainable development. In the AFOLU sector, this RPJMN focuses on (i) permanent termination of licencing in primary forest and peatlands; (ii) forest restoration; (iii) increasing participation of business sector in forest rehabilitation; (iv) rehabilitation of 637,000 hectares of mangrove; (v) corridors for connecting fragmented habitat; (vi) maintaining conservation areas; (vii) scaling up best practices in research and education; and (viii) establishment of 1.02 million hectares of high conservation value forest.[200] As per the RPJMN, areas requiring protection for forest ecosystem services increased from 51.8 to 65.3 million hectares, and include both forest and non-forest areas which has to be considered in the land use planning process at sub-national level.

Indonesia's commitment to contribute to the global temperature goal under the Paris Agreement has been reflected in its Enhanced Nationally Determined Contribution (ENDC) 2021-2030 which is aligned with its Long-Term Low Carbon and Climate Resilience Strategy (LTS-LCCR) 2050 with a vision to achieve net-zero emissions by 2060 or sooner. The LTS-LCCR aligns climate goals and targets with economic development goals and the SDGs. In its ENDC, Indonesia has an unconditional emissions reductions target of 31.89% and a conditional target up to 43.20% compared to business as usual in 2030.

To meet its climate change mitigation and adaptation targets, Indonesia has the National Action Plan on Climate Change Adaptation (RAN-API) 2019 and the National Action Plan on Greenhouse Gas Emission Reduction (RAN-GRK) 2011 which require the participation of key government ministries and institutions including forestry and peatlands, agriculture, energy, industry, transportation and waste. RAN-GRK mandates that Indonesia's provinces develop

[199] https://www.wri.org/blog/2019/07/indonesia-reducing-deforestation-problem-areas-remain
[200] https://www.andgreen.fund/wp-content/uploads/2022/02/JECA-Indonesia-Full_compressed.pdf

and submit a Local Action Plan (RAD-GRK) in line with their development plans, and provides guidelines, capacity building, budgets and potential participation in domestic and international markets to incentivize local governments to contribute. The Ministry of Home Affairs with the support of BAPPENAS and MoEF oversee and coordinate the preparation of RAD-GRKs. GoWK has developed RAD-GRK 2020-2030 in 2020 which revised based on the previous RAD-GRK 2012-2020. RAD-GRK sets GHG emission reduction targets from 5 sectors, namely: forestry and peat land; agriculture, plantation, and livestock; energy; transportation; and waste. AFOLU sectors account for 85% of GHG emission reduction target by 2030. Provincial Action Plan on Climate Change Adaptation (*Rencana Aksi Provinsi Adaptasi Perubahan Iklim*, RAP-API) and Regency Action Plan on Climate Change Adaptation (*Rencana Aksi Adaptasi Perubahan Iklim Kabupaten*, RAK-API) are not yet in place, but these documents are mandated to be developed by provincial and regency government under PERPRES 98/2021.

Of the 2030 ENDC targets, forestry and land use are to contribute a substantial 17.4 % to 25.4% by enhancing land rehabilitation (afforestation, reforestation, rehabilitation) and peat water management. Forestry and land use (140 Million tCO2 emission level) are to become a net-sink by 2030 as per Indonesia's FOLU Net Sink (2030) strategy and operational plan prepared by MoEF. The document prepared using spatial analysis is to serve as a guide to help accelerate the emissions reductions actions currently being carried out in the sector. An estimated funding of IDR 204 trillion (EUR 12 billion) is required to meet the 2030 FOLU Net Sink goal, and may come from domestic and foreign carbon markets, the state and regional budgets, private investment, domestic and foreign grants, and other funding sources.[201]

The Indonesian REDD+ policies are described in section 2.3.

Indonesia's National Forestry Plan (*Rencana Kehutanan Tingkat Nasional*, RKTN) revised in 2019[202] is a macro spatial plan for the use of forestlands for forestry and other development for the period 2011-2030, showing the current situation of state forestlands and providing direction for their utilization. It aims to reform forest governance, conduct sustainable multiple-benefit management of forests, improve community engagement and access to forest management, and consider environmental carrying capacity in forest utilization schemes.[203] MoEF's revised five-year Forestry Plan (Rencana Strategis Kehutanan 2020-2024) also emphasises resource utilization, job creation, forestry business, farmers groups, economic productivity and supportive low carbon development. Bappenas launched the Wetland Management National Strategy document for Peatland and Mangrove Ecosystems in February 2023 as a reference for stakeholders to collaboratively manage wetland ecosystems.[204]

Indonesia's Master Strategy for Agricultural Development 2015-2045 vision is the realization of a sustainable agricultural-bioindustrial system that produces a diversity of healthy foods and value-added products. This vision is to be realised through spatial planning and agrarian reform, developing agroecological farming systems with integrated bioindustry; marketing, financing, innovations, entrepreneurship and building social capital among others.[205] The five-year strategic plan of the Indonesian Ministry of Agriculture for 2022-2024 is aimed at empowerment and enhancement of farmer welfare, increased food security, increasing added value and agricultural competitiveness, biofuel provision and sustainable low carbon agricultural development.[206] The Agriculture Ministry, in collaboration with FAO, has also launched an agriculture digitalization strategy called the e-Agriculture National Strategy in

[201] https://en.antaranews.com/news/272856/need-rp204-trillion-to-meet-folu-net-sink-target-govt
https://en.antaranews.com/news/272856/need-rp204-trillion-to-meet-folu-net-sink-target-govt
[202] https://www.forclime.org/index.php/en/activities-and-achievement/1263-the-revised-national-forestry-plan-rktn-for-2011-2030-gazetted
[203] https://www.menlhk.go.id/cadmin/uploads/renstra_full_3_1_960074a1c4.pdf
[204] https://www.bappenas.go.id/berita/luncurkan-stranas-pengelolaan-lahan-basah-bappenas-tetapkan-strategi-gambut-dan-mangrove-9Z5zU
[205] https://faolex.fao.org/docs/pdf/ins169439.pdf
[206] https://ap.fftc.org.tw/article/1842

February 2023.[207] The strategy aims to harness data and information resources for the benefit of smallholder agriculture.

The One Map Policy (*Percepatan Kebijakan Satu Peta*) launched in 2010 and mandated by the Indonesian Presidential Regulation 9/2016, is an effort to integrate and synchronize the thematic maps of Indonesia to have one geo-reference, one standard, one database, and one geoportal.[208] It handles 85 thematic maps of 19 ministries and agencies and covers 34 provinces in Indonesia. Maps are compiled, integrated, synchronised to resolve overlapping land use permit and inconsistencies. The resultant integrated and synchronized thematic maps of OMP have begun to be used by Ministries, Agencies and Local Governments across sectors to support various spatial-based priority programmes, at the central and regional levels.

3.3.2 Provincial level

West Kalimantan developed a Regional Action Plan on Greenhouse Gas Emissions (RAD GRK) in 2012, which is currently under revision, and complements sectoral reforms and jurisdictional approaches guiding the implementation of REDD+ in the forest and land use sector.[209] West Kalimantan also has a jurisdictional Strategy and Action Plan on REDD+ (SRAP REDD+) developed in 2014 and revised in 2017 based on the REDD+ national strategy and provincial circumstances and priorities.[210] It was developed by the West Kalimantan REDD+ Working Group in cooperation with stakeholders under the governor's guidance and MoEF supervision and coordination.

In line with its SRAP and RAD-GRK, West Kalimantan developed the Forest Reference Emission Level (FREL), forest inventory guidelines, the sub-national SIS REDD+, an MRV system, and the Emissions Reduction Intervention Strategy (ERIS) that contains a detailed analysis on priority location to be intervened for GHG emission reduction. The GoWK aims to reduce emissions from deforestation and forest degradation by 60% by 2030 compared to the Forest Reference Emissions Level (FREL) or baseline period of 1990–2012. West Kalimantan is one of the REDD+ prioritized target regions of MoEF with an assigned emissions reduction target of 4.7% for the forestry sector as the province's contribution to the national NDC.

The province established Jurisdictional Green Growth Plan (GGP) strategies to support REDD+ in 2018. It presents development scenarios for the forest and land sectors; and seeks to grow regional revenue and development by promoting sustainable supply chains; encouraging growers, mills, investors, buyers, and traders to invest in sustainable enterprises, and mobilizing green investments. West Kalimantan is also a prioritized region under the GGP of the National Planning Agency for shifting towards a low-emission and climate- resilient development pathway, with a special emphasis on REDD+ and effective forest protection. The West Kalimantan GGP is associated with the National GGP Framework by the National Planning Agency and Low Carbon Development Indonesia (LCDI). It formulated a Regional Action Plan for Sustainable Development (*Rencana Aksi Daerah- Tujuan Pembangunan Berkelanjutan*, RAD-TPB) in West Kalimantan 2019-2023 (*Peraturan Gubernur*, PERGUB 61/2019).

Of the 12.7 million hectares of state forests to be assigned to local community management/tenure through various social forestry schemes, 1.4 million hectares was to be assigned in West Kalimantan. The Provincial MRV report 2013-2018 shows the success of social forestry (village forest and community forest) in avoiding deforestation by around 80% in three years after the licenses were granted.[211] The province also has strategic sectoral plans

[207] https://en.antaranews.com/news/274170/indonesia-launches-national-strategy-for-digitizing-agriculture
[208] https://www.researchgate.net/publication/352761169_One_Map_Policy_of_Indonesia_Status_Challenges_and_Prospects
[209] Rencana Aksi Daerah Penurunan Emisi Gas Rumah Kaca Kalimantan Barat, 2012.
[210] Regional Strategy and Action Plan on REDD+, 2017.
[211] The previous allocation was state-owned for protection and production areas. Under the social forestry license, forest functions are still state-owned forest. Indigenous/local community only has right to access and manage the forest.

(*Rencana Strategis*, RENSTRA) for Dinas LHK 2020-2023 and Dinas Perkebunan 2018-2023 which are currently updated.

The effectiveness of the national moratorium policy at the provincial level needs to be proven, and supported by a robust provincial regulatory framework, and effective implementation and enforcement in the field. Adaptation considerations need to be mainstreamed into provincial GHG mitigation plans and other frameworks.

West Kalimantan is a key province for FOLU net sink implementation. It recently issued a Regional Action Plan on Indonesia's FOLU Net Sink 2030 (*Rencana Kerja FOLU Net Sink 2030 Provinsi Kalimantan Barat*, RKFNET) (MoEF A09/Renja Kalbar/09/2022). RKFNET includes 12 forestry sector mitigation action activities: 1) Avoided deforestation in mineral land, 2) prevention of deforestation on peatlands, 3) prevention of concession deforestation, 4) plantation development, 5) Enhanced Natural Regeneration (ENR), 6) application of Reduced Impact Logging Carbon (RIL-C), 7) increase in carbon stocks by rotation, 8) increase in non-carbon stocks rotation, 9) peat water management, 10) peat restoration, 11) protection of high conservation areas, and 12) mangrove management. Each action plan will be implemented at locations based on the Location Priority Index (IPL) which ranks and categorises the locations into high, medium and low priority areas. The expected provincial output is protection and management of 7.6 million hectares of forest and land with 32.1 million tons of CO2e or equivalent to 12% of the total national contribution. Funding required to carry out the 12 mitigation activities is estimated at IDR 25.2 trillion (EUR 1.48 billion) while available financing is only IDR 728.2 billion (EUR 42.84 billion). Additionally local supportive policies need to be formulated and institutions on the ground including FMUs need to be strengthened.

3.3.3 Regency level

The Kapuas Hulu Regency with approximately 65% of its area in forest was designated as a Conservation Regency in 2003.[212] Regency residents are very dependent on forest sustainability, which provides them with non-timber forest products such as agarwood and honey, Arowana fish, as well as water and tourism potential. Conservation regencies are administrative units that are based on sustainable development principles, include designated conservation areas, set limits to development activities and implement sustainable management of natural resources.

Furthermore, Kapuas Hulu along with Sanggau and Sintang Regencies in West Kalimantan are members of the Sustainable Regency Association (*Lingkar Temu Kabupaten Lestari*, LTKL).[213] LTKL is a collaborative forum of Regency Governments and development partners in Indonesia committed to green growth objectives and sustainable development. LTKL has a Regional Competitiveness Framework to measure the jurisdictional sustainability performance of its regency members.[214] Forest area ranges between 42-57% in the three regencies. Kapuas Hulu and Sintang Regencies have sizeable peatland areas as well. All three are priority regencies for the project.

In 2018, UNESCO's Man and the Biosphere Programme declared the Betung Kerihun Danau Sentarum (BKDS) National Parks and the Kapuas Hulu Regency in West Kalimantan as a Biosphere Reserve area.[215] BKDS National Parks with a total area of 944,086.80 hectares, is home to two-thirds of mammals in Kalimantan, 12% of birds in Indonesia, and nearly 2,000 species of flora, including some rare and endangered species. There are 33 villages in and around the BKDS National Parks, and the Reserve would focus on both conservation and sustainable development, including sustainable agricultural supply chains.

[212] https://www.wwf.mg/en/?331771/Betung-Kerihun-Danau-Sentarum-and-Kapuas-Hulu-officially-confirmed-as-new-Biosphere-Reserves
[213] https://jaresourcehub.org/wp-content/uploads/2022/08/LTKL-Annual-Report-2021_2022-ENGLISH.pdf
[214] https://cdn.cdp.net/cdp-production/cms/reports/documents/000/006/098/original/Indonesia_Policy_Brief_2021_EN_final.pdf?1643196152
[215] https://www.wwfguianas.org/?338850/Biosphere-Reserve-and-Sustainable-Development

3.4 AFOLU Key Regulations

The following section gives an overview of key sector policies and regulations relevant to the project. In addition, a long-list of regulations in Indonesia and West Kalimantan is inserted as appendix 10.2 to the Feasibility Study.

UU 6/2023 on Job Creation (amending the first Law No 5/2020 on Job Creation and Government Regulation in Lieu of Law 2/2020) and its derivative regulation, namely Government Regulation (PP 23/2021) on Forestry Administration governs forestry planning, forest area designation and function, use of forest areas, forest management and management plan preparation for forests and forest utilization, social forestry management, forest protection, supervision and administrative sanctions. The Law aims to streamline licensing requirements and bureaucratic inefficiencies, simplifying licensing requirements for the forestry sector licenses, which made it easier for businesses to obtain licenses and then accelerate the country's economic progress through increasing investment and job creation in the forestry sector.

PP 23/2021, followed by Permen LHK 8/2021 targets Forest Management, Planning, and Utilization of Protected and Production Forests. It enforces that forest management is implemented in each Production Forest Management Unit (KPHP) or Protection Forest Management Unit (KPHL) by the head of FMU organizations. It transforms the multi-business approach for forest utilization business licenses. PP 23/2021 also specifies social forestry management, followed by Permen LHK 9/2021 on Social Forestry (see section 1.3.4.1 and 1.3.4.2 for further information on PP23/2021).

Under PP 23/2021, forest utilization activities can only be carried out by concessionaires holding a Forest Utilization Business Permit (PBPH) or by holders of a Social Forestry permit. The FMU organization is now structured as a provincial technical implementation unit (UPTD). Therefore, the FMU organization has not anymore the mandate to conduct business operations on “unlicensed” FMU areas and generate Original Local Government Revenue (*Pendapatan Asli Daerah,* PAD).. FMU organizations must transform to be impactful facilitators to push forest managers to improve business models, which increase PAD through non-tax revenue payment and thus increase the provincial government's budget allocation to FMU organizations (see section 1.3.4.3 for further information on FMUs).

For social forestry, complex rules and procedures create obstacles for communities to independently be registered under the official schemes and manage forest resources without the funding and support of donors and NGOs. Therefore, adequate extension support is critical. Most of the obligations imposed on HD, HTR, and HKm permit holders are similar to those imposed on large corporate license holders. Although there are some controversial rules under UU 6/2023, it should be noted that the Law strengthens the protection and recognition of the rights of indigenous peoples and local communities, including social forestry programmes. The incorporation of social forestry (article 29A of UU 6/2023) provides legal certainty and a strong position of social forestry in the national development agenda (see section 1.3.4.2 on social forestry).

In the plantation sector, PERPRES 44/2020 on Indonesia Sustainable Palm Oil (ISPO) and Permentan 38/2020 on the Implementation of ISPO are relevant to this project to improve sustainable palm oil management, contributing to climate-resilience development. These regulations require mandatory ISPO certification for all big and small plantations by 2025 and specify the ISPO certification process, financing, and funding facilitation. It mandates provincial and regency governments to develop overreaching strategies and plans to achieve ISPO targets. With these regulations, administrative sanctions are imposed on companies if they do not proceed with ISPO certification with three levels of sanction: written reprimand, temporary suspension of operations, and permanent license revocation (see section 1.4.1 for more information on the palm oil sector and ISPO certification). It provides an opportunity for funding support to smallholders as a group through funding from national, provincial, or regency

governments through training and facilitation to fulfill ISPO requirement certification cost to achieve a group certificate (groups with an area between 500-1000 ha).

While larger companies have sufficient funding available to comply with the mandatory ISPO process, smallholders are often not ready to comply with all rules and face many obstacles in reaching the legality of land status, business permits, and funding. Although the government can allocate a budget to smallholders to proceed with ISPO certification, the government still does not cover costs for surveillance audits and certification renewal. ISPO certification by smallholders should be supported and strengthened to reduce and halt further illegal conversion and provide incentives for sustainable oil palm and agriculture. The government could incentivize ISPO-certified production by smallholders by, for example, taking over the costs of certification and other charges and fees.

Activities of this project are connected to several policies and regulations for HCVF in support of unprotected forests in non-forest land that are relevant since, for example, oil palm companies need to allocate HCV areas within the concessions. The Circular Letter 10/SE/VII/2015 issued by the Ministry of Agrarian and Spatial Planning (Land National Agency). It recommends local authorities (Governor and Regency Heads) to protect HCV areas in state forest land released to non-forestry land use (APL) and to respect oil palm companies that allocate HCV in their concessions. Location permits in the HCV area should not be released by the governor or regent/ mayor, and the HCV area should be maintained to protect the company from deforestation and wildlife conflict. No sanction can be imposed as this is based on the governor's and regency heads' leadership commitments.

Then, PP 108/2015 regulates the protection of nature preservation areas and nature reserve areas, including the protection activities of essential ecosystem areas (EEA). MoEF introduced EEA, i.e., a protection area outside conservation areas where the conservation function is to be maintained. The concept is the same as HCV. The Directorate General Nature Resources and Ecosystem Conservation (Direktorat Jenderal Konservasi Sumber Daya Alam dan Ekosistem, Ditjen KSDAE) also issued P5/KSDAE/2017 on the identification of HCV areas outside natural reserve area, conservation area, and hunting park. Lastly, Presidential Instruction (INPRES 8/2018) about evaluation and delay of oil palm business license and increasing productivity of oil palm plantation states that evaluation is required to the development of forest area with HCVF, and evaluation should be done to the implementation of protection and/or development of forest with HCVF from being released to oil palm plantation.

Land tenure is one of the key challenges to implementing HCVF regulations. Land ownership and rights are often unclear. This can lead to conflicts and difficulties by the government in designating HCVF areas. There are also significant economic pressures to convert forests into agricultural land, particularly for palm oil production. Additionally, local communities and stakeholders lack the capacity, resources, or incentives to manage HCVFs sustainably.

At the provincial level, various regulations have been issued that are relevant to the project, including: Provincial Regulation (PERDA 2/2021) concerning integrated watershed management, PERDA 6/2018 concerning Sustainable Land-Based Enterprises, PERDA 8/2019 on forest management, PERGUB 3/2020 on sustainable palm oil plantation action plan 2022 – 2024, PERDA 28/2020 about the general plan for sustainable plantation development, PERDA 8/2021 on protection and management of peat and mangrove ecosystems, PERDA 2/2022 on forest and land fire control, PERDA 1/2022 on Agriculture Land Clearing Adopting Local Wisdom. Despite having a solid commitment, budget shortage influences the implementation of these regulations at provincial and regency levels. PERDA 6/2018 mandates companies to allocate 7% of their designated plantation permit to be conserved. As for now, none of the conservation areas have been designated. The provincial governance needs funding to proceed with this regulation and developing technical guidelines to implement the PERDA.

PERPRES 98/2021 on Carbon Economic Value is one of the new regulations relevant to the project. It enforces the provincial and regency governments to implement concrete mitigation and adaptation activities. It strengthens the provincial government's role through the authority to set GHG emission baselines as the foundation to set mitigation targets and actions by the provincial government and land managers. PERPRES 98/2021 allows forest utilization business licenses to implement two carbon trading mechanisms domestically and internationally, among others, trading and offsetting, and take place either through carbon exchange and/or direct trading between entities. PR 98/2021 supplements with *Peraturan Menteri Lingkungan Hidup dan Kehutanan* (PermenLHK) 21/2022 on the Guidelines for Implementing Carbon Pricing and (PermenLHK) 7/2023 on Carbon Trading Procedures. Recently, GoI has issued two regulations referencing carbon trading through carbon exchanges, including Law 4/2023 on the Development and Strengthening of the Financial Sector and the Regulation *Peraturan Otoritas Jasa Keuangan* (OJK) 14/2023 on carbon trading through carbon exchanges. A more comprehensive assessment of the domestic carbon market situation is provided in chapter 3.5.4.

As of now, there remains uncertainty concerning the offshore trading of carbon units generated in Indonesia although OJK 14/2023 allows foreign parties to trade and for foreign carbon units to be traded in Indonesia's domestic carbon market, and MOEF confirmed that this is technically possible. It is expected that further implementing regulations will soon be issued to gradually complete the necessary framework to allow for the effective implementation of carbon pricing and trading in and from Indonesia, including the provincial government's role on carbon trading.

3.5 AFOLU Sector Financing

3.5.1 Government administration and offices

National Budget from the Ministry of Environment and Forestry (MoEF)

In 2022 the annual state budget (Anggaran Pendapatan dan Belanja Negara, APBN) of MoEF was Rp. IDR 6.5 trillion (EUR 382.35) . An analysis by Patera Foundation of Bogor Agricultural University (*Institute Pertanian Bogor*, IPB)[216] concluded that of this budget 60% is directly FOLU related, 4% indirectly FOLU related (could contribute to FOLU Net Sink achievement) and 36% is non-FOLU related activity. The budget of MoEF over the past six years is provided in Table 16.

Table 16: Annual budget of MoEF (2017-2021)

Year	2017	2018	2019	2020	2021	2022
Amount in IDR tn	6.48	8.06	9.20	7.66	7.69	6.50
Amount in EUR m	381	474	541	451	452	382
Absorption in %	90.65%	89.08 %	96.16 %	93.96%	96.49 %	97.58%

Source: Laporan Kinerja 2002 MoEF, http://bit.ly/LKJ-KLHK-2022

Under MoEF, there are several Directorate General (Dirjen) who are receiving different shares of this budget. They are supported and represented by technical units (Unit Pelaksana Teknis - UPTs) across all provinces where they are responsible for several forestry-related activities. These technical units comprise offices engaged in national park management, social forestry,

[216] Patera Foundation (2023). Identifikasi program dan kegitan renstra klhk 2020-2024 yang mendukung implementasi folu net sink 2030

and others. They are under the direct command of MoEF. The budgets of these units in 2022 are described below:

Table 17: Budget of directorates in MoEF in 2022

Directorate General [2]	Amount in IDR bn	Amount in USD m	Amount in EUR m
PHLHK	290.34	18.3	17.08
BP2SDM	267.44	16.8	15.73
PKTL	411.73	26	24.22
PSLB3	211.58	13.3	12.45
SETJEN	435.1	27.4	25.6
PSKL	317.06	20	18.65
Itjen	58.01	3.6	3.41
PHL	314.28	19.8	18.49
BSI-LHK	247.87	15.6	14.58
KSDAE	1602.33	101	94.25
PPKL	227.67	14.3	13.4
PDASRH	1550.43	97.8	91.20
PPI	268.95	16.9	15.82
BRGM	300.94	18.9	17.7
Total	6503.73	409.7	382.57

Source: MoEF (2022). Laporan Kinerja. http://bit.ly/LKJ-KLHK-2022

These numbers represent the national budgets of MoEF and related technical units with offices in the provinces. Additionally, the national budgets of MoEF that allocated to West Kalimantan through MoEF's technical units are described below.

Table 18: Annual MoEF budget allocated to West Kalimantan Province through MoEF's technical units (2017-2022)

Year	2017	2018	2019	2020	2021	2022
Amount in IDR bio	131	210	289	273	214	170
Amount in USD m	9.3	15	20.7	19.5	15.3	12.1
Amount in EUR m	7.71	12.35	17	16.06	12.59	10
% of MoEF budget	2.29 %	2.95 %	3.56 %	4.04 %	3.16 %	2.97 %

Source: West Kalimantan Official Statistic 2018, 2019, 2020, 2021, and 2022

Provincial budgets (Bappeda, Dinas Kehutanan and FMUs)

In addition to the national ministerial budget of MoEF, the budget of the provincial government (APBD) is funding the provincial (Dinas Kehutanan) and local forest administration including forest management units (Kesatuan Pengelolaan Hutan – KPH). The total budget of West Kalimantan's environment and forestry services in 2023 amounted to 42.075 billion IDR (EUR 2.48 million). This figure is similar to the budget of 2022, while it was about twice as high in

2020 & 2021. Generally, the budget fluctuated between EUR 1.82 million and EUR 5.46 million (US$ 2 and 6 million) per year[217]. This budget comprises annual funding for FMUs, service units responsible for forest inventory and mapping, forest and land fire mitigation, forest park management, wetland ecosystem management, forestry museum, and nurseries.

3.5.2 National Funds

To achieve its ambitious climate change mitigation targets, Indonesia needs more than IDR 4,000 trillion (EUR 235.29 billion) of which only 30 percent will come from the state budget (APBN).[218] The rest will be met through collaboration with the regional governments, the private sector, donors, and the public. They are also working on carbon trading as an incentive for non-governmental parties. Below are some mechanisms developed for raising and distributing finance for meeting environmental and climate-related goals.

National Funds under BPDLH

In 2019, the Ministry of Finance established the Environmental Fund Management Agency (BPDLH). This institution operates as a Public Service Agency (*Badan Layanan Umum*, BLU) and is entrusted with the responsibility of aggregating and disbursing funds for various sectors, including energy and mineral resources, carbon trading, environmental services, as well as maritime affairs and fisheries. BPDLH sources its funding from different institutions and actors, with the primary contributors being the state budget (APBN) and regional budgets (APBD). Other sources of funds can also come from cash surpluses, donations/charities, corporate social responsibility, carbon trading revenue sharing, loans, or other government programme funds related to the environment[219]. BPDLH develops a plan for distribution of each source of finance and will have programmatic windows for different sectors. Disbursement is based on investment plans of line ministries, as well as specific requirements for grant and APBN funds.

MoEF in consultation with BPDLH can either elaborate distribution/ investment plans to disburse money directly or via intermediaries for FOLU Net Sink implementation.[220] Beneficiaries can also submit funding proposals and a subnational REDD+ agency may be formed that can submit proposals. For direct distribution, the beneficiary must be listed via a specific programme in the distribution plan or via call for proposal. Beneficiaries could be individuals, customary communities, community groups registered with the government, governmental and non-governmental agencies, business entities, and educational and research institutions. Intermediary institutions could be local governments, governmental institutions, banks, non-bank financial service institutions, cooperatives, and other legal entities who must apply for accreditation as intermediaries. The legal framework still needs to be developed for subnational governments to directly access funds from BPDLH and use it effectively for local emission reduction goals and efforts. Funding distribution mechanisms are to be improved along with financial management.

Recently, some Result Based Payments (RBP) for Indonesia's REDD+ achievements have been committed such as by Green Climate Fund (GCF) Results-based Payment Scheme (EUR 94.36 million; US$ 103.8 million) and Norway (EUR 50.91 million; US$ 56 million) for pre-2020 results, Forest Carbon Partnership Facility- Community Facilitator (FCPF-CF) for East Kalimantan Province (EUR 100 million; US$ 110 million) and c for Jambi Province (EUR 63.64 million; US$ 70 million) for results between 2019-2024 and 2021-2025 respectively.[221] At the UN Climate Summit in December 2023 (UNFCCC COP 28), Norway announced to contribute an additional EUR 90.91 million (US$ 100 million) in RBP for verified emission reductions between 2017 and 2019[222]. If deforestation levels stay low, REDD+ RBP will continue to be the backbone of international climate finance to Indonesia in support of NDC achievement in the forestry sector (FOLU net-sink 2030). Other opportunities under different

[217] https://kalbarprov.go.id/page/transparansi-anggaran
[218] https://en.tempo.co/read/1652326/bpdlh-ceo-djoko-hendratto-environmental-fund-management-agency-is-like-a-locker
[219] https://mediakeuangan.kemenkeu.go.id/article/show/diam-diam-kita-telah-berkontribusi-melestarikan-lingkungan
[220] BPDLH Main Director Regulation No. 07/BPDLH/2020 about guidelines for disbursing REDD+ funds
[221] https://www.andgreen.fund/wp-content/uploads/2022/02/JECA-Indonesia-Full_compressed.pdf
[222] Indonesia and Norway strengthen joint efforts to beat climate change - regjeringen.no

mechanisms will be explored along with the implementation of 'Presidential Regulation on The Implementation of Carbon Pricing to Achieve the NDC.

Other forest-related financing managed by BPDLH at present include Climate and Land Use Alliance (CLUA) Social Forestry Programme for EUR 1.36 million (US$ 1.5 million), the Community Based Programme Dana TERRA from the Ford Foundation for EUR 0.91 million (US$ 1 million), and World Bank-supported mangrove rehabilitation for EUR 363.64 million (US$ 400 million).

The Revolving Fund Facility (*Fasilitas Dana Bergulir,* FDB) is another government-funded programme under BPDLH, funded by the Government (APBN) and the rehabilitation fund collected from companies. FDB serves as a funding mechanism designed to support forest and land rehabilitation activities and environmental investment and strengthens community business capital in the forestry sector.[223] It plays a vital role in enhancing community business capacities for social forestry, with implementation across various regions in Indonesia. FDB is a continuation of the *Badan Layanan Umum Pusat Pembiayaan Pembangunan Hutan* (BLU P3H), the forest development financing center of MoEF which managed reforestation funds since 1999 and channelled credit to small businesses and the public to protect forests. The distribution of state funds (APBN) begins with the submission of proposals by beneficiaries and their selection takes place according to predetermined criteria. The types of forestry businesses that have the potential to receive FDB financing are business activities that support social forestry schemes like village forests or community forests including the utilization of non-timber forest products (NTFPs) as well as ecosystem restoration. Importantly the funds distributed via local banks or government offices are concessional loans and not grants[224]. The Funds are distributed as low interest loans in various forms, directly to beneficiaries or indirectly through channelling institutions. Funds returned are then channelled back to prospective beneficiaries. Eligible recipients are individuals in groups, state-owned enterprises, regional-owned enterprises, village-owned enterprises, private enterprises and cooperatives. Between 2022-2023 the BPDLH via the FDB scheme has distributed IDR 4.21 trillion (EUR 247.65 million) through the revolving fund facility (FDB) to 28,339 debtors in 30 provinces[225].

The Reforestation Fund (*Dana Reboisasi* - DBH DR) has also been merged into the BPDLH. According to Minister of Finance Regulation (*Peraturan Menteri Keuangan*, PMK 216/PMK.07/2021), revenue sharing funds (DBH) are funds allocated in the state budget to regions based on a certain percentage of state revenue to fund regional needs in the context of implementing decentralization. The revenue sharing fund of natural resources (Dana Bagi Hasil Sumber Daya Alam – DBH SDA) is the regional share derived from natural resource revenues from forestry, minerals and coal, fisheries, petroleum, and natural gas exploitation as well as geothermal energy. Within the DBH SDA, there is a sub-fund known as the reforestation fund (DBH DR), which specifically consists of the regional share derived from the forestry resource revenues.

Reforestation funds are non-tax state revenues (*Pendapatan Negara Bukan Pajak*, PNBP) collected from companies holding natural forest concession licences for harvesting timber. The provisions of the Minister of Finance Regulation (PMK No. 230/PMK.07/2017) regulate the expansion of the use of DBH-DR not only for forest and land rehabilitation activities as the main focus of activities supported by the fund, but also other activities such as community empowerment, operational and social forestry, FMUs, control of forest and land fires, forest protection and security, development and storage of seeds, forestry counselling and other strategic activities. According to PP 23/2021 concerning the Implementation of Forestry, the available funds are divided between the central government (60%) and the regional governments of timber producing provinces (40%).

Since regional autonomy was implemented, the West Kalimantan Provincial Government has received DBH-DR transfers from the Central Government and recorded from 2017 to the first

[223] https://bpdlh.id/donors/2aedf45e-a351-4f47-aef3-d96b563b7705
[224] https://bpdlh.id/program/6acf8a2a-bd4a-477c-8f6a-2d9386b31978
[225] https://mediaindonesia.com/humaniora/591328/bpdlh-telah-salurkan-dana-bergulir-pada-28339-debitur

quarter of 2023 amounting to IDR 144.15 billion (EUR 8.48 million). The major part of these funds have been used to finance forestry development which is under the authority of the West Kalimantan Provincial Government. Activities supported comprise forest and land rehabilitation activities, prevention and control of forest and land fires, community empowerment, social forestry, operationalization of FMUs as well as monitoring, evaluation, and reporting. Most of the DBH-DR allocation is directed to support forest management at the site level through 17 FMUs spread across West Kalimantan[226].

Table 19 summarizes the funds mobilised via levies and fees on harvested timber and forest concessions and distributed to West Kalimantan via the reforestation fund. The economic rent charged on each forestry business permit may be in the form of Forest Utilization Business Permit Fee (IIUPH) or Forest Resource Rent Provision (PSDH). The IIUPH is based on forest area as stated in the permit, while the PSDH is calculated based on the amount, volume, or weight of commodities harvested in forest areas.[227]

Table 19: Funds disbursed to West Kalimantan via Reforestation Fund (2020 - 2023)

Type of Transfer (Forestry) / Year	2020	2021	2022	2023
Reforestation Fund (DBH-DR) in bn IDR	23,17	32,4	14,2	18,1
Business Permit Fee (IIUP) & Forest Resource Rent Provision (PSDH) in bn IDR	5,3	11,8	4,8	9,2
TOTAL in bn IDR	28,5	44,2	19,0	27,3
TOTAL in m USD	2,03	3,1	1,3	1,9
TOTAL in m EUR	1,68	2.6	1.12	1.61

Source: https://kalbarprov.go.id/page/transparansi-anggaran

Despite a gradual increase of the levy on harvested timber (now around US$ 12-20 per cubic meter), the financial volume of the DBH-DR has been declining over the past decades due to lower amounts of harvested timber as well as illegal timber extraction with non-payment of levies.

Dana Alokasi Khusus; Special Allocation Funds (DAK)

The DAK comprises funds sourced from the state budget (APBN) allocated to certain regions with the aim of helping to fund special activities which are regional affairs and in accordance with national priorities. The allocation of DAK funds within the forestry sector is directed at revitalizing the ecological health and enhancing the capacity of river watersheds. Simultaneously, it seeks to uplift community well-being by implementing social forestry programmes and fostering the growth of local economic ventures through forest farmer groups. This allocation also serves the overarching goal of addressing cross-sector themes, with particular emphasis on the development of food estates and the reinforcement of agricultural, fisheries, and livestock production centers. In West Kalimantan Province, the financial DAK allocation for the fiscal year 2021 has amounted to IDR 5.58 billion (EUR 328,24) . This budget was disbursed to the provincial government and 14 regencies/cities in West Kalimantan according to the priority classifications determined by the Investment Coordinating Board (*Badan Koordinasi Penanaman Modal,* BKPM), a non-ministerial government institution[228].

[226] https://kalbarprov.go.id/berita/optimalisasi-pemanfaatan-dana-bagi-hasil-dan-reboisasi.html
[227] Wahyudi, R. (2012). Understanding Aspects of Economic Rent of Timber Forest Resources Extraction in Indonesia.
[228] https://kalbarprov.go.id/berita/sosialisasi-petunjuk-teknis-dana-alokasi-khusus-dak-non-fisik-fasilitasi-penanaman-modal-ta-2021.html

Badan Pengelola Dana Perkebunan Kelapa Sawit (= Palm Oil Plantation Fund Management Agency)

The Palm Oil Plantation Fund Management Agency (BPDPKS) is an organizational unit under the Ministry of Finance, which is in charge of managing export levy dues of palm oil entrepreneurs and distributing incentive funds for biodiesel production. BPDPKS collects funds from plantation business actors (CPO Supporting Fund CSF) and manages and distributes it in support of sustainable palm oil development programmes.[229] It allocates the palm oil funds on three categories, including biodiesel incentives (94%), replanting of oil palm (5%), and social activities (1%). Objectives include supporting research and development, business promotion, improving industrial infrastructure, biodiesel development, replanting, increasing the number of business partners and distribution channels, and educating communities about sustainable practices. The Smallholder Oil Palm Replanting Programme (*Peremajaan Sawit Rakyat, PKS)* helps smallholders renew their oil palm plantations towards more productive, sustainable and better-quality oil palm and reduce the risk of illegal land clearing. As of 31 May 2023, the Smallholder Oil Palm Replanting Programme had covered an area of 282,409 hectares and benefitted 124,152 people.

As part PKS, BPDPKS distributes “aid funds” to West Kalimantan. This is a national strategic programme decreed by President Jokowi and Ministerial Decree of Agriculture (Permentan 3/2022). Up to July 2023, the funds distributed to West Kalimantan reached IDR 462,49 billion (EUR 27.21 million), covering 17.62 hectares[230].

Badan Restorasi Gambut dan Mangrove Indonesia (BRGM; Indonesian Peat and Mangrove Restoration Agency)

BRGM is tasked with facilitating accelerated implementation of peat restoration and efforts for accelerating mangrove rehabilitation to improve communities’ welfare in peat areas in 13 provinces, including West Kalimantan Province, specifically in the Kubu Raya and Kayong Utara Regencies. The total BRGM budget (all provinces) in 2022 was IDR 376 billion (EUR 22.12 million).

For West Kalimantan, BRGM's budget in 2022 amounted to IDR 11.5 billion (EUR 676,471). For 2023, the budget was IDR 16.4 billion (EUR 964,706)[231].

Dana Desa - Village Fund

Finally, there are also village funds, which are funds transferred directly from the province budget (APBD) to the villages of each province. The allocated village fund (Dana Desa) in West Kalimantan for the year 2022 amounted to IDR 1,.89 billion (EUR 111,176), sourced from the state budget through regional allocations[232]. Minister of Villages Regulation Number 16 of 2018 specifically stated that village funds can also be used for economic empowerment activities of communities to support social forestry, but there is limited evidence that this is already taking place at relevant scale[233]. Until now, village funds have been mostly used for infrastructure development, such as roads, reservoirs, and irrigation, while environmental protection and sustainable development have received less attention. Therefore, the impact of this funding stream on the management and conservation of natural resources in West Kalimantan is probably minimal[234].

3.5.3 International Donors

International cooperation in the forest sector in West Kalimantan focuses on strengthening forest conservation, social forestry, and sustainable rural development. Currently there are several ongoing projects while West Kalimantan is usually only one of several project regions

[229] https://www.bpdp.or.id/kontribusi-penuh-blu-bpdpks-dalam-menyukseskan-program-pembangunan-nasionall
[230] https://disbunnak.kalbarprov.go.id/berita/realisasi-peremajaan-sawit-rakyat-di-kalbar-capai-17.618-ha/
[231] https://brgm.go.id/publikasi/
[232] https://kalbar.kemenkumham.go.id/berita-kanwil/berita-utama/6242-kanwil-kalbar-terima-petikan-dipa-apbn-dan-tkdd-ta-2023
[233] https://kolom.tempo.co/read/1227871/integrasi-dana-desa-dan-perhutanan-sosial
[234] https://www.climatepolicyinitiative.org/publication/indonesias-village-fund-an-important-lever-for-better-land-use-and-economic-growth-at-the-local-level/

of these projects. Hence the share of financial volume of these projects that is being spent on West Kalimantan is unknown. Similarly, the disbursement of Results Based Payments (RBP) via the GCF will be arranged via calls for proposals, which will be reviewed and selected by MoEF (and BPDLH). The total amount of RBP funds disbursed to West Kalimantan will probably only be revealed after all the funds have been disbursed. More information on relevant projects in Indonesia that also operate in West Kalimantan and spent a share of their project budget in this province can be found in section 4.1.3.

3.5.4 Domestic Carbon Market

Indonesia has implemented several pieces of legislation relevant to the development of a national carbon market (see also section 3.4). These include Presidential Regulation (*Perpres*) No. 98/2021 on Carbon Economic Value, and MoEF Regulation (*Permen LHK*) No. 21/2022 on the procedure for implementation of carbon economic value. More recently, the government has stipulated *"procedures for the forestry sector carbon trade"* under MoEF Regulation (*Permen LHK*) No. 07/2023, which regulates how carbon trading in the forestry sector can be performed and by which parties. It outlines that mainly three parties can engage in forest carbon trading: (1) holders of forestry utilization business licenses (perizian berusaha pemanfaatan hutan – PBPH), (2) holders of social forestry licences with at least silver classification, or (3) customary communities (*hutan adat*). These pieces of legislation regulate how Indonesia can benefit from carbon trading or an emissions trading system (ETS) and results-based payments (RBPs) in achieving a low-carbon economy. The development of a national carbon market holds considerable potential to mobilize private sector funding for forest and climate protection at unprecedented scale. The IDN government anticipates that carbon trading in Indonesia could generate between EUR 0.91 – 13.64 million (US$ 1-15 billion) annually[235].

Carbon trading can occur at domestic or international levels, while all carbon credits need to be registered at the national carbon registry system (Sistim Registrasi Nasional, SRN). For the creation of forest carbon credits, the national methodologies developed by MoEF must be followed. Currently there are four AFOLU methodologies that provide for the development of forest carbon credits through (1) Reducing deforestation (2) Reducing forest degradation (3) Prevention of forest fires on peatlands (4) Reduced emissions from avoided peat decomposition [236]. Currently no methodology for afforestation / reforestation has been developed or approved by the SRN. The recent launch of Indonesia's Carbon Exchange in late September 2023 represents another milestone in the realization of the national carbon market and will facilitate carbon trading in an effective and transparent manner. While currently only coal fired power plants are covered by the Indonesian ETS, in the future other sectors like industries or selected businesses in the forest sector (e.g. those engaged in the management of peat and mangroves) will also be covered. Therefore, the sectoral NDC roadmap (*Peta Jalan Perdagangan Karbon Sektor Kehutanan*) is a key document, which outlines the MoEF's anticipated emission reduction pathway until 2030 and allows for annual stocktaking. This will allow for monitoring whether actual sectoral emission reductions are sufficient to achieve sectoral NDC targets. The trade of Indonesian carbon credits (*Sertifikat Pengurangan Emisi Gas Rumah Kaca*, SPE-GRK) will facilitate the achievement of the national NDC by mobilizing additional financial resources from the private sector.

According to a minister letter from MoEF to the governors of Indonesia (SE.5/MENLHK/SETJEN/PPI.3/5/2023) provincial governments may engage in preparations for engaging in carbon markets but need to inform MoEF previously. For this purpose, technical consultations may also be carried out between provincial governments and MoEF including through the formation of provincial working groups. This is where the project aims to support by preparing the enabling environment for carbon trading in West Kalimantan in collaboration

[235] https://indonesiabusinesspost.com/insider/ojk-issues-regulation-on-carbon-trading-provides-instruction-and-guidance-for-market-organizers/
[236] https://lcdi-indonesia.id/wp-content/uploads/2020/05/Executive-Summary-NAP.pdf

with relevant stakeholders. This will include but is not limited to preparing emission baselines, monitoring approaches as well as Climate Change Mitigation Action Plans (Dokumen Rancangan Aksi Mitigasi Perubahan Iklim - DRAM). The latter is a requirement for qualified market participants to obtain the Indonesian GHG emission reduction certificate (SPE-GRK).

While it is clear that no emission reductions generated through the funded activities described in this proposal may be used to offset emissions occurred elsewhere (according to the Accreditation Master Agreement), the project aims to support the preparations to empower relevant stakeholders in West Kalimantan to capitalize on future emission reductions and carbon sequestration in the forestry sector after the termination of the project.

These activities may also include consultancies for further technical assessments as needed, but the project will abstain from any activities relating to carbon project development or the sale of carbon credits under any standard. The result will be a new funding stream hat mobilizes private sector finance for the province to incentivise local stakeholders across the province to further engage in emission reductions through forest conservation and reforestation in the future. As stipulated in the Presidential Regulation (PERPRES) No. 98/2021, financial benefits of these activities will mainly accrue to non-governmental actors, but the state budget will still benefit through a carbon levy which will be imposed on the transaction of Indonesian carbon credits. Similar to results-based payments (RBP), the distribution of these funds will be managed by BPDLH.

3.5.5 Challenges of Sector Finance

Major challenges in sector financing in West Kalimantan include the low budgets for technical units of MoEF on province level as well as of the provincial and local forest administration. In addition, the weak capacities of local governments and communities to access national funds is limiting the absorption of available funds where they are needed most. The limited government budgets at province level provide insufficient funding for the procurement of required assets and adequate staffing of skilled personnel, which limits the effectiveness of FMUs in monitoring forest related activities, patrolling, and for serving as an extension service for social forestry in collaboration with local communities. Consequently, financial means are often insufficient for many forest-related tasks including the procurement of sufficient vehicles and petrol or for the provision of transportation for the vocational training of forest officers . Reports by MoEF have estimated the budget gap to be around US$ 1 billion per year between 2020 and 2030[237]. Due to the extreme difference between required and existing funds, the diversification of non-APBN funding sources is recommended. This includes increasing provincial budgets (APBD), mobilizing more funding from international and national donors, and the development of carbon markets. In addition, investments from the private sector need to be attracted for example from forest utilization business licence (PBPH) holders for the implementation of reduced impact logging (RIL-C) and enhanced natural regeneration (ENR) for natural forests and plantation forests.

The access to national funds, such as the Revolving Fund Facility or the GCF RBP require sound proposal writing skills as well as capacities and experience in financial administration. Due to the widespread lack of these requirements, the absorption of these funds at local level is often insufficient. Especially local communities often lack the knowledge and awareness of available financial support mechanisms to fund their incipient social forestry businesses or environmental protection and restoration initiatives.

Despite the availability of different national and international funds and funding mechanisms, there is a persisting lack of incentives for sustainable forest management and forest conservation at individual level. Notwithstanding the success of Payments for Ecosystem Services (PES) in Latin America, the use of this tool is still lacking in Indonesia with the

[237] KLHK (2023).The State of Indonesia's Forests 2022 – Towards FOLU Net Sink 2030

exception of some local initiatives, which often operate in partnership with the private sector[238]. Consequently, the high opportunity costs of non-deforestation consolidate the local rationale of land conversion to produce agricultural commodities.

Similarly, the development of the national carbon market holds much potential for mobilizing additional private sector funding for forest conservation. However, despite a rapidly evolving policy framework which aims to create and regulate this market, there are still regulatory gaps and carbon trading through the national carbon exchange is still incipient. Also, further methodologies for the development of (forest) carbon projects still need to be developed and approved by MoEF. At the same time, the knowledge about the available regulations, the functionality of carbon markets and related methodologies is very limited across all relevant stakeholders, especially at province level.

West Kalimantan needs significant additional financial resources to implement FOLU Net Sink 2030[239]. Although the province is a priority region for REDD+ implementation, there is a serious resource gap that needs to be filled with a mix of domestic, international, and private sector funding. As described above, there are various funding opportunities that could be explored and pursued including the available windows under BPDLH, APBN revolving fund facility, CPO supporting fund and private sector financing. However, similar to BPDLH, the province would require a provincial level funding mechanism to receive and distribute financing of different kinds from various public and private sector sources to implement its climate change mitigation and adaptation initiatives. The legal framework is required to set up and operate such a mechanism and allow for effective channelling of funds from the national to provincial level as well.

[238] Nugroho, H. Y. S. H., Nurfatriani, F., Indrajaya, Y., Yuwati, T. W., Ekawati, S., Salminah, M., ... & Baral, H. (2022). Mainstreaming Ecosystem Services from Indonesia's Remaining Forests. Sustainability, 14(19), 12124.
[239] Government of West Kalimantan (2022). Provincial FOLU Net Sink 2030 Work Plan.

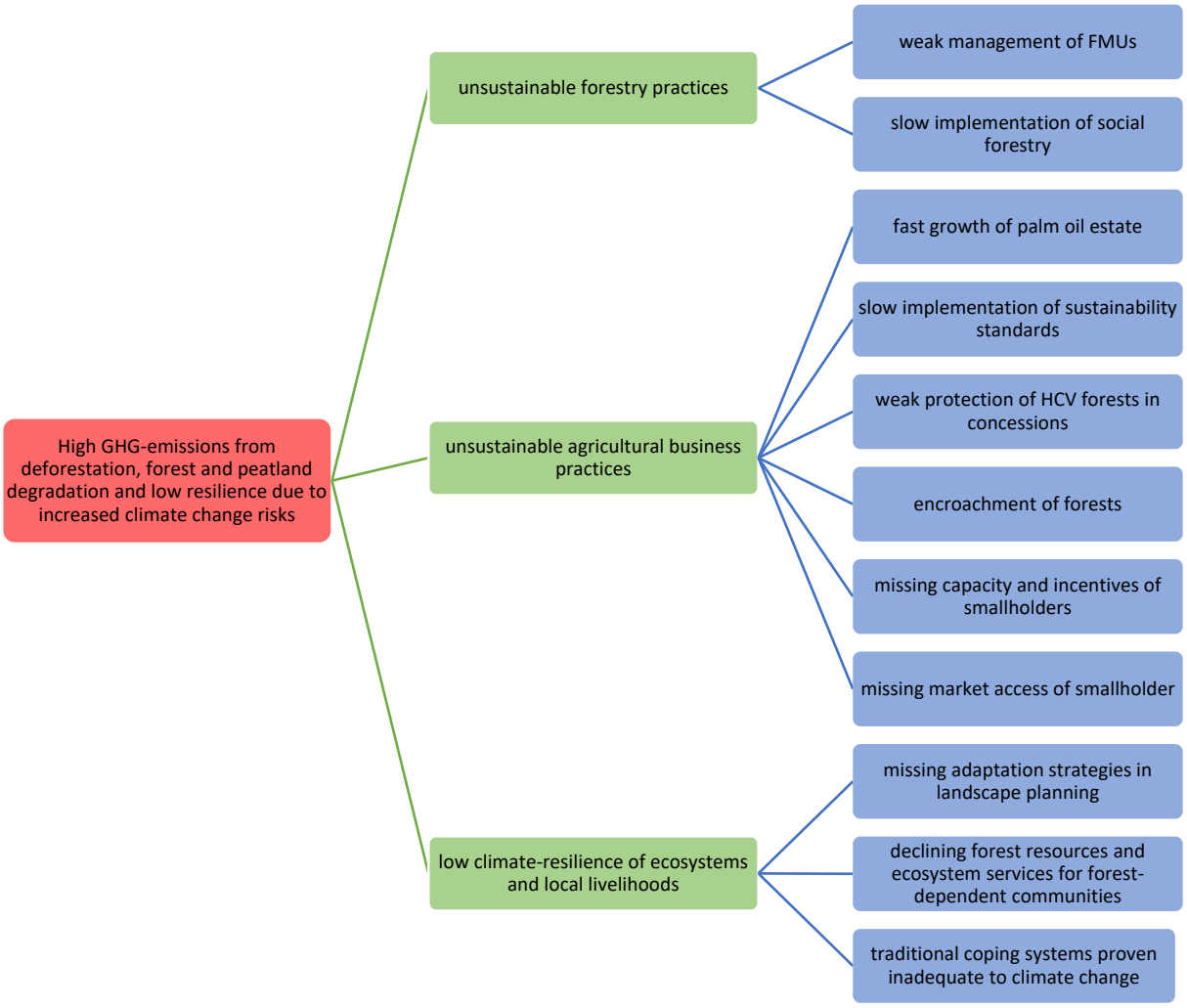
4 Project Baseline and Barriers

4.1 Baseline and Problem Analysis

4.1.1 Problem Statement

Despite government efforts at the national and provincial levels, deforestation and forest degradation remain major threats to the last intact ecosystems of the island of Borneo/Kalimantan (for the Indonesian part). West Kalimantan has seen particularly high deforestation rates over the past decades. According to the GHG emission reduction performance report of West Kalimantan year 2012-2018, deforestation in West Kalimantan is caused by diverse and underlying causes. Unsustainable forestry practices, mainly due to weak management of FMUs and slow implementation of social forestry, are the main contributor to deforestation, accounting for 58%, while conversion into agriculture accounts for 40% (overwhelmingly due to palm oil expansion). Other factors, including crop expansion, settlements, roadway expansion, and mining account for the remaining 2% of deforestation.[240]

Figure 20: Problem tree



Forests are critical for forest-dependent communities who rely on natural resources for their livelihoods.[241] Although the forestry sector only contributes around 0,3% of regional income[242], it is indispensable for the communities residing in and around forest areas. Forest ecosystems

[240] Based on provincial land use. Source: Monitoring, Reporting, and Verification (MRV) report on emission reduction of West Kalimantan 2013-2018, 2020.
[241] https://www.pembina.org/reports/c4d-case-study-world-vision.pdf
[242] Governor Regulation No. 84 Year 2022 on Regional Government Budget of 2022.

provide climate, food, water, and income services, among others, for forest-dependent communities living in 1,150 villages (56,6%) in West Kalimantan.[243] West Kalimantan is ranked 30th of the 34 Indonesian provinces according to the HDI. Around 6.8% of West Kalimantan people are poor[244] and of 25,863 villages that are located in and around the forest, 36,7% are poor. [245] These are the people who are highly dependent on forest resources for their livelihood.[246]

As local populations are increasingly at risk to climate change (see section 2.2), there is a need to strengthen the resilience of vulnerable communities and the ecosystems upon which they depend. The global COVID-19 pandemic has also reiterated the fact that both risk and vulnerability are systemic and interconnected. Strengthening the resilience of the most vulnerable communities against different types of risk (climatic, geophysical, economic or health-related) and developing and implementing adaptation strategies is therefore of upmost importance. Traditional coping strategies such as traditional planting patterns or hunting used by communities and households to adapt to shocks and threats have been proven to be inadequate, due to climate change.[247] Communities still apply rotational agriculture and land clearing using burning methods to reduce the use of chemical fertilizer, but other suitable methods are needed, so that land clearing through burning or shifting agriculture methods will be gradually reduced.

In addition, there is a need to address accelerating deforestation and forest degradation, which exacerbates the vulnerability of local ecosystems (e.g. soil degradation and erosion, loss of protective forests that protect ecosystems and communities against flooding). In West Kalimantan, the current figures show only 108 villages have received PROKLIM status by 2022 since the inception of this programme by MoEF in 2011. It indicates that only 108 out of 2.142 villages have capacities to implement activities related to adaptation and mitigation. These figures are clearly showing the needs and challenge to increase resilience of vulnerable communities and ecosystems.

As elsewhere in Indonesia, the demand for agricultural commodities, mainly palm oil, is the major driver of land use change in West Kalimantan. Although many global companies have committed to eliminate deforestation from their supply chains already by 2020, current data shows that most of them are not on track to meet this goal.[248] Major palm oil companies e.g. did not commit to clear High Conservation (HCV) areas, High Carbon Stock (HCS) areas and peatlands. Sustainability commitments could shift future land use, especially in Kalimantan, where oil palm driven deforestation increased in recent years.[249] In addition, Austin *et al.* (2017) argue that there is still a large area of potentially suitable land for plantation expansion that is not forested in parts of Kalimantan.

40% of the palm oil area in West Kalimantan is managed by independent smallholders farmers, where they do neither have sufficient capacities nor incentives to implement sustainable agriculture practices. Several notable challenges for the smallholders include: land tenure and formal use rights, access to finance and markets, very low productivity and limited awareness and uptake of good agriculture practice.

Policy change, including recent regulations on peatlands, new areas covered under moratoriums, and the No Deforestation No Peat No Exploitation (NDPE) commitment, limit production areas to licensed areas for certified and verified growers[250] and mills. Therefore,

[243] https://www.bps.go.id/publication/2020/06/29/ee925d3cdebd389299c8de78/identifikasi-dan-analisis-desa-di-sekitar-kawasan-hutan-berbasis-spasial-tahun-2019.html
[244] https://www.bps.go.id/pressrelease/2019/07/15/1629/persentase-penduduk-miskin-maret-2019-sebesar-9-41-persen.html
[245] CESS-ODI, 2005, "Links Between Forests and Poverty in Indonesia. What Evidence? How Can Targeting of Poverty in and Near Forests be Improved?", Briefing Paper II, March, Jakarta
[246] Sunderlin, W.D., Resosudarmo, I.A.P., Rianto, E. and Angelsen, A. 2000. The Effect of Indonesia's Economic Crisis on Small Farmers and Natural Forest Cover in The Outer Islands. Occasional Paper 29(E). Bogor, CIFOR

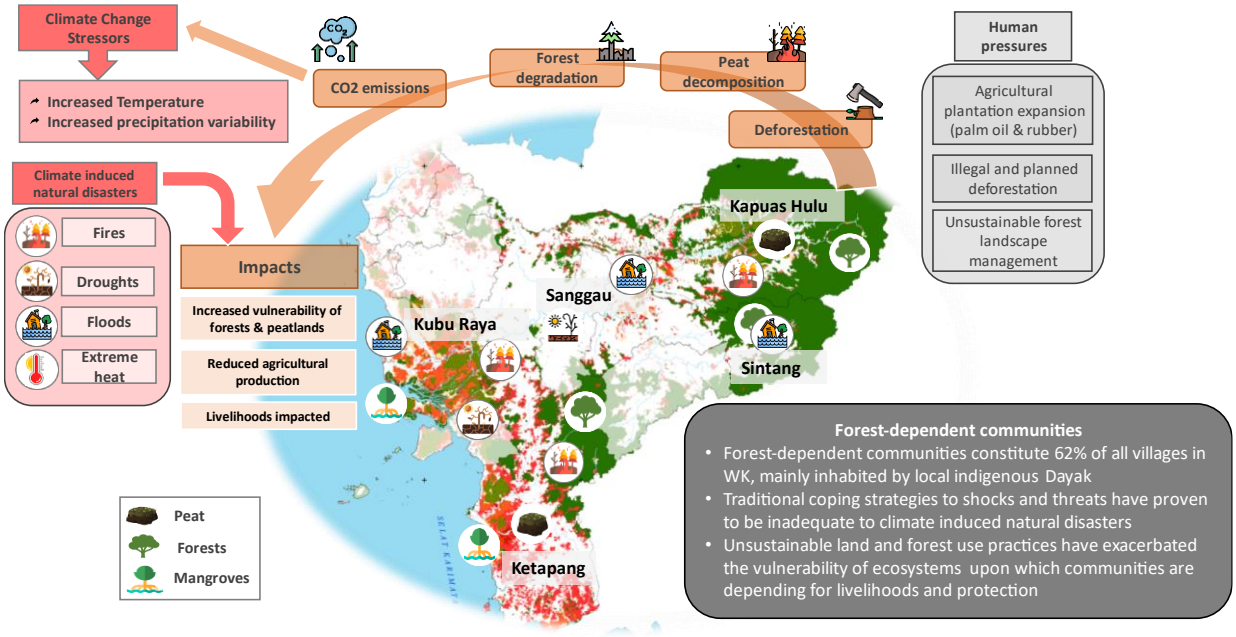
[248] Rau, F.& Langenberger, G., 2019, RURAL 21 04/19 pp.9-11.
[249] Austin et al. 2017. Shifting patterns of oil palm driven deforestation in Indonesia and implications for zero-deforestation commitments. Land Use Policy 69, 41-48.
[250] Based on Presidential Regulation No 44 Year 20 on Palm Oil Certification System in Indonesia

companies must include smallholders´ fruits to make their mills run on the minimum capacity. As such, smallholders must fulfil stringent criteria for sustainable practices to ensure they and larger firms comply with the laws. Nonetheless, some local traders and markets still accept non-verified products from smallholders. Thus, there is a need to also strengthen regulations and policy gaps, awareness raising, monitoring and enforcement, and ultimately support diverse incentives to help both companies and smallholders to make the transition to sustainable practices.

4.1.2 Baseline Analysis

Overall, progress on West Kalimantan emission reductions from deforestation, forest and peatland degradation is still challenging, despite few positive achievements that have been made.

Figure 21: Scenario without project



Without the project, the following challenges for replication and scaling up of sustainable, low emission and climate resilient agricultural practices and forest landscape management persist:[251]
Institutional and regulatory frameworks at provincial and regency level cannot be timely amended
Gender-responsive climate change adaptation action is not included in mid-term spatial plans and regional development plans, awareness of stakeholders at province, regency and village level is weak, implementation tools are missing due to a lack of funding availability. FOLU Net Sink 2030 targets have no legal basis at the provincial level, provincial REDD+ policies are not aligned with national mitigation policies and regulations and mitigation policies are not included into provincial development plans. REDD+ Task Force for West Kalimantan (Pokja REDD+) is not strengthened and continues to coordinate gender-responsive mitigation and adaptation actions as an ad-hoc organization with scarce resources, unclear mandate and overlaps with other working groups.

[251] A detailed baseline description for each sub-activity is described in the activity sheet in section 5.6

Regulatory framework for forests with HCV/HCS in non-state forest areas (APL) is not strengthened and remaining forest are at risk to be converted to agricultural use. Primary forest and peatland areas are inconsistently mapped and field-identified moratorium areas are not included in regional land use plans. Gender-responsive climate change adaptation action is not included in mid-term spatial plans and regional development plans, awareness of stakeholders at province, regency and village level is weak, implementation tools are missing due to a lack of funding availability.
Existing, unsustainable land and forest business models are not replaced because investors are not willing to invest in improved agricultural practice and smallholder farmers and IP are lacking capacities to implement resilient and sustainable farming and community-based forest management
Investors continue to invest in concessions rather than in innovative smallholder land and forest business models. Smallholder farmers, including women, continue to be dependent on unsustainable practices and few commodities, mainly uncertified palm oil production and exposed and vulnerable to climate change. Nearly 50% of social forestry permit holders received the license, yet had no further developments (e.g. social forestry business groups (KUPS), business plans). In addition, efforts to strengthen (Gender Equality and Social Inclusion) GESI remain largely untapped. Market access with climate-resilient commodities for smallholder farmers and Social Forestry permit holders, including women, remains very limited. Traceability systems cannot be upscaled to smallholder farmers, including women, which disqualifies them from participating in sustainable value chains.
FMU Organizations do not have the resources and capacity to fully implement sustainable forest management, including Social Forestry
Mid-term management plans of FMU units do not reflect current national and provincial climate mitigation strategies and action plans and do not integrate adaptation measures. Most FMUs cannot fulfil the criteria of “effective FMU organizations” and do not receive the authority to utilize again forests in unlicensed Production or Protection forests to develop business models through cooperation partnerships with PBPH or Social Forestry permit holders and/or self-managed. Human resources, infrastructure and equipment remain too limited for the mandate, resulting in insufficient: securing of FMU area from illegal logging, forest and land fires, wildlife poaching, and other activities which lead to deforestation and degradation, including to oversee the implementation of moratorium policies at the field level fire management information and data exchange with other government offices at provincial and central level facilitation and support of IP, including women, on social forestry

4.1.3 Gaps and complementarity with other development initiatives in the sector

Indonesia has received significant amounts of bi- and multilateral support for the readiness and implementation of REDD+. In addition to the initial support from Norway, the GCF has approved the RbP for REDD+ Funding Proposal 130. The RbP project is ongoing with its implementation at subnational level. MoEF and BPDLH have developed a benefits-sharing plan for the sub-national level, and West Kalimantan is one of the target areas for the implementation of the RbP project (see Section 3.5.2 for more details). The proposed project

for West Kalimantan closely aligns with existing support and will coordinate to avoid overlaps, e.g. through a strong focus on strengthening the capacities of FMU Organizations, implementing and upscaling sustainable business models for communities under the social forestry initiative, and, together with private sector institutions, develop, implement and upscale economically viable business models for sustainably produced commodities.

Several ongoing projects have been identified in West Kalimantan with potential alignment options of the proposed GCF project. Initial consultation with these projects has been conducted, and further consultation will be conducted after project start to ensure no overlaps or duplication of activities and village intervention areas and to determine how the GCF project activities synergize with and complement the ongoing projects (see Table 20 for ongoing projects). Recently completed projects have also been assessed regarding target areas, lessons learned and challenges and project activities will build on achievements made and the project will potentially provide further support to former intervention areas.

Alignment between the existing projects with West Kalimantan´s jurisdictional strategies, programmes, and targets of GHG emission reduction is necessary and will be enhanced further during project implementation. The synergy between the baseline project targets with provincial targets on GHG emission reductions is in place, but fully alignment is needed to ensure the project achievements are well-documented in the provincial GHG emission performance report.

A more comprehensive summary, including recently completed projects, is provided in the appendix 10.1 10.1.

Table 20: Overview of complementarities with other initiatives

Project, implementation period, donors	Budget	Description and synergies
Forests and Climate Change Programme-Technical Cooperation (FORCLIME-TC) Timeframe: 2009-present Funding entity: Federal Ministry of Economic Cooperation and Development Germany (BMZ) Status: Ongoing	EUR 40 million	• Aims to reduce GHG emissions from the forest sector while improving the livelihoods of Indonesia's poor rural communities • Project area: Indonesia and 5 provincial jurisdictions of West Kalimantan, North Kalimantan, East Kalimantan, Central Sulawesi and Papua • Both projects focus on improving mitigation policies and sustainable forest management. FORCLIME-TF improved regulatory frameworks that are referenced for activities of 1.1.1, 1.1.2, 1.1.3, and 3.2.1 • BMZ provides co-finance for the GCF project
KALFOR - Strengthening Forest Area Planning and Management in Kalimantan (Kalimantan Forest) Timeframe: 2018-2024 Funding entity: UNDP / Global Environment Facility (GEF) Trust Fund Status: Ongoing	EUR 8.18 million (US$ 9 million)	• Designed to back up the Government’s programme to maintain the remaining forests located outside state forest zones (APL) in Kalimantan's lowland and montane areas in the face of the growth and development of the estate crop sector by addressing sustainable management of forest, environment, and ecosystems. • Project area: West, Central, and East Kalimantan Province • This project closely links with activity 1.2.1 Consultation will be conducted to ensure no overlaps of village intervention areas and duplication of activities at field level

Project, implementation period, donors	Budget	Description and synergies
SEGAR - Sustainable Environmental Governance Across Regions Timeframe: 2021-2026 Funding entity: United States Agency for International Development (USAID) Status: Ongoing	EUR 29.73 million (US$ 32.7 million)	• Aims to advance Indonesia's development goals of balancing biodiversity conservation and sustainable land use with inclusive economic and livelihood development by brining together government, businesses, and local communities to make business-as-usual commodities production less harmful to the environment, more beneficial to local farmers, and more profitable for businesses. • Project area: Aceh and 3 provinces in Kalimantan (West, Central, and East Kalimantan) • This project closely links with activity 1.2.1, 2.1.1, and 2.1.2. Consultation will be conducted to ensure no overlaps of village intervention areas and duplication of activities at field level
Strengthened Systems for Community-based Conservation of Forests and Peatland Landscapes in Indonesia (CoPLI) Timeframe: 2021-2025 Funding entity: GEF Trust Fund Status: Ongoing	EUR 19.09 million (US$ 21 million)	• Aims to conserve globally important biodiversity and enhance livelihoods through a strengthened institutional framework and community-based conservation of peatland ecosystems • Project area: West Kalimantan • There will be no area overlap and activity duplication with the GCF project since the project area of this project is National Parks. But, exchange on lessons learned potentially be conducted since CoPLI also focus on community-based forest management
Forest Programme V (FPV): Social Forestry Support Programme Timeframe: 2021-2025 Funding entity: KfW Status: Ongoing	EUR 11.5 million	• FPV project's objective is that poor rural communities' livelihoods are sustainably improved through the protection of natural ecosystems and sustainable forest management (SFM), and greenhouse gas emissions are reduced from decreasing deforestation and land degradation. • Project area: Sanggau Regency, West Kalimantan • This project closely links with activity 3.2.1. Consultation will be conducted to ensure no overlaps of village intervention areas and duplication of activities at field level
The Sustainability and Value Added in Agricultural Supply Chains in Indonesia Project (SASCI+) Timeframe: 2020-2025 Funding entity: BMZ Status: Ongoing	EUR 7.3 million	• Aims to increase the farmers' incomes, safeguard natural resources, and establish sustainable supply chains by 2025 • Project area: West Kalimantan and Central Sulawesi • SASCI+ activities are linked with activities 2.1.2 and 2.1.3. Consultation have been conducted for alignment.
Sustainable Agriculture for Forest Ecosystems (SAFE)	EUR 4.6 million	• Aims to provide technical assistance, strengthening capacity, scaling up traceability systems and supporting reliable

Project, implementation period, donors	Budget	Description and synergies
Timeframe: 2022-2026 Funding entity: BMZ Status: Ongoing		and stable partnerships, including through exchange and learning amongst a wide range of actors • Project area: West Kalimantan and Central Sulawesi • SAFE activities are linked with activity 2.1.2 and 2.1.3. Consultation will be conducted to ensure no overlaps of village intervention areas and duplication of activities at field level
Improving the Management of Peatlands and the Capacities of Stakeholders in Indonesia (Peat-IMPACTS Indonesia) Timeframe: 2020-2023 Funding entity: Federal Ministry for the Environment, Nature Conservation and Nuclear Safety of Germany (BMU) - The International Climate Initiative (IKI) Status: Ongoing	EUR 4 million	• Aims to support the achievement of sustainable, climate-smart management of Indonesia's peatland through a transformative landscape approach, combining technical and institutional capacities in peat landscape restoration in alignment with the public and private sectors • Project area: West Kalimantan and South Sumatera • PEAT-IMPACT is closely linked with activity 1.1.1 and 1.1.2. Outreach will be conducted with PEAT-IMPACT for knowledge and lessons learned exchanges for activity 1.1.1 and 1.1.2. The GCF project potentially provides further support to villages intervened by PEAT-IMPACT
The Food Systems, Land Use and Restoration Impact Programme (FOLUR): Enabling environment for sustainable value chains and integrated landscape Timeframe: 2021-2027 Funding entity: GEF Trust Fund Status: Ongoing	EUR 14.73 million (US$ 16.2 million)	• Aims to develop integrated landscape management systems, promoting sustainable food production practices and responsible value chains, conserving and restoring natural habitats. • Project area: Aceh, North Sumatera, West Kalimantan, South Sulawesi, and West Papua • FOLUR is linked with activity 1.2.1, 2.1.1, and 2.1.2. Consultation will be conducted to ensure no overlaps of village intervention areas and duplication of activities at field level
Indonesia REDD-plus RBP for results period 2014-2016 Timeframe: 2021-2025 Funding entity: Green Climate Fund Status: Ongoing	EUR 94.36 million (US$ 103.8 million) (total funding)	• Recognises Indonesia's REDD+ results for 2014-2016, with a total volume of 27 million tonnes of carbon dioxide equivalent (Million tCO2eq) submitted to GCF for results-based payments (RBP). • Aims to fund the implementation of the National REDD+ Strategy (STRANAS), which is aligned with Indonesia's Enhanced Nationally Determined Contribution (ENDC) under the Paris Climate Agreement. • Is supporting decentralised sustainable forest governance and social forestry. The disbursement will be arranged via a call for proposals.

Project, implementation period, donors	Budget	Description and synergies
		• Project area: Indonesia, including West Kalimantan • RBP project is significantly linked with activities in Component 1 and Component 3 of the GCF project. Coordination between GoWK and GIZ as Accredited Entity (AE) with MoEF and BPDLH have been and will be conducted further for alignment and no duplication or overlaps of activities in the field level.
Fund for the Prosperity and Sustainable Economy of Indigenous Peoples and Local Communities (TERRA Fund) Timeframe: 2021-2023 Funding entity: Ford Foundation Status: Ongoing	EUR 0.91 million (US$ 1 million)	• Aims to achieve NDC 2030 target and the Sustainable Development Goals (SDGs) by providing financial support to indigenous peoples or community groups living in surrounding forest areas to help them develop sustainable income generation that protect forests and at the same time reduce poverty • Project area: 20 provinces in Indonesia include West Kalimantan • TERRA project is linked with activity 1.3.1 and activity 3.2.1. Outreach will be conducted with BPDLH and TERRA for knowledge and lessons learned exchanges, especially for the development of funding mechanism for IP between BPDLH and Ford Foundation.

4.2 Barrier Analysis

Several barriers have been identified which prevent West Kalimantan from taking a climate-resilient and low-emission development pathway and need to be addressed with GCF support:

Barrier 1: Governance

Local land use planning is missing direction on climate-change issues

Climate change issues, including REDD+ and Ecosystem-based Adaptation (EbA), are still not fully mainstreamed and integrated into the long and mid-term Regional Development Plans at the provincial and regency levels. Also, plans do not sufficiently consider climate change adaptation and fostering climate resilience. For instance, there is no comprehensive framework in place to adequately address vulnerabilities to climate change such as fire, floods or droughts (see section 2.2.). Development plans and sectoral agency plans need to be strengthened to integrate and consider climate change adaptation and mitigation measures simultaneously. Climate-informed development plans and sectoral strategies can help to provide direction for local land use plans at various jurisdictional levels, which are further required to enable climate-informed planning for social forestry, EbA, Forest Land Rehabilitation and agricultural value chain development.

Gaps in forest and land governance on sub-national level

The sub-national government's role in REDD+ has been assigned by the national government to the provincial government. This includes overseeing institutions and processes, legal and regulatory frameworks, strategic programmes, and inclusion/involvement of stakeholders. Yet,

institutional capacities and regulatory frameworks are not ready and with current resources, timely adoption and implementation of urgent action is not ensured.

The Government of West Kalimantan struggles to improve forest and land governance, nor clarify rights and other issues related to land tenure, forest resource use and land allocation. There are also inconsistent policies and gaps in the legal framework that result in complex and occasionally overlapping land use claims. An illustrative example for a legal gap / inconsistency is the following: for a committed company with a palm oil concession, it is challenging to protect their High Conservation Value and High Carbon Stock (HCV/HCS) areas within their concession due to a gap in regulations not considering the protection of such areas as concession development. Rather than conserve HCV/HCS areas within their concession, some companies will manage the overall license for production. The current regulations allow deforesting and developing the areas. If such areas are just kept as protection, the area could be considered as not being developed and, hence, being excluded by the government from the granted concession area. Finally, the company could abandon the area with the risk of either encroachment or new concession permissions to those willing to deforest HCV/HCS areas. Government responsibilities to support the implementation of sustainable land and forest management have shifted from the regency to the provincial level because of the Law (UU 23/2014) on Local Government. Sectoral regulations have been unable to monitor land use plan implementation and control the expansion of agricultural activities, plantations, other land use activities and infrastructure into forests. This challenge in implementing and enforcing regulations is heightened by the aforementioned gaps in forest and land governance where there may be overlapping land use claims.

Insufficient integration of indigenous and local communities in sustainable land and forest management

The exclusion of indigenous and local communities has been escalating social conflicts due to the conversion of forests and paddy rice areas into monoculture plantations, with insufficient recognition of local/indigenous rights over the management of natural resources, nor the important ecosystem services these ecosystems provide. Under the current national policies, MoEF has been granted over 572,000 ha of social forestry programmes (with a target of reaching 1.4 million ha). A significant number of social forestry programmes still cannot develop and implement their management plans and receive benefits due to limitations in power, networking, capacity, funding and resources. For example, the model social forestry programmes in ten villages in Padang Tikar has cut deforestation by 83% in three years, however, they failed to improve participation and institutional development and still struggling to develop an advanced business model.[252] Technical support is needed to raise awareness of land rights, support communities to register their land, and develop sustainable and inclusive business models (from planning to implementation and monitoring). Financial support is needed to support them with upfront investments.[253]

Several challenges that are causing the slow implementation of social forestry as listed below would need to be overcome to optimise social forestry development and outcomes:

- Rules and procedures are complex, making it difficult for communities to independently apply without the support of donors and NGOs. Therefore, adequate extension support is critical.
- Most of the obligations imposed on HD, HTR, and HKm permit holders (in MoEF Regulation 9/2021) are similar to that imposed on large corporate license holders. However, local communities do not have the same resources, goals and management capabilities as corporations. Delineating boundaries and preparing ten-year Forest Management Plans

[252] Nurdwiansyah D, Hardiansyah G, Roslinda E. 2020. Management Strategy for 10 Village Forest Permits in Padang Tikar Landscape to Avoid Deforestation. Thesis S2, Tanjungpura University. Pontianak.
[253] An Indigenous Peoples Plan will be developed during the project development process, which will further ensure that there is sufficient integration of indigenous communities in the project, and that there are sufficient safeguards in place to avoid or mitigate risks to these communities.

sounds reasonable for social forestry as well provided there is sufficient government (perhaps FMU) support for implementation. However, other steps such as preparing business work plans and annual work plans, implementing forest product administration, submitting implementation reports and paying for the provision of forest resources may be irrelevant, unnecessary and burdensome for social forestry license holders.[254] Processes and requirements would need to be simplified for the license type while supporting local economic development and promoting SFM.

- Adequate budgets are required to support the social forestry development process in line with the envisioned targets and scope. FMUs in particular, lack funds and resources to effectively support social forestry development and post-license activities. In accordance with the duties and functions of the FMU (PP 23/2021 and Permen LHK 8/2021), the role of the FMU is strategic in strengthening the effectiveness of social forestry in land-based mitigation and adaptation.
- The roles of the two agencies BPSKL and the FMUs need clarification and coordination needs to be strengthened.

A focal group discussion (FGD) with representatives from DLHK and BAPPEDA in Pontianak complements this analysis from the provincial perspective. According to stakeholders, the implementation of the Social Forestry programme in West Kalimantan faces several key problems, namely:

- Site-level FMUs to support and strengthen social forestry are not yet optimally operational. Budgets, human resources and capacity require strengthening.
- Social forestry extension workers and support staff are particularly absent in some FMUs and regencies.
- Businesses linked to the social forestry licenses have not yet been developed, so the economic impact is still minimal. Social forestry products require sustained production and marketing support including for obtaining various licenses such as food and beverage distribution permits from the Food and Drug Supervisory Agency (*Badan Pengawasan Obat dan Makanan*, BPOM) and through exposure to networks through events such as business expos.
- Support from other sectors (besides the Forestry Service) critical for the development of social forestry is still limited. This includes support from agencies such as Bappeda (Development Planning Agency); Dinas Sosial (Social Services); Dinas Perkebunan dan Peternakan (Plantation and Livestock Service); Dinas Ketahanan Pangan (Food Security Service) and Dinas Tanaman Pangan dan Holtikultura (Department of Food Crops and Horticulture).
- SF approval holders are more interested in cultivating palm oil rather than forestry commodities.
- The contribution of state revenue from the social forestry sector (PNBP) is still low.
- The current budget is only IDR 600 million (EUR 35,294) per year to carry out all social forestry activities in West Kalimantan. There is no budget available for social forestry working groups and they work voluntarily. NGOs have been primarily funding social forestry groups (KUPS) for conducting patrol activities.
- There is an alternative financing mechanism for social forestry (especially for Hutan Desa), namely the Remediation and Compensation Procedure (RACP) from oil palm plantation companies with a direct money transfer mechanism to the Village Forest Management Institution - *Lembaga Pengelola Hutan Desa* (LPHD) for patrol activities and Village

[254] Nugroho B, Setiajiati F, Rahayu NH, Indarto AM, Meilantina M, Boer R, Rafiuddin A. 2023a. Peran Kesatuan Pengelolaan Hutan Pasca Undang-Undang Cipta Kerja dan Implikasinya. Policy Brief Pertanian, Kelautan, dan Biosains Tropika 5(1): 1 – 3. doi:10.32734/jsi.v7i01.11912

Government for Mid-Term Development Plan (*Rencana Pembangunan Jangka Menengah Daerah* - RPJMDes) activities, but RACP needs Governor Regulations (Pergub) and Regional Regulations (Perda) which currently do not exist.

Barrier 2: Institutional and Technical Capacities

Insufficient institutional capacities for implementing and scaling-up sustainable AFOLU practices

Jurisdictional approaches are crucial for West Kalimantan REDD+ implementation. Nonetheless, jurisdictional approaches need to link many stakeholders from the private sector through the local communities to the sub- and also national level. The current REDD+ Task Force, a provincial-led, multi-stakeholder, ad-hoc, and coordinating institution faces challenges in integrating sustainable forest and land management strategies such as landscape approaches and targets at local government levels due to authority barriers.[255] The platform also faces challenges due to insufficient capacity and budget allocation, as well as gaps in the legal framework. It relies highly on the commitment of the current leadership and donor support. No dedicated robust structural agency has been developed and embedded to support the platform for the technical implementation of landscape-level forest and land use management to oversee safeguards, MRV, SRN (*Sistem Registri Nasional*), and the Green House Gases Inventory (*Inventarisasi Gas Rumah Kaca,* IGRK), among others. Another identified weakness is the missing linkage in terms of linking measurement, monitoring and reporting from local and sub-national approaches to the national system.

Lack of technical capacities and support for communities

Technical capacity of FMUs as well as of communities is lacking. FMU´s can't effectively fulfil their assigned critical role and functions to support social forestry initiatives and communities' implementation is hampered although through social forestry initiatives, they could receive formal ownership of their land; however, they need support in getting their land title, technical support for implementing and upscaling viable and sustainable business models including access to finance (e.g. agroforestry or paludiculture systems) for their land, certification, and financial support to meet the required upfront costs. Next to implementing the models, value chains need to be improved to connect the producers to the markets and sustainable businesses.

Barrier 3: Financial

Insufficient sustainable financial mechanisms

Insufficient sustainable financing mechanisms limit the mobilization of additional investments dedicated to implement and upscale best practices on sustainable forest and land management:

- The dedicated national-based climate change funding mechanism at the national level - the *Badan Pengelolaan Dana Lingkungan Hidup* (BPDLH)[256] is operational. BPDLH was established in October 2019 and is the country's official mechanism to manage and channel environmental and climate funds, including from both domestic and international sources. However, the institutional set-up to implement projects on a transformative scale remains challenging, as operational procedures are not fully in place yet.
- There is a lack of investment cases and ready pipelines for green investment. Commercial investments are needed to support and to accelerate developments including for sustainable agricultural and forestry commodities. While some financiers are keen to

[255] Land management authority for the plantation sector is a district-led. The provincial government needs district recognition for a forest recommendation issuance under Law No 23/2014.
[256] Badan Pengelola Dana Lingkungan Hidup (BPDLH) is an emerging Indonesian' agency that responsible for managing environmental funds, including the climate change window. BLU P3H KLHK, a forest finance facility managed by GoI, also has merged with BPDLH.

continue financing BAU (Business-as-usual) practices, investments coming from emerging impact investors can provide a strong framework to realize investments in sustainable land management. The impact investment must couple robust social and environmental impacts with a financially viable deal. However, support is needed to develop investment ready business cases, helping companies to ensure their compliance with national policies and international sustainability standards, while supporting them to access markets, improve productivity and enabling them to receive premium prices through the implementation of environmentally and socially sustainable practices. Further support is needed with impact monitoring, to ensure transparency in the context of the specific investment, and throughout the entire value chain.

- Due to insufficient regulations, - private sector contribution cannot be aggregated for the implementation of EEA/KEE in concession areas. Many companies are now urged by either market demand or government regulations to lower their carbon emissions and produce climate-friendly products. In the palm oil sector, RSPO members are liable to any HCV-HCS loss that had happened in their concessions. This mechanism (RSPO RaCP) forces the companies to rehabilitate the HCV-HCS areas within their concessions, and to compensate their loss of HCV-HCS outside their granted concession area through contributions to the RSPO compensation fund (EUR 2,273 per ha lost; US$ 2,500 per ha lost) or through the protection of forests with an equal size to the lost HCV/HCS area for 25 years. In West Kalimantan, the two community forests of HD *Laman Satong* and HD *Nanga Lauk* (not to mention other projects in the pipeline) have received Payments for Environmental Services (PES) based on their performance in reducing deforestation and received long-term support for community-conservation actions equaling a total of EUR 4.55 million (US$ 5 million) from two oil palm companies alone. This is still very limited considering the large area of forest in West Kalimantan being converted to palm oil plantations.[257] There is a high potential to channel financial resources under the RSPO RaCP. However, a legal framework is needed to determine that all palm oil concessions rehabilitate and compensate their liabilities within the province.
- Indigenous peoples and local communities in the province are very vulnerable to the impacts of climate change and as elsewhere in Indonesia, smallholders and MSMEs in West Kalimantan lack access to finance for investing in sustainable land use activities. Financial inclusion and financial technology need to be expanded in West Kalimantan as well to close the access gap. Available funding opportunities need to be channelled towards social forestry and climate-resilient agricultural practices by smallholders and local communities. Blended financing options could help leverage green private sector finance and enhance collaboration between sustainability-focused private sector and local communities.

Insufficient institutional budgets for FMUs mandated with overseeing forest land use

In the current budget year (2019), the entire provincial budget was EUR 374.09 million (US$ 411.5 million). Of this, only 2.2% were designated for forest management, equalling ~EUR 1.36 (US$ 1.5) per hectare.[258] This limits the ability of the 17 provincial-led FMUs (as forest governance forefront institutions being responsible to manage all forest land) to improve their currently negligible institutional capacities, empower the communities and monitor and guide all types of activities within the area including private sector including the provision of sufficient forest management infrastructure. The current COVID-19 pandemic also significantly affects the current regional forestry allocation by reducing West Kalimantan's tax revenue and the national government's annual fiscal transfer in 2020 and coming years.

[257] S. Peteru, E.M. Wardani, Y. Laumonier, C. Chan. 2018. “West Kalimantan, Indonesia” in C. Stickler et al. (Eds.), The State of Jurisdictional Sustainability. San Francisco, CA: EII; Bogor, Indonesia: CIFOR; Boulder, CO: GCF-TF.
[258] Calculate from: Pemprov Kalbar | Page - Transparansi Anggaran (kalbarprov.go.id).

The current regulatory framework under UU 6/2023 could either positively affect West Kalimantan's overall emission performance, or the contrary. The Law has changed forest and land governance in a significant way. Despite the breakthrough that this regulation made where forestry licensing is now allowed to cover multiple business models and carbon trade, the simplification of licensing and environmental permits for the land-based industry could undermine environmental integrity. This could be even aggravated as FMU organizations have limited resources to implement their mandates. In terms of budget, the annual budget of the 17 FMUs in West Kalimantan to manage 6,5 million ha of state-forest (inc. management and programme costs) is EUR 2,142,074 (US$ 2,356,281) or equal to EUR 0.33 (US$ 0,36) per ha.

FMUs receive little budget support from local government and are, with the new Omnibus Law UU 6/2023, not permitted to utilise the unlicensed forest land or cooperate on forest utilisation with license holders. Their resources are limited in terms of staff, capacity, infrastructure and authority, and this restricts the effectiveness of their role in overseeing sustainable forest management and restoration of degraded landscapes on the ground. Under the circumstances, options for strengthening FMU budgets could be:

- Allocating a clear and adequate budget for FMU development and operation from APBN and APBD. For this purpose, the government (national and local) needs to establish Minimum Service Standards (*Standar Pelayanan Minimum*, SPM) for FMUs, i.e., the type and quality of basic services that must be fulfilled by FMUs to ensure sustainable forest management in their areas. The activities required need to be determined jointly by the National and Local Governments and both Governments are obliged to provide budgets for these basic services.
- The establishment of Regional Government-Owned Enterprises (BUMD) where the local government is a shareholder. BUMD can apply for Forest Utilization Business Permits (PBPH). Assets of the government would be separated from BUMD assets, and profits derived could provide Local Government Revenue (PAD) that could be used to support FMU operations. There are two types of BUMD that could be considered – Regional Public Company (*Perusahaan Umum Daerah*, PERUMDA) which aims for social development while generating a profit, and Limited Liability Company (*Perusahaan Perseroan*, PERSERO) which is solely for profit. Legal requirements for establishing BUMD can be found in UU 5/1962 and PP 54/2017 concerning BUMD, and UU 23/2014 on Local Government. The procedures for obtaining PBPH can be found in PP 23/2021 and Permen LHK 8/2021.

Lack of finance to advance the implementation of social forestry

In addition to the described capacity gaps a lack of finance is challenging the implementation of social forestry schemes. Before communities can successfully work within social forestry schemes upfront costs to receive the land title, to receive the certification, to start business associations and to finance technical support for implementing sustainable business models is required and currently lacking.

Barrier 4: Markets

Lack of sustainable business models for farmers and local communities, and functioning value chain linkages to markets

There is insufficient adoption of sustainable agricultural practices and certification schemes, where many smallholders and small and medium companies conduct business as usual (unsustainable) practices due to a lack of long/term incentive schemes, and access to financing. Proven and scalable land-based business models suitable for social forestry areas, including the establishment of e.g. farmers associations and adopting sustainability standards,

are crucial to increase the buy-in of different private sector actors. This includes producers (farmers, communities, companies), but also traders and impact investors. West Kalimantan has few sustainability projects led by the private sector to balance production and protection activities. GoWK is still unable to design and create robust systems to upscale and replicate those pilots at a jurisdictional level.

In the plantation sector, the challenges are:

- Small and medium private growers are challenged to reach sustainability standards due to insufficient business models, and limited support from buyers and investors that look for certified or verified products. Independent smallholders have a more complex situation due to limitations in knowledge, markets, prices, governance, fertilizers, access to finance and production tools.
- Many smallholders have low productivity and returns, and limited access to finance to invest in sustainable land use activities. This limits their ability to buy agricultural inputs, planting materials, and re-plant. There is a need to increase their access to sustainability-oriented finance and markets, and to develop incentives, together with the public and private sector, to support them to implement good agricultural practices, while also improving their productivity, and increasing ecosystem resilience through forest landscape restoration and reduced deforestation, e.g for palm oil and rubber production:
- Many small and medium private palm oil growers and mills are not affiliated with large sustainability-minded companies or lack connection to sustainability committed markets. They have limited resources to comply with sustainability standards, including knowledge on sustainable land use practices, and opportunities to access green finance, so business as usual practices continue.
- The level of rubber productivity is low and quality is poor compared to that produced by competitor countries. Many community plantations are mature and lack maintenance.
- There is still a high demand for unverified and uncertified commodities or products based on BAU practices that lead to deforestation and ecosystem degradation. Concerning palm oil in Kubu Raya Regency, for example, there are 28 concessions, but only four hold Indonesian Sustainable Palm Oil (ISPO) certificates and just one holds RSPO certificates.
- Sustainability compliance initiated by the government, private sector, community under RSPO/ISPO or another global sustainability standard is partial, limited, uncoordinated, and slow in progress. Unlike voluntary RSPO certification, mandatory ISPO certification has not provided smallholders incentives such as a premium price.[259] The process is complex and certification costs are high for smallholders.[260] The effectiveness of ISPO certification has been questioned given weak implementation, lack of transparency and inability to convince the global market .[261]
- The private sector plays a major role in deforestation. There is still a lack of commitment from the private sector in sustainable management of forest and agricultural land. However, with a growing demand for sustainable agricultural commodities, producers increasingly need to reconsider current business as usual practices.

[259] Christiawan R. 2020. Implementasi Green Growth Economic pada Industri Kelapa Sawit melalui Sertifikasi ISPO. Mulawarman Law Review Vol. 5 Issue 1 (2020): 47 – 60.
[260] Hasnah H, Hariance R and Hendri M. Analysis of the implementation of Indonesian Sustainable Palm Oil-ISPO Certification at farmer level in West Pasaman District. IOP Conf. Series: Earth and Environmental Science 741 (2021) 012072. IOP Publishing. doi:10.1088/1755-1315/741/1/012072
[261] Kaoem Telapak. 2022. Mendorong Transparansi Analisis tantangan dan peluang dalam skema sertifikasi Indonesia Sustainable Palm Oil (ISPO) baru. https://kaoemtelapak.org/wp-content/uploads/2023/06/20221222-ISPO-Mendorong-Transparansi-Interactive-2-MB-1.pdf

5 Project Design

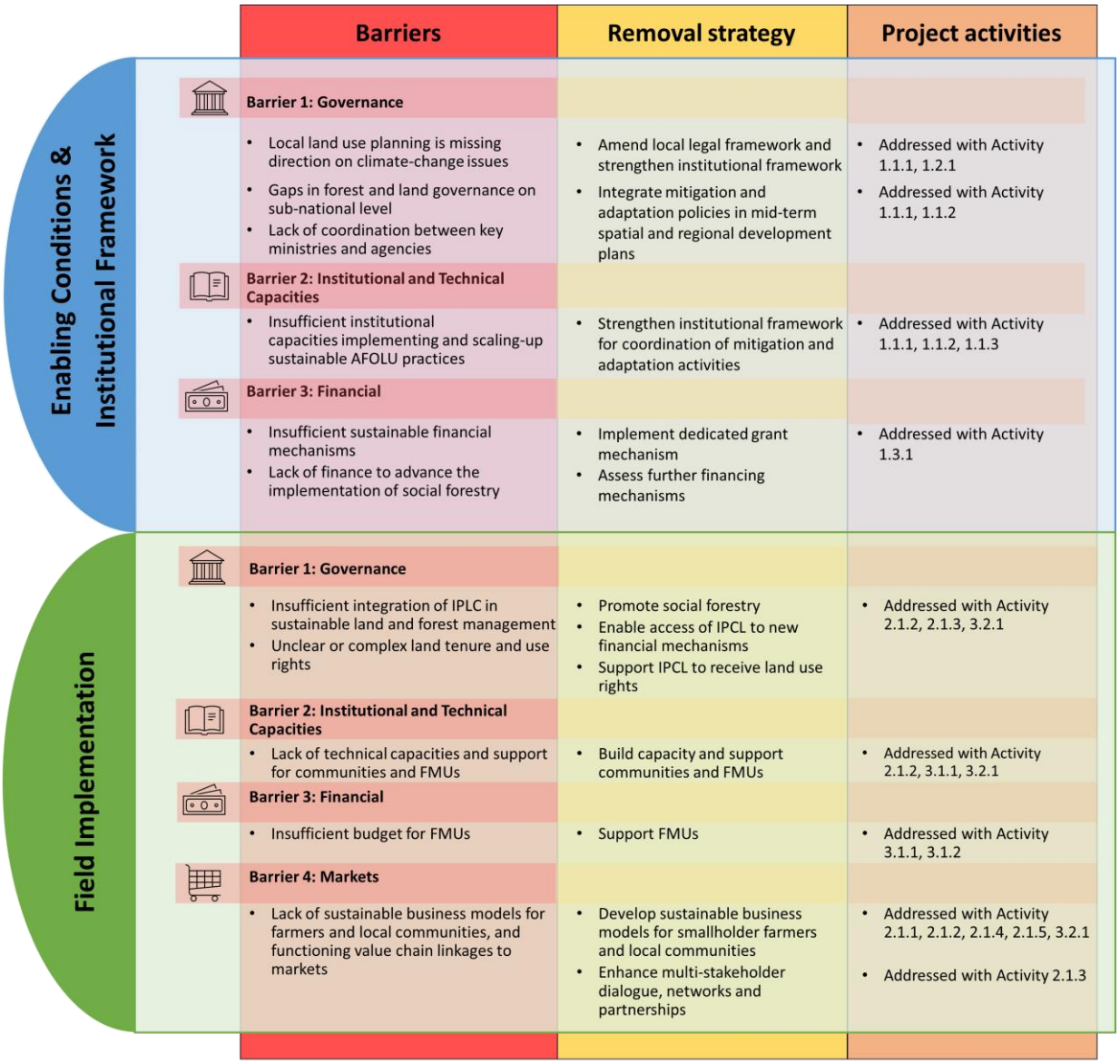
5.1 Project Objective

This project´s overall objective is to reduce GHG emissions from deforestation and degradation, enhance forest carbon stocks through reforestation and forest land rehabilitation, improved good agriculture practices and ultimately strengthen the resilience of forest and peat landscapes in West Kalimantan by addressing two main climate risks (a) increased forest and peat fire due to increased temperatures and droughts and b) reduced agricultural production due to increased drought). This will enable a paradigm shift towards climate-resilient and low-emission pathways at the province level. Mitigation and adaptation measures are synergetic, where the sustainability of mitigation benefits depends on successfully strengthening the long-term resilience of vulnerable small-scale rural producers and smallholders and forest-ecosystems.

5.2 Project's Approach to Address Barriers

The GoI and the GoWK are committed to implementing the policies and strategies mentioned under Section 3.2 and moving towards low-emission and climate resilient development pathways. The barriers described in Section 4.2 need to be addressed with GCF support to ensure the success of the already initiated transformational change of the forestry and land use sector in West Kalimantan. Figure 22 summarises the activities that address the barriers.

Figure 22: Barriers and removal strategy



5.3 Envisaged Paradigm Shift in the Sector

The project will facilitate a paradigm shift in the forestry and land use sector in West Kalimantan that will allow a transformation to a sustainable, climate-resilient and more diverse and resilient agricultural and agroforestry production from smallholder farmers and forest communities beyond the project, give the producers improved tenure security through cultivation permits and social forestry licenses and access to new markets Through further emission reductions the project will enable to unlock additional sources from results-based payments, as well as public and private finance managed through national funds and institutions with strengthened capacities for mobilizing and channelling climate finance. A recent World Bank report[262] highlighted the importance of integrated land use initiatives for addressing complex social and environmental challenges. This GCF project covers a broad range of topics that have been identified by the World Bank report to be essential for achieving this: multistakeholder engagement; environmental focus; economic focus; boundary setting; land tenure; financing

[262] https://openknowledge.worldbank.org/entities/publication/6e065d7e-b6ac-51c3-bfdb-c425a1afbc00

strategies; monitoring, evaluation, and learning; and cross-sectoral coordination. Improving enabling conditions and strengthening institutional frameworks at the jurisdictional level will lay the foundation for successful field implementation.

Jurisdictional Approaches are seen as a way to address challenges faced to implement corporate commitments to sustainable supply chains. It should align government-led, multi-stakeholder processes to external and market incentives. Private sector companies consider these approaches e.g. to meet their NDPE commitments. West Kalimantan is among a few provinces in Indonesia where such approaches have already been piloted and the concept has already been mainstreamed into the Indonesia's 2020-2024 Medium Term Development Plan.[263]

This project will further strengthen the sub-national regulatory frameworks and policies for jurisdictional approaches to ensure the project results and outcomes will sustain beyond the project duration. Amended or newly developed provincial regulations will provide the legal framework for all regencies. The five most important regencies in term of both, existing forest and peatlands as well as deforestation, were selected to implement jurisdictional approaches to sustainable agriculture and forest practices and value chains. This project is expected to drive investment from private sector and business practices that aim for sustainable commodities and low-emission activities and provide sufficient finance to expand the proposal's impact beyond the boundaries of the intervention area. By promoting collective learning and capturing generated knowledge along the project implementation process, this project can strengthen the knowledge of climate actions and provide lessons learned for other provinces in Indonesia. This will enable the project being replicated elsewhere and create greater impact in the long run.

The demand for a paradigm shift for the West Kalimantan provincial socio-economic development pathway is linked with the province's commitments towards climate mitigation and the role AFOLU plays to achieve this. The paradigm shift consists of developing sustainable business and livelihoods models while creating an effective institutional framework which enforces and substantiates existing policies and legislation (Figure 23).

This needs to take into account that West Kalimantan is still in the transition to sustainable development pathways, and forest governance and management are now administered directly by the province under UU 23/2014 on Local Government. Private sector commitments to conservation and sustainable supply chains are still insufficient in dimension but are notably growing under the GGP framework. Devolution under the social forestry regulatory framework promotes forest-dependent communities as key actors for change. Hereafter, ensuring the adoption of sustainable development pathways in this transition stage is possible.

To overcome path dependencies, the project will:

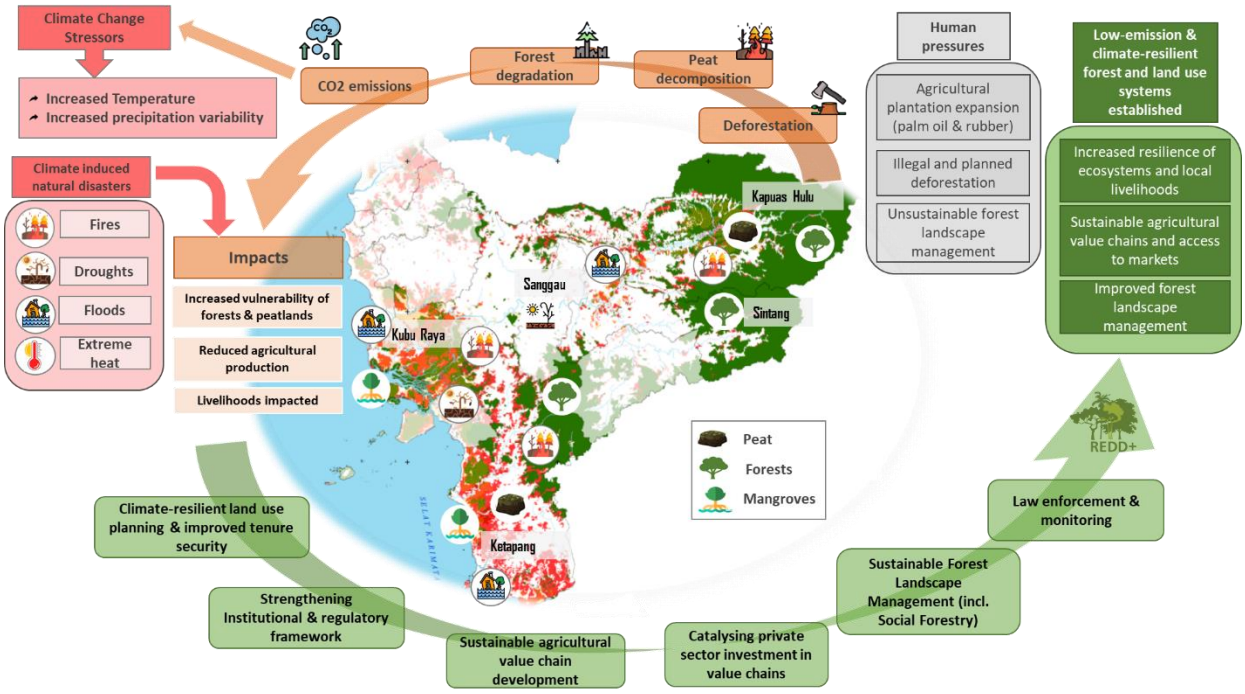
- Support the clarification of legal frameworks, where there are inconsistencies or uncertainties (Activities 1.1.2 and 1.2.1);
- Build institutional capacities on best practices for planning, implementation, monitoring and stakeholder engagement (including gender equality and social inclusion; cross-cutting in all Activities);
- Promote participatory and inclusive processes (cross-cutting in all Activities, but especially critical under land use planning processes in Activity 1.1.1, and the implementation of sustainable land- and forest-based investments under Components 2 and 3);
- Develop financial mechanisms and mobilize private and public funds for sustainable land-based investments (Activity 1.3.1, and Components 2 and 3 during the project period and beyond. This includes setup and implementation of a grant mechanism for IP and mobilization of private and public investment for: i) productive commercial activities that

[263] Seymour, F., Aurora, L. and J. Arif (2020): The Jurisdictional Approach in Indonesia: Incentives, Actions, and Facilitating Connections, *Frontiers in Forests and Global Change 3:503326*

are coupled with positive social and environmental impacts, ii) for large conservation and ecosystem restoration commitments (e.g. through RSPO/RaCP), and iii) for regular field level activities including conservation, social forestry, and smallholder training on good agricultural practices and sustainable forest management. This will help facilitate a transition to more sustainable markets focusing on sustainable products, and support a transition away from BAU practices to low-emission and climate-resilient land use. Private sector commitment will be secured through contracts, agreements and action plans for sustainable land-based investments.

Beyond this, the project builds on recent government commitments to strengthen forest governance, including (among others): the social forestry initiative, the moratorium on conversion prohibition of primary natural forests and peatland (INPRES 5/2019), the moratorium on oil palm plantation permits (INPRES 8/2018), and UU 6/2023 on Job Creation. Thus, this project would come at an opportune moment to build on this momentum and provide additional incentives for public and private actors to sustainably manage forest and land resources in West Kalimantan.

Figure 23: Project's envisioned paradigm shift



Potential for scaling-up and replication

A role model on sub-national jurisdictional approaches to shape new development pathways to ensure forest and land-based investments are managed in a sustainable manner to stimulate regional development is high for Indonesia's overall provinces. The success of jurisdictional models developed in West Kalimantan provides a foundation and robust model for scaling-up and replicating REDD+ implementation blended with GGP to the other 10 priority REDD+ provinces in Indonesia.

The concept of matching co-funding between government funds with potential funding opportunities for jurisdictional implementation strategies and private investments can be replicated in the other 10 REDD+ prioritized provinces – in particular strengthening the FMUs is a cornerstone for implementing social forestry and supporting private sector involvement.

The new financial streams and opportunities built and mobilized in this project will benefit beyond GCF project areas within the province and become a new nationwide model. This effort has been embedded in this project output and activity intervention. The financial model can be built upon from the previous models developed by the Executive Entities GIZ and Solidaridad or other models which the Government of Indonesia has recognized, such as:

GIZ in bridging communities to access the market for a commodity (Public-Private Partnership with Continental AG to support sustainable rubber production) in Kapuas Hulu and Sintang. Biosphere reserve initiative in which GIZ has designed a fundraising framework to fund long-term conservation activity for the reserve.

GIZ aims to give social forestry licence holders an incentive to increase carbon stocks in their areas through a collaboration with TREEO[264].

Pilot measurements of biomass and carbon will be conducted using a new methodology, which will be submitted to the government for official recognition. If successful, so-called contribution claims may be sold to private sector actors, without any transfer of carbon titles.

Solidaridad in facilitating sustainable agriculture farming for 19,399 farmers in the 37.99 hectares and built alternative source of income for around 2,847 villagers.

The expertise of FFI in West Kalimantan in accessing funds e.g. through the Remediation and Compensation Procedure (RaCP) of the Roundtable for Sustainable Palm Oil (RSPO) has been channelling EUR 1.36 million (US$ 1.5 million) to community forest for supporting community actions in reducing deforestation and rehabilitating degraded land.

The project and its activities can be scaled up and replicated in regencies located outside this project priority area and in other regions in Indonesia. The innovative business models in the forest and land-based sectors developed under Activity 2.1.1 can be replicated by other private sector actors outside the project target areas, thus extending the contributions of the private sector and communities to REDD+ mitigation actions.

GCF funding ensures a paradigm shift in government budget management for more effective, efficient, precise, and direct impacts on sustainable development, including emissions reduction. The system and process have a high potential to be replicated with Indonesia's growing emissions reduction commitment.

Potential for knowledge and learning

The project creates institutional learning and strengthening of knowledge, collective learning processes and institutions. Knowledge and learning management seek to improve project performance by leveraging and maintaining the value of the present and future knowledge assets. The key concepts adopted in this project include converting data, organizational insights, experience, and expertise into reusable and useful information for people who need it. The most important aspects of knowledge and learning are project documentation and dissemination. This project develops systems to document and disseminate information, lessons learned, and challenges during the process. The Project Management Unit (see chap. 6.4) will have the task to manage knowledge and learning management under the project.

This project can build up knowledge and learning process from the past GIZ FORCLIME project. The interventions have embedded and changed the behaviour of local government organizations and have embedded in the regulatory framework, such as promoting transparency on budgeting in forest governance, capacity improvement of Civil Servant (*Aparatur Sipil Negara,* ASN), conflict resolution desk, and the Biosphere Reserve initiative in Kapuas Hulu. In the private sector aspect, Solidaridad and GIZ have both experience in embedding conservation efforts to operational plans and budgeting for the management of HCV areas by companies in West Kalimantan.

Contribution to the creation of an enabling environment

The project aims to create a balance between protection and production within a sustainably managed and resilient landscape. The balance ensures that the project's long-term impacts

[264] Treeo Is an initiative by the company Fairventures offering certified carbon sinks; for more information see: https://treeo.one/en/.

continue after its completion. To ensure this balance, the project creates an enabling environment by applying the following conceptions:

- Mainstreaming of climate change adaptation: Adaptation policies and regulations will be developed at the provincial level in West Kalimantan and their inclusion in regional development plans, spatial plans and land use plans will enable more efficient planning, implementation and monitoring of activities and enable pathways to climate-resilient development.
- Forest protection and conservation: The project maintains environmental capacities and carrying capacities by adopting site-specific appropriate management models, e.g., SFM, Forest Land Rehabilitation and social forestry in state forest land or HCV, HCS on non-state forest land.
- Inclusion: Stakeholders are involved across different levels to invest in conservation and community-based forest management under the strengthened devolution regulatory framework.
- Production of sustainable, climate-friendly commodities: Increased production scale improves regional development and the security of community livelihoods by adopting good agricultural practices with sustainable and climate-resilient options, promoting investment-based socio-environmental safeguards; enabling the growth of green investments and sustainable supply chains.
- Transparent and credible financial mechanism to mobilize funding from the private sector, local financial institutions, or global green investment vehicles at the jurisdictional level.

Contribution to the regulatory framework and policies

This project makes a substantial contribution to the regulatory framework and policies at the regional level and will support GoWK to integrate climate change adaptation into regional development and sectoral agencies plans; strengthen mitigation actions through improved REDD+ implementation towards achievement of sub-national FOLU Net Sink 2030 targets; strengthen the regulatory framework on HCVF/HCS protection in the non-state forest and enhance the institutional framework for coordination of mitigation and adaptation activities. ; Additionally, GoWK will establish the legal basis for local, sustainable public and private financing mechanism for long-term funding security for sustainable land- and forest-based investments which should, at the same time, reduce vulnerabilities of local communities to climate change. The regulatory framework and policies will be developed through an effective and socially inclusive process as mandated by UU 15/2019 on Law Establishment by also engaging private sector actors and civil society organizations to fully understand their role and contribution in designing and implementing the overarching policy framework.

This project also supports the national BPDLH in designing a robust framework for channelling domestic and international climate finance. BPDLH is channelling GCF Results-based Payments (RbP) to sub-national levels but is also anticipated to establish specific windows for grant mechanisms to local beneficiaries. Consultations on Fund management have already begun, and this project has been introduced to the MoEF as a role-model to establish sub-national fund structures to successfully channel funds to local beneficiaries. The proposed dedicated grant mechanism for IP through BPDLH is another concrete example. Hence, the project will work closely with the national-level BPDLH.

5.4 Theory of Change

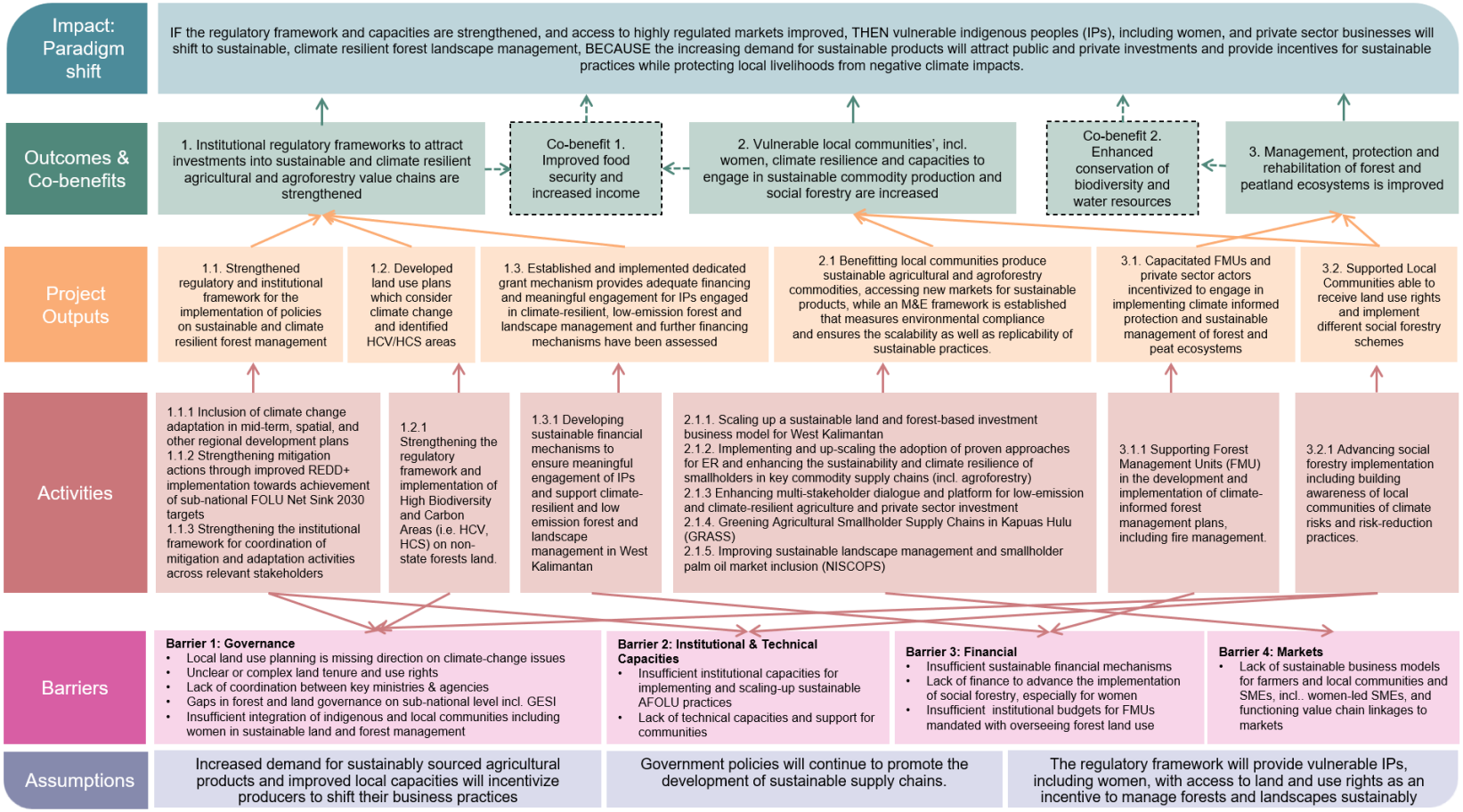
The project logic can be stated as follows:

IF the regulatory framework and capacities are strengthened, and access to highly regulated markets improved,

THEN vulnerable indigenous peoples (IPs), including women, and private sector businesses will shift to sustainable, climate resilient forest landscape management,

BECAUSE the increasing demand for sustainable products will attract public and private investments and provide incentives for sustainable practices while protecting local livelihoods from negative climate impacts

Figure 24: Theory of Change

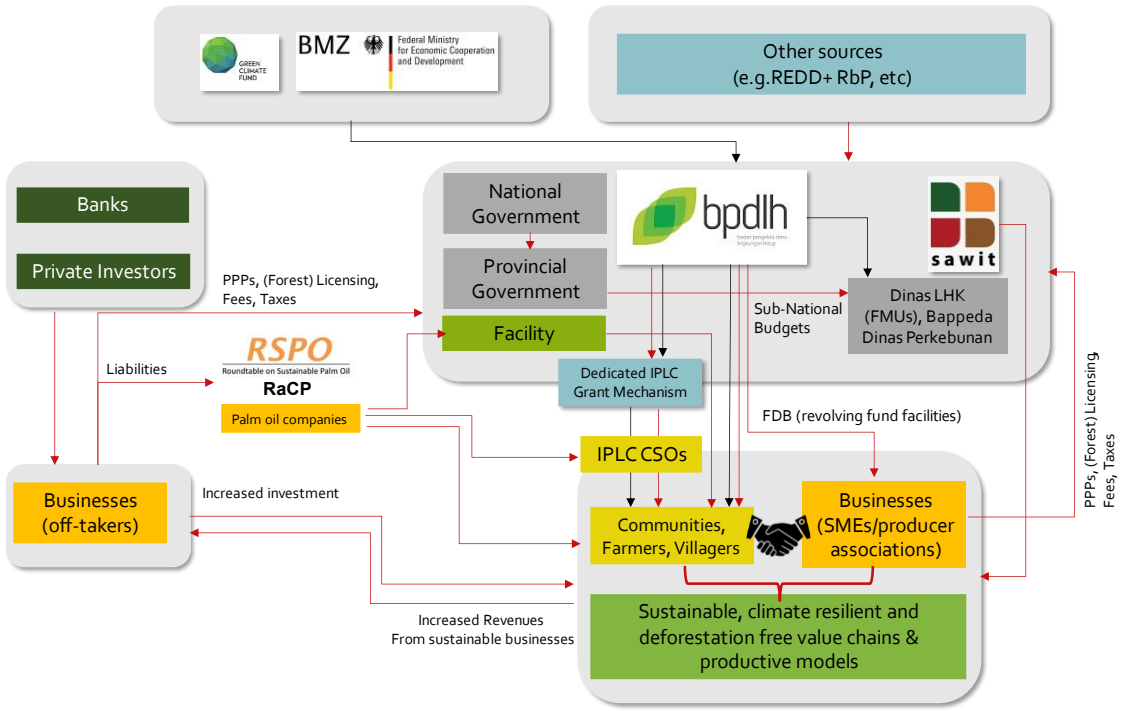


5.5 Exit Strategy and Sustainability

A robust sub-national financing structure, and the long-term sustainability of financing are the key for the project´s sustainability and exit strategy. The GoWK commits to gradually increase its contributions and thereby replace GCF grant funding. GCF grant financing enables the GoWK to close the structural funding gap through diverse sources:

- Public budget: This includes in-kind resources of the GoWK budget tagging. This project's intervention is expected to increase fees, taxes, and non-tax revenue returns as a co-benefit (plantation, forestry, potentially the domestic carbon trading, and commercial village forestry).
- Increasing forestry revenues by improving business cases of forestry licenses (PBPH and Social Forestry).
- Developing financial mechanisms for climate resilient agriculture and forestry in West Kalimantan that can be implemented before or by project end to channel fund sourced from private and national public funding.
- Innovative financing under the green investment (loan): This project helps to facilitate funding for productivity improvements, while protecting West Kalimantan´s remaining forests. Examples of commercial instruments have been identified that support sustainable commodity production and reduce deforestation and forest degradation. However, these business models and investment structures need to be further refined and optimized. This project facilitates FMUs, both private and community-based, to refine and scale these investments and sustainable business models. The project also prepares communities to access loans under the BPDLH loan program FDB to sustain activities that were initiated during the project implementation period (see section 3.5.2). The various instruments will be further assessed under Activity 1.3.1.
- Domestic carbon market: Through the strengthening of the enabling framework, capacity building and technical support, this project empowers stakeholders at province and local level to engage trading contribution claims (contribution to NDC achievement of Indonesia) in line with the national regulations. This will help to mobilize additional private sector funding and create a sustainable incentive for entitled stakeholders to conserve forests and corresponding carbon stocks. The support for the development of new methodologies for issuing carbon credits will enable forest farmer groups (*Kelompok Tani Hutan*, KTHs) to access carbon financing, which will provide an incentive for afforestation, reforestation, and agroforestry. In the long term, these efforts will make participation in the national carbon market more inclusive and contribute to a fair distribution of financial benefits from this market.
- Results based payments: the expected emission reductions from the impact of the project could attract further donor funding from multilateral (GCF, FCPF, Carbon Fund) or bilateral channels in accordance with Article 5.2. of the Paris Agreement, which encourages parties to engage in policy approaches and positive incentives for emission reductions from deforestation. Recent discussions with donor representatives from Germany and Norway showed continued willingness to remunerate future low deforestation rates.

Figure 25: Sustainability of Project Approach



Additional measures for project sustainability are as follows:

- Policies and institutional aspects include the deep integration of climate change, low-emission and climate-resilient AFOLU and REDD+ into landscape-level and provincial and regency planning; sectoral regulations; strengthened cross-sectoral institutional frameworks and multi-stakeholder coordination platforms at the regional level, clear and transparent governance at the jurisdictional level, and the dedicated structural agency embedded in government at the provincial and regency levels developed.
- Financial aspects include credible and transparent financial mechanisms, the jurisdictional alignment with national/global sustainability platforms, and improved financial institutions to support financial instruments for scaling-up investments in low-emission and climate-resilient AFOLU that contribute to REDD+.
- Socio-economic aspects include strengthened village forest institutions, strengthened smallholder organizations, sustainable business models developed for the community at village level and private sector, and the improvement of community knowledge, skills, and networks.
- Government commitment through increased funding from GoWK to the forestry sector (e.g., increased budgetary allocations and expenditures for transferred FMU Organizations).

5.6 Project Structure and Rationale

The Project aims to support the Government and people of West Kalimantan in the transition to sustainable and climate resilient management of forests and landscapes at scale. The Project is comprised of three Components (see Figure 32 below):

Component 1 - Institutional regulatory frameworks to attract investments into sustainable and climate resilient agricultural and agroforestry value chains are strengthened.

This Component strengthens the enabling conditions and the institutional frameworks for sustainable and climate-resilient forest and landscape management of West Kalimantan. It focuses on enhancing and developing policies related to the mitigation and adaptation to climate change. Currently, climate change adaptation and fostering climate resilience is not

sufficiently considered in the official government development plans and in REDD+ and FOLU Net Sink policies, since the major focus is on climate change mitigation and not yet on adaptation. The Component re-shapes and transform the REDD+ Task Force as Provincial Body on Climate Change. As it is a cross-sectoral institution, it is well placed to coordinate cross-cutting climate change measures across sectors and the new Provincial Body on Climate Change will take over a leading role. Transformational change to enable companies and communities to legally protect and sustainable managed their High Biodiversity and Carbon Areas is also addressed by this Component. The Component addresses insufficient public and private funding for climate-resilient and low-emission forest and land use practices. A dedicated grant mechanism will be set up for IP to address lack finance and technical capacities to implement climate-resilient agricultural practices and sustainable forest management. Finally, this Component supports creation of mechanisms that extend beyond the project's lifespan, ensuring continued funding flows even after the project is completed.

Component 2 - Vulnerable local communities' climate resilience and capacities to engage in sustainable commodity production and social forestry are increased.

This Component scales the adoption of sustainable business practices in the AFOLU sector, building on the outputs of Component 1 that strengthen the policy framework, institutional capacities, access to finance and monitoring. In the past, unsustainable agricultural practices have contributed up to 60% of deforestation in West Kalimantan. The jurisdictional REDD+ strategy highlights the demand to incorporate sustainable agriculture production, forest land rehabilitation, and sustainable value chains for key commodities that target smallholders, big producers, mills, traders, and end buyers. At the same time there is a need to strengthen ecosystem resilience, to ensure ecosystems are healthy and continue to provide important ecological services – including peat ecosystems role as a "sponge" to support water retention and infiltration, and the protective functions of forests. This Component will also improve smallholder farmers' capacities to implement sustainable land-based investments. The initiative will draw upon experiences from established traceability systems and partnerships with the private sector. It strives to facilitate national and international market access for the sustainably produced agricultural commodities from the selected jurisdictions. This Component also encourages value chain actors to invest in production/ conservation/ restoration / resilience, reward conservation, resilience and intensification accomplishments, smallholders' service delivery, and local commercial facilities leveraged for business advancement (see Table 21).

Table 21: Incentives for private sector and smallholder producers

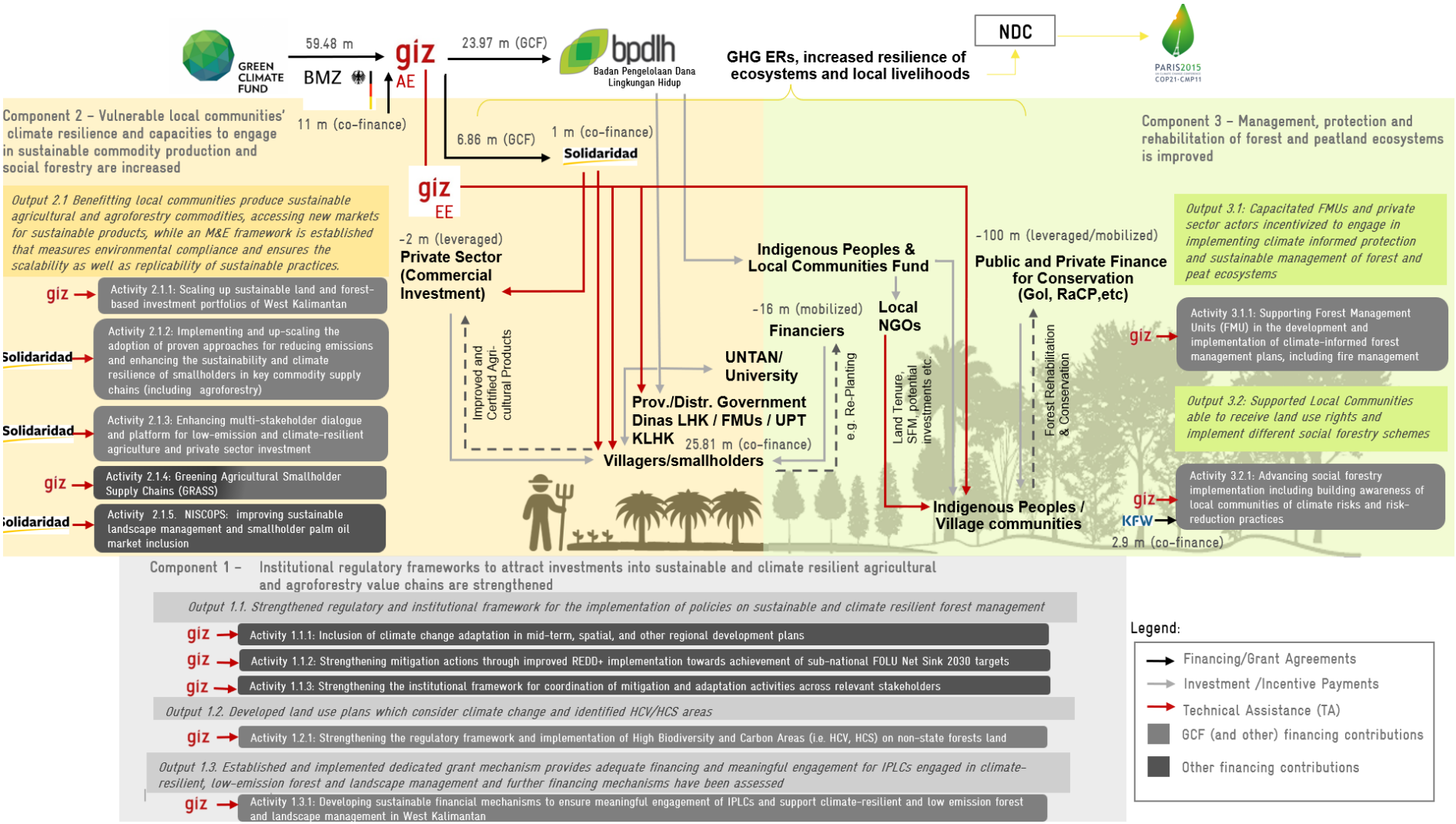
Private sector	Smallholder producers
• Compliance with national policies and international sustainability standards • Secure sourcing area • Market-demand for sustainable products (alignment with shifting markets) • Access to market with the implementation of no deforestation, no peat, no exploitation (NDPE) policies, while sustainably increasing productivity, and enabling them to receive premium prices • Access to innovative green investment • Improve company branding • Increased ecosystem resilience and reduced GHG emissions • Corporate Social Responsibility (CSR)	• Access to broader Markets and Finance • Incentives from Mills and Markets such as continuous support to implement good agricultural practices , financial incentive for compliance product • Improved smallholder legality status • Improved cooperation with private sector • Increased ecosystem resilience and reduced deforestation • Productivity improvements • Improve support for CPO fund and government support for sustainable palm oil practices

Component 3. Management, protection and rehabilitation of forest and peatland ecosystems is improved.

Strengthened social forestry schemes are strategic interventions to contribute to REDD+, Forest Land Rehabilitation, and EbA, while providing economic and environmental benefits for the communities in the FMU areas. This project supports the FMU (KPHP, KPHL, and KPHK)[265] system and develops their capacity for implementing diverse activities, including: SFM, Forest Land Rehabilitation, Ecosystem-based Adaptation (EbA), protected area management, biodiversity conservation, fire prevention and social forestry. Such measures are critical for building the resilience of ecosystems and forest-dependent persons, where BAU practices currently exacerbate climate risks (e.g. draining peatlands, deforestation and forest degradation). The implementation of good practices will support the sustained provision or improvement of key ecosystem services including carbon sequestration, and water regulation functions that reduce flood and fire risks. This Component supports the development of frameworks for performance-based payments for community forestry groups to benefit from Payments for Environmental Services (PES). Special emphasis will be given to peat and mangrove areas due to the high importance of their protection and rehabilitation to reduce emissions and enhance environmental services.

[265] Protection Forest Management Unit (KPHP), Production Forest Management Unit (KPHP), and Conservation Forest Management Unit (KPHK).

Figure 26: Overview of project components and activities



This project will be implemented over an 8-year period and will involve a phased approach. The first 1-2 years will focus on strengthening enabling conditions, preparing for implementation in the selected regencies (including safeguards and ensuring free, prior and informed consent (FPIC) of affected partners) and enhancing the institutional frameworks for sustainable landscape planning and management (Output 1.1). This will form a strong foundation for an efficient and effective implementation and upscaling of sustainable land and forest management and agriculture-based commodities investments under Components 2 and 3. All outputs and respective activities build on proven approaches including lessons learned for successful implementation at scale from GIZ and Solidaridad; both being active in West Kalimantan for many years.

5.6.1 Component 1: Institutional & Regulatory Frameworks

5.6.2 Output 1.1. Strengthened regulatory and institutional framework for the implementation of policies on sustainable and climate resilient forest management.

5.6.2.1 *Activity 1.1.1: Inclusion of climate change adaptation in mid-term, spatial, and other regional development plans*

Contribution to project output	Activity 1.1.1. is a set of sub-activities focusing on strengthening the enabling conditions and the institutional frameworks for sustainable and climate-resilient forest and landscape management of West Kalimantan. It focuses on enhancing and developing policies related to the adaptation to climate change. Currently, climate change adaptation and fostering climate resilience is not sufficiently considered in the official government development plans[266] and in REDD+ and FOLU Net Sink policies, since the major focus is on climate change mitigation and not yet on adaptation. In order to strengthen the institutional regulatory framework for the adaptation to climate change, the (sub-)activities will focus on the concrete development of adaptation policies that are not yet in place. Capacity building measures will support the development of policies and ensure the adaptation mainstreaming in development or land use plans down to the village level. To ensure the implementation of adaptation measures, tools like a multistakeholder forum or the further enhancement of the existing early disaster warning systems and the monitoring and reporting of such adaptation measures will be supported. The following sub-activities are included: ▪ Sub-activity 1.1.1.1: Development of adaptation policies at provincial level in-line with national adaptation policies ▪ Sub-activity 1.1.1.2: Capacity building and implementation support related to climate change adaptation for government agencies at provincial, regency and village level ▪ Sub-activity 1.1.1.3: Development of tools for the implementation of adaptation measures ▪ Sub-activity 1.1.1.4**:** Monitoring and reporting of adaptation measures
Envisaged results	The envisaged results of this activity are: ▪ A clear and comprehensive pathway of GoWK towards climate-resilience development which accommodates province-specific characteristics. ▪ Climate-resilience development adoption across GoWK policies and regulations

[266] Government development plans include Mid-term government plan (RPJMD) for 5 years, Annual government plan (RKP), Annual agency plans (RENJA).

	▪ Advanced tools and capacities for climate-resilience development across key stakeholders in the province ▪ A robust adaptation monitoring system towards transparency and accountability of climate-resilience development
Sub-activity 1.1.1.1:	**Development of adaptation policies and regulations at provincial level in line with national adaptation policies**
Baseline	To date, no adaptation policies and regulations in-line with national adaptation policies are in place at the provincial level in West Kalimantan and in the five target regencies of the project. Since other climate change-related policies, such as provincial REDD+ and FOLU Net Sink policies, are focusing solely on mitigation, further guidance documents are required for the provincial and regency governments. The GOI has provided instructions and guidelines for provincial and regency governments and other key stakeholders to develop adaptation policies in PERPRES 98/2021 and guidelines for setting priority action plans in Enhanced Nationally Determined Contribution (ENDC). ENDC sets key programmes, strategies, and actions to achieve climate resilience targets in economic, social and livelihood, and ecosystem and landscape aspects.
Description	This sub-activity includes several approaches to develop adaptation policies in the province and five target regencies. In the first step, this sub-activity supports the development of RAP API[267] and RAK API[268] documents in the province and five target regencies in Y1 to Y2. The documents will outline specific adaptation targets, list and priority activities, and specify how the activities will be monitored and reported. Key measures taken to develop these documents include data collection of climate vulnerability and risks that serve as a baseline to develop the adaptation policies, to develop a regional-specific template adopting national guidelines to be used by all government levels in West Kalimantan to develop RAP API and RAK API, and to develop a RAP API document at province level and RAK API document at the five target regencies. RAP API and RAK API will be legalized through regulatory frameworks at province and five target regencies in Y1 to Y2 to ensure the inclusion of adaptation policies in the provincial and regency development plans. Key measures to ensure the inclusion include a legal review of the appropriate regulatory frameworks[269] at the province and five target regencies and the development of regulatory frameworks to support their inclusion.
Deliverables	▪ Five (5) RAK API developed and legalized through a regulatory framework at five target regencies as a legal basis for their inclusion in the development plans[270].
Justification	To guide provincial and regency governments in planning and implementing adaptation activities towards climate-resilient development, reference documents at the province and regency level are required. Knowledge and capacity gaps can only be overcome in a timely manner through support in the development of adaptation plans. Also, regulations are needed as a legal base for adaptation activities for provincial and regency governments.
Institutions involved (include roles)	GIZ Indonesia as EE, within the PMU, will provide support to DLHK and PBCC in coordinating stakeholders and providing technical advice and consultants to develop RAP API and RAK API.

[267] Provincial Action Plan on Climate Change Adaptation or *Rencana Aksi Provinsi Adaptasi Perubahan Iklim* (RAP API)
[268] Regency Action Plan on Climate Change Adaptation or *Rencana Aksi Kabupaten Adaptasi Perubahan Iklim* (RAK API)
[269] Regulatory frameworks at province level include Provincial Regulation (PERDA), Governor Regulation (PERGUB) or Governor Decree (KEPGUB) at provincial level. At regency level include Regency Regulation (PERDA), Regency Regulation (PERBUP), or Regent Decree (KEPBUP).
[270] In Indonesia, regulations are needed for policies to become legally binding and receive budget for activities. Depending on if it is a provincial or regency policy, sectoral regulations in the form of provincial or regency regulations are required (or alternatively governor/regent regulations).

	▪ DLHK together with PBCC and BAPPEDA will lead coordination to DGCC as technical advisor in developing RAP API and RAP API and provincial and regency agencies (DPUPR, DLH, DISBUN, etc.) and other stakeholders (NGOs, universities, land managers, etc.). ▪ BIROPEM (Biro Pemerintahan Sekretariat Daerah) at province and five target regencies will lead the review and legalization processes of RAP API and RAK API. ▪ UNTAN will provide technical advice.
Sub-activity 1.1.1.2:	**Capacity building and implementation support related to climate change adaptation for stakeholders at provincial, regency and village level**
Baseline	The development plans at all levels pay little attention to adaptation activities and reflect low awareness of mainstreaming adaptation activities. The RPJMD of West Kalimantan sets targets for mitigation activities, but there are no adaptation targets set in RPJMD, both at the province and five target regencies. The plans will be revised and updated in 2024, but with the currently limited awareness of key actors, adaptation may be falling through the cracks again. The government of West Kalimantan is revising PERDA 10/2014 on Spatial and Regional Planning, but guidelines or tools for the province-specific situation that can help stakeholders to design climate-resilience land use plan are currently unavailable. Due to missing capacities and resources many village governments are facing challenges in developing village spatial planning, as mandated by Law No 6/2014 on Village. Village governments are also facing challenges in implementing initiatives to respond to climate change. Such as the PROKLIM programmes, which is focusing on implementing mitigation and adaptation programmes at the village and community level. To date, West Kalimantan has 108 PROKLIM[271] villages since the inception of this programme by MoEF in 2011. While the national Mid-Term Development Plan 2019-2024 targets 20,000 villages to be settled until 2024. Due to a lack of capacity, the GoWK targets 10 villages annually to receive PROKLIM status in West Kalimantan. The support by GoWK to PROKLIM village is also insufficient due to lacking availability of funding.
Description	This sub-activity includes several approaches to enhance the capacity of stakeholders (government agencies, private sectors, NGOs, universities, land managers, etc.) on how to design and implement adaptation activities at the province and five target regencies. As a first step, this activity ensures the inclusion of adaptation policies in the development plans in Y2 and Y7. Key measures taken to ensure the inclusion include developing outreach material packages, such as policy briefs or other types of publication materials (flyers, videos, etc.), conducting outreach activities to mainstream adaptation policies for key decision makers at province and regency levels, and providing technical assistance enabling stakeholders to integrate adaptation policies in the development plans. A series of capacity building activities will be provided to stakeholders on adaptation-related topics, such as climate-resilient development, climate-resilient land-use planning, climate risk reduction, etc., during Y2 to Y3. A training needs assessment (inc. development of training modules and curriculum) will be conducted to identify capacity gaps and training needs of stakeholders on adaptation-related topics. This sub-activity also supports the revision and development of climate-resilience land-use plans in the province and five target regencies, including support in 50 villages in the five targeted regencies with the development of climate-resilience land-use plans in Y3 to Y7. Support at the village level will

[271] Desa Proklim (the “Climate Change Village”) is a national but village-led programme to respond to climate change at the local level.

	also be provided to improve the capacity of village governments to design and implement joint adaptation and mitigation activities, as well as to identify the existing mitigation and adaptation activities under the PROKLIM programme in Y4 to Y7, and other requirements for the implementation of PROKLIM programme.
Deliverables	▪ Adaptation policies in RAP API and RAK API included in the development plans at the province and five target regencies. ▪ 5 trainings conducted on adaptation-related topics targeting key stakeholders at provincial, regency, and village levels. These trainings will also focus on awareness raising about the different forms of corruption, its negative impacts, and prevention measures. • 5 dedicated trainings on the same topic are conducted with IP ▪ Guidebooks developed, as a guideline for key stakeholders on developing climate-resilient land-use planning ▪ Land-use plans are revised at the province level, in five target regencies and 50 villages ▪ 50 villages in five target regencies are enabled to receive PROKLIM status and climate-resilience land-use plans developed at these villages (financial support for implementation will be provided through sub-activity 3.2.1.8)
Justification	Increased awareness and capacities at all government levels will ensure that adaptation-related activities are budgeted in provincial and regency development plans. Additional knowledge is required to align development plans with mitigation and adaptation frameworks and, hence, allowing climate-resilient development through climate-sensitive land-use planning. Only through sufficient available capacities of key stakeholders at provincial, regency and village levels can practices for adaptation and climate risk reduction be well executed and the sustainability of activities of component 2 and 3 is guaranteed –beyond the project lifetime.
Institutions involved (include roles)	GIZ Indonesia as EE will coordinate the implementation jointly within the PMU and provide technical advice and consultants to help BAPPEDA, DLHK, PBCC, DPUPR and BPBD in implementing their activities. BAPPEDA at province and five target regencies will lead the inclusion of adaptation policies to the development plans and coordinate adaptation-related agencies (DLHK, DISBUN, DLH, BPBD, etc.) to include adaptation activities in their plans. ▪ DLHK will lead PROKLIM activities ▪ PBCC will lead overall coordination activities for capacity building activities and provides technical advice ▪ DPUPR at province and five target regencies will lead spatial and regional planning revision and provide technical assistance to village governments in developing climate-resilience land-use plans
Sub-activity 1.1.1.3:	**Development of tools for the implementation of adaptation activities**
Baseline	Due to a lack of funding availability at the provincial and regency levels, the level of implemented adaptation-related activities is currently too low and too slow in view of the significance for the province, e.g. three capital cities in the five target regencies are located in flood-prone areas. The GoWK has developed multistakeholder forums, such as the REDD+ task force aiming to coordinate mitigation and adaptation activities in the province. The PROKLIM working group, active since 2012, fosters the PROKLIM village programmes, and the GHG inventory working group. Yet, coordination among the forums is weak. This will be addressed with the new PBCC in activity 1.1.3,

	but this will not fill the gap of adaptation-specific working groups at the regency level. Moreover, BPBD as one of the key agencies to mitigate disaster events at provincial and regency levels, which sets up targets, programmes, and activities that contribute to address climate-resilience development is missing a strategic foundation because adaptation policies are not yet available. The GoWK has developed a Disaster Management Data Centre (DMDC) located in capital city Pontianak, but there are no DMDCs in the five target regencies that would enable governments to improve adaptation to climate change and disaster risk reduction measures to reduce material loss and casualties in case of disaster events. Indonesia has selected five cities as pilots for climate-resilient development, called Climate Resilient Cities. This is one of the flagship programmes of the Government of Indonesia to promote climate-resilience development in urban areas. There are four key actions prioritized under this initiative, among others: awareness campaign on the importance of integrating climate vulnerability, risks and impacts in city planning and development; capacity building and institutional strengthening; revitalisation of city infrastructure to increase adaptive capacity and resilience to climate change impacts; and increase urban forest area and other green open spaces. Currently, no capital city in the five target regencies is categorized as a climate resilient city.
Description	The project will support the development of tools to facilitate the implementation of adaptation activities for stakeholders. This sub-activity will support the: • Development of new, or to strengthen existing regulatory frameworks for the working group as a legal basis to implement adaptation policies at province and regency levels. Under the lead of the PBCC (see sub-activity 1.1.1.3), a working group on adaptation will be developed at province and regency levels. At the province level, the WG will be integrated in the PBCC, while in the regency, an independent WG will be developed, respectively existing structures will be strengthened, in Y2, following legal frameworks in each regency. Key agencies within the province and regency levels, including BPBD will be identified, and the WG will help PBCC to coordinate and monitor the implementation of adaptation activities. The improved coordination across agencies at provincial and regency levels will allow for improved management of disaster risks and risk reductions. • Establishment of Disaster Management Data Centres (DMDC) infrastructures at five target regencies in Y3 as adaptation information and disaster early warning systems. DMDC in five target regencies will link to the monitoring system developed under sub-activity 1.1.1.4 and 1.1.2.4, as well as with the monitoring system developed by the national government. Furthermore, mapping disaster evacuation routes, based on detailed analysis at the village level, will also be supported. • Development of a climate-resilient model city: This sub-activity supports one of the capital cities in the target regency to be transformed into a climate-resilient model city in Y4 to Y5. The model city will serve as an example for other cities in West Kalimantan and showcase how adaptation and mitigation activities can be implemented in urban areas (for example specific measures for flood-prone areas). Key measures taken to develop a climate-resilient model city include data collection on climate vulnerability and risks in the target city, development of city action plan towards climate-resilience city, and provision of support to the target city in developing a set of regulations to support city action planning.

Deliverables	▪ An adaptation working group developed and attached to the PBCC and legalized by KEPGUB at province and 5 KEPBUP at regency. ▪ 5 DMDC established in five target regencies and linked with DMDC at province, as well as with monitoring system developed under activity 1.1.1.4 and 1.1.2.4; supporting infrastructure provided (support tools and equipment) ▪ Map of disaster evacuation routes with detailed village-based analysis ▪ One capital city received climate-resilience city status by the respective Ministry
Justification	In order to reduce climate risks and vulnerability of communities in West Kalimantan, adaptation supporting tools like the adaptation forum, the further improvement of disaster warning systems and best-practice climate-resilient cities are needed to support government stakeholders in the implementation of adaptation activities in the action plans in sub-activity 1.1.1.1 at all government levels, including village governments. In addition, the activities are needed to enhance political commitment for budget allocation to execute adaptation related activities. Currently, there is no dedicated funding for adaptation activities from provincial and regency budgets.
Institutions involved (include roles)	▪ PBCC with help from DLHK at provincial level and BAPPEDA at five target regencies will lead the coordination to stakeholders in developing the adaptation working group. ▪ BIROPEM at province and five target regencies will lead the review and legalization processes of the working group. ▪ DLHK will lead the development of DMDC at five target regencies and link the system with DMDC at the provincial level. ▪ BPBD will lead in the development of disaster evacuation routes with village-based analysis. ▪ BAPPEDA will in target regencies lead the development of a climate-resilient city. ▪ GIZ Indonesia, as EE, will coordinate all activity implementation and provide technical advice and consultants to support BAPPEDA, BIROPEM, DLHK, PBCC, DPUPR and BPBD to implement their activities.
Sub-activity 1.1.1.4:	**Monitoring and reporting of adaptation activities**
Baseline	There are two national frameworks for the monitoring and reporting of adaptation activities: ▪ AKSARA[272], developed by BAPPENAS in 2021, aims to make the national low-carbon action plan documentation transparent, accurate, comprehensive, consistent, and integrated for mitigation and adaptation activities. ▪ NRS[273], developed by MoEF, aims to monitor, and report adaptation activities, including SIS REDD[274] to monitor safeguard compliance and implementation. All adaptation activities should be reported through NRS according to PERPRES 98/2021. Currently, no adaptation reports have been developed and reported by the provincial or regency governments to relevant national ministries, no provincial and regency monitoring systems have been established for adaptation, and dedicated staff to manage the monitoring and reporting process related to

[272] The Planning and Monitoring Application for the National Low Carbon Action Plan (AKSARA). Access via https://pprk.bappenas.go.id/aksara/
[273] National Registry System (NRS). Access via https://srn.menlhk.go.id/index.php?r=home%2Findex
[274] Safeguard Information System REDD (SIS REDD). Access via http://sisredd.menlhk.go.id/

	adaptation activities. Moreover, capacities and funding are not sufficiently available. DLHK is responsible for monitoring and reporting adaptation-related activities in collaboration with BAPPEDA and other FOLU agencies.
Description	This sub-activity supports the development of a monitoring system for the RAP API and RAK API in Y1 and Y2. This system ensures transparency and accountability of the RAP API and RAK AP implementation. The monitoring system will consist of this system and an online platform where all required information for monitoring can be inserted, and all the necessary information for reporting on the RAP API and RAK API implementation can be extracted. The system will be linked with the national monitoring system and will be developed together with the provincial monitoring system for mitigation activities (see sub-activity 1.1.2.4). A supporting environment will be provided, such as data hosting, computers, guidelines, capacity building, etc., ensuring the online platform can be well-operated. This sub-activity also provides technical assistance to government agencies and other stakeholders on how to report the implementation of RAP API and RAK API to the online platform and to respective monitoring systems managed by MoEF (NRS) and BAPPENAS (AKSARA). The report will outline the current progress of RAP API and RAK API implementation, including achievements, challenges, and lessons learned.
Deliverables	▪ A provincial adaptation monitoring system is developed and aligned with the national monitoring system. This system will also monitor adaptation activities in customary communities. ▪ An online platform developed as a monitoring and reporting portal to be used by stakeholders that link to the mitigation monitoring system developed under sub-activity 1.1.2.4 and supporting environment is provided. ▪ Annual monitoring report developed for RAP-API and RAP-AKI implementation at provincial levels and for five target regencies.
Justification	A comprehensive, but easy to use, monitoring system is required to ensure the transparency and accountability of RAP-API/RAP-AKI implementation. Also, it will allow future informed decision-making, that is based on the data collected on adaptation-related activities, and to share knowledge on climate actions and best practices between stakeholders and provinces.
Institutions involved (include roles)	▪ PBCC, DLHK and BAPPEDA at provincial level will lead the coordination of reporting activities for all sectors, conduct regular monitoring, provide technical advice to FMU organizations, SF permit holders, as well as companies to report their adaptation activities. ▪ BAPPEDA and DLH at five target Regencies will help PBCC, DLHK and BAPPEDA at the provincial level in reporting activities at regency level. ▪ GIZ Indonesia, as EE, will help PBCC, DLHK and BAPPEDA at provincial level and BAPPEDA and DLH at five target regencies to coordinate all activity implementation and provide technical advice and consultants to implement monitoring and reporting activities.

5.6.2.2 Activity 1.1.2: Strengthening mitigation actions through improved REDD+ implementation towards achievement of sub-national FOLU Net Sink 2030 targets

Contribution to project output	Activity 1.1.2. is targeting the mitigation side of enabling conditions and institutional frameworks for sustainable and climate-resilient forest and landscape management in West Kalimantan. While activity 1.1.1 focuses on adaptation-related support and establishment of adaptation policies, that are not

	yet in place, this activity focuses on strengthening the implementation of existing provincial mitigation policies of REDD+ and FOLU Net Sink 2030. To strengthen the implementation of mitigation activities, this activity focuses on the alignment of provincial REDD+ policies with the national mitigation policies and regulations and the enhancement of local regulations for the implementation of the updated policies. To ensure this, mitigation policies will be included in the development plans at the provincial level. The following sub-activities are included: • Sub-activity 1.1.2.1: Align the provincial REDD+ policies with the current national mitigation policies and regulations. • Sub-activity 1.1.2.2: Inclusion of mitigation policies into provincial development plans. • Sub-activity 1.1.2.3: Support implementation of enabling conditions for mitigation activities. • Sub-activity 1.1.2.4: Monitoring and reporting of mitigation activities.
Envisaged results	The envisaged results of this activity are: • A clear target for mitigation targets, indictors, programmes and activities in West Kalimantan. • A clear contribution of the GoWK to enhanced NDC. • Mitigation policies for full adoption across GoWK policies and regulations. • Advanced enabling environment and capacity across key stakeholders in the province to implement mitigation actions of REDD+ and FOLU Net Sink 2030 policies. • A robust adaptation monitoring system towards transparency and accountability of mitigation actions in West Kalimantan.
Sub-activity 1.1.2.1:	**Align the provincial REDD+ policies with the national mitigation policies and regulations**
Baseline	The GoI has issued new instructions and guidelines for provincial governments and other stakeholders to develop mitigation policies in PERPRES No. 98/2021 and guidelines for setting targets and priority programmes and activities in the ENDC, the operation plan of Indonesia's FOLU Net Sink 2030, the National REDD+ Strategy (STRANAS) and the 2nd FRL[275]. Therefore, the provincial REDD+ policies needs to be further aligned with updated national policies and with the Provincial FOLU Net Sink 2030. The Provincial FOLU Net Sink 2030, developed in 2022, is an overarching sub-national action plan to contribute to Indonesia's FOLU Net Sink 2030 targets. The GoWK sets 7,6 million ha to be intervened in RKFNT through 12 operational plans, contributing as much as 32,1 million tCO2eq or 12% of IFOLU Net Sink 2030 targets. The GoWK has issued regulations to support the enabling environment of REDD+ implementation and the inclusion of mitigation policies in the development plans, among others PERGUB 125/2020 on Provincial Action Plan on GHG Emission Reduction 2020-2030; PERGUB 201/2021 on Monitoring, Reporting, and Verification of REDD+ activities; KEPGUB 1215/DLHK/2020 on GHG Emission Reduction Target from Deforestation and Degradation; and KEPGUB 928/DLHK/2022 on REDD+ Task Force Establishment.
Description	This sub-activity supports the alignment of the provincial REDD+ policies with the national mitigation policies and regulations. The alignment ensures clear contribution of the provincial targets to the ENDC, the GHG emissions accounting method used at the sub-national level, and alignment between sub-

[275] National Forest Reference Level (FRL). Access via https://redd.unfccc.int/files/2nd_frl_indonesia_final_submit.pdf

	national mitigation action plans with national mitigation strategies and action plans. This sub-activity will support the: • Revision of the current provincial REDD+ policies in the SRAP and FREL documents and will be conducted in Y1 to Y2. Key policy revisions include the revision of the sub-national FRL according to the updated national FRL, as well as targets, programmes, activities, and priority location intervention revisions of SRAP with robust involvement of stakeholders at all levels. • Development of a provincial regulatory framework in Y2 as a legal foundation for provincial agencies to include mitigation policies in their development plans. Key measures taken to ensure the legalization include conducting a legal review of the regulatory framework at the provincial level and developing the regulatory framework to support the inclusion in the development plans.
Deliverables	SRAP and FRL are revised and legalized through the regulatory framework at provincial level, as a legal basis for inclusion in the development plans
Justification	The GoI has strengthened its polices and regulations with the ENDC, the issuance of carbon regulations, the revision of the National REDD+ strategy, the FRL and IFOLU Net Sink 2030 operational plan. As one of the National's REDD+ and FOLU Net Sink priority location, the GoWK needs to adapt with those changes through updating its policies stipulated in the SRAP. With this update, the GoWK will be able to set a clear contribution to ENDC, as well as to the FOLU Net Sink 2030 of the GoWK. With the clear contribution to ENDC, the GoWK can further proceed with aspirations under its plans to reverse current high deforestation and forest degradation trends and lower its emissions levels below the national benchmark.
Institutions involved (include roles)	• DLHK, together with PBCC and BAPPEDA, will lead the coordination activities to DGCC as technical advisor in revising the SRAP and FRL and provincial agencies (DPUPR, DISBUN, etc.) and other stakeholders (NGOs, universities, land managers, etc.). • BIROPEM at provincial level will lead the review and legalization processes of the SRAP and FRL. • GIZ Indonesia as EE will provide support to DLHK, PBCC and BAPPEDA in coordinating stakeholders and providing technical advice and consultants to revise the SRAP and FRL. • UNTAN will provide technical advice.
Sub-activity 1.1.2.2:	**Inclusion of mitigation policies into provincial development plans**
Baseline	The GoWK has set mitigation targets, programmes, and activities of REDD+ in RPJMD 2019-2023, but not for FOLU Net Sink 2030. The RPJMD of West Kalimantan will be revised and updated in 2024.
Description	To ensure the implementation of mitigation policies of REDD+ and FOLU Net Sink 2030, sub-activity 1.1.2.2 will ensure that mitigation targets, programmes, and activities are set in the provincial development plans. Support will also be provided to provincial government agencies to set mitigation targets, programmes, and activities in their development plans in Y2 to Y7. Key measures taken to ensure mitigation targets, programmes, and activities are set in the provincial development plans include the development of outreach material packages, such as policy briefs, or other types of publication materials (flyers, videos, etc.) to inform key decision-makers of the new mitigation policies in West Kalimantan, to conduct exchange events for improved understanding of REDD+ and FOLU Net Sink 2030 policies, and to provide technical assistance to public agencies in relevant sectors to integrate mitigation policies in their development plans.

Deliverables	REDD+ and FOLU Net Sink targets, programmes and activities are set in the provincial development plans.
Justification	The inclusion of mitigation targets, programmes and activities in their development plans ensures the commitment of governments towards low emission and climate-resilience development. Without inclusion, mitigation action plans of REDD+ and FOLU Net Sink 2030 policies cannot be fully implemented by the GoWK and the GoWK pledge on 60% GHG emission reduction will not be achieved.
Institutions involved (include roles)	• BAPPEDA with support from DLHK and PBCC will lead the inclusion of adaptation policies to the development plans and coordinate mitigation-related agencies (DLHK, DISBUN, DLH, BPBD, etc.) to include mitigation activities in their plans. • GIZ Indonesia, as EE, will coordinate all activity implementation and provide technical advice and consultants to help BAPPEDA, DLHK, PBCC in the inclusion process. • UNTAN will provide technical advice.
Sub-activity 1.1.2.3:	**Support creation of enabling conditions for mitigation activities**
Baseline	Key government agencies, land managers and other stakeholders face significant knowledge and capacity challenges to design, register, implement, monitor and report their mitigation activities to the national system. These challenges are also faced by the REDD+ Task Force, as the key institution at the provincial level to coordinate and manage REDD+ activities (see sub-activity 1.1.1.3). At national level, the framework for the implementation of the domestic carbon market is still incomplete. In the AFOLU sector there are currently only four mitigation activities that can be registered in the National Carbon Registry (SRN) for the creation of Indonesian carbon credits (SPE-GRK). This limits the scope of Natural Climate Solutions that can contribute to emission reductions in this market. Additionally, a model for comprehensive mitigation and adaptation implementation, led by forest managers (concessionaires, Social Forestry permit holders) is lacking in West Kalimantan. KHDTK is the only Educational Forest concession in West Kalimantan, with an area of 19.682 hectares and directly managed by the public Tanjungpura University (UNTAN). Currently, activities in KHDTK are focusing on basic research and community empowerment, but research on sustainable forest management and climate change need to be further strengthened and KHDTK could then serve as a model, or excellence centre, for mitigation and adaptation activities implementation for forest managers. Yet as a prerequisite, climate change research in West Kalimantan, has been initiated by UNTAN and other universities, but is not well-consolidated, and thus needs to be further developed to improve policies, programmes and activities. To support the implementation of programmes and activities of the provincial REDD+ policies, the Government of West Kalimantan has issued several regulations; among others PERDA 6/2018 on Sustainable Business Land Management; PERDA 6/2014 on Environmental Protection and Management; PERDA 2/2028 on Watershed Management; PERDA 8/2021 on Peat and Mangrove Protection and Management; PERDA 2/2022 on Forest and Land Fires Mitigation; PERDA 8/2019 on Forestry Management; PERDA 1/2022 on Agriculture Land Clearing Adopting Local Wisdom; and PERGUB 33/2022 on NTFP Development. PERDA 1/2022 is aligned with several national regulations such as PP 22/2021 on Environmental Protection and Management and PermenLHK 10/2010 on Pollution Prevention Mechanism and/or Environmental Damage Related to Forest and/or Land Fires, etc. It recognizes burning method for land clearing implemented by IP, but IP requires to apply controlled burning method and the

	village government must define the area and prepare a team to manage this. Through this, the government wants to set limits to land clearings and ensure that no party abuses this policy for other purposes e.g., illegal land clearing for palm oil plantation etc.
Description	This sub-activity ensures the creation of enabling environments of REDD+ and FOLU Net Sink 2030 policies. Enabling environments will be enhanced through the following activities: • Support the development of regulatory frameworks at the national level through policy advice in AFOLU methodologies for GHG emission accounting under the SRN. Pilot activities in West Kalimantan will inform technical discussions at national level about innovative and feasible approaches. • Support the development of regulatory frameworks at the provincial level, as part of the programmes and activities implementation of REDD+ and FOLU Net Sink 2030 policies in Y1 to Y7. The regulatory frameworks will be developed based on specific issues to strengthen the implementation of programmes and activities. • Technical assistance will be provided to provincial government agencies and other public stakeholders, ensuring they can design and implement mitigation activities that align with provincial mitigation policies of REDD+ and FOLU Net Sink 2030 in Y2 to Y7 and register their mitigation activities to NRS and SIS. The assistance also includes capacity development to support the domestic carbon market. An assessment will be conducted at the beginning of the process to identify key gaps and stakeholder needs. • Establish an interdisciplinary climate change research center for West Kalimantan Province in Y3 to Y4 to support PBCC, in collaboration with Tanjungpura University. The center aims to strengthen the implementation of mitigation actions by providing robust data-driven decision-making processes, providing alternatives and improvement of the existing policy, and concrete mitigation actions on the ground. Key measures to establish the center include designing of a climate change research center attached to Tanjungpura University structure (inc. institutional arrangement), developing priority programmes and activities for the center, and providing initial support to the center to implement programmes and activities. • Develop a model for REDD+ and FOLU Net Sink 2030 mitigation implementation in collaboration with the Education Forest of Tanjungpura University. This activity will take place in Y3 to Y7. The model will be a learning and excellence center for forest managers to comprehensively design, implement, monitor, and report mitigation activities. Support for the Education Forest of Tanjungpura University includes creating a comprehensive mitigation action plan for the Education Forest of Tanjungpura University; capacity building of the Education Forest organization to design, implement, monitor, and report mitigation activities; providing support to the Education Forest organization in implementing mitigation activities; and monitoring and reporting of mitigation activities. • Identify and map agricultural land allocated to slash-and-burn practices by IP for further awareness raising in Y3. Once the agricultural lands to slash-and-burn practices have been identified and mapped, outreach activities will be conducted to IP for recognition and socialization. • Identify and map peat soils for updating the national peat inventory. This will create the data basis for the update of the national peat map, published by KLHK about the Peat Hydrological Unit. These areas are protected under Indonesian law and stakeholders on subnational level

	need to respect the boundaries of this area in all operations (e.g. land use planning etc.).
Deliverables	• At least 3 regulatory frameworks are established to support the implementation of REDD+ and FOLU Net Sink 2030 • All REDD+ and FOLU Net Sink activities/projects are registered and updated in NRS and SIS • A climate change research center structure and governance are developed and attached to the Tanjungpura University • Support provided to KHDTK to implement their management plans, including forest protection, restoration, and sustainable livelihoods towards improved REDD+ implementation over 20.000 ha of KHDTK areas • Map of potential agricultural land allocated to slash-and-burn areas based on local wisdom • 5x outreach in each regency about the map of potential agricultural land allocated to slash-and-burn areas based on local wisdom National discussions about AFOLU methodologies under the SRN are supported through policy advise and pilot activities for measuring carbon sequestration of Natural Climate Solutions in West Kalimantan (see sub-activity **3.2.1.6**). Approx. 400.000 ha of peat areas mapped for the national inventory. These areas will be submitted to KLHK for the update of the National Peat Map (PHU – Peat Hydrological Unit)
Justification	The creation of enabling environments for mitigation activities implementation have been started by the Government of West Kalimantan in 2012 through the development of policies and regulatory frameworks. The government of West Kalimantan has also been providing support to multiple village-level co-empowerment programmes that are aimed at improving community adaptation and resilience capacities. Further support to enhance enabling environments of mitigation activities will allow provincial and regency governments, as well as key FOLU stakeholders, to proceed and achieve their ambitious targets on GHG emission reduction.
Institutions involved (include roles)	• PBCC will provide technical assistance to FOLU stakeholders to implement mitigation activities in context of REDD+ and FOLU Net Sink 2030. • DLHK will lead identification and mapping activities of agricultural land allocated to slash-and-burn for IP. • UNTAN in collaboration with PBCC and DLHK will lead the development of KHDTK as a role model of REDD+ and FOLU Net Sink 2030. • GIZ Indonesia, as EE, will coordinate all activity implementation and provide technical advice and consultants. • KLHK is responsible for peat inventory map (scale 1:50.000). BRGM is responsible for the management of the Peat Hydrological Unit.
Sub-activity 1.1.2.4:	**Development and implementation of a transparent and accountable monitoring system for mitigation activities**
Baseline	• The national frameworks for monitoring and reporting of mitigation activities are managed under AKSARA developed by BAPPENAS, and SRN, SIS REDD, and SIGN SMART developed by MoEF. • The GoWK has measured its GHG emission reduction performance from REDD+ activities for the period 2012-2018 and 2019-2021. GHG monitoring reports also have been submitted to MoEF, focused on mitigation activities.

	• The GoWK has initiated a REDD+ information system[276] that is linked to NRS. This system and the online portal need to be further developed beyond REDD+ framework and it is expected to become a single hub of information for mitigation and adaptation (activity 1.1.1.4) activities in West Kalimantan. • DLHK is responsible to monitor and report GHG emission reduction activities from forestry, agriculture, energy, transportation, and waste in West Kalimantan in collaboration with BAPPEDA and other FOLU agencies. Specifically for REDD+ activities, REDD+ task force is responsible agency according to KEPGUB 928/2021 on REDD+ Task Force[277] • Currently neither at provincial, nor at regency level dedicated staff are available to manage monitoring and reporting processes related to mitigation activities. Moreover, capacities and funding are not sufficiently available.
Description	This sub-activity supports the development and implementation of a transparent and accountable monitoring system for mitigation activities. This system will interact with the adaptation monitoring system developed under sub-activity 1.1.1.4. This monitoring system will consist of the system and an online platform where all required information can be inserted and extracted. The system and online platform will be improved in Y1 to Y2. Key measures include revising the provincial monitoring system following the current policy at the national level, enhancing the existing online-based monitoring platform, managed by the provincial government, providing support (capacity and equipment) to operate the online-based monitoring platform, and consultation with key stakeholders at the national and provincial levels concerning the development of monitoring platform. The capacity of key stakeholders in REDD+ and FOLU Net Sink 2030 will be improved to use the system for training activities, including how they monitor and report their mitigation activities in Y2 to Y4. Training needs assessment (inc. the development of training modules and curriculum) will be conducted prior to training events, to identify gaps and training needed. Additionally, in this sub-activity in Y2 to Y7 technical assistance will be provided to government agencies and other stakeholders on how to report mitigation activities to the online platform and to respective monitoring systems, managed by MoEF, and to develop their annual reports. These reports will outline the current progress of mitigation activity implementation and GHG emission reduction performance, including challenges and lessons learned. Consultation with MoEF and other stakeholders of the annual monitoring report will also be facilitated.
Deliverables	• Provincial monitoring system is developed and aligned with the national monitoring system. This system will also monitor mitigation activities in customary communities. • Software and hardware of online monitoring platforms are enhanced. Software includes store capacity, user interface and experience, automate data analytic system, registry system, etc. Hardware includes supporting infrastructures to operate the system and platform, such as tools and equipment2 trainings for stakeholders are conducted per year • Annual GHG inventory report submitted to SIGN-SMART • Annual MRV report produced by provincial government • Annual SRN report produced by provincial government
Justification	A robust monitoring system allows the GoWK to achieve its GHG emission reduction targets, provide transparency and accountability about the implementation of mitigation activities of REDD+ and FOLU Net Sink 2030 policies, reliable and timely data for decision making process, and ensure

[276] https://reddplus.kalbarprov.go.id/ and SIPOHON KALBAR (trees planting register and monitoring system)
[277] Governor Decree No. 928/LHK/2021 on The Establishment of Task Force on Reducing Emission From Deforestation and Degradation in West Kalimantan Province. Issued in August 29, 2021

	effective coordination and communication with the respective Ministry. The current REDD+ information system is unable to provide conducive environment and to provide robust, reliable and updated climate-information, where all stakeholders (including the private sector) support them into evaluate activities; regularly identifying and assessing deforestation- and forest degradation drivers; as well as formulating effective climate-informed strategies, intervention, policies, and law enforcement.
Institutions involved (include roles)	GIZ Indonesia, within the PMU, as EE, will help PBCC, DLHK and BAPPEDA at provincial level and BAPPEDA as well as DLH in five target regencies to coordinate all activity implementation and provide technical advice and consultants to implement monitoring and reporting activities. PBCC, DLHK and BAPPEDA at provincial level will lead the coordination of reporting activities for all sectors, conduct regular monitoring, provide technical advice to FMU organizations, SF permit holders, as well as companies to report their adaptation activities. • BAPPEDA and DLH in five target Regencies will support PBCC, DLHK and BAPPEDA at the provincial level in reporting activities at regency level

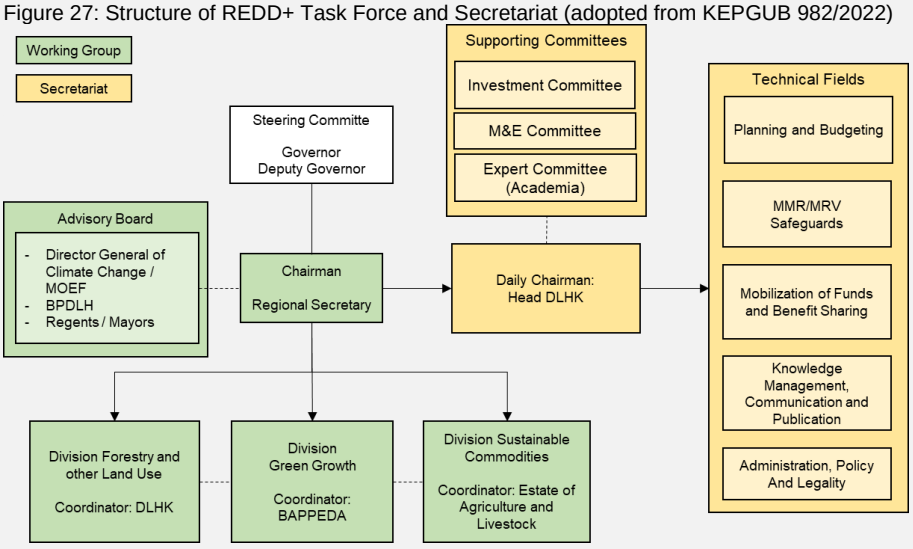
5.6.2.3 Activity 1.1.3: Strengthening the institutional framework for coordination of mitigation and adaptation activities across relevant stakeholders

Contribution to project output	This activity re-shapes the provincial governance architecture, including the REDD+ Task Force[278] as provincial body on climate change and its legal framework. While REDD+ is often closely associated with climate change mitigation, the REDD+ Task Force in West Kalimantan has the mandate for coordinating both climate change mitigation and adaptation activities. As it is a cross-sectoral institution, it is well placed to coordinate cross-cutting climate change measures across sectors and the new provincial body on climate change will take a leading role. The following sub-activities are included: • Sub-activity 1.1.3.1: Enhance institutional arrangements for the provincial body on climate change, including stakeholder consultation and amendment of the supporting legal framework. • Sub-activity 1.1.3.2: Support activities of provincial body for climate change with capacity building measures, absorption of operational costs and outreach.
Envisaged results	The envisaged result of this activity is a clear and permanent institutional arrangement of the provincial body on climate change with a strong legal support that goes beyond leadership changes in the province, strengthens the authority of the institution and allows a substantial allocation of GoWK budgets to manage the climate change agenda in West Kalimantan.
Sub-activity 1.1.3.1:	**Enhance institutional arrangement for the Provincial Body on Climate Change**
Baseline	The REDD+ Task Force for West Kalimantan (Pokja REDD+) is a multi-stakeholder forum (government, academia, private sector, NGOs and projects in the forestry sector of West Kalimantan) and has been formed in 2012 through a Governor´s Decree. It assisted the provincial government in formulating action plans and strategies to reduce greenhouse gas emissions, especially from deforestation and forest and peatland degradation. Several policy and legal documents have been produced, such as the REDD+ Strategic Action Plan (SRAP), the sub-national FREL, or technical guidelines for carbon stock measurement.

[278] West Kalimantan REDD+ (kalbarprov.go.id)

Recently, KEPGUB 928/2022 extended the scope of the working group on climate change control, including adaptation and on low emission development in the land-based sectors, aligned with green growth targets of West Kalimantan by promoting sustainable production of commodities in the agricultural sector and ensuring that mitigation and adaptation activities are aligned, monitored, and reported to relevant authorities at the national level. The new task force structure foresees thematic divisions, formed by Pokja members, coordinated by sector agencies and a permanent secretary with technical teams, composed by government officials from the involved agencies and selected other Pokja member (see Figure 27). The REDD+ Task Force is well renowned for its major contribution to the REDD+ readiness and implementation in West Kalimantan and has become a strong brand in the province and beyond. However, the name does not anymore cover the new scope of this Task Force.

Figure 27: Structure of REDD+ Task Force and Secretariat (adopted from KEPGUB 982/2022)



Although KEPGUB 923/2022 does extend the scope of the REDD+ Task Force, challenges related to the legal framework still remain. The REDD+ Task Force highly depends on Governor leadership, lacks authority to coordinate REDD+ activities, and has no substantial regional budget allocation due to the current legal framework of KEPGUB. The province had initiated to improve KEPGUB through a PERGUB, but the Ministry of Home Affairs argued that Permen LHK 70/2017[279] was not strong enough to be a legal reference of a PERGUB.

Description	Under this sub-activity, the current institutional arrangements of existing working groups related to climate change mitigation and adaptation in West Kalimantan will be assessed. The result will be discussed with provincial and regency stakeholders to inform institutional arrangements of a new provincial body of climate change, as a multi-stakeholder forum for coordination and communication of adaptation and mitigation activities. The outcome of the stakeholder consultation will be used to amend KEPGUB 928/2022 (establishment of REDD+ Task Force) which is aimed to be upgraded to a PERGUB, similarly to the Provincial Climate Change Council (Dewan Daerah Perubahan IKLIM/DDPI) in East Kalimantan. Under a PERGUB, the GoWK will have dedicated institutions to oversee technical implementation of adaptation and mitigation activities, which would go beyond leadership changes in the province. The PERGUB will refer to a PERDA on mitigation and adaptation to climate change developed under sub-activity 1.1.1.2 and 1.1.2.3. The PERGUB will also strengthen the authority barrier of the forum to manage the climate change agenda and allow a substantial allocation of GoWK budgets for

[279] Ministerial Decree No. 70 Year 2017 on Procedures for Implementing Reducing Emissions From Deforestation And Forest Degradation, Role of Conservation, Sustainable Management of Forest and Enhancement of Forest Carbon Stocks

	improved functioning. During the process, a re-branding of the Pokja REDD+ will be brought up for discussion. As the Provincial Body on Climate Change will take up a key role in the implementation of activities under all outputs, sub-activity 1.1.3.1 will be implemented as early as possible. This sub-activity will be conducted through a revision of the current legal status of the REDD+ Task Force as Provincial Body on Climate Change in Y2. The revision will start with an assessment of the current institutional arrangements of existing working groups related to climate change mitigation and adaptation in West Kalimantan. The development of PERGUB on the Provincial Body on Climate Change and operational procedures for the Provincial Body on Climate Change will also be enhanced under this sub-activity.
Deliverables	• Amended regulation of REDD+ Task Force endorsed as Governor Regulation (PERGUB). • Operational procedures developed for the new structure of a Provincial Body on Climate Change.
Justification	No funding support is currently allocated by the GoWK for operations of the current Pokja REDD+ and the structure is not yet implemented due to resource limitations and the Task Force's working mode is still ad-hoc. Moreover, other task forces exist under DLHK (e.g., ProKlim, Pokja PPS (Social Forestry)), respectively under other Services (e.g. DESTANA under Disaster Risk Management). Part of the stakeholder consultation will consist of a discussion on how to better coordinate the activities of the different task forces and prevent overlaps. Or even integrate these groups under the new Provincial Body on Climate Change. In this case, multi-sectorial participation could be strengthened through co-chairing of different sectors. Sub-activity 1.1.3.1 will thus allow a transition to improved institutional arrangements and give leeway for funding opportunities, due to a better coordination among government agencies.
Institutions involved (include roles)	• REDD+ Task Force and DLHK will lead the transformational changes of the Task Force's branding and legal support. • BIROPEM at provincial level will lead the review and legalization processes of the SRAP and FRL. • GIZ, as EE, and international and national consultants on organizational development will support the Pokja REDD for the assessment of the current actors in climate change adaptation and mitigation, as well as the design and implementation of a stakeholder consultation. A legal expert will support the drafting of a provincial regulation.
Sub-activity 1.1.3.2:	**Support activities of provincial body for climate change**
Baseline	Even after more than 10 years of its initial appointment, Pokja REDD+ is still working as ad-hoc institution with often insufficient resources for meetings and operations and weak capacities of members. Funding to improve the enabling environment of REDD+ has been ensured in the past by partners from local, national and international organizations such as IJ REDD+, GIZ Forclime, IDH, FFI, FIP 1 ADB, UNDP, Under2 Coalition the Climate Group, Governor Climate and Forest Task Force (GCF TF), Bentang Kalimantan and other partners. Most of the work has been implemented by an ad-hoc committee with few active members and on a voluntary basis, but at a substantial volume of an average five days per month.
Description	This sub-activity will be implemented over the full project cycle and builds the capacity of the secretariat of the Provincial Body on Climate Change. As successor organization of the REDD+ Task Force it will implement the daily management of activities and programmes and support its operations (secretariat infrastructure, management costs, equipment). Ten professional staff for implementation will be hired on a consultant basis. They will work together and assist civil servants assigned to PBCC to manage programmes

	and activities of PBCC, including office management activities. Capacity building for members of provincial body for climate change to implement daily management of activities and programmes will be provided, including training need assessment to identify gaps and training needs. With a new legal framework of PBCC developed under sub-activity 1.1.3.1, this activity encourages regional budget allocation to PBCC, as part of the project exit strategy. A special focus will be given to the development of materials to increase public awareness on climate change mitigation and adaptation, including forest protection and conservation activities. Youth groups will receive particular attention. Outreach products will include fact sheets, video productions and an improved social media presence, based on the existing website of the REDD+ Task Force[280].
Deliverables	• 10 professional staff hired for daily management of Provincial Body on Climate Change. • 1 training course (3 days) per year to improve the capacity of secretariat staff. • Supporting infrastructure is provided, such as office building renovation, working tools and equipment, vehicles, etc. • Outreach activities developed on climate change mitigation and adaptation are published. • At least, 5x awareness events conducted targeting youth groups on climate change mitigation and adaptation.
Justification	The Provincial Body on Climate Change will be the key institution for the coordination and implementation of climate change mitigation and adaptation measures in West Kalimantan through the project. It will be based on FOLU Net Sink 2030 policies and strategies and the RAN-API. A successful implementation of all activities will depend on its capacity and operational resources.
Institutions involved (include roles)	• PBCC will lead activity implementation. • GIZ, as EE, and international and national consultants will support the PBCC (the successor organization of REDD+ Task Force) to implement capacity development measures and outreach activities, as described above.

5.6.3 Output 1.2. Developed land use plans which consider climate change and identified HCV/HCS areas

5.6.3.1 Activity 1.2.1: Strengthening the regulatory framework and implementation of High Biodiversity and Carbon Areas (i.e., HCV, HCS) on non-state forests land.

Contribution to project output	The sub-activities under activity 1.2.1 are: 1.2.1.1 Identify areas and develop management plans for High Biodiversity and Carbon Areas within non-state forest land across West Kalimantan Province. This will be done by establishment of an official teams/working groups at provincial and regency levels, landscape assessment and ground truth verification at regency levels, meetings and experts' consultations throughout the process, and assist in legal drafting of Governor and Regent (Bupati) Decrees on the identified high biodiversity and carbon areas.

[280] West Kalimantan REDD+ (kalbarprov.go.id)

	1.2.1.2 Develop and strengthen regulations at provincial and regency levels, to govern the protection and sustainable management of the high biodiversity and carbon areas. This will be done by establishment of an official team/working group at provincial and regency levels, facilitating stakeholders meetings and experts' consultations in co-designing the management of high biodiversity and carbon areas, and assist in the legal drafting for provincial and regency regulations on the management plan for high biodiversity and carbon areas, and also facilitate the establishment of Wildlife Corridors (*Koridor Hidupan Liar, KHL*) or High Conservation Area (*Areal Bernilai Konservasi Tinggi,* ABKT), or other similar terminology that align with the government's policy and regulation on high biodiversity and carbon areas. 1.2.1.3 Increase stakeholders' capacities (i.e. companies, communities, provincial and regencies governments) in implementing the management plan for high biodiversity and carbon areas within non-state forest land. This will be done by conducting Training Needs Assessments (TNA) for stakeholders, facilitate the needed trainings to implement the management plan, and assist in the development of (Best Management Practices) BMPs, SOPs and safeguards framework in implementing the high biodiversity and carbon areas management plan for stakeholder in each regency and province. 1.2.1.4 Support and monitor the management plan implementation for high biodiversity and carbon areas. This will be done by supporting the stakeholder activities in implementing the management plan within their managed-land, facilitate semi-annual monitoring activities by the government, and assist the government to integrate the fund needed in implementing these activities into state-budget (so these activities can be sustained beyond project time). 1.2.1.5 Enabling Jurisdictional Approach (JA) certification for Ketapang Regency as a replicable model for other regencies in West Kalimantan Province This will be done by facilitating the jurisdiction-level certification scheme under international sustainable palm oil standard (RSPO), to promote regency-level certification process that ease the palm oil industry in complying with sustainable practices and increase government roles in ensuring sustainable business practices in the regency. The reasons why the implementation of this activity is needed, are (i) to ensure that these areas are indented that have the potential to contribute the most to the mitigation of climate change and affect community resilience to climate change the most through the identified high biodiversity and carbon areas; (ii) to ensure that the stakeholders have a legal standing on protecting and sustainable management of these areas by ensuring the process are procedural, gain support from the government (through Governor's and Bupati's Decrees) and secure support from the parliament (through Regency's and Provincial's Regulations) to enable permanent impact in the regulatory framework; (iii) to ensure stakeholders have increased capacities in implementing the management plan for mitigation and adaption to climate change; (iv) to ensure good governance, not just int terms of implementation, but also for monitoring the implementation of the management plan.
Envisaged results	This activity will bring transformational change through policy and regulation framework intervention, enable companies and communities to legally protect and sustainably manage their high biodiversity and carbon areas, and improve stakeholder capacities that are needed to increase

	community resilience in climate change and to implement activities for mitigating climate change impact. In general, there will be (1) five Bupati's and one Governor's decrees on the identified areas and management plan of high biodiversity and carbon areas in West Kalimantan Province, (2) five Regency's and one Provincial's regulations on the protection of high biodiversity and carbon areas on non-state forest-land including designation of 100,000 ha of Wildlife Corridors (*KHL*) or High Conservation Area (ABKT) across West Kalimantan Province, (3) BMPs, SOPs, and safeguard frameworks with more than 50% stakeholders demonstrate increased understanding and skills in monitoring and implementation of the management plan (with 50% stakeholder are women), and (4) Commitment letters from at least five companies to financially support the activities in management plan implementation (beyond the project duration), and also statement on the Province's and Regencies budgets to support the protection of High Biodiversity and Carbon Areas across West Kalimantan Province. Under this activity climate risk and vulnerability will be taken into consideration throughout the planning process to ensure improved resilience of such areas and, at the same time, avoid maladaptation. As a key principle, the process will be further complemented through the use of participatory and inclusive procedures, capacity building and promoting good governance. The Stakeholder engagement plan, available in Annex 7a, further outlines how two-way communication will be implemented throughout the process identifying space for providing input, feedback and supporting learning on various topics, including the effectiveness of adaptation measures and alignment with local priorities.
Sub-activity 1.2.1.1:	**Identify areas and develop management plans for high biodiversity and carbon areas within non-state forest land across West Kalimantan province.**
Baseline	There are several project-level HCV-HCS reports on companies' concessions and an outdated (2009) landscape level HCV assessment for the province. But, until now, there is no government policy describing areas with high biodiversity and carbon stock in West Kalimantan province and its regencies. According to the new Presidential Instruction No 1-year 2023, every province and regency needs to develop a Biodiversity Management Plan (Rencana Pengelolaan Keanekaragaman Hayati) to mainstream biodiversity conservation in sustainable development plans. West Kalimantan and its regencies do not yet have these biodiversity management plans. The absence of management plans creates uncertainty among land managers and government in designing and implementing the provincial and regency management plans.
Description	In Year-1 of the project, areas with high biodiversity and carbon values will be identified, by using the most trusted and reliable toolkits that are acknowledged by the government of Indonesia. Currently, different approaches such as High Conservation Value (HCV) and High Carbon Stock (HCS) toolkits can be applied at a landscape level to cover the entire West Kalimantan Province. Together with the Provincial Government (e.q. Environment and Forestry Agency), GIZ will form a team to conduct the HCV-HCS identification, in collaboration with the deforestation and HCS secretariats to legitimate the process. The team will be legalized through the Governor of West Kalimantan Decree (*Surat Keputusan*, SK), as well as the identified high biodiversity and carbon areas (i.e. maps and reports). Also, public consultation about the results will be conducted, before it's finalization and legalization. By doing this, the identification process will be transparent, legal, and become a government product that is methodologically correct and administratively accepted. Hence, it will

	become a legal policy that can be referred to for further development planning. In general, the steps in HCV-HCS identification will be: Y1: team formation, data compilation, methodology consultation. Y1 - Y2: data analysis and clean up, expert consultation, landscape level survey and ground truth activities. Y2 - Y3: reports writing, stakeholder consultations, finalizing map and report. Y3: legal drafting for Governor Decree on the final map and report. After finalizing the report, we will develop the management plan for high biodiversity and carbon areas. The management plan will follow the Presidential Instruction (INPRES 1/2023) on the needs for Provincial and Regency Governments to develop a Biodiversity Management Plan (*Rencana Pengelolaan Keanekaragaman Hayati,* RPKH). Thus, there will be only one management plan to cover the high biodiversity and carbon areas in West Kalimantan Province. The Biodiversity Management Plan will be at two levels, namely provincial level (called the provincial RPKH), and regency level (called the regency RPKH). This is to ensure that the management plan can be implemented. The team who develops the management plan, will all be legalized through the Governor of West Kalimantan Decree (*Surat Keputusan*, SK) to prepare the Provincial RPKH, and through the Regencies' Heads Decree to prepare the Regency RPKH. All RPKH will be consulted with public before finalization. It is expected that the provincial RPKH will be ready by Year-2, and the five regency RPKHs will also be ready by Year-2 as they will be conducted in parallel. After the high biodiversity and carbon areas are mapped out, the governments will be assisted to develop provincial and regency levels management plans. Afterwards, companies will be assisted in the development of specific management plans referring to the RPKH (as part of their HCV/HCS management plan) that can be used to support companies in fulfilling their needs to their standards (RSPO/FSC) and to help the project to identify how much remediation and/or compensation companies need to channel back to West Kalimantan community/social forests. In general, the steps in developing the management plan will be: Y2: [at province level] team formation, drafting initial RPKH based on the identified high biodiversity and carbon areas. Y2: [at province level], stakeholder consultations and needs assessment to understand the commitments and interest of stakeholders to play roles in developing and later-on implementing the RPKH. Y2: [at province level] drafting final RPKH, stakeholder consultation, and finalizing the RPKH. [at regency level] team formation. Y2: [at province level] drafting legal draft for Governor Decision, Governor Decision on the final Provincial RPKH. [at regency level] drafting RPKH based on the provincial RPKH, stakeholder consultation and finalizing the RPKH. Y3: [at regency level] legal drafting for Regent's (Bupati Decree), Bupati Decree on the final Regency RPKH.
Deliverables	This sub-activity will contribute to the project objective in strengthening institutional and regulatory framework on non-state forest lands. This sub-activity will produce, but not be limited to, deliverables as below:

	1. One report with maps of high biodiversity and carbon areas in the West Kalimantan Province. 2. One Governor Decree on the identified high biodiversity and carbon areas in West Kalimantan Province. 3. One provincial Biodiversity Management Plan (RPKH Provinsi) 4. One Governor Decree on the Provincial Biodiversity Management Plan (RPKH Provinsi) 5. Five Regencies Biodiversity Management Plans (RPKH Kabupaten) 6. Five Bupati Decrees on the Regency Biodiversity Management Plans (RPKH Kabupaten)
Justification	Many natural forest conversion-based licenses (i.e. palm oil, timber plantation) are provided for areas with high biodiversity and carbon stock that escalate the emissions from forest conversion. This happens due to the absence of one policy, and one maps about identified areas with high biodiversity and carbon stock. With the identified high biodiversity and carbon areas, policy makers can avoid giving extraction licenses to such areas, to avoid potential emissions. Policy makers and land managers can also reduce emissions by protecting and rehabilitating areas that have high biodiversity and carbon stock inside their existing concessions licenses. Hence, the potential emissions from forest conversion can be avoided, and forest-conversion from existing licenses can be reduced. This has not yet been provided, because there was no incentive for doing so: 1. For the last decade, the change from extractive economy to green economy has accelerated but was mostly driven by the private sector and not the government. 2. During the last five years, the government has started to promote more green economy instead of extractive economy. But this is gradual process. 3. This process needs to be accelerated, to avoid and reduce potential emissions from forest conversion to non-forest. 4. Although this constitutes a regulatory process, there are no specific budget allocations to identify areas with high biodiversity and carbon stock, and/or providing plans to manage these areas for government and land managers. 5. Hence, the GCF fund will be used to support the activities, with government fund as a co-fund, to support the government staffs and bureaucracy processes. As this is part of strengthening the regulatory framework, this activity becomes priority in government activity and budgeting processes. Hence, the government budget can be used as co-funding in implementing this activity.
Institutions involved (include roles)	GIZ (lead in the assessment, facilitation, and development of policy documents); Provincial (incl. FMU) and regency governments (main actors in developing the policies); MoEF and the Provincial Nature Reserve Conservation Agency (BKSDA) West Kalimantan (focal points on biodiversity assessment and strategic action plan development);
Sub-activity 1.2.1.2:	**Develop and strengthen regulations at provincial and regency levels, to govern the protection and sustainable management of the high biodiversity and carbon areas.**

Baseline	In 2019, the Governor of West Kalimantan Province has made a regulation on procedure and mechanism to conserve areas within private concessions (PERGUB 60/2019), but it was not formed as PERDA thus might be changed when there will be a change of Governor, and the regencies have no regulations on protecting areas on non-state forest-land with high biodiversity and carbon. The PERGUB 60/2019 was formed based on PERDA 6/2018 and has been issued for the fulfilment of this regulation. The assumption is that many companies did not feel enough incentivized, and the new regulation will ensure a stronger buy-in from companies through provision of incentives in certification easiness for sustainable commodities (I.e. RSPO). In return, the companies are required to commit to the protection of high biodiversity and carbon areas within their concessions.
Description	This activity will help non-state forest-lands managers (i.e. concessions holders) in having the legal foundation on protecting the high biodiversity and carbon areas in their concessions. There was a provincial regulation on procedure and mechanism to conserve areas within private concessions (Governor Regulation No 60/2019), that can be referred to in developing the Regency regulations, as the non-state forest-lands are under the Regency jurisdictions. This activity will start on Q1 of Y2 project and expected to be completed in Q4 Y4 project. In this activity, we will: 1. This project will assist the governments to form the policies teams at provincial and regency levels, legalized by Governor and Bupati's decrees in developing the policies. [Y2: Q1] 2. Through meetings, workshops, and close coordination, this project will engage with the provincial government to develop a provincial regulation (PERDA) to strengthen the Governor Regulation to ensure that changes of Governors will not affect the validity and implementation of this regulation. [Y2: Q1-Q4] 3. Through meetings, workshops, and close coordination, this project will engage with the regency government to develop regency regulations (PERDA) in at least five target-regencies in West Kalimantan province, based on the existing governor regulation and the ongoing development of Provincial Regulation (PERDA). [Y2: Q1-Q4] 4. This project will help non-state forest-lands managers (concession holders) to protect existing forest standing on their land concession by providing assistance to the companies in delineating the areas as Wildlife Corridors (*KHL*) or High Conservation Area (ABKT), or other similar terminology that align with the government's policy and regulation [Y3Q1 – Y4Q4] This project will facilitate the engagement process with government and companies, expert review, and public consultation to ensure the reliability, transparency, and acceptance of the policies at regency and provincial levels. [Y2Q1 – Y3Q4] At least one KHL/ABKT will be formed that will be covering a total of 100,000 ha forested land across West Kalimantan province.
Deliverables	This sub-activity will contribute to the project objective in strengthening institutional and regulatory framework on non-state forest lands. This sub-activity will produce, but is not limited to, deliverables as below: 1. One provincial regulation (PERDA) on protection of high biodiversity and carbon areas on non-state forest-land. 2. Five Regency regulations (PERDA) on protection of high biodiversity and carbon areas on non-state forest-land.

	3. At least one KHL/ABKT is formed covering a total of 100,000 ha forested land across West Kalimantan Province. 4. At least five companies declare commitments to protect KHL/ABKT identified in their concession land.
Justification	Providing business licenses on non-state forest-land is under the jurisdiction of Regency's head (Bupati). For non-state forest-land that still covered with standing forest, the provincial government has provided an opportunity to delineate those areas to become areas that have legal-basis for protection as Other Effective Conservation Measures (OECM). This nomenclature can be translated as Wildlife Corridor (*KHL*) or High Conservation Area (ABKT) or other similar terminology that align with the government's policy and regulation. KHL/ABKT will be identified as forest function under the Ministry of Environment and Forestry (MoEF), and under the forestry law, the management will be administered under the Provincial Government (Governor). Hence, to protect standing forests on non-state forest-land, regulations and policies on provincial and regencies levels are required. This activity has not yet been supported by the government, due to the unclear direct incentive to the economic development in the short run (<5 years), because it will limit the ability to convert forests on existing licensed land. However, in the long-term (>5 years), this will help the private sector in sustaining their businesses, as more and more markets require green economy and eventually provide more incentives to the government from income, tax, and workforce. The support from GCF is important to enable the conditions needed by the private sector in implementing sustainable businesses and providing incentives to the government to achieve its climate change commitments.
Institutions involved (include roles)	GIZ (leads the assessment, facilitation, and development of policy documents); Provincial and regencies governments (main actors in developing the policies); Private sector companies (i.e. palm oil companies); MoEF and the Provincial Nature Reserve Conservation Agency (BKSDA) West Kalimantan (focal points on biodiversity assessment and strategic action plan development);
Sub-activity 1.2.1.3:	**Increase stakeholders' capacities (i.e. companies, communities, provincial and regency governments) in implementing the management plan for high biodiversity and carbon areas within non-state forest land.**
Baseline	Many stakeholders have received trainings in many kinds, hence, we a training needs assessments (TNA) will be done to assess the improved capacities due to the trainings they already have. The capacity gaps will be checked, filled and monitored to ensure sufficient capabilities in implementing the project. A general description of existing capacities in the forest sector in West Kalimantan is available in the Annex 2a Feasibility Study section *3.2. Capacity Needs Assessment and Capacity Development Strategy.*
Description	This activity will help stakeholders in implementing the management plan for high biodiversity and carbon areas by providing trainings, generating technical guidance, Best Management Practices (BMPs) for concessions, and SOPs in management plan implementation, including safeguards documents to prevent negative impacts due to the management plan implementation. This project will also develop a framework of grievance

	mechanism to capture and provide a transparent process in implementing the management plan. There will be trainings for government officials at provincial and regency levels on implementing the RPKH province and regency, including increasing the capacity of government in understanding, identifying, and managing the high biodiversity and carbon areas and Wildlife Corridors (*KHL*) or High Conservation Areas (ABKT), or other similar terminology that align with the government's policies and regulations. There will be trainings for companies that committed to protect the forested lands within their concessions, especially oil palm companies. This project will train the committed companies to identify, manage, and implement the management plan on their HCV-HCS areas and KHL/ABKT, including the use of BMPs, SOPs and safeguards framework. There will be trainings for communities that committed to protect the KHL/ABKT adjacent to their lands including how to use and comply with the technical guidance, SOPs, safeguards, and grievance mechanism framework in implementing the management plan. This activity will start on Y3 project and is expected to be completed in Y6 project. In this activity, there will be: 1. Development of technical guidance, BMPs, SOPs, safeguards plan, and grievance mechanism. [Y3] 2. Training needs assessment (TNA) for government, companies, and communities. [Y3] Trainings for government, communities, and companies in implementing the management plan. [Y3 – Y6]
Deliverables	This sub-activity will contribute to the project objective by strengthening institutional and regulatory framework on non-state forest lands through the improvement of stakeholder capacities in policy implementations. This sub-activity will produce, but is not limited to, deliverables as below: 1. One technical guidance on implementing RPKH at the province level 2. Five technical guidance documents on implementing RPKH in five regencies 3. BMPs and SOPs on the concession's specific management plan of the RPKH 4. Safeguards framework and grievance mechanism on the implementation of the management plan 5. At least four trainings for provincial government officials, with 50 people each where 50% are women, and 50% of the participants confirm an increase of understanding for each specific training. 6. At least four trainings for each of the five regencies, 50 people each, where 50% are women, and 50% of the participants confirm an increase of understanding for each specific training. 7. At least two trainings for at least five companies, 50 people each, where 50% are women, and 50% of the participants confirm an increase of understanding for each specific training.
Justification	Many stakeholders have skills and knowledge gaps to implement a sustainable management plan. This has been identified through the years of work on the ground. Private sector and communities who manage non-state forest areas in West Kalimantan province have limited understanding and skills on sustainable land management and business practices. This situation has been illustrated through the high-rate of forest loss on non-state forest land. Some of the degraded land has been converted into agriculture, while others are left as bare land. Moreover, there are no

	incentives for companies and communities to develop and implement sustainable management plans, SOPs and BMPs. For the government, it is also important to strengthen their capacities in monitoring stakeholder practices in sustainably land management. With an increased understanding and skills for sustainable land management, they will be able to protect the high biodiversity and carbon areas in non-state forest land. This will reduce potential emissions and biodiversity loss. The training will be conducted as a series that will also include mentoring and coaching, based on the stakeholders' needs.
Institutions involved (include roles)	GIZ (lead); Provincial and regency governments (main actors); Private sector companies (i.e. palm oil companies) (main actors); Communities' groups (main actors); MoEF and the Provincial Nature Reserve Conservation Agency (BKSDA) West Kalimantan (focal points for biodiversity assessment and strategic action plan development);
Sub-activity 1.2.1.4:	**Support and monitor the management plan implementation for High Biodiversity and Carbon Areas.**
Baseline	There has been no support to identify and delineate high biodiversity and carbon areas, and there has been no support to develop and implement the management plan, hence there has been no support to monitor the management plan.
Description	As the management plan for the province and regencies will be completed in Year 2 of project, and the training to implement and monitor the management plan will be started right afterwards, the stakeholders will need supports for implementation and monitoring. The management plan for high biodiversity and carbon areas will be completed in Year 2 of the project. The training to implement and monitor the management plan will start in Year 3 of the project and be completed in Year 4. This will include the evaluation, coaching, and mentoring of the trainees. Afterwards, the stakeholders will need to implement and monitor the management plan. Here, the GCF fund will be used to support the management plan implementation and monitoring for areas managed by the government and communities. We expect the cost will be covered by the state-budget (for government monitoring and community activities) after the project ends, and by the company-budget (for companies and nearby-community activities) from the first year of management plan implementation. By doing this, the implementation and monitoring activities will be sustained beyond the project timeline. The support during the first three-years is needed to enable the necessary changes in the conditions within the government and communities; to provide enough time for stakeholder to experience the benefits of applying sustainable practices; and to demonstrate the stakeholders' capacities and capabilities in applying sustainable practices. The support will include semi-annual monitoring activities by the government, through visiting and reporting on the identified high biodiversity and carbon areas. The project will also provide support to the communities and the private sector, in preparing their management plans, such as monthly forest patrols and monitoring, and/or establishment of nurseries for degraded land restoration and rehabilitation. This support will be a needs-based approach, where stakeholders can submit their requests for support semi-annually.

Deliverables	This sub-activity will contribute to the project objective in strengthening the institutional and regulatory frameworks on non-state forest lands by providing technical-and financial support to stakeholders in implementing the management plan, based on the stakeholder needs. This sub-activity will produce, but is not limited to, deliverables as below: 1. Annual activity and financial report from the stakeholders in implementing the management plan on their high conservation value and high carbon stock areas. 2. Semi-annual monitoring reports from the government in monitoring the management plan implementation on the high conservation value and high carbon stock areas. 3. Commitment letters from at least five companies to financially support the activities set under the management plan, beyond the project time.
Justification	Previous actions to reduce emission and biodiversity loss at field level have not been particularly successful. Unclear regulations and limited understanding make climate policy implementation, including the fund to support the climate activities, for communities and the private sector generally slow. Hence, sufficient support is required to shift the stakeholders' paradigm in climate policy, particularly in government's budget allocation, private sector funds, and community participation. By provision of assistance and financial support for the first three years, funding from public (i.e. government) and private (i.e. company) will be ensured to support the protection of high biodiversity and high carbon areas.
Institutions involved (include roles)	GIZ (lead); Provincial and regency Governments (main actors); Private sector companies (i.e. palm oil companies) (main actors); Communities' groups (main actors);
Sub-activity 1.2.1.5:	**Enabling Jurisdictional Approach (JA) certification for Ketapang Regency as a replicable model to other regencies in West Kalimantan Province**
Baseline	No jurisdictional approach (JA) certification has previously been implemented in any of the regencies in West Kalimantan province. This JA certification has been piloted in Seruyan Regency, in Central Kalimantan Province.
Description	The RSPO Jurisdictional Approach (JA) to certification is an approach to minimise the negative impacts of oil palm cultivation on the environment and on society, at the scale of government administrative areas (jurisdictions), which involves a stepwise certification of the production and processing of sustainable oil palm products. JA is a framework for group certification which allocates legal requirements and authority to a Jurisdictional Entity (JE), with a multi-stakeholder governing body, which will establish an Internal Control System to facilitate full compliance with the RSPO Standards (). The Jurisdictional Approach is a new framework for RSPO, taking a larger perspective than the production unit, and incorporating the government as a key stakeholder. Hence, the government will play an important role in certification process for the regency, and also help companies and smallholders to achieve RSPO certification. Under this sub-activity, there will be four main activities to deliver the objective:

	1. FPIC process with all stakeholders to get the buy-in from companies and smallholder during the process. In this inclusive process, commitment will be obtained from the regency government to achieve 100% sustainable commodities under RSPO and RSPO approval for the regency to become a RSPO JA pilot project. This is planned to be started in Year 2 until Year 3 of the project. 2. Through expert and stakeholder consultative process, a legal analysis, a grievance mechanism, and also a management and governance system will be established to implement the RSPO JA pilot. Also, a Jurisdictional Entity (JE) will be established and the application to become a RSPO member will be submitted. This means the certification process will include all stakeholders, from smallholders to companies, whether they are RSPO or non-RSPO members. This is planned to be started in Year 3 until Year 4 of the project. 3. GIZ will support the facilitation process to conduct the initial audit process for certification of all JE's participants. This will provide cost savings for all JE's participants who are pursuing RSPO certification. This is planned to be started in Year 4 until Year 5 of the project. 4. GIZ will facilitate the full certification process, including audit by an RSPO certification body. Under this activity, also the government's role in monitoring and evaluating the JE performances will be facilitated. This is aimed at improvement of the governance and management of the JE. This is planned to be started in Year 6 of the project.
Deliverables	This sub-activity will contribute to the project objective in strengthening the institutional and regulatory frameworks on non-state forest land by providing technical support and financial support to stakeholders in implementing the management plan, based on the stakeholder needs. This sub-activity will produce, but is not limited to, deliverables as below: 1. An official letter from the regency government to produce 100% sustainable commodities under RSPO, with letters of commitment from palm oil plantations and smallholders for intended compliance with the RSPO sustainable standard. 2. A Jurisdictional Entity (JE) is legally established by the multi-stakeholder group, which has legal authority over its participants (RSPO and non-RSPO members). This includes governance, operational- and grievance systems. 3. A landscape Jurisdictional Approach (JA) assessment is conducted and RSPO JA requirements (including internal controlling system) are fulfilled, as a prerequisite for RSPO JA certification. 4. Verifications through RSPO and external audits are facilitated, and any feedback are addressed, in the process for the JE to become RSPO member and obtain RSPO certification.
Justification	Sustainable commodities certification has never been easy for companies, and even more so for small holders. Thus, there are relatively few companies that have been certified under RSPO and even fewer smallholders. The benefit of RSPO certification is preferred market access. The consequences of RSPO certification is that any potential environmental losses that were caused by companies or their predecessor need to be remediated and compensated From a governance perspective, they were not heavily involved in decision making or facilitation to ensure that all business units (palm oil companies or smallholders) do adhere to the highest standards for environmental management and sustainable commodities. This caused the perception

	that governments did not actively support business units in implementing green business, and vice versa. The government is not involved in the operation of business units. Without an inclusive approach, this constitutes a 'permissive' process where the government provides companies a lot of leeway in terms of their behaviour. If both, the business units (plantations and smallholders) and governments provide no benefits to the environment then land management will not be improved, and commodity production will be unsustainable. Thus, green business growth will not be reached. Hence, this sub-activity is needed to improve the role of the government to ensure that business units are sustainable and become catalysator for green business growth in the regencies. This landscape-, or jurisdictional approach will help to reduce costs and improve time-efficiency for business units in obtaining RSPO certification. Hence, this win-win solution will generate positive impacts to the environment in a landscape at an aggregated level. Under this project, a JA and JE will be piloted in one regency, to create a practical and replicable model for implementation in other regencies within West Kalimantan province. The Ketapang regency was selected as pilot, as it has the most oil palm plantations and smallholders in the province, and Fauna & Flora International has a long-standing social investment initiative with the private sector, communities, and the regency government.
Institutions involved (include roles)	GIZ (lead); Provincial and regencies governments (main actors); Private sector companies (i.e. palm oil companies) (main actors); Communities' groups (main actors);

5.6.4 Output 1.3. Established and implemented dedicated grant mechanism provides adequate financing and meaningful engagement for IP engaged in climate-resilient, low-emission forest and landscape management and further financing mechanisms have been assessed

5.6.4.1 Activity 1.3.1 Developing sustainable financial mechanisms to ensure meaningful engagement of IP and support climate-resilient and low emission forest and landscape management in West Kalimantan

Contribution to project output	This activity provides the necessary support to implement initiatives that directly contribute to the project's objective of reducing GHG emissions, enhancing forest ecosystem resilience, and promoting climate-resilient and sustainable land management practices. It addresses insufficient public and private funding for climate-resilient and low-emission forest and land use practices. It also includes the set-up of a dedicated on-granting mechanism to ensure that local stakeholders are able to access finance, they are fully informed, broadly participate, give consent to the planned activities and implement activities under the on-granting programme. The following sub-activities are included: • Sub-activity 1.3.1.1 Implement an on-granting mechanism focusing on Indigenous Peoples and Local Communities (IP) in West Kalimantan • Sub-activity 1.3.1.2 Elaborate strategies, policies, and procedures for one or several financing mechanisms for climate resilient agriculture and forestry

	• Sub-Activity 1.3.1.3 Implementation of the Environmental and Social Management Plan (ESMP), Indigenous Peoples Plan (IPP) and Gender Action Plan (GAP)
Envisaged results	The envisaged results of this activity include several key outcomes. First, it emphasizes and guarantees the inclusion and active participation of Indigenous Peoples (IP), recognizing their vital role in decision-making processes and promoting their engagement in sustainable development efforts. Additionally, a sub-activity will improve the project portfolios of West Kalimantan as the funding will allow the province to increase the quantity, quality and diversity of initiatives and activities. Furthermore, by facilitating and increasing cooperation with the private sector, the project seeks to address barriers that hinder access to private sector resources, fostering collaboration for sustainable development. Another important outcome is the creation of mechanisms that extend beyond the project's lifespan, ensuring continued funding flows even after the project is completed.
Sub-activity 1.3.1.1:	**Implement an on-granting mechanism focusing on Indigenous People (IP) in West Kalimantan**
Baseline	Indigenous peoples are amongst the most vulnerable to the impacts of climate change. However, there is insufficient progress and efforts to fully integrate IP in sustainable land and forest management. IP often lack financial and technical capacities to implement climate-resilient, low emission agricultural practices and sustainable forest management.
Description	The proposed grant mechanism aims to support the indigenous peoples of West Kalimantan in their efforts to protect and sustainably manage forest resources by promoting land tenure, the official recognition of *adat* communities and good local forest governance. This sub-activity allows IP to access GCF proceeds for climate-resilient, low emission agriculture, sustainable forest management and conservation and rehabilitation measures. The dedicated IP grant mechanism will follow standard operational procedures of the TERRA Fund[281] already in place within BPDLH. It will provide them with funding to secure tenure rights, strengthen their capacity to participate in decision-making processes related to sustainable and climate-smart natural resource management, and promote sustainable forest management practices including the documentation, promotion and valorisation of traditional knowledge on sustainable forest management and biodiversity conservation. The grant mechanism will be designed to be flexible and responsive to the needs of indigenous communities. This will complement other planned activities under this GCF project and contribute to the project's overall objectives. The activities to implement the on-granting programme include: • In cooperation with BPDLH, develop and agree on a Grant Manual that will be used to deliver the on-granting mechanism. The Manual will include procedures to develop, and issue calls for proposals (including eligibility and selection criteria, as well as activities eligible for grant support), procedures to appraise and select proposed projects, procedures to contract selected projects, procedures to oversee the implementation of supported projects and procedures to close and evaluate projects and portfolios. The Manual will also determine who is going to have which responsibilities in different steps of the project cycle, such that potential conflict of interest can be avoided, and such that meaningful ownership and participation of GoWK and other provincial stakeholders can be ensured. ○ In terms of eligible entities, the following will be considered, amongst others: nationally registered CSOs, Indonesian universities and R&D organizations, Indonesian business

[281] https://bpdlh.id/program/63d13b33-488e-4fa8-a5f9-377d4e8da1f3

	organizations such as associations, chambers, cooperatives, SMEs etc.) ○ The selection criteria will ensure that most vulnerable and women-led households will specifically be considered as target group of the proposals. ○ Each recipient is eligible to request an amount of up to EUR 120.000 for the respective proposal. ○ Each proposal has an approximate project duration between 6 months to 1 year. ○ A total amount of up to EUR 3.000.000 will be available to support at least 25 proposals. ○ In total, there will be 5 calls for proposals (1 per year) starting in year 2. ○ All investments made under the dedicated grant mechanism will have to comply with GIZ safeguards and exclude activities listed under Appendix 10.3. All funded proposals should fall under ESS risk category C. • Formulate and publish five calls for proposals. Outreach events focusing on IP will be carried out in each regency following the publication of a call for proposals to ensure information is well-received and relevant information is available for proposal development. For each call, proposals from eligible proponents will be appraised, selected and successful proponents contracted. The implementation of contracted proposals will be overseen and monitored (involving adaptive management, if necessary) and when activities are completed, they will be formally closed. Project portfolios will be evaluated annually. • Elaborate and distribute aggregated information at portfolio level, including lessons learned and success stories. IPs and key stakeholders will be engaged in providing inputs and feedback to independent evaluations focusing on selected projects and/or project portfolios.
Deliverables	• Detailed on-granting procedures embodied on an agreed and adopted, dedicated Grant Manual which builds on BPDLHs previous on-granting experience through the TERRA Fund and good national & international practice. • Five calls for proposals published and implemented over a time span of at least five years, along with detailed documentation for each project supported (project proposal, appraisal report, project contract, implementation and monitoring reports, project closure reports, independent project & portfolio evaluations)
Justification	IP in West Kalimantan face difficulties in the recognition of their status as “indigenous” (*adat* in Bahasa Indonesia) and later in obtaining land rights or forest use and access rights (e.g. through *hutan adat* social forestry licenses). Various government agencies need to be involved and mandatory documents prepared. These bureaucratic processes are often difficult to be tackled by these communities. As a result, indigenous communities who are effective guardians of the forest, are often displaced or negatively affected.
Institutions involved (include roles)	• GIZ Indonesia as EE will provide support in coordinating stakeholders and providing technical advice and consultants to develop the mechanism. • BPDLH will lead implementation at national level in line with the agreed Grant Manual and coordinate with MoEF to ensure a fit of the programme with established policy priorities. • The Grant Manual will include a detailed allocation of roles and responsibilities of additional stakeholders to be involved.

Sub-activity 1.3.1.2:	Elaborate strategies, policies, and procedures for one or several financing mechanisms for climate resilient agriculture and forestry
Baseline	West Kalimantan is lacking strategies, policies, and procedures for the implementation of provincial level financing mechanisms for climate resilient agriculture and forestry. Without such a framework in place, the implementation and operation of provincial level funding mechanisms faces challenges. Moreover, the deficit hinders the provincial government to attract, facilitate, channel and apply funding for example from conservation liabilities of certification schemes, public or private investments and other types that could be potentially allocated for social forestry permit holders, smallholder farmers or enterprises (SMEs and large companies) to fund their projects and programmes. Thus, especially SMEs, smallholders and IP lack the necessary access to financing for sustainable and climate resilient AFOLU practices at provincial level.
Description	This sub-activity aims to set up and implement strategies, policies, and procedures for one or several financing mechanisms that build on activity 1.3.1.1 and can be implemented beyond the project end in West Kalimantan to sustain project achievements. These strategies, policies and procedures will be designed in a way that replication in other provinces of Indonesia is facilitated. Measures taken under this sub-activity are as follows: • Identify potential private and public sources of funds that could be used to finance one or several financial mechanisms for climate resilient agriculture and forestry in West Kalimantan. • Design at least one financial mechanism for climate resilient agriculture and forestry in West Kalimantan that can be implemented before, or by project end, building on the mandates of existing institutions such as BPDLH or other suitable institutional options. Attain necessary approvals for the agreed design of the mechanism. • Elaborate detailed operational policies and procedures for at least one financial mechanism for climate resilient agriculture and forestry in West Kalimantan, such that operational policies and procedures are adopted before or at project end, include meaningful participation and decision-making at provincial level and can be replicated in other provinces of Indonesia. • Facilitate co-financing of the mechanism(s) designed by one or several development partners active in West Kalimantan.
Deliverables	• One assessment report on the potential private and public sources of funds that could be used to finance one or several financial mechanisms. • At least one financial mechanism developed for climate resilient agriculture and forestry in West Kalimantan that can be implemented before, or by project end. • Established policies and procedures at least for one financial mechanism and legalized through regulatory frameworks at provincial level. • Agreement with at least one development partner active in West Kalimantan for co-financing under the designed mechanism. • Policies and procedures regarding provincial funding mechanisms for low-emission forest and landscape management are prepared in a participatory manner with customary communities.
Justification	There are funding gaps that need to be addressed in order to effectively implement REDD+ and FOLU Net Sink 2030 initiatives. The availability of funding plays a crucial role in ensuring the successful execution of these programmes. It will allow for an increase in funding for jurisdictional REDD+ and FOLU Net Sink 2030 implementation, including forest protection, rehabilitation,

	and community empowerment. Addressing these challenges and establishing strategies, policies, and procedures for a better implementation of funding mechanisms at the provincial level is essential to ensure effective resource allocation and support mitigation and adaptation initiatives. Additionally, the implementation of this sub-activity facilitates the establishment of a scheme that enables the direct channelling of private sector resources into mitigation and adaptation activities under social forestry, smallholder farming or from sector companies. Moreover, the development of this scheme creates an environment that encourages increased engagement between the private sector and local communities, fostering further cooperation and collaboration.
Institutions involved (include roles)	• BIROEKON (Biro Ekonomi Sekretariat Daerah) and DMPTSP will lead the coordination with key stakeholders at national and provincial level to develop the mechanism. • BIROPEM will lead in the review and legalization process of policies and procedures. • PBCC, DLHK and BAPPEDA will provide technical advice in designing the mechanism. • GIZ Indonesia as EE will provide support to BIROEKON and DMPTSP in coordinating stakeholders and providing technical advice and consultants to develop the mechanism, legal drafting, action plans and capacity building. • MoHA, BPDLH and MoEF will provide technical advice.
Sub-activity 1.3.1.3	**Implementation of the Environmental and Social Management Plan (ESMP), Indigenous Peoples Plan (IPP) and Gender Action Plan (GAP), ensuring compliance with FPIC and safeguards.**
Description	This sub-activity ensures compliance with FPIC and safeguards through supporting the implementation of the of the Environmental and Social Management Plan (ESMP, FP Annex 6b), Indigenous Peoples Plan (IPP FP Annex 6c), and Gender Action Plan (FP Annex 8b). These documents have been developed based on detailed analyses (see the ESIA in FP Annex 6a, and the Gender Assessment in Annex 8a), and are in compliance with GCF's Indigenous Peoples Policy, Gender Policy
Baseline	Only in Kapuas Hulu Province a Conflict Resolution Desk was piloted by GIZ and the local government.
Deliverables	Implementation of the ESMP, IPP and GAP
Justification	See description
Institutions involved (include roles)	The PMU, and by extension GIZ as the EE responsible for the PMU, will have the operational responsibility for the GCF funding. One of its core tasks is the management and provision of financing to the implementation partners, following the project operations manual. The PMUs' safeguards and gender personnel will be responsible for the implementation of the ESMP, IPP and the GAP, and will ensure that programme implementation integrates gender actions and social and environmental safeguards.

5.6.5 Component 2: Sustainable commodity production and social forestry

5.6.6 Output 2.1. Benefitting local communities produce sustainable agricultural and agroforestry commodities, accessing new markets for sustainable products, while an M&E framework is established that measures environmental compliance and ensures the scalability as well as replicability of sustainable practices.

5.6.6.1 *Activity 2.1.1: Scaling up a sustainable land and forest-based investment business model for West Kalimantan*

Contribution to project output	By providing support in designing and expanding a sustainable land and forest based sustainable business model, the project aims to overcome barriers that impede the widespread adoption of sustainable agricultural practices. This activity includes one sub-activity: Design of a sustainable land and forest-based business model.
Envisaged results	Through the provision of support in designing and expanding a sustainable land and forest-based business model, this activity aims to facilitate and promote the engagement of investors, developers, and companies in purchasing from and investing in sustainable supply chains. This support will enable land managers to adopt and implement sustainable practices by providing them with the necessary assistance and resources. By creating an environment that encourages such investments and collaborations, the activity strives to enhance the sustainability of agricultural activities and foster the adoption of environmentally friendly practices by land managers.
Sub-activity 2.1.1.1:	**Design of a sustainable land and forest-based business model**
Baseline	The adoption of sustainable agricultural practices and certification schemes is insufficient, with not only smallholders and SMEs but also Large Enterprise (LEs) continuing to engage in unsustainable practices. This is primarily due to the absence of long-term incentive schemes and limited access to financing, which hinders their ability to transition towards more sustainable approaches. LEs face difficulties in meeting sustainability standards, as their business models often lack support from buyers and investors who prioritize certified or verified products. Independent smallholders encounter an even more challenging situation, characterized by limited knowledge, constrained access to markets, price fluctuations, governance issues, insufficient fertilizers, restricted access to finance, and a lack of necessary production tools. West Kalimantan has proven models and on-going development of sustainable agricultural practices that can improve business models of LEs and at the same time provide multiplier effect to smallholder and SMEs as part of value chains to thrive through the development of impact investment such as: • Sustainable palm oil project in Landak Regency, collaboration between IDH (technical assistance provider), PT HDL (project developer) and &Green (key investors) for the project. [282] • Coconut project in Kubu Raya, collaboration between Tropical Landscapes Finance Facility (TLFF) and ADM Capital (technical assistance provider), Lionheart (project developer) and BNP Paribas (key investors) • Rubber project in Kapuas Hulu funded by GIZ and Continental[283]
Description	This sub-activity aims to identify and support development or scaling up of sustainable land and forest-based business models. Moreover, this activity will provide support to LEs as the key actor (project developer), ensuring they have a viable business model and comply to investment requirements and link the model to financing instruments developed under sub-activity 1.3.1.2. The sub-activity will first explore sustainable land and forest business models that could be developed or scaled up and LEs engagements in Y1 to Y2. The models will be promoted to public or private finance institutions and investors and so for

[282] https://www.andgreen.fund/portfolio/pt-hilton-duta-lestari-hdl/
[283] https://www.continental.com/en/press/press-releases/20220824-natural-rubber-indonesia/

	financing models for the business models. Once the business models and its financing models (developed in sub-activity 1.3.1.2) have been structured, this project will provide technical assistance to LEs to implement business model in Y4 to Y7.
Deliverables	• At least one business model explored, including type of financial instrument suitable for the model, readiness and commitment of the project developers to further develop the model. • Letter of commitment from the developers to further develop the model.
Justification	This sub-activity focuses on creating favourable conditions for the private sector and financiers to invest in sustainable supply chains through the development of innovative business models and financing instruments. These efforts directly contribute to the project's objective of promoting sustainable practices. Furthermore, by establishing such models, the project sets the stage for long-term sustainability beyond its own duration. This ensures that the positive impacts of sustainable business practices can endure even after the project's completion, fostering a lasting transition towards more environmentally friendly and socially responsible agricultural activities.
Institutions involved (include roles)	• DMPTSP will lead the coordination of key stakeholders in exploring potential business models of SMEs and investors. • GIZ Indonesia as EE will work with DMPTSP to lead the engagement with SMEs and investors, provide technical advice and expert on investment to oversee the overall process.

5.6.6.2 Activity 2.1.2: Implementing and upscaling the adoption of proven approaches for reducing emissions and enhancing the sustainability and climate resilience of smallholders in key commodity supply chains (including agroforestry)

Contribution to project output	In West Kalimantan, the agriculture, forestry and fisheries sectors are of major economic importance, contributing EUR 2.9 million (21.24%) annually.[284] The province is the 3rd largest province in Indonesia, with an area of 14.6 million ha. West Kalimantan is one of the country's deforestation hotspots: Between 1990 and 2018 the forests in West Kalimantan declined by 27%, from 7.5 million ha to 5.5 million ha. Between 1990 and 2012 West Kalimantan showed an average deforestation rate of approx. 69,000 ha/year[285] Agriculture is a major driver of this huge forest loss in West Kalimantan. Agricultural expansion (including palm oil plantations) into rainforests is the main cause for the deforestation. Deforestation accounted for 26.2 million tCO2eq emissions in 2018, the decomposition of peat even accounted for 38.2 million tCO2eq. A lack of adequate adaptation to climate change leaves millions of farmers vulnerable to changing climate and environmental conditions. Smallholder farmers are caught in a vicious cycle: With unsustainable agricultural practices they contribute to deforestation and harmful GHG emissions. But they also lack opportunity to adopt sustainable business models to access markets with verified and certified products and they have limited access to finance to invest in the development of sustainable business models, leaving them with low productivity and income. Without breaking this vicious cycle by providing technical and financial support farmers will keep being caught exposed and vulnerable to climate change. To address these conditions, under Activity 2.1.2 measures to reduce the drivers of deforestation and forest degradation will be conducted. , These are aimed to reduce CO_2 emissions and to protect natural resources in the agricultural sector

[284] BPS-Kalimantan Barat Province. 2022. Provinsi Kalimantan Barat dalam angka 2022.
[285] Wegscheider et al. (2018): Current Achievements to Reduce Deforestation in West Kalimantan. URL: https://www.researchgate.net/publication/330218497_Current_achievements_to_reduce_deforestation_in_Kalimantan/fulltext/5c34a88e299bf12be3b6be3f/Current-achievements-to-reduce-deforestation-in-Kalimantan.pdf

in West Kalimantan. By introducing and scaling sustainable smallholder farming practices and strengthening a supportive business ecosystem the resilience of farmers and ecosystems to changing environmental and climate conditions will be strengthened. Solidaridad will work closely with governmental agencies at local, regency and province level. This will be approached through an alignment of the provincial and regency action plans with project activities, and by influencing new policies through capacity building for staff in public agencies, as well as through engagement with the Multi-Stakeholder Forums (MSF) to increase transformational capacities towards sustainable agricultural production (anchoring of project learnings in governmental authorities will ensure long-term sustainability of the project).

Under activity 2.1.2, Solidaridad plans to engage with and support the 12,000 smallholder farmers (based on field experience a dropout rate of 20% is expected, thus finally around10,000 farmers will directly benefit in full extend from the project) across the following commodities:

Commodity	# of farmers targeted
Palm oil	6,000
Rubber	2,400
Coffee	600
Cocoa	600
Tengkawang, Coconut	1,200
Pepper, Bamboo, Rattan, Sugar palm, ecosystem services (water)	1,200

This activity will be conducted through the following sub-activities:

- Sub-activity 2.1.2.1: The agricultural sector in the five target regencies in West Kalimantan (incl. agricultural supply chains and target groups) will be analysed and mapped, and hotspots and drivers of deforestation will be identified. Capacities in sustainable agriculture of farmers and cooperatives as well as local government staff will be increased, and climate-resilient business cases introduced. Farmers will be linked to financial mechanisms of financial partners to leverage finance into sustainable agricultural production of smallholders.
- Sub-activity 2.1.2.2: Market access of smallholder farmers with sustainable production will be strengthened by establishing and fostering farmer organizations and cooperatives, and by supporting farmers/cooperatives to achieve certification under common standards.
- Sub-activity 2.1.2.3: Traceability systems for different agricultural supply chains will be developed, introduced and scaled up to trace goods and products to their origin and comply with traceability requirements of sustainability standards, specific international sustainability requirements or similar legislation that may emerge during or after the project. Traceability systems will support the avoidance of deforestation and contribute to the duties of corporates to implement due diligence systems for their supply chains and to meet legal and market requirements.

Envisaged results	1) 10,000* / 70,000* Direct and indirect beneficiaries reached, including 40,000* members of the direct beneficiaries' families (four per direct

	beneficiary) and 30,000* members of indirect beneficiary communities (three per direct beneficiary). a. 10,000* beneficiaries (at least 3,000* women) adopting innovations that strengthen climate change resilience. b. 10,000* beneficiaries (at least 3,000* women) adopting improved and/or new climate-resilient livelihood options. 2) 25,000* ha of natural resource areas (in average 2.5 hectares per direct beneficiary, including HCV) brought under improved low-emission and/or climate-resilient management practices * All figures already include an estimated dropout rate of approx. 20%
Sub-activity 2.1.2.1:	**Improved capacities to implement resilient and sustainable smallholder farming**
Baseline	West Kalimantan lost primary forest of about 1,25 million ha in the two decades from 2002 to 2020. This contributes 35% of the total forest cover lost during this period. The main cause of deforestation in West Kalimantan is forest conversion to become palm oil plantation[286]. In West Kalimantan, there are 697.182 ha of oil palm plantations that are managed by smallholder[287] (880,35 ha managed under RSPO). They often lack professional farming infrastructure, do not have access to improved planting material or improvement methods, and are mostly not certified. In 2020 [23] out of 373 companies only 67 companies were ISPO certified. They constitute for a combined 308.013 ha out of the total 1.910.293 ha oil palm concessions This means that only 16,12% of concession area is managed in accordance with a sustainability standard. Indonesia has a National Action Plan for sustainable palm oil action plan, which is regulated in INPRES 6/2019 and INPRES 44/2020. Provinces and regencies are required to produce their own action plans, with many regions still being delinquent. Thus many the integration of the palm oil action plans at regency level is often still poor and there is a lack of understanding of the effects and consequences. This poor translation of national regulation into local action also happens in other commodities. Personnel in public agencies (e.g. provincial and regency estate crop agencies, extension service officers of regency extension service agencies, etc.) have insufficient capacities in sustainable agroforestry production practices. Limitation budget is an additional challenge for local governments to achieve their targets. Insufficient awareness about EU deforestation regulation (EURD) and traceability requirements on regency and province level hamper the adoption and support of improve agricultural practices. Generally, there is a lack of scientific insights in the agricultural activities in West Kalimantan as well as the hotspots and drivers for deforestation. This negatively affects the development of appropriate land use plans. Insufficient knowledge about agricultural practices leads to low agricultural productivity and low farm income and hinders smallholders to meet certification requirements. E.g., in oil palm cultivation less than 1% of farmers hold either ISPO or RSPO certification[288]. Hardly any smallholder agricultural land is registered in traceability systems, a minor fraction due to RSPO certification (880,35 ha[289]). Only about 32% of

286 https://www.mongabay.co.id/2021/10/31/dua-dekade-terakhir-kalimantan-barat-kehilangan-125-juta-hektar-hutan/
287 https://kalbarprov.go.id/berita/akselerasi-sertifikasi-perkebunan-sawit.html
288 https://kalbarprov.go.id/berita/akselerasi-sertifikasi-perkebunan-sawit.html
289 https://kalbarprov.go.id/berita/akselerasi-sertifikasi-perkebunan-sawit.html

	smallholder farmers in West Kalimantan hold a land title for their farmland[290]; Without land titles farmers do not meet the requirements to access financing mechanisms, which would allow them to invest in a more sustainable production. In West Kalimantan there is no sufficient technical support available (weak supportive business environment) to provide training and capacity building measures for introduction and upscale of more sustainable business models for smallholder farmers.
Description	Measures to increase the resilience of 10,000 smallholder farmers (and additional 70,000 indirect beneficiaries) and to avoid deforestation on 25,000 ha of smallholders' agricultural land will be implemented in West Kalimantan. For this purpose, the following intervention conditions need to be achieved: 1) Development of a strong analytical basis about the landscape and farmers' context. 2) Introduction of sustainable farmer level business cases that will improve farmers' incomes and resilience, including access to related services to scale business cases. 3) Strengthening of capabilities at the farmer and community levels to implement resilient and low emissions business models and prepare for sustainable agriculture certification (e.g. RSPO etc.). This sub-activity will be conducted through the following steps: **Step 2.1.2.1.1:** Mapping and analysis of the target groups (smallholder farmers and farmer groups), and the physical conditions (incl. forests and agricultural area) and local level climate risks and vulnerabilities of farmers in the target regencies. The following measures will be delivered in Y1, as a basic programme intervention and to obtain baseline information: • Spatial analysis (GIS) of agricultural production areas, as well as present agricultural supply chains in the targeted regencies. • Overlay of spatial data with forest status to determine levels of deforestation and forest degradation risks. • Analysis and selection of target groups (farmers and farmer groups) across target regencies and value chains, considering the target groups' capacities and interest to attend the training sessions. • Conduct sustainable livelihood assessments (human, natural, financial, social and physical) in a representative number of villages across all regencies to understand farm-level economies of commodity production. • Execute youth and gender analyses to identify structural social inclusion barriers and to identify inclusive measures. • Spatial mapping (GPS) of smallholder farm areas in different commodities, as basis for certification and traceability system implementation. **Step 2.1.2.1.2:** Climate resilient business cases for smallholders will be co-developed with smallholder farmers, aiming to diversify their farm income and introduce resilient practices. These farmers, applying climate resilient business practices, will then be linked to combined farmer service (see sub-activity 2.1.2.2) and to financial mechanisms supporting to invest into sustainable practices (see activity 1.3.1.). This step will be conducted from Y2 to Y6 and includes the following measures: 1) Develop and co-create community and farmer level adapted sustainable practices and climate-resilient business models for different value chains, including agronomy, economics, finance needs, and skills development. This activity also includes an analysis of potentials for the

[290] Solidaridad Indonesia & Center for Climate Risk and Opportunity Management Southeast Asia and Pacific, IPB University, 2022, Baseline Assessment of Solidaridad Indonesia's NISCOPS Project in West Kalimantan and East Kalimantan

introduction of agroforestry models linking to other crops (e.g. areca nut and Tengkawang)

2) Explore and link the business models to suitable access to finance instruments (e.g. existing or new SME loans by credit unions, Bank Negara Indonesia (BNI), or Bank Rakyat Indonesia (BRI)) and instruments under 1.5.
3) Support 25 farmer groups (thereof 60% from IP) to improve access to markets and finance.

Step 2.1.2.1.3: A training programme, building on Solidaridad's approaches and track record, will be rolled out to 12,000 farmers and community groups. Solidaridad will apply its Farmer Field School approach for training delivery. This training approach combines different methods and tools, such as conducting a comparative study, and exchange visits facilitated to enable mutual learning processes. The approach also includes a Training of Facilitators method that increases ownership among farmers and anchors intelligence and technical expertise within the communities, contributing to the indirect impact of the project. This step will be delivered in Y1, depending on readiness of the villages and farmers, until Y6.

Following measures will be conducted:

1) Modification of standardized and commodity specific training packages, with a variety of modules including, but not limited to:
    a. Good Agriculture Practices (GAP), Best Management Practices (BMP), Climate Smart Agriculture (CSA), agroforestry and peat management that align with regenerative agriculture principles, including e-learning approaches, building up training centers, extension models and introduction of improved planting materials.
    b. Health and Safety Environment.
    c. introduction of sustainable business models.
    d. Introduction of High Conservation Value areas.
    e. Additional training required for certification requirements of ISPO/RSPO (palm oil), UTZ (coffee, cocoa, pepper), FSC (rubber), Geographical Indication (GI), Internal Control System (ICS).
    f. Enhanced local value adding harvesting, storing & (post-harvest) processing of agricultural products to improve product quality.
    g. Introduction of business management and financial literacy.
    h. Introduction of digital technologies of the Ag. SME business.
    i. Branding and marketing approaches.
2) Development of a farmer level motivation system to increase adoption rates[291]. We will analyse and understand farmers' intrinsic motivation factors (see visual below) and build a motivation system with gamification elements to ensure farmers stay motivated until improved revenue streams will materialize.

Figure 28: Factors driving intrinsic motivation of farmers[292]

3) A training programme will be delivered to 12,000 farmers in Farmer Field Schools, to deliver trainings on improved practices, certification and traceability (see training modules above), including exchange visits of farmers and mutual learning approaches.
In the Farmer Field Schools, a Training of Facilitators approach will be conducted to capacitate lead farmers in the communities, as well staff of the Extension service agencies' and provincial/regency crop agencies' staff, as well as extension service agencies and provincial/regency estate crop agencies with technical expertise on sustainable production and farm management. Agencies' staff and lead farmers will be supported by the project with the facilitation of activities on income generating measures. These measures will further strengthen capacities in farming communities and local ownership, they will increase the capacities of governmental agencies (in GAP and BMP, in access to finance, and possibilities to reward smallholders) and ensure the long-term sustainability of the project.

Deliverables	● 25,000 ha of agricultural and forest land (farmland of direct beneficiaries) will be spatially analysed. ● Per commodity a specific climate-resilient and agroforestry model will be developed. ● Training programme designed and implemented: ○ 6,000 palm oil farmers receive training on GAP in the 7 years project duration, at least 60 % of them reach eligibility for ISPO certification process.

[292] with &Ranj - a specialized gamification company (est. 1999) and expert in the field of behavioral change. Their approach develops game-based systems that improve people's intrinsic motivation, address biases, remove obstacles and give clear feedback on actions

	○ 2,400 rubber farmers receive training and at least 60% technically qualify for certification (FSC, PEFC or IFCC). ○ In addition to palm oil and rubber, 3600 farmers of other commodities (Coffee, Coconut, Tengkawang, Cocoa, Pepper, Bamboo, Rattan, Palm Sugar) are trained and qualified for RA/UTZ certification (for some of the commodities). ○ 1,200 customary communities will receive training in agroforestry, NTFP processing and marketing. ● 25 farmer organizations (see also activity 2.1.2.2.) have improved access to finance.
Justification	The mapping of agricultural activities in West Kalimantan and the analysis of main deforestation drivers in the regions will enable prioritization and strengthening of the interventions in West Kalimantan. Capacity building for smallholders in agricultural and business management practices in the targeted regencies will enable smallholders to sustainably adapt their agricultural production, which will in turn lead to higher yields, improved climate resilience, avoided deforestation and consequently a reduction of GHG emissions. In addition to that, the sub-activity will also leverage investments into sustainable business practices in West Kalimantan.
Institutions involved (include roles)	**Solidaridad ID:** As main EE, Solidaridad ID will be responsible for all steps under this sub-activity, including mapping of regencies, facilitation of trainings and development of business models. Solidaridad ID will also work closely with regency and province governments to ensure consideration and representation of governmental strategies in the project and to ensure the embedding of project related intelligence and capacities in public and local agencies (long-term sustainability). **Financial partners:** Solidaridad will work closely with Credit Union and the national banks BRI and BNI, to link beneficiaries to their financial mechanisms as well as to create linkages to the financing mechanism developed under activity 1.3.1. For the deployment of the financial mechanisms the project will also create a linkage to the portfolio of approx. 3.000 active cooperative farmers that receive support through trainings and grants from the West Kalimantan government to embed the project with the existing structures. **Provincial + Regency Estate crop agencies (Dinas Perkebunan):** Solidaridad will work closely with provincial and regency Estate crop agencies, refer to strategic planning of provincial and regency Estate Crop Agencies, supporting government agencies to establish the forum “Perkebunan Berkelanjutan” (Sustainable Estate Crop Forum) and to implement provincial and regency action plans (if applicable), deliver capacity building to extension services through Training of Facilitators (ToF). **Extension service officers of regencies’ extension service agencies:** Solidaridad will provide trainings to local extension service officers to strengthen the agencies’ capacities and to ensure long term sustainability of the project interventions at local level. **&Ranj** - a specialized gamification through an expert company with more than 20 years of experience in the field of behavioural change. Their approach develops game-based systems that improves people's intrinsic motivation, addresses biases, remove obstacles, and provides clear feedback on actions. They will support the design of a farmer motivation system to increase climate resilient practices adoption rates. After complete development of the game-based motivation system Solidaridad ID will become the owner and operator of this system.
Sub-activity 2.1.2.2:	**Climate-resilient commodity and agroforestry scaled with improved market access**

Baseline	In West Kalimantan, there is a lack of appropriate organizational structures like business support units that could provide farmers with marketing or processing intelligence and advice. Although there are about 5,000 cooperatives registered[293] in West Kalimantan for different purposes (Village Savings and Loans Associations (VSLA), basic services etc.) only small fraction of cooperatives focus on agricultural inputs or trading of agricultural goods. Due to corruption and mismanagement in the existing cooperatives, many farmers avoid getting organized in a cooperative. Policy changes, including recent regulations on peatlands, new areas covered under moratoriums, and the No Deforestation No Peat No Exploitation (NDPE) commitment, limit production areas to licensed areas for certified and verified growers and mills. Presidential regulation (Perpes No. 44/2020) targets to have 100% of oil palm farms ISPO certified by 2025. The mandatory Indonesian Sustainable Palm Oil (ISPO) standard requires regular investment by smallholders, but support during the compliance process is limited, and tangible rewards after certification are generally not available. Only a minor share of smallholders in West Kalimantan are certified under common sustainability standards, e.g., in palm oil only less than 1 % of all smallholders own an ISPO or RSPO certificate and only 25% of plantations (>3,000 ha[294]). This is due to complicated and costly certification processes (usually certification cost USD 135 per farmer) and often due to missing land titles among smallholder farmers (about 32% of smallholder farmer in West Kalimantan hold a land title for their farmland[295]). Market demand for certified product: 60% of Indonesia CPO product is aimed at export[296]; only 14% is exported to Europe[297]
Description	To trigger and scale adoption of climate-resilient agroforestry models by farmers, market access and an improved farmer business case is crucial. Sub-activity 2.1.2.2. aims to improve market access and establish a supportive business ecosystem (incl. needed services and inputs, marketing and processing support units), to the target farmers and local small and medium enterprises, 25 cooperatives and ten support units (to be established). The supportive business ecosystem will benefit the businesses of at least 10,000 farmers, as well as 25 cooperatives, who will be supported to achieve certification under common standards to ensure sustainable practices and to access regulated sales markets. This activity will be implemented in close combination with **step 2.1.3.1.2** national and international networks and partnerships with companies to ensure farmer access to markets. The 2.1.2.2 step will be delivered in Y2 to Y6. This sub-activity will be conducted through the following steps: **Step 2.1.2.2.1:** farmers will be supported to **establish farmer cooperatives, community business groups** and **marketing support units.** This will include internal organization structures & procedures and integration of good governance and financial management principles. Key measures are: • Assessment of existing farmer groups to determine needs for further interventions on farmer group model (GAPOKTAN, cooperatives). • Formation of 25 farmer cooperatives, support the establishment of legal entities, provision of technical assistance on developing an Internal

293 Dinas Koperasi UKM Provinsi Kalimantan Barat (2023): Laporan Perkembangan Koperasi UMKM. URL: https://dev-data.kalbarprov.go.id/dataset/6c75bfa2-e8ca-45e9-8a00-c18a53dcdc01/resource/a8513efa-b08e-4837-ad01-c717f6fe9327/download/laporan-perkembangan-koperasi-umkm-per-31-maret-2023.pdf
294 Dinas Koperasi UKM Provinsi Kalimantan Barat (2023): Laporan Perkembangan Koperasi UMKM. URL: https://data.kalbarprov.go.id/dataset/880948db-9835-40ff-a73e-bf722cd94931/resource/43e5e64d-8f4c-4a65-9e9b-32f9253c3f8b/download/laporan-perkembangan-koperasi-umkm-per-30-april-2023.pdf
295 SOLIDARIDAD INDONESIA & CENTER FOR CLIMATE RISK AND OPPORTUNITY MANAGEMENT SOUTHEAST ASIA AND PACIFIC, IPB UNIVERSITY, 2022, Baseline Assessment of Solidaridad's Indonesia's NISCOPS Project in West Kalimantan and East Kalimantan
296 https://gapki.id/en/news/23262/europe-still-needs-ris-palm-oil-despite-eudr
297https://journalofeconomicstructures-springeropen-com.translate.goog/articles/10.1186/s40008-020-00202-8?_x_tr_sl=en&_x_tr_tl=id&_x_tr_hl=id&_x_tr_pto=tc

	Control System (ICS) structure and procedures to meet business and legal standards. • Establishing five local marketing support units for agricultural products to strengthen local trade of sustainably produced commodities, through promotion of sustainable products to traders. • Establishment of five rubber farmer organizations and its Standard Operational Procedure (SOPs) In **step 2.1.2.2.2** farmers will be supported to gain a cultivation certificate (STDB [298]) and farmers and cooperatives will be certified under common standards, such as RSPO or ISPO for Palm Oil, UTZ/RA for Coffee, Cocoa, Pepper, FSC for Rubber etc. Financing for certification will be ensured. Solidaridad will continue to collaborate with the Directorate General of Estate Crop at the national level to provide support in meeting the ISPO goals for 2025 as outlined by the GOI. The ISPO regulation will be advocated to smallholders, the private sector and government level. Solidaridad will continue to observe, monitor and assist the development and make further adjustments. This step includes the following activities: • Exploring and allocating funding potentials to finance the certification of farmers/farmer groups. • Explore, test and scale payment for ecosystem services markets and certification systems (e.g. carbon offsetting, insetting, biodiversity markets etc.). • Supporting 4,800 farmers to achieve a cultivation permit (STDB) (at least 40% of target farmers, assuming that 25% already have an STDB) and regular coordination with relevant government agencies. • Providing support to 7,200 farmers (at least 60% of the total target farmers) and 25 cooperatives (approx. 288 farmers per cooperative, across different commodities) throughout the voluntary sustainability standard certification process, as well as through the registration process for distribution/cultivation permits. • Developing Internal Control System (ICS) on post harvesting activity.
Deliverables	• 25 farmer cooperatives (thereof 60% from IP), legal entities, provision of technical assistance on developing ICS structure and procedures to meet business and legal standards • Establishing five local marketing support units for agricultural products to strengthen local trade of sustainably produced commodities. • Establishment five of rubber farmer organization and its SOPs. • Support 4,800 farmers to achieve STDB. • Support 7,200 farmers (including IP) to get certified. • Payment for ecosystem service models tested. • Collaborating with Directorate General to support implementation and further development of ISPO.
Justification	The GCF project has a.o. the objective to promote sustainable agricultural business practices to strengthen resilience of smallholder farmers, as well as to target drivers and causes of deforestation. With this sub-activity farmers will be

298 STDB is a registration approach to register farms into a governmental system which will facilitate the support through government funds, e.g. palm oil fund.

	strengthened to produce sustainable, certified products. By developing a supportive business ecosystem in the regencies, farmers are enabled to better market their products, which will in turn improve their financial conditions. The underlying assumption is that farmers, who are enabled to make a decent living off their existing plots will not be forced to expand their cultivation areas, which in most cases – due to the given limitation of the production factor land – leads to encroachment of valuable forest areas.
Institutions involved (include roles)	**Dinas Perkebunan:** The agency will support farmers to achieve STDB/farm registration- and provide technical recommendations (rekomtek) to farmers to meet ISPO requirements. **Dinas Lingkungan Hidup dan Kehutanan:** The agency will support farmers by issuing Statement Letters of Environmental Management /Surat Pernyataan Pengelolaan Lingkungan (SPPL). This is similar to an Environmental Impact Analysis/Analisis Mengenai Dampak Lingkungan (AMDAL) letter in the private sector and part of the certification requirements. **Permit and investment Agency:** The agency will support on One Single Submission (OSS). **Dinas Koperasi**: The agency will be responsible to issue permits for cooperatives. **Notary:** Issuing legal documents required for farmer group registration. **RSPO, RA, FSC:** Certification bodies for smallholder certification. **Certification Bodies:** Auditors of the project.
Sub-activity 2.1.2.3:	**Digital systems for value chain traceability and certification, and improved access to services**
Baseline	Some companies in West Kalimantan (e.g., Wilmar, Musimmas, Astra) have developed and implemented their own traceability systems that are already verified under international sustainability standards like FSC or RSPO and integrate conservation criteria, such as HCV in accordance with the approach from the HCVRN. These systems allow companies to be compliant with their own sustainability commitments and market regulations. There are several private sector providers of tools to facilitate traceability such as GEO-T, Koltiva, or Akvo. Digital traceability systems provide a comprehensive solution to monitor and manage the flow of products, enhance accountability, and respond effectively to various challenges within supply chains.
Description	Digital connectivity and digital information exchange system are key enablers for an efficient implementation of the project and improved access to markets by smallholder farmers. Under sub-activity 2.1.2.3 product traceability systems for agricultural products from West Kalimantan will be implemented for different commodities (coffee, cocoa, palm oil, rubber, pepper, etc.), in order to strengthen the evidence base for sustainable production, support agricultural supply chains to comply with regulatory frameworks of consumer countries (e.g. international sustainability requirements) and additional market requirements (e.g. GHG protocol, Science based target Initiative (SBT), anti-corruption principles, human rights and labour conditions). New traceability systems will be scaled up among 10,000 farmers in West Kalimantan. The 2.1.2.3. step about commodity traceability will be delivered in Y2 to Y6, in parallel with training and preparation for certification process. This sub-activity will be conducted through the following steps: **Step 2.1.2.3.1:** Traceability systems will be developed and scaled up across different commodities/supply chains to comply with certification schemes and specific international sustainability requirements and any other existing or

emerging national and international legislation. The following activities will be conducted:

- Developing traceability systems for other commodities, complying with existing certification schemes and national regulations.
- Integration of traceability systems across other supply chains in certification process and into implementation support.

Step 2.1.2.3.2: GHG mitigation monitoring and reporting will be integrated into traceability systems (step 2.1..2.3.1) in compliance with Science-based Targets Initiative (SBTi) and GHG protocol (to support Scope 3 emission reduction reporting and in-setting for the private sector). It increasingly becomes an industry standard for the food and beverage industry and is a crucial basis to mobilize private sector investment supply chain decarbonization. Further potential Indonesian domestic carbon market opportunities will be explored and upcoming legislation that may enable farmer rewards for GHG mitigation outcomes. The following activities will be conducted:

- Review of methods of SBTi and GHG protocol and design of a monitoring and reporting system that aligns with private sector needs
- Assess and engage in the domestic carbon market legislation developments
- Integrating tools and practices into traceability systems and enable farmers to deliver scope 3 supply chain GHG data which is third party verifiable **and/or national carbon market requirements**.

Figure 29: Key methodological guidance for food and beverage companies to toward supply chain

- Explore and negotiate with private sector partners, farmer incentives and investment models to support supply chain decarbonization (e.g. via German Multi-Stakeholder-Partnerships (MSPs) such as FONAP or GISCO).

In **Step 2.1.2.3.3** The traceability app BENTANG SAWIT [299] owned by Solidaridad will be connected and harmonized with existing public and private database and traceability systems:

[299] Mobile Application to assess palm oil farmers in RSPO AND ISPO Certifications. Helps farmers in farm management. Helps farmers with FAQs on better agriculture practices. URL: https://play.google.com/store/apps/details?id=com.login.solidaridad.application&pli=1 (this link only works in Indonesia)

	• Optimize Solidaridad BENTANG SAWIT App (Palm Oil traceability app) to allow interoperability with existing public and private database traceability systems and to widen it for further commodities. • Link BENTANG SAWIT with existing or agreed traceability systems open to any actor active in any of the respective commodities. *Figure 30: BENTANG SAWIT App of Solidaridad*  Deploy the BENTANG SAWIT app for smallholder mapping (step 2.1.2.1.1) and capacitate governmental agencies (regional planning agencies, provincial estate crop agency, and permit and investment Agency, Cooperative agency) to manage and operate the app.
Deliverables	• Traceability systems for oil palm, rubber and other commodities are adopted. • Interoperability of app and digital systems with different reporting systems and tools. • API from BENTANG SAWIT app to public and private database and traceability systems are created. • 10,000 smallholders (prioritizing women and IP) are traced under traceability system (mapping conducted under 2.2.1). • GHG monitoring and reporting systems are aligned with national requirements and with GHG Protocol and SBTI FLAG guidance.
Justification	Traceability is a key component to ensure the application of sustainable production practices and to ensure better access to markets. It is a crucial approach to conquer deforestation in supply chains and increasingly becomes a mandatory requirement for the import of agricultural products, in particular to the European market. Therefore, more and more companies pledge to implement traceability systems and traceability becomes a quality criterion of their products. Against this background, there is an increasing demand to establish traceability systems across different agricultural supply chains, including scope 3 actors which meets international standards and thus market access can be improved.
Institutions involved (include roles)	**Solidaridad Indonesia:** Development of traceability system; provision and adaptation of traceability app BENTANG SAWIT. Solidaridad Indonesia will

	build on Solidaridad Asian Digital Team that works on a traceability systems across several countries and commodities. **Solidaridad Germany:** Leads the design of the GHG monitoring and reporting system in close collaboration with the Solidaridad Asia digital team. **Dinas perkebunan and Badan Pertanahan Nasional:** Both governmental agencies support field verification for smallholder farmer land for STDB registration. All related governmental agencies will be capacitated in managing and operating Bentang Sawit.

5.6.6.3 Activity 2.1.3: Enhancing multi-stakeholder dialogue and platform for low-emission and climate-resilient agriculture and private sector investment

Contribution to project output	In West Kalimantan, most agricultural products are neither produced sustainably nor are they certified under an internationally recognized sustainability standard. Most of the products are sold to poorly regulated markets with low, or no minimum standards regarding their impact on the climate, deforestation, or the socio-economic condition of the farmers and workers. Companies active in the agriculture often do not meet international sustainability standards, requirements for traceability, and often do not apply minimum standards for procurement and sourcing (only 18,5%[300] of agricultural supply is traceable to farm level). The national agricultural legislation does not demand sufficient minimum requirements from the private sector for sustainable production in agriculture. Multi-stakeholder Forums (MSFs) will be established on regency level to promote investments into low-emission and climate-resilient agriculture. The establishment of a regency level MSPs will also help to harmonize public sector (regency, province) with private sector objectives on environmental issues and climate change (see act. 1.3) Following the establishment of the MSPs on regency level, Solidaridad Indonesia will foster active engagement with the objective to: • Engage with public authorities to improve the enabling environment for sustainability production and to ensure the commitment of local authorities to the NDCs. • Address the current practices and ensure the private sector is aware and takes more responsibility for sustainable agricultural production and sourcing. • Building trust and partnerships among **public and private sector and civil society** for low-emission and climate-resilient development pathway at the regency level.
Envisaged results	1. 10,000* / 70,0 00* direct and indirect beneficiaries reached, including 40,000* members of the direct beneficiaries' families (4 per direct beneficiary) and 30,000* members of indirect beneficiaries (3 per direct beneficiary). a. 10,000* beneficiaries (at least 3,000* women) adopting innovations that strengthen climate change resilience. b. 10,000* beneficiaries (at least 3,000* women) adopting improved and/or new climate-resilient livelihood options.

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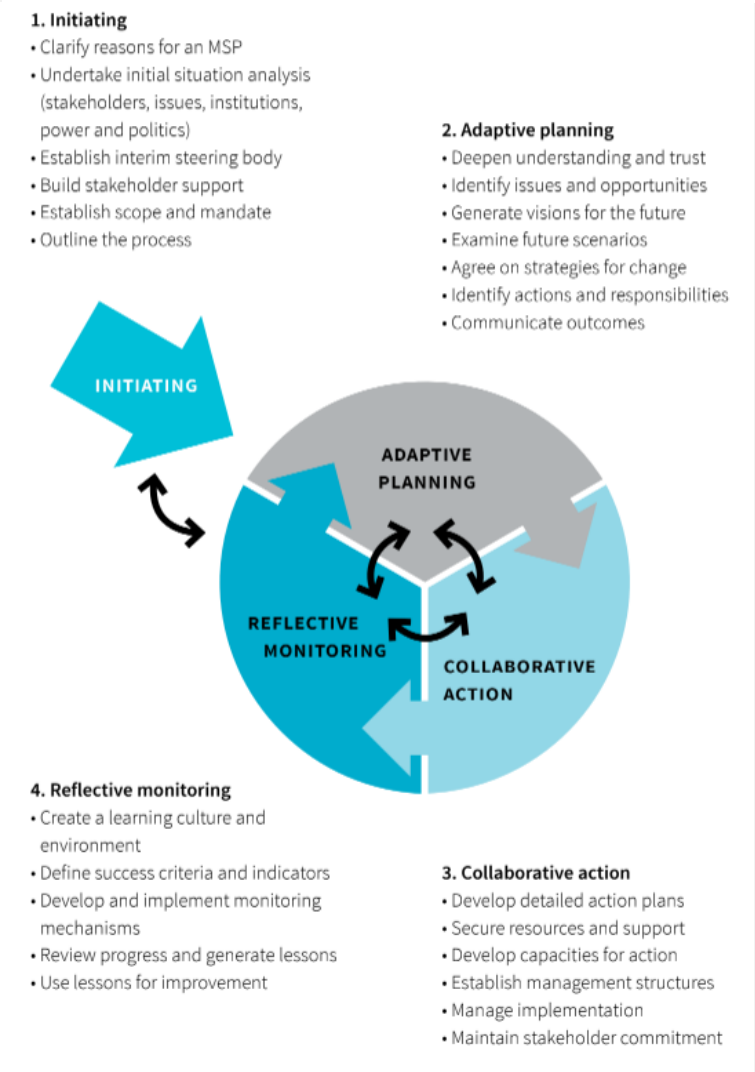
	2. 25,000* ha of natural resource areas (in average 2.5 hectares per direct beneficiary, including HCV for forest and biodiversity) brought under improved low-emission and/or climate-resilient management practices. * All figures already include an estimated dropout rate of 20% of farmers
Sub-activity 2.1.3.1:	**Establish a commodity-based platform at regency level and engage with provincial, national and international MSPs to promote dialogue on sustainable forestry & agriculture practices, investment into sustainable supply chains and sustainable sourcing practices**
Baseline	The private sector does contribute significantly to deforestation in West Kalimantan. There is still a lack of commitment from the private sector for sustainable management of forest and agricultural land. West Kalimantan is the origin of many agricultural products that are exported to all over the world (particularly USA, UK, Asia, Middle East). Only a minor fraction of West Kalimantan's agricultural products is exported to more regulated markets like Europe and therefore there is only limited market pressure for sustainable production and sourcing. E.g. out of the total 697,182 ha of smallholder oil palm plots only about 880 ha are certified under RSPO/ISPO[301]. In West Kalimantan different multi-stakeholder forums exist, such as the Watershed forum, the sustainable palm oil forum, REDD Plus working group, FKMS (Forum Komunikasi Masyarakat Sipil/Civilian community communication Forum) Forum Sabang Merah Berdompu, plus there are some Forums that were initiated by USAID SEGAR and LTKL (Lingkar Temu Kabupaten Lestari) - Sekretariat Bersama (SekBer). These forums are generally focused on single commodities and have a very particular geographical focus. Forums with a broader commodity focus and for province or landscape level do not exist. In terms of legislation for sustainable agriculture, forums only exist for palm oil, but not for other commodities like coffee, rubber, cocoa, etc. Sustainable sourcing policies of companies are uncommon and insufficient regulation, ownership and bad practices contribute to a high deforestation rate in West Kalimantan of 69,000 ha per year.
Description	Sub-activity 2.1.3.1 will focus on the transformation of business practices in the agricultural sector in West Kalimantan to abandon unsustainable practices and to stop deforestation. In close cooperation with the private and public sector, regency level Multi-Stakeholder Forums (MSFs), sometimes referred to as Multi-Stakeholder Partnerships (MSP), will be convened to work towards collaborative action plans for sustainable and climate resilient agriculture. In addition, existing MSFs at province, national, and international level will be strengthened by bringing local perspectives on sustainable production and sourcing to the agenda. By doing this, the private sector will take more ownership for the local agricultural sector and partnerships will be built. Solidaridad builds extensive experiences in the design and operation of multi stakeholder processes (e.g. MSFs in landscape approaches, Asian palm oil alliance, etc) and Solidaridad's existing work within the NISCOPS initiative **(**National Initiatives to stimulate and scale up smallholder climate-smart agriculture in oil palm landscapes). Sub-activity step 2.1.3.1 will be delivered in Y1 to Y5, depending on the preparedness of regency level stakeholders for sustainability practices in the landscape. It will be implemented in parallel with smallholder capacity building activities. This sub-activity will be conducted through the following steps: In **step 2.1.3.1.1.** a collaborative action plan for regency level platform to promote sustainable practices will be developed, through which investment, and

[301] https://kalbarprov.go.id/berita/akselerasi-sertifikasi-perkebunan-sawit.html

	trade for each commodity will be facilitated. The following activities will be conducted: 1. Mapping of any existing and running regency level commodity multi-stakeholder platforms and initiatives. 2. Where relevant, development of a collaborative and commodity-independent action plan for the institutionalization of multi-stakeholder forums (MSFs) at regency level to share and increase local ownership and to ensure sustainable production, future investment, as well as sustainable sourcing in the long term. 3. Collaborative alignment of action plan on national level policies in consultation with relevant stakeholders, ensuring the recognition of objectives and targets, as well as the role and ownership of MSFs. Based on the action plan, in **step 2.1.3.1.2** the commodity based multi-stakeholder dialogue will be established on regency level and the dialogue with existing forums at provincial, national, and international levels will be strengthened. The establishment and maintenance of MSPs will follow a structured approach:

Figure 31: MSP process logic



Source: The MSP Guide. How to design and facilitate multi-stakeholder partnerships.

The following measures will be conducted:

1. Establish sustainable commodity Multi-Stakeholder Forums at regency level 302 in collaboration with the Plantation Office (forums will later be managed by the Plantation Office) and BPDLH (at provincial level, as BPDLH will fund this activity), as a cross commodity platform in line with the national policies on sustainable commodity production and NDC commitments.
2. Engage with governmental institutions, the private sector and other relevant stakeholders at regency, provincial and national platforms (among others the sustainable commodity forum) to strengthen sector ownership for sustainable commodity production.
3. Advocate for sustainable agricultural sourcing commitments to the private sector in at least 30 MSFs events (regency, regional, national) to increase sustainable production in West Kalimantan and to create access to premium and sustainable markets.
4. Leverage financial resources from public and private stakeholders to sustain follow-up activities after the project ends (among others by

	teaming up with the Plantation Office to leverage public funding into the project). **<u>Step 2.1.3.1.3:</u> National networks and partnerships** with companies will be built for sustainable smallholder-inclusive sourcing and trading practices and agreements between producers and buyers will be promoted. The following activities will be conducted: 1. Analysis and assessment of potential local national partnerships in targeted value chains. 2. Actively attending workshops, webinars and other forums on sustainable supply chains (3-4 events and workshops per commodity and year). 3. Establish a network of agroforestry product initiatives. 4. Facilitation of five buyer workshops / fairs for premium products. 5. Engagement with the private sector at commodity and sector platforms to strengthen ten public and private sector partnerships for sustainable sourcing from West Kalimantan **Step 2.1.3.1.4: International networks and partnerships** with European companies and buyers will be built for improved and sustainable sourcing and trading policies and practices (including payment for verified scope 3 emission reduction in supply chains): 1. Engage with European companies that source commodities from West Kalimantan, build a sustainable sourcing and decarbonization strategy and ensure EU deforestation compliance. 2. Advocate for sourcing of sustainable agricultural products in at least on four events of European Multi Stakeholder Forums. 3. Leveraging additional contributions from the private sector for sector investments to ensure long term sustainability of the project.
Deliverables	▪ One collaborative action plan developed. ▪ Ten Multistakeholder Forums for sustainable commodities will be established on regency level. ▪ Active participation in at least 30 multi-stakeholder events. ▪ Ten public and private sector partnerships for sustainable sourcing are established. ▪ Five buyer workshops for premium product are established.
Justification	As stated under 2.1.2.3, The GCF project has the objective to promote sustainable agricultural business practices. Besides this, the project will also focus on the sustainable transformation of West Kalimantan's agricultural sector, by engaging with the relevant actors (traders, processors, producers etc.) via multi-stakeholder processes. The project targets to develop and promote a jurisdictional approach to implement sustainable practices among the private sector, smallholders, civil society and local governments. Part of the jurisdictional approach will be to link the sector to climate finance and to create incentives to the private sector and smallholders to start implementing sustainable practices.
Institutions involved (include roles)	**Solidaridad Indonesia**: Solidaridad ID (as well as the Solidaridad Network in general) has a long lasting and sound experience in establishing and engaging

302 Measure 1 of step 2.3.1.2 will be facilitated by BPDLH. Associated costs are reflected in the budget of BPDLH.

	in Multi-Stakeholder Platforms. The organization will lead the activities on regional and national levels. **Solidaridad Germany:** Solidaridad Germany, as part of Solidaridad Europe, has a long track record with Germany and Swiss based MSPs. With support from the Dutch colleagues, Solidaridad Germany will engage in European sector platforms (particularly on Palm (FONAP), Coffee, Cocoa). **BAPPEDA Provincial/Regency Regional Planning Agency:** BAPPEDA has the function to facilitate and manage public and private, provincial and regency level programmes. In this project they will be responsible to elaborate climate jurisdictional initiatives. **SEKDA Provincial/Regency Secretariat:** SEKDA manages many actors at the regency and provincial level (overlap with activities of BAPPEDA). They manage, control, facilitate different multi stakeholder forums. In this project they will support in engagement with MSP by sharing with them challenges and solutions. **Plantation Office of GoWK:** Solidaridad will work closely with the Plantation Office in the newly established sustainable commodity MSPs at regency level. It will be led by the Plantation Office, to leverage government funding into the project to enable continuation of capacity building measures. The Plantation Office will also support the facilitation of partnerships between private sector, the public sector and smallholder farmers.

5.6.6.4 Activity 2.1.4: GRASS - Greening Agricultural Smallholder Supply Chains in Kapuas Hulu

Contribution to project output	The project aims to improve the livelihoods and resilience of smallholder farmers at the basis of global supply chains and will target independent estate crop smallholder farmers in Kapuas Hulu district, West Kalimantan (focus on rubber, oil palm, cocoa, and coffee). The project will develop and/or test, and implement digital and other approaches, tools and procedures supporting sustainable, climate-resilient smallholder agriculture in selected sub-districts in Kapuas Hulu. Successfully tested approaches, tools and procedures will be promoted proactively and made available for up-scaling at the provincial (West Kalimantan) and national levels, in cooperation with other projects and development partners. The GRASS project contributes to the overall BMZ "Forest and Climate Protection" programme in Indonesia, by reducing deforestation for agricultural land by the targeted smallholder farmers. To increase the resilience of estate crop smallholder farmers to negative external impacts, e.g., from global market price fluctuations or from impacts of climate change, the project will advise, and strengthen the capacity of, the targeted smallholder farmers in aspects of sustainable and climate-resilient agricultural practices, including integrated farming, intercropping/agroforestry, permaculture, and regenerative farming. Agricultural extension staff from the government, civil society, and private sector will be targeted to include the aspects of resilience and sustainability in their support of smallholder estate crop farmers. The project approach will include the use of field-tested e-learning and blended learning formats for sustainable, climate-resilient smallholder agriculture, and will actively promote successful concepts and approaches at the provincial and national levels. The activity contributes directly to "Output 2.1: Trained and enabled local communities are able to produce sustainable agricultural and agroforestry products, with access to new markets for sustainable commodities".
Envisaged results	The overarching goal of the GRASS project is living conditions of the poor rural population have been sustainably improved through the protection of natural habitats and sustainable forest management, with the project objective of

	improving economic and environmental resilience of smallholder farmers, including links to global supply chains, for selected communities in Kapuas Hulu district. To achieve the project objective, the GRASS team will address the following Outputs: 1. The skills of smallholder farmers, agricultural extension agents and model farmers for the implementation of resilient smallholder agriculture have improved, 2. Smallholder farmers' market access to local and global supply chains has improved, 3. Proven concepts for resilient smallholder agriculture and sustainable supply chains are available to local and provincial government authorities for development and spatial planning, and 4. Field-tested approaches to promote the resilience of smallholder farmers are available for upscaling.
Sub-activity 2.1.4.1:	**GRASS - Greening Agricultural Smallholder Supply Chains in Kapuas Hulu**
Baseline	The regency of Kapuas Hulu is still heavily forested: 74% of the total area is designated as primary and secondary forests and about 57% of the forest is protected. The regency government recognized this as an opportunity and declared Kapuas Hulu a conservation regency (Kapupaten konservasi) in 2003 and was recognized by UNESCO as a Man and Biosphere reserve in 2018. The population of Kapuas Hulu, especially indigenous Dayak and Malay communities, consists largely of small-scale farmers and households dependent on forest products. In addition to rice and vegetables for self-consumption, cash crops such as natural rubber, palm oil, coffee, cocoa, or kratom, which has now been made illegal by the national level, are produced. Other sources of income include hunting, gathering of forest products (such as rattan, illipe nuts) as well as seasonal work on plantations, in mining, and on construction sites, with most workers earning less than the state-set minimum wage, which was $244 per month in Kapuas Hulu in 2022. A percentage of 8.59% of the population in the regency of Kapuas Hulu lives below the national poverty line. The size and remoteness of the regency, which has a very low population density (9 people/km²) and poor connectivity to off taking markets, as a result of the great distance to the nearest port (Pontianak, 12-15 hours by car), as well as few feeder roads from villages to main roads restrict the competitiveness of products from Kapuas Hulu. Due to the length of its meandering characteristics and the associated long transportation times the Kapuas River does not offer an alternative for the transport of perishable agricultural products. At the same time, poor internet and mobile phone coverage hinders the mobile use of internet-enabled devices. Despite the many outlined challenges, Kapuas Hulu has the potential for a transformation to a productive, diversified, and resilient rural production due to its favourable natural conditions and very high (agro-)biodiversity. The local government has positioned itself politically through the designation of the UNESCO biosphere reserve and intends to address the improvement of the living standards of the rural population by promoting agroforestry production systems and improving the ecological and economic sustainability of small-scale production. The reasons for the vulnerability of smallholder farmers are caused, on the one hand, in their lack of knowledge about ecologically more resilient cultivation methods. In addition, they have poor access to local and global markets due to their lack of entrepreneurial skills, poor networking networks with lucrative buyers, weak capacities of their producer organizations and insufficient quality of their products. Another reason for the lack of resilience of the target groups is

	the one-sided orientation of the strategies by government authorities towards promoting the maximization of yields from monocultures through the high use of external inputs (fertilizers, pesticides) without addressing the ecological and economic consequences of this production method. So far, there exist no field-tested, locally validated approaches to improving the resilience of smallholder farms in the target region. These causes can be changed through the planned activity.
Description	2.1.4.1.1 Capacity development of smallholder farmers and extension agents • 1,100 farmers (of which 30 % are women) have been qualified to practice resilient and diversified farming • 100 agricultural staff and/or champion farmers (of which 30 are women) have been qualified successfully to provide extension services in resilient smallholder farming 2.1.4.1.2 Strengthened market access and market position for smallholder farmers (in alignment with activity 2.1.2). • 250 independent smallholder palm oil farms have been ISPO and/or RSPO certified • Three case studies that document a resilient production by smallholder estate crop farmers with improved market access for produce other than their main cash crop have been elaborated 2.1.4.1.3 Sharing of knowledge and tested concepts with government (in alignment with activity 1.1.1, 1.1.2, 1.1.3 & 2.1.3) • 4 successful concepts and/or practices of resilient smallholder farming have been discussed with relevant governmental stakeholders at district, provincial, and national level • 3 examples of thematic plans at community / village level have been provided to the local government authorities as input to development and spatial planning 2.1.4.1.4 Upscaling and dissemination of successful digital approaches and tools (in alignment with activity 2.1.1) • 3 digital tools and 3 e-learning formats have been field-tested with participation by the target group • Field-tested approaches on resilient smallholder agriculture have been presented at 10 upscaling events at local, provincial, national, and international levels
Deliverables	2.1.4.1.1: - 1.100 (30% women) farmers trained - 100 (30% women) trainers of trainers trained 2.1.4.1.2 - 250 oil palm smallholders are ISPO/RSPO certified - 3 case studies for resilient production 2.1. 4.1.3

	- 4 concepts or proven practices - 3 thematic plans 2.1.4.1.4 - 3 digital tools and 3 e-learning formats - Field-tested approaches upscaled in 10 events
Justification	Smallholders in Kapuas Hulu Regency are highly vulnerable due to fluctuations in world market prices due to the one-sided promotion of rubber and palm oil. At the same time, current cultivation methods endanger natural resources and make smallholders vulnerable to pests and diseases in their agricultural products, as well as to the effects of climate change. The currently practiced production methods for natural rubber and palm oil are not only vulnerable to economic and ecological risks, but potentially contribute to climate change through further deforestation. The activity directly addresses the necessary improvements in terms of this ecological, economic and climate related vulnerability of smallholders. The activity's goal is: The climate resilience of smallholders at the base of global supply chains is improved in the Regency of Kapuas Hulu.
Institutions involved (include roles)	- Executing Entity: GIZ, in close alignment with and supported by Solidaridad - Political Partner: Ministry of Agriculture (MoA) - Important implementation partners include: 1. Both the local government of Kapuas Hulu and the downstream authorities of the MoA at provincial and regency levels. 2. At the provincial level, the project coordinates closely with the Provincial Agency for Estate Crops and Livestock. 3. At the regency level, activities are implemented with the Agency for Agriculture and Food and the Division for Estate Crops. - Intermediaries to reach the target groups include: 1. Producer and marketing communities of smallholders; 2. NGOs that support sustainable agricultural production; 3. Private agribusiness companies, as buyers of plantation crops and agricultural raw materials; 4. Universities (Polytechnic University in Putussibau, Tanjungpura University in Pontianak), which support the development of content and implementation for smallholders. 5. Providers of business-related services, especially in the areas of agricultural consulting and ICT-based support instruments for supply chains, in financial basic education, in the promotion of the entrepreneurial orientation of smallholder businesses, and in certification. 6. Experts and leaders of government agencies at Regency and provincial levels.

5.6.6.5 Activity 2.1.5: (NI-SCOPS II): The National Initiatives for Sustainable and Climate-Smart Oil-Palm Smallholders II - Improving sustainable landscape management and smallholder palm oil market inclusion

Contribution to project output	The National Initiatives to stimulate and scale up smallholder climate-smart agriculture in oil palm landscapes (NI-SCOPS II) represents a long-term engagement between key palm-oil producer and consumer countries and

	complements market-driven, supply-chain initiatives in palm-oil producing countries. It envisions to facilitate joint action by governments, the private sector and civil society in developing climate-smart palm-oil landscapes that are capable of improving the lives of the smallholder farmers who work those lands. The development of these key partnerships is based on mutually agreed frameworks of sustainability. The most likely route to achieving significant growth in international sustainability requirements' compliant palm-oil supply, is by working with all smallholder farmers through engagement with the national standards in Indonesia as well as with key consuming regions such as Europe. With smallholders already providing one-third of the global oil supply – NI-SCOPS Phase II has the potential to make a significant and lasting sustainability improvements in palm oil production globally.
Envisaged results	Solidaridad expects 15,000 ha of SHF oil-palm plantations to be under climate-adaptive practices in Indonesia by the end of the project.
Sub-activity 2.1.5.1:	
Baseline	Even though deforestation due to oil-palm cultivation has declined in Indonesia, the risk remains. Based on Ministry for Forestry and Environment /Kementerian Lingkungan Hidup dan Kehutanan (KLHK) data, there are 144 million ha of state forests and 95.6 million ha still with forest cover in Indonesia, comprising 50.9% of the total Indonesian land area. The total palm-oil area developed in state forests is around 3.5 million ha (including illegal plantations). Government policies regulating land use are in place, but their implementation is plagued by challenges. The deforestation process is complex, involving market incentives from palm oil, governance and political support to occupy land. Communication about forest boundaries often does not reach SHFs, especially those in remote areas where sustainable forest management is not fully implemented. Although the Forest Management Units (FMUs) are officially tasked with implementing the regulations in the field, they often lack the capacity and (digital) tools to map and monitor protected areas; moreover, enforcement is not within their mandate, adding an additional layer of complexity. SHFs, communities and forest authorities need support to implement the regulations and to protect both forests and livelihoods. SHFs face long supply chains from farm to mill. Transport infrastructure is often poor, meaning oil-palm FFBs reach the mill in poor condition, leading to reduced prices. Smallholder-produced FFBs often reach the mills from several collection points, usually aggregated because SHFs have no means of bringing their small quantities of FFBs to the mill themselves. The quality of FFBs declines rapidly post-harvest, so the longer these take to reach the mill, the lower the quality and therefore the potential sale price. Also, SHFs' informal contact with mills reduces their bargaining power. The mills used by SHFs do not trace supply, meaning that without external support, SHFs will be excluded from future supply chains that must meet forthcoming traceability requirements, such as international sustainability requirements. The mandatory Indonesian Sustainable Palm Oil (ISPO) standard requires regular investment by SHFs to maintain certification, but support for SHFs in meeting and maintaining compliance requirements, as well as rewards after certification, is generally not available or well arranged. In order to help SHFs with compliance and to strengthen standards, engagement with SHFs, the Indonesian government and the private sector is needed. In NI-SCOPS Phase I, extensive work was put into embedding and aligning the programme with international and national policies, such as NDCs and forestry policies. Strong partnerships with provincial and regency governments were established in all project locations, giving SHFs access to finance and key agricultural inputs, such as fertiliser and good-quality seedlings. NI-SCOPS also supported stakeholders to improve sustainable practices in the

	palm-oil sector through Climate-smart Agricultural Practice (CSAP) and engaging at all levels of the value chain, from harvest to transformation.
Description	The following overview of activities does not include the activities of IDH, but only of Solidaridad. Sub-activity 2.1.5.1a: Sustainable palm MSP's delivering on their commitments in key forest rich landscapes: • Work with the Forest Management Units (FMUs) to map and monitor forest encroachment and implement national policy (also on forest restoration). • Support farmers in production forest areas to convert to agroforestry. • Train farmers on sustainable, climate resilient oil palm production. • Support farmers with replanting oil palm with certified seedlings. • Help farmers with farm registration to obtain land legality. • Work with MSPs to make Sustainable Management Plans for community landscape for natural resource management and sensitise farmers on importance of sustainable management, forest protection and restoration. Sub-activity 2.1.5.1b: Investment and sourcing secured from partner companies in sustainable agriculture and forest restoration • Expand Henkel partnership linking international supply chain to smallholders via mills. • Create additional partnerships to link (international) supply chain actors to smallholder farmers. • Strengthen mapping, traceability and monitoring of land use (avoided deforestation, agroforestry, regenerative agriculture) • Carbon emission reduction and possible carbon capturing, growing towards PES. • Partner with mills to ensure uptake of sustainably SH produced palm oil. Sub-activity 2.1.5.2: Farmer empowerment and training to increase yields, climate resilience and gender inclusivity • Train farmers on i.e. GAP, CSA, bargaining power, financial literacy, diversification and agroforestry business models. • Support smallholders with obtaining ISPO certification. Where possible, support will be provided towards RSPO certification. • Support farmer groups to form Village Savings and Loans Associations (VSLAs) and build capacity to run the VSLA independently. Sub-activity 2.1.5.3: Dialogue, brokering and de-risking of SH sourcing by international companies, in Europe and Asia • Partnerships with mills to link to international supply chains. Sub-activity 2.1.5.4a: Advice and insights on delivery of SH inclusive traceability with producer governments, companies and the EU • Test traceability system with mills linked to SHFs. Sub-activity 2.1.5.4b: Purpose-driven convening and dialogue with producer and consumer governments

	• Joining the Sustainability Workshop Forum and other (inter)national events on sustainable palm oil. • Support the revision of ISPO in 2025, to advocate strongly for alignment with other (international) standards and requirements.
Deliverables	▪ Trainings for SHF on i.e. GAP, CSA, bargaining power, financial literacy, diversification and agroforestry business models. ▪ Registration of farmers' land titles ▪ Establishment of private sector partnerships ▪ Create market uptake on international markets ▪ Test traceability system
Justification	West Kalimantan, Central Kalimantan and East Kalimantan are the top three provinces with oil-palm plantations by hectares, representing 29.74% of total oil-palm plantation nationally. They contribute almost a third of Indonesia's 52 million tons of crude palm-oil production. In 2021, Indonesia reported the loss of 1,575,442 ha forest area as result of deforestation, mainly in Kalimantan, Sumatera and Papua Island, with Kalimantan, which has very limited non-forest area, reporting the largest deforestation (654,663 ha). Land-tenure disputes between indigenous (Dayak) and transmigrant SHFs and private plantations occur frequently. It is therefore crucial to work with indigenous communities, Forest Management Units (FMUs) and local authorities to balance forest conservation and restoration with the livelihoods of smallholder communities.
Institutions involved (include roles)	Solidaridad Indonesia: Main implementer IDH: Main implementer

5.6.7 Component 3: Management, protection and rehabilitation of forest and peatland ecosystems

5.6.8 Output 3.1. Capacitated FMUs and private sector actors incentivized to engage in implementing climate informed protection and sustainable management of forest and peat ecosystems

5.6.8.1 Activity 3.1.1: Supporting Forest Management Units (FMU) in the development and implementation of climate-informed forest management plans, including fire management.

Contribution to project output	Activity 3.1.1 includes a set of sub-activities to support FMU organizations to overcome the new regulatory challenge with the enaction of UUCK 2020 (now UU 6/2023). With the Law in force, the role of FMU organizations is limited to organizational management, namely planning, organizing, monitoring and controlling. Forest utilization activities can only be carried out by forest managers (PBPH and SF permit holders). This activity focuses on building capacities in FMU organizations to ensure the sustainable management of 6.5 m ha in FMUs. The FMU organizations are a crucial facilitator for enabling forest managers to manage their business models moving forward towards sustainable and climate-resilient forest and landscape management of West Kalimantan. With this importance at site level, this activity intervention will include 17 FMUs (ten FMUs in the five target Regencies and seven FMUs in seven Regencies beyond the project's core target region). Support will be provided to the FMU organizations in developing climate informed RPHJP and capacity building (sub-activity 3.1.1 and 3.1.2) while field activity support under sub-activity 3.1.1.2 and 3.1.1.4 will focus on ten FMUs in the five target regencies. This approach, as internally analysed by GoWK, is to

	ensure that all RPHJP are well established and fully aligned with mitigation and adaptation policies of West Kalimantan and the capacity of FMUs staff is balanced in all regions. The following sub-activities are included: Sub-activity 3.1.1.1: Development of climate-informed management plans of FMU units. Sub-activity 3.1.1.2: Supporting FMU organizations in five target regencies to receive the status of "Effective FMU organization". Sub-activity 3.1.1.3: Capacity building for FMUs to implement climate-informed RPHJP and RPHJPd. Sub-activity 3.1.1.4: Support FMU organizations in five target regencies in implementing climate-informed RPHJP and RPHJPd through the development of information systems and enhanced forest management practices.
Envisaged results	Through the provision of support for FMU organizations, the envisaged results of this activity include several key outcomes. First, this activity will establish the alignment between forest management plans at site level with mitigation and adaptation policies in West Kalimantan. Second, this activity enables FMU organizations to effectively manage the forest towards improved forest management at site level with various community livelihood empowerment interventions, conflict resolution, integrated area development and enhanced forest protection activities and infrastructures. Lastly, with an improved capacity, FMU organizations will contribute to regional income by better supporting implementation of improved business models of forest managers which will lead to an increase in payment of non-tax revenues.
Sub-activity 3.1.1.1:	Development of climate-informed management plans of FMUs
Baseline	Production forests and protection forests as part of state forests are managed at the site level by FMU organizations, which are Regional Technical Implementation Units (Unit Pelaksana Teknis Daerah / UPTD KPH). After issuance of Law 6/2023 through PP 23/2021 On Forest Management and Permen LHK 8/2021, forest utilization activities can only be carried out by concessionaires holding a Forest Utilization Business Permit (PBPH), or by holders of social forestry permits. FMU organizations are responsible for forest management, including planning, implementation, controlling and supervision and for supporting social forestry. Forest fire control is part of the forest management activities assigned to FMU organizations. An FMU organization manages FMU units (or blocks) according to their status as Production Forest Management Unit (KPHP) or Protection Forest Management Unit (KPHL). West Kalimantan has reorganized its forest management organization according to UU 23/2014 On Local Government into 17 FMU organizations, managing in total 34 FMU units (28 KPHP and 6 KPHL). FMU units have been established since 2017. Basis of the management of FMU units are Long Term Forest Management Plans or RPHJP which some of the management plan was approved between 2019 and 2021. It is valid for a period of ten years and approved by KLHK. Table 22 shows an overview on the current status of management plans. The priority regencies cover 23 FMU units in ten FMU organizations (bold script in Table 22). Seven RPHJP (six in the priority regencies) are still under preparation and for two RPHJP in Ketapang, financing is not yet secured.

Table 22: Overview FMU Organizations, FMU Units and status RPHJP in West Kalimantan as of May 2023 (source DLHK)

No.	FMU Organization	FMU Status	FMU Unit	Approval Year RPHJP
1	KPH Melawi	KPHL	XIII	2019
1	KPH Melawi	KPHP	XXII	2020
1	KPH Melawi	KPHP	XXIII	2022
1	KPH Melawi	KPHP	XXIV	2022
2	KPH Sambas	KPHP	I	2020
3	KPH Kapuas Hulu Selatan	KPHP	XXI	2020
4	KPH Kapuas Hulu Timur	KPHL	XX	2021
5	KPH North Kapuas Hulu	KPHL	XIX	2021
5	KPH North Kapuas Hulu	KPHL	XVIII	2019
6	KPH South Ketapang	KPHP	XXIX	not yet budgeted
6	KPH South Ketapang	KPHP	XXX	2020
6	KPH South Ketapang	KPHP	XXXI	Preparation Process
6	KPH South Ketapang	KPHP	XXXII	2020
7	KPH North Ketapang	KPHP	XXVI	2020
7	KPH North Ketapang	KPHP	XXVII	not yet budgeted
7	KPH North Ketapang	KPHP	XXVIII	Preparation Process
8	KPH Kubu Raya	KPHP	XXXIII	2019
9	KPH Sintang Timur	KPHP	XIV	2020
9	KPH Sintang Timur	KPHP	XV	2019
9	KPH Sintang Timur	KPHL	XVI	Preparation Process
9	KPH Sintang Timur	KPHP	XVII	2020
10	KPH North Sintang	KPHP	IX	2020
10	KPH North Sintang	KPHP	X	2019
10	KPH North Sintang	KPHP	XXXIV	Preparation Process
11	KPH East Sanggau	KPHP	IV	2020
11	KPH East Sanggau	KPHP	XI	Preparation Process
12	KPH West Sanggau	KPHP	III	Preparation Process
12	KPH West Sanggau	KPHP	V	2020
13	KPH Bengkayang	KPHP	II	2020
14	KPH Landak	KPHP	VI	Preparation Process
14	KPH Landak	KPHP	VII	2020
15	KPH Mempawah	KPHP	VIII	2019
16	KPH Kayong	KPHP	XXV	2020
17	KPH Sekadau	KPHL	XXII	2019

Although some RPHJP have undergone a partial revision since 2021 in order to reflect the new legal requirements following the issuance of UU CK, they are still not reflecting Indonesia's FOLU Net Sink 2030 operational plan, respectively the provincial level plan which define priority locations and operational plans for the implementation of mitigation actions. They are aiming at the development of a low carbon, sustainable and resource-efficient FOLU sector. Moreover, adaptation actions, as defined in the Provincial Action Plan for Climate Change Adaptation

	(Rencana Aksi Provinsi Aksi Perubahan Iklim/RAP-API, see Activity 1.1), are not translated into the mid-term forest plans. RPHJP are implemented through annual management plans (RPHJPd). These annual plans are equally missing climate-informed measures.
Description	The sub-activity will support FMU organizations to transform the existing forest management plans (RPHJP) of FMU units towards climate-informed management plans by reflecting national and provincial action plans on climate change mitigation and adaptation. Fire management will also be strengthened. Responsible staff for management planning from DLHK and all 17 FMU organizations of West Kalimantan will be trained and supported with technical assistance during the revision of the management plans. The sub-activity will start with the development of a template for climate-informed management plans and annual plans (RPHJP and RPHJPd) by DLHK in collaboration with FMU organizations.
Deliverables	Templates for RPHJP and RPHJPd, developed in a collaborative approach with FMU organizations. Training courses for responsible staff at DLHK and FMU organizations. Revised RPHJP for 34 FMU units
Justification	Climate-informed RPHJP and RPHJPd are the main tool for the management of Production and Protection Forest Areas and the implementation of adaptation and mitigation activities. The establishment of new plans and the amendment of existing plans will allow FMUs in West Kalimantan to better align their activities with national and provincial strategies and plans and better coordinate and facilitate the activities of PBPH and Social Forestry permit holders in their areas. This activity will thus also strengthen the facilitation of social forestry implementation activities under Activity 3.2.1.
Institutions involved (include roles)	Environment and Forestry Agency of West Kalimantan (lead). Planning Agency of West Kalimantan (coordination with regional development plans and provincial action plan on climate mitigation). Provincial Body on Climate Change (technical advice). GIZ as EE and international and national consultants on forest management planning and climate change mitigation and adaptation.
Sub-activity 3.1.1.2:	**Supporting FMU Organizations in five target Regencies to receive the status of "Effective FMU Organization"**
Baseline	UU 6/2023 on Job Creation (Omnibus law) and derived PP 23/2021 and Permen LHK 8/2021 have shifted the roles, duties and functions of FMUs. UU 41/1999, article 21 stipulated that forest management includes four points: 1) forest governance and preparation of forest management plans, 2) utilization and use of forest areas, 3) forest rehabilitation and reclamation, 4) forest protection and nature conservation. In PP 23/2021 and Permen LHK 8/2021, forest management is limited to organizational management, namely planning, organizing, monitoring and controlling. Forest utilization activities can only be carried out by PBPH and SF permit holders. The implication on the ground is that FMUs lost their ability to manage their own business in unlicensed area and generate Original Local Government Revenue (*Pendapatan Asli Daerah*/, PAD), even though PAD would be a leverage for local government to allocate an adequate budget for FMU. As such, FMUs need to find ways to provide concrete contributions to PAD. FMU organizations must transform to become an impactful facilitator to push forest managers to improve business models. With the improved business models, it will increase PAD through non-tax revenue payment thus leverage the bargaining power of FMU for local government to allocate an adequate budget.

	Funding for FMUs is getting increasingly limited, which questions the effectiveness of FMUs to fulfil their mandate. Adequate budget, human resources, infrastructure and clarity on jurisdiction are central issues in FMU management[303]. In order to ensure that FMU can play a role as an impactful facilitator, MoEF developed a tool named Effective FMU Organizations. Effective FMUs (FMU Organization that is effective in supporting independent communities and sustainable forests) is a terminology which replaced the former "advanced FMU" (KPH Model) after the revision of the MOEF Strategy 2020-2024 in 2022 (issued with Permen LHK 1/2022). To become an Effective FMU, the status of the applicant FMU is assessed according to a technical guideline issued by the Division of Forest Utilization Plan Development under MOEF (Direktorat Bina Rencana Pemanfaatan Hutan /BRPH) through Decision No. SK.14/BRPH/PKPH/HPL.0/072022. The procedure consists of a self-assessment by the FMU, according to criteria and indicators, its verification by a team with representatives from MOHA, MOEF and DLHK and a field verification of corrective actions by a field review team from the same organizations. FMUs that achieve the required effectiveness score are stipulated an Effective FMU by an official letter from the Director of BRPH. Indonesia has a total of 339 FMU organizations which manage 549 FMU Units (350 KPHP and 199 KPHL units)[304]. Since 2020 until December 2022, 46 FMU organizations received Effective FMU status. This lacks behind the target of 65 organizations in the same period as defined in the MOEF strategy 2020-2024[305]. Currently, only 1 of the 17 FMU organizations in West Kalimantan has been stipulated Effective FMU (FMU Kubu Raya). Changes in the legal framework increase business opportunities for PBPH and social forestry permit holders. Thus, the role of Effective FMU Organizations need to be further strengthened to support PBPH and social forestry. PP 23/2021 determined two more forest areas with specific purpose apart from the Forest Area for Special Purposes (KHDTK, see sub-activity 1.1.2.3). While Forest Area with Special Management (KHDPK) are only applied in Central Java Province, East Java Province, West Java Province, and Banten Province, Forest Areas for Food Security (KHUKP) are applicable in open or degraded production forests and protection forests in all provinces. Activities include among others agroforestry, silvopasture or silvofishery.
Description	The sub-activity will support nine FMU organizations in the five target Regencies to receive the status of "Effective FMU Organization". FMU Organizations will receive capacity building and technical assistance during the self-assessment of criteria and indicators and planning and implementation of necessary amendments requested by the verification team. FMU organizations stipulated as "Effective FMU Organization" will then be supported under sub-activity 3.1.1.3 to improve the capacity to co-design viable business models implemented by PBPH and social forestry towards improved forest management at site level and concrete contributions of forestry business to regional income.
Deliverables	▪ Training courses on implementation of technical guidelines for the assessments of Effective FMU Organizations for FMU Organization staff ▪ Nine Decrees from BRPH, stipulating nine "Effective FMUs" in the five target regencies ▪ Policy dialogue with the local government about budget and human resource needs for FMU development.
Justification	Effective FMU organizations will allow FMUs to fulfil their mandate as facilitator. Hence, business models co-designed by FMUs and implemented by forest managers could generate retribution to original local government revenue and

[303] Nugroho et al. 2023
[304] Sistem Informasi RPHJP (menlhk.go.id)
[305] Permen KLHK No. 1/2022op

	thus become more attractive to receive funding from local government. This will strengthen their capacity to fulfil their mandate and the support of social forestry implementation. Business models developed under Activity 3.2.1 as partnerships with private sector entities will offer an additional window for the scaling-up of forest-based business models under Activity 2.1.1.
Institutions involved (include roles)	Environment and Forestry Agency of West Kalimantan (lead). Planning Agency of West Kalimantan (coordination with regional development plans and provincial action plan on climate mitigation). GIZ as EE and international and national consultants on forest management planning and climate change mitigation and adaptation.
Sub-activity 3.1.1.3:	**Capacity building for FMU and UPT Organizations to strengthen capacities and implement climate-informed RPHJP and RPHJPd**
Baseline	Since the establishment of FMUs in 2017, DLHK and FMUs have been struggling to establish legal frameworks ensuring their organization is well-managed, revising planning as frequent changes of regulations at national level, and allocating sufficient budget and human resource to manage 6,5 m ha of areas under FMU control. On top of that, DLHK and FMUs are still searching for effective and efficient ways for their organization. At technical aspect, forest management has been a challenge for FMUs due to low and uneven capacities between staffs, the unavailability of human resources, governance challenges, and budget limitations. At the same time, the technical units of MoEF (UPT) at province level are also struggling with low budgets and gaps in human resources and capacities.
Description	Under this sub-activity the technical capacities of the FMUs and Technical Implementation Unit under MoEF (*Unit Pelaksana Teknis*/UPT) to implement forest management will be further strengthened on thematic aspects related to organization development and technical aspects of forest management. A training needs assessment (inc. develop training modules and curriculum) will be conducted to identify gaps and training needs. A special attention will be given to improve FMUs organization and staff capacity on how to push forest managers to improve their business models. The capacity building will be targeting ten FMUs in five target regencies and seven FMUs in other regencies, as well as UPTs of MoEF. Additionally, this activity supports the capacity improvement of DLHK and FMUs on law enforcement, focusing on increasing the number of civil servant investigators to support forest protection and law enforcement. This also includes dedicated trainings on corruption prevention, building on the experiences and developed training manuals of GIZ's Corruption Prevention in the Forestry Sector project.
Deliverables	▪ Staff of 17 FMUs in all regencies trained on thematic aspects related to organization development and technical aspects of forest management, such as Climate-informed RPHJP and RPHJPd, Training on Surveillance of Timber and Non-Timber Business, SMART Patrol, Effective FMUs, GIS & Drones, Community Empowerment and Social Forestry, and Forest Protection including Fire Management Training, including training on the Danger Rating System (SPBK). ▪ 50 staff of DLHK and FMU trained and licensed as civil servant investigators (Penyidik Pegawai Negeri Sipil /PPNS), including trainings on corruption prevention. ▪ 100 staff of UPTs of MoEF at the province level are trained. ▪ Documentation of lessons learned regarding capacity development and effective FMU organization.
Justification	There are capacity gaps that need to be addressed in order to effectively implement the current role of FMU as facilitators and UPTs as technical staff of MoEF at the province level. In the current situation with the inability of most FMU to directly generate PAD from forest utilization activities, FMUs need to be able to

	find ways how they can increasingly contribute to PAD from the forestry sector, while at the same time protecting their forests. Only through sufficient available capacities of FMUs staff, RPHJP and RPHJPd can be well executed and the sustainability of activities of sub-activity 3.1.1.1, 3.1.1.2 and 3.1.1.4.
Institutions involved (include roles)	REFET will lead the capacity building activities of staff of MoEF in the province; CEFET will be involved for policy advise, e-learning and organizational development. DLHK will lead the capacity building activities for 17 FMUs. GIZ as EE and international and national consultants on forest management planning, business model development and climate change mitigation and adaptation.
Sub-activity 3.1.1.4:	**Support FMU Organizations in five target Regencies in implementing climate-informed RPHJP and RPHJPd through the development of information systems and enhanced forest management practices**
Baseline	There is no system developed for data and information exchange between FMUs and BPBD at province and regency levels, and integrated actions for both institutions in responding forest and land fires as well. With the absence of such a system, FMUs are not able to respond to ongoing fire events, due to the absence of system that can provide real time deforestation ALERT on the ground. Annual budget for 17 FMUs in West Kalimantan is USD 2,4 million (2023) to manage 6.5 m ha of FMU units. This translates into an average costs per ha is USD 0,3 for planning, coordination and reporting activities include forest protection, community empowerment, rehabilitation and coordination activities. FMUs are faced by insufficient budget to secure their area from illegal logging, forest and land fires, wildlife poaching, and other activities that lead to deforestation and degradation, including supporting 1000 ha of annual rehabilitation target of the Government of West Kalimantan in non-state forest or APL. In the FMU Kubu Raya, only USD 32K (30%) allocated in fiscal year 2022 out of USD 106K to secure 317.402 ha of forest areas, meaning that the budget per ha was only USD 0,1[306]. West Kalimantan has only seven licensed forest rangers (civil servant investigators or *Penyidik Pegawai Negeri Sipil*/PPNS) out of 30 active forest rangers, who are able to do full-fledged investigations (*penyidikan*) of criminal acts in the environmental and foresty sector (illegal logging, forest fire, wildlife poaching, etc.), but five of these rangers will retire in 2023. Forest ranger should pass investigation education and training issued by National Police Indonesia to be licensed as PPNS. PPNS of DLHK and FMU can do full investigation independently and DLHK can issue investigation/search warrants or collaborate with Quick Response Unit Forestry Police (SPORC)[307] to do full investigations. The zero-burning programme has been initiated in 2015, in such initiatives as Desa Peduli Gambut (Peat-Care Village)[308], Masyarakat Peduli Api (Fire-Care Communities) and Desa Siaga Bencana (DESTANA) which are managed by different ministries. BRGM has facilitated 90 villages under Peat-Care Village. To support these initiatives, the government of West Kalimantan issued PERDA 1/2022 on Agriculture Land Clearing with Local Wisdom. It recognizes burning method in clearing the land implemented by IP. IP need to report land clearing with burning activity before they do the activity and apply controlled burning method. The village government need to prepare a team to manage the controlled burning activities. The government of West Kalimantan has also issued PERGUB 97/2020 on Forest and Land Fires Prevention and Mitigation in response to

[306] https://kalbarprov.go.id/page/transparansi-anggaran
[307] Quick Response Unit Forestry Police (SPORC) is a tactical unit under Directorate of Law Enforcement of MoEF. SPORC is a unit that have special expertise and skills in handling forest security disturbances and law enforcement in the forestry sector.
[308] Peat Care Village aims to facilitate the development of inter village cooperation, village spatial planning, conflict resolution, recognition and legalization of rights and access, livelihood support, strengthening local knowledge, and village community preparedness in dealing with peat fires.

	INPRES 3 of 2020 on Management of Forest and Land Fires. This regulation serves as a basis for government of West Kalimantan to give administrative sanctions to land managers (written warning until permit revoke) who do not take precautionary measures against forest and land fires within their concessions. DLHK has been organizing several events to promote IAD, but these need to be further enforced to ensure key stakeholders provide concrete support for SF. IAD is an approach introduced by MoEF that aims to enhance stakeholder collaboration to foster the development of social forestry business. The outcome of IAD is improved programme budgeting and activities to support SF development as well as private sector at the province and regency (not only DLHK) levels.
Description	This sub-activity supports FMUs in implementing climate-informed RPHJP and RPHJPd. Through this funding gaps of FMU will be overcome to implement forest protection and disaster management, rehabilitation activities in APL and agroforestry, PBPH and social forestry and community facilitation, and stakeholder coordination. Support to FMU will be provided through the following measures: Development of data and information exchange system for forest protection and disaster management of FMUs. Data and information exchange system of forest management and disaster risk management will be developed between FMUs and BPBD at province and five target regencies. Strengthen law enforcement to protect FMU areas from illegal logging, forest and land fires, wildlife poaching, and other activities that lead to deforestation and degradation. To ensure FMUs have sufficient capacity to enforce environment and forestry laws including case building, investigation, prosecution, etc., the presence of civil servant investigators of FMUs and DLHK will be improved under activity 3.1.1.3. Key measures to strengthen law enforcement include support of FMUs in five target Regencies to implement forest patrol and support coordination between PPNS of DLHK and FMUs with other law enforcement institutions to build and follow up cases, investigation, prosecution, and court trial processes. Support rehabilitation activities of degraded areas in APL and establishment of agroforestry plots. This support includes the development of technical plans for rehabilitation in APL and agroforestry; conducting peat and mangrove inventory as a baseline to support the government developing peat and mangrove protection and management plan; and supporting FMUs in five target regencies in rehabilitation activities in APL and agroforestry. Improve community-based forest management practices, including improved sustainable and alternative livelihoods, climate change and disaster awareness, fire mitigation through the development of Fire Group, etc. Review the current status of business model development of SF permits in five target regencies will be supported and facilitation of business units of SF to develop a viable business model and execute their business plan will be provided. Improve stakeholder coordination and activity alignment on a landscape level (between FMUs, forestry license holders, social forestry license holders) through adapting the Integrated Area Development (IAD) approach. This sub-activity supports the development of agreement and action plans with key stakeholders of IAD in five target regencies.
Deliverables	▪ Data and information exchange systems developed and agreed between DLHK, FMUs and BPBD for disaster management, while forest protection is linked to sub-activity 1.1.4 and 1.2.4. ▪ FMU forest patrol system is integrated with SMART Patrol. ▪ Monthly salary is provided to additional five forest rangers to implement regular forest patrol (five rangers per FMU with total 50 forest rangers supported).

	▪ Tools, equipment, and vehicles are provided to support forest patrol (one unit of 4x4 car per FMU, one unit drone pr FMU, one unit of fire equipment per FMU, two units of Laptop GIS spec, one unit Signboard Fire Danger Rating per FMU, one package of office furniture at FMU resort offices). ▪ At least, 20 agroforestry plots developed in ten FMUs within FMU managed areas. ▪ At least, 5,000 seeds per FMU/year (total 250,000 seeds) planted in non-state forest areas adjacent to FMU managed areas. ▪ At least, 20 business units of SF permit are registered in OSS system and non-tax revenue is paid annually. ▪ Five IAD action plans developed or revised to support SF business practices
Justification	FMUs are the key institution to improve forest management at site level. A successful implementation of RPHJP and RPHJPd and "Effective FMU Organizations" will depend on the capacity and resource of the FMUs. On top of that, a successful implementation of programmes and activities of FMU stipulated in RPHJP and RPHJPd also will depend on how innovations and values are provided in each programme and on activities implementation.
Institutions involved (include roles)	DLHK and FMUs in five target regencies will lead the implementation of activities in RPHJP and RPHJPd. GIZ Indonesia as EE will provide support to DLHK and FMUs in coordinating stakeholders and providing technical advice and experts to implement activities in RPHJP and RPHJPd.

5.6.9 Output 3.2. Supported local communities are able to obtain land use rights and implement various social forestry schemes

5.6.9.1 Activity 3.2.1: Advancing social forestry implementation including building awareness of local communities of climate risks and risk-reduction practices.

Contribution to project output	The sub-activities under activity 3.2.1 are: • 3.2.1.1: Develop and implement SF management plans and support new SF permit proposals for local communities. This will be done by facilitating communities in securing 70 new Social Forest (SF) licenses and strengthening 30 existing SF groups covering a total of 200,000 ha of community areas. • 3.2.1.2: Develop and strengthen SF business units (KUPS) to establish, improve, and escalate market, supply chain, and value-added communities' products, including the creation of KUPS models and capital supports. This will be done by assisting and facilitating 100 KUPS to be formed and strengthened to develop investable business plans to secure sufficient funding from investors and/or off-takers. • 3.2.1.3: Capacity building for SF permit holders. This will be done by facilitating trainings to the stakeholders that will improve their capacities • 3.2.1.4: Forest restoration and rehabilitation of mangrove and peat forest ecosystems. This will be done by conducting trainings and developing detailed technical restoration plans for rehabilitation of degraded peatland and mangrove ecosystems. Around 5,000 ha of peatland and 5,000 ha of mangrove are targeted for restoration during the project duration. • 3.2.1.5: Developing climate-resilient aquaculture infrastructure for coastal communities. This will be done through coastal community capacity improvement in aquaculture and provision of

	support in establishing aquaculture infrastructure in the coastal ecosystem. • 3.2.1.6: Accelerate and enable access to potential financial streams for climate change mitigation (e.g. REDD+) and adaptation strategy, including eco-tourism, conservation commitment from private sector (i.e. RaCP), public fund (i.e. state-budget, aspiration fund), and Result Based Payment (i.e. BPDLH); This will be done by assisting communities in preparing all necessary documents needed to access different funding streams. It is targeted that at least 20 SF groups will have access to Public Fund, and/or Private Fund, and/or National Fund indicated by the signed agreements between SF groups and funders. • 3.2.1.7: Social Forestry Support Programme implemented by KfW • 3.2.1.8: Channelling dedicated GCF proceeds (under this proposal) to local communities to implement social forestry licenses and related management plans as well as climate-resilient land-use plans in PROKLIM villages
Envisaged results	1) This activity will bring implementable activities on the ground that will restore degraded ecosystems, increase stakeholder capacities in adapting to changing climate, and ensure access to different funding sources that can be used to support the long-term operational activities by the community groups. 2) Overall, there will be: 3) 200,000 ha of new and strengthened community forest licenses, 4) 100 KUPS established, investable business plans developed and investor funding secured, 5) Stakeholder capacities in different skillsets with at least 50% are women improved, 6) 10,000 ha degraded peatland and mangrove rehabilitated and restored, 7) One aquaculture infrastructure is established, and 8) 20 SF groups will have access to sufficient funding for support SF group activities across West Kalimantan Province. 9) Up to 30 villages in Sanngau supported to implement SF
Sub-activity 3.2.1.1:	**Develop and implement SF management plans and support new SF permit proposals for local communities**
Baseline	Until now, a total of 709,980 ha of land have been secured for IP under the social forestry (SF) license, with a total of 213 permits for 84,289 IP's households[309]. With more than 1 million ha of SF areas having been targeted for the province in 2020[310] and the potential SF areas identified on the Indicative Map and Social Forest Areas (*Peta Indikatif Areal Perhutanan Sosial*, PIAPS); the project needs to contribute to protect 300,000 ha of un-licensed forest areas in West Kalimantan Province. The PIAPS total target in five regencies are 539,622 ha, where 238,423 is aimed for Kapuas Hulu, 133,430 for Ketapang, 27,545 for Kubu Raya, 69,116 for Sanggau, and 71,106 for Sintang. The project will support emission mitigation from forest conversion. Through provision of legal access to natural resources livelihood options and resilience of local communities' will be strengthened. This is part of sustainable forest management practices. Since 2017, most of the SF facilitators (84%) were conducted by non-government actors (i.e. NGOs, CSOs, etc.) while only a small share (16%) was provided by the government (i.e. civil servants, Bakti Rimbawan). The

[309] https://gokups.menlhk.go.id/public/home
[310] SK.2111/MENLHK-PKTL/REN/PLA/0/4/2020

	government faces limitations in providing sufficient resources to better manage unlicensed forests, and to better assist local communities. This is one of the main obstacles in improving local communities' wellbeing and reduce emissions from deforestation and forests degradation. With only 93 registered facilitators and 213 SF permits approved across the province, the project needs to increase the number and quality of the facilitators, to enable security of 100,000 ha of un-licensed forest areas and to strengthen another 100,000 ha of SF-licensed forest areas.
Description	The government of Indonesia has committed to distribute 12.7 million hectares of land to local communities[311] to reduce rural poverty and to improve sustainable use of forest (Hajjar et al., 2016). Indonesia increased the allocation in 2021 to 14.6 million hectares, as mapped out on Indicative Map and Social Forest Area[312] , respectively through contributing initiatives during the process (e.g. TORA, BRWA). Until now, a total of 5.5 million hectares have been provided to IP through SF license.[313] Out of the 1,086,066 ha of SF target in West Kalimantan[314] , a total of 709,980 ha (84,289 household, 213 SF licenses) has been achieved in West Kalimantan Province by 2021. The data emphasizes that there are an estimated number of 40,000 households that require assistance for securing tenure (SF license) for a combined more than 300,000 ha of land in West Kalimantan Province. The government's resources to facilitate SF licenses for local communities are limited. In West Kalimantan Province, the facilitators funded by the government were less than 20% of the total.[315] Facilitators are needed not only for securing new SF licenses, but also for assisting the existing local communities in improving their governance and developing SF management plans. Moreover, facilitators are needed to assist local communities and ensuring the sustainability of the SF implementation during the license period and beyond (35 years, extendable until 60 years). In this sub-activity, GIZ will harness FPIC principles for obtaining community consent on the SF scheme. This will be done by providing sufficient and balanced information about the SF and permit scheme in Indonesia, facilitating processes for communities to represent themselves and to make a communal decision, and by providing space to communities to independently decide whether they want to pursue an SF permit and a certain SF scheme. Afterwards, the project will assist the development of SF application, preparation of participatory mapping and land use plans, and facilitate technical verification from the government to ensure the SF permit approval. This sub-activity will also assist local communities who already hold SF permits, in developing and implementing their SF management plans (RKPS). A targeted 100,000 ha of new SF permits will be supported by this project and another 100,000 ha of existing SF permit holders will be assisted, totalling in 200,000 ha of improved forest management by local communities. Based on previous experience, applicants for an SF permit need less than two years to obtain a permit. Implementation of management plans will start from Y3 onwards. The implementation will be supported by GIZ and (local) NGO partners which will be mandated for specific tasks. They are selected through an Expression of Interest process during the initial project implementation phase. The sub-activity also includes assistance of KPHs during the official application process for the issuance of SF permits and in coordination with regional technical implementation units of PSKL (BPSKL) which operates

[311] Peraturan Presiden Nomor 28 Tahun 2023 Mendorong Hutan Sosial Dengan Kolaborasi (menlhk.go.id)
[312] SK.8878/MENLHK-PKTL/RED/PLA.0/12/2021
[313] https://gokups.menlhk.go.id/public/home;
[314] SK.2111/MENLHK-PKTL/REN/PLA/0/4/2020
[315] https://gokups.menlhk.go.id/public/chart/companion;

	an office in Pontianak. The role of BPSKL is to technically verify SF permits and support KUPS (see sub-activity 3.2.2). The above-mentioned activities will be delivered directly through trained and registered high-potential candidates in the province, and indirectly through strengthening of the provincial Pokja PPS to influence more people to become facilitators. This will be valuable for local communities in getting the required assistance to secure tenure, and develop and implement the SF management plans. Before implementing this activity, it will be ensured that all the safeguards, SOPs, and procedures for this GCF project implementation are in place. Especially in delivering information and getting consent from the communities. After all necessary implementation manuals and documents are complete, a training will be offered to all partners to ensure a coherent approach and implementation. The document preparation and training will start from Q1 until Q2 of Year 1. This sub-activity will be done starting from Q3 of Year 1 until Q2 of Year 4.
Deliverables	This sub-activity will contribute to the project objective in advancing social forestry (SF) implementation for improving community resilience and livelihoods. This sub-activity will produce, but is not limited to, deliverables as below: 1) New SF licenses and/or other legal CBFM schemes with a total size of ~100,000 ha (~70 local communities) of un-licensed forest areas on high biodiversity & carbon areas are granted during project period. 2) New management plans (RKPS) for existing SF and/or other legal CBFM rights holder with a total size of ~100,000 ha (~30 local communities) are elaborated during the project period. 3) A total of 70 local communities covering around 200,000 ha (total area of deliverables 1 and 2) of SF-licensed and/or other legal CBFM scheme are assisted in implementing and reporting their SF management plans during the project period. 4) At least 40 local communities are registered as SF facilitators (local champions) under the Ministry of Environment and Forestry (MoEF), with support from the existing SF facilitators during the project time. 5) Annual reports from the Pokja PPS verify monthly coordination meetings during the project period.
Justification	Despite the huge task of providing local communities with the legal tenure they need to access and sustainably manage their natural resources, the resources from the government in facilitating the process are limited. The government has been providing policies and regulations as legal frameworks in securing tenure for local communities. The government has also provided a mechanism to ensure that the facilitation process is following the best practice methods and is respecting the rights of local communities and IP in the process. However, the government has not allocated enough budget to achieve the SF target of 12.7 million ha (now 14.6 million ha). Thus, support from non-state budget sources is required. Studies are showing the positive impacts of social forestry to livelihoods in local communities and roles in mitigating emissions from deforestation and forest degradation. This project needs to assist local communities in securing their tenure on non-licensed forest areas, and to support local communities in developing and implementing their SF management plans. Hence, the GCF fund is needed to support this project activities.

Institutions involved (include roles)	GIZ (lead); Provincial and Regencies Governments (especially KPH and Forestry Agencies), BPSKL; Communities' groups (main actors);
Sub-activity 3.2.1.2:	**Develop and strengthen SF business units (KUPS) to establish, improve, and expand their market, supply chains, and value-added communities' products, including the creation of KUPS models and capital supports**
Baseline	Since 2016, almost 500 KUPS (494 KUPS) have been established in West Kalimantan Province. Unfortunately, the majority of these KUPS (55%) do not have business unit or business plans, and less than 10% have access to capital and/or local markets, and even fewer (4%) have access to regional markets outside WK. Out of the total 51 KUPS commodities recorded from West Kalimantan, there are two main commodities that have the highest gross revenue - namely honey with IDR 378 million (EUR 22,235) and seedlings with IDR 300 million (EUR 17,647). Honey is produced by 15 KUPS, where more than half of them have access to capital and access to local as well as regional markets. The frequency of transaction is once a year, with variant transacted volume over the years. Assuming that IDR 378 million (EUR 22,235) of gross revenue were generated by one honey KUPS (29 members) since 2019, then the annual gross revenue was IDR 126 million (EUR 7,411) respectively around IDR 4.3 million (EUR 253) per member per annum. This gross revenue is too low compared to the production cost of the honey. The benefit sharing is directed at protecting the social forests. This situation reflects the challenging condition in generating meaningful income to improve IP livelihood and support the SF management.
Description	SF business unit (KUPS) are a means to ensure that SF operationalization can be supported sustainably through the revenue generated from the SF. As SF is the license for IP, KUPS is the business unit that aim to generate revenue from sustainable management of natural resources inside and around the social forest areas. KUPS is formed by local communities who have been granted rights to manage and utilize forest areas for various purposes, such as agroforestry, non-timber forest product harvesting, eco-tourism, or other sustainable economic activities. This sub-activity was designed to assist and improve communities' capacities and capabilities, to gain an understanding and establish investable social forest business units. KUPS will be facilitated and technically assisted to submit proposals for access to public finance under the Social Forestry programme, managed by BUPSHA (transferred directly to village fund) and develop markets to support the production of climate-resilient and sustainable produced forest products. It will be started by working with the same thematic KUPS and transform them to become an aggregated KUPS-group with the same (or similar) business model. It is envisioned that there will be KUPS for ecotourism, coffee, chocolate, aquaculture, and also tengkawang, among other potentials that are considered to be developed during the project implementation. A business analysis of the communities' commodities and markets will be facilitated, and gaps to improve community product market size and values will be identified. Furthermore, the existing Forest Product Marketing Center (FPMC) facility of GoWK will be advanced as a business- and marketing hub for FMU and SF products. It is estimated that KUPS will be able to grow economically and provide sufficient revenue that can be used to improve community livelihoods, and also to support the local conservation activities by communities.

	Potential commodities assessments for KUPS on Social Forests Licenses will be started in Year 1. Assistance and facilitation to develop KUPS will be started from Year 3 until Year 4. Support for KUPS will be provided for the first 2 years of the KUPS development, to ensure sufficient support in maturing the KUPS businesses. In Year 5 it is expected that the KUPS will have a sizeable and investable business, and at least one investor and/or buyers (off-takers) for their products. For Year 7 it is estimated that the KUPS will already be self-sustained, with stable production and market access.
Deliverables	This sub-activity will contribute to the project objective in advancing social forestry (SF) implementation for improving community resilience and livelihood. This sub-activity will produce, but is not limited to, deliverables as below: 1) Five business feasibility reports on potential KUPS commodities in five regencies (one for each regency). 2) A total of 100 KUPS are formed and strengthened, based on the business feasibility reports. 3) At least one aggregated-commodities business-unit is formed with an investable business plan. 4) At least one investor and/or off-taker invests into KUPS 5) FPMC facility is operatable and effectively facilitated KUPS product transactions. • Documentation of lessons learned regarding capacity development in SF.
Justification	Not many investors and/or banks are willing to invest in a community-based business units that produce small-scale (and sometime unsustainable volumes) of community products. Hence, potential investors and off-takers need to be incentivized to invest in green-field business like KUPS. By doing this, investors'/buyers' risks will be minimized, and the leverage of additional investments enabled, until the KUPS businesses are mature. The government budget, e.g. through BUPSHA, is limited and funding to support KUPS is insufficient. Hence, the GCF fund is needed to initiate the process and leveraging funding from investors and buyers.
Institutions involved (include roles)	GIZ (lead); Provincial and regencies governments (especially KPH and Forestry Agencies); Private sectors (investors, buyers/off-takers) Communities' groups (main actors);
Sub-activity 3.2.1.3:	**Capacity building for permit holders of SF and other legal CBFM schemes**
Baseline	Currently, less than 30% of SF permit holders have had trainings on forest patrol and monitoring, SF governance, agroforestry rehabilitation, etc. that are needed to ensure the highest quality of forest management. Furthermore, even fewer SF permit holder have the capacity to solve conflicts within their villages and / or promote gender justice in the decision-making processes, not to mention lack of understanding and implementation capacities in climate risk and risk reduction practices.
Description	To effectively support the development of sustainable forestry (SF) practices and other legal CBFM schemes, a comprehensive training programme should be implemented. This programme can encompass various aspects to equip extension staff and SF facilitators with the necessary skills and knowledge.

	This activity will enable at least 70 villages to have similar capacities in SF management through trainings, and comparative studies between local communities. The first step is to conducti Training of Facilitators (ToF) sessions to enhance the capacity of extension staff and SF facilitators. These sessions will focus on equipping them with the necessary training and facilitation skills to effectively transfer knowledge to the communities. Identifying commodities with a high potential in SF license areas is crucial for sustainable economic growth. Therefore, training sessions should be organized to help participants to identify and evaluate potential commodities that can be sustainably produced within SF license areas. This will enable them to make informed decisions about the types of products to focus on. To ensure proper SF management, training should be provided on SF boundary mapping and participatory mapping techniques. This will enable participants to accurately define and demarcate SF boundaries, incorporating the inputs and knowledge of local communities. Tenurial conflicts can hinder SF efforts. Hence, it is essential to provide training on conflict resolution, specifically related to tenurial disputes. This will equip participants with conflict management skills and strategies to address conflicts effectively and to promote peaceful resolutions. Given the increasing impact of climate change, it is crucial to provide training on climate risk and risk reduction practices. Participants should be educated on identifying climate-related risks, implementing mitigation measures, and adopting climate-resilient practices within SF management. To ensure gender equality and inclusivity in SF management, training sessions on gender mainstreaming should be conducted. This will focus on promoting equal participation and decision-making for both, women and men, in SF activities. Developing, implementing, and monitoring SF management plans are key components of sustainable forestry. Therefore, trainings on these topics should be provided, covering the entire process from development of the plan until evaluation. This will enable participants to effectively manage SF resources and measure progress. Training on SMART (Spatial Monitoring and Reporting Tool) Patrol is essential for effective monitoring and enforcement of SF regulations. Participants will be trained on using SMART Patrol techniques and tools to detect and prevent illegal activities within SF areas. To ensure the sustainability of SF businesses, trainings for business development and -management should be provided. This will equip participants with the necessary skills to establish and manage successful SF enterprises, including marketing-, financial management-, and entrepreneurship aspects. By implementing such a comprehensive training programme, extension staff, SF facilitators, and communities will acquire the knowledge and skills required to promote sustainable forestry practices, contribute to local economies, and ensure the long-term viability of SF initiatives.
Deliverables	This sub-activity will contribute to the project objective of improving the capacity of social forestry (SF) permit holders. This sub-activity will produce, but is not limited to, deliverables as below: 1) At least four trainings for the provincial government officials, with minimally 50 participants out of which at least 50% are women. 2) At least four trainings in each of the five regencies, 50 participants each where minimally 50% are women.

	3) At least 50% of 70 targeted SF permit holders and CBFM scheme in each regency have improved capacities in forest management, governance, forest patrol and monitoring, and are able to produce their own annual monitoring report. • Documentation of lessons learned regarding capacity development in SF.
Justification	The purpose of this training is to ensure that communities have the required capacity to manage their forests. In the first three years of this project communities will be assisted to gain the necessary capacities to manage their forest, and during the remaining project period these trained communities will demonstrate that they have the required capacities to sustainably manage their forest. The indicators to assess whether the community have the required capacity will be based on the annual reports submitted by the SF management unit and will be evaluated by the Ministry of Environment and Forestry (MoEF) through Directorate General of Social Forestry and Environment Partnership (DG PSKL). Some trainings will be funded by the MoEF, and some other will be funded from other sources, but with 1 million ha of SF areas targeted for the province in 2020 alone, there is insufficient funding to secure improved community capacities for sustainable management of their forest. Hence, support from the GCF is needed.
Institutions involved (include roles)	GIZ (lead); Solidaridad (co-lead on respective sites); Provincial and regencies governments (especially KPH and Forestry Agencies); Communities' groups (main actors);
Sub-activity 3.2.1.4:	**Restoration and rehabilitation of mangrove and peat forest ecosystems**
Baseline	PERDA 8/2021 concerning Protection and Management of Peat & Mangrove Ecosystems is the legal basis. The condition of peat and mangrove ecosystems continues to be damaged due to increased utilisation that is not in accordance with the provisions of laws and regulations. Damage to peat and mangrove ecosystems is a threat to environmental sustainability. Mangrove ecosystems, and the presence of mangroves are important to protect from marine abrasion. Mangrove damage can also be a threat to the existing peat ecosystems, because these two ecosystems are often interconnected. Based on Peatland Restoration Agency (2023), the actual realization for peat restoration in West Kalimantan Province was 119,634 hectares. 29,701 ha (24.83%) were restored in Ketapang Regency, and 48,763 ha (40.76%) were restored in Kubu Raya Regency. PERDA 8/2021 on the Protection and Management of Peat and Mangrove Ecosystems is expected to prevent damage to peat and mangrove ecosystems through good, systematic, harmonious and synergistic management of peat and mangrove ecosystems with national and regional development planning. Related to peatlands, Ketapang Regency is one of the regencies that has a high level of vulnerability and high risk of forest and land fires (karhutla). The target for mangrove and peat restoration outside of BRGM is 469,218 ha in the two regencies, Ketapang and Kubu Raya.

Description	Based on the Minister of Forestry Decree Number 733 of 2014, West Kalimantan Province has a forest area of 8,389,600 hectares, respectively 57.14% of the total area of West Kalimantan. The province has a peat area of 2,793,331 hectares, based on the Decree of the Minister of Environment and Forestry Number 130 of 2017. The peat area is divided into indicative peat cultivation functions and indicative peat protection functions in 699 villages. In addition, West Kalimantan Province also has a mangrove area reaching 161,557.19 hectares based on the National Mangrove Map spread across Bengkayang, North Kayong, Ketapang, Kubu Raya-, Mempawah, and Sambas regencies as well as Singkawang municipality. There are two main measures planned under this sub-activity. The first is to improve the coordination of key stakeholders to accelerate mangrove and peat rehabilitation in West Kalimantan Province. The second is to rehabilitate the degraded peat and mangrove areas following the latest regulation and guidance on mangrove and peat rehabilitation, including the use of multipurpose tree species. Peat and mangrove areas that need to be rehabilitated in West Kalimantan Province with a total of 119,634 ha (from the Peatland and Mangrove Restoration Agency target) and 469,218 ha (outside the Peatland and Mangrove Restoration Agency target) were identified. Under this sub-activity, the restoration of 5,000 ha of peatland and 5,000 ha of mangrove across West Kalimantan Province is targeted. Under this sub-activity, the following steps will be conducted: 1) Conduct a regular coordination meeting between the provincial forestry and environment agency (DLHK) with the Peatland and Mangrove Restoration Agency (BRGM) to synergize the support (finance and technical) from central and provincial governments, including regular update reports on the peatland and mangrove restoration activities. 2) Facilitate the development of detail technical restoration plans (including peat dam construction) on targeted areas through feasibility studies (i.e. soil, hydrology, ecology) from experts and practitioners in peatland and mangrove restoration. 3) Conduct FPIC to the impacted villages and engage with the communities to become actively involved in the restoration process to ensure long-term support from the communities in maintaining and protecting the restoration activities on the ground. 4) Facilitate training on mangrove and peatland restoration to the communities and relevant stakeholders (including provincial and regency governments) in implementing the detailed technical restoration plans, including training for the construction and maintenance of peat dams. 5) Assist and support communities to establish tree nurseries for mangrove and peat ecosystem. 6) Assist and support the peat and mangrove restoration including the construction of peat dams and mangroves planting. 7) Establish and conduct regular monitoring tools for peatland restoration (i.e. water & subsidence bars/piezometer) and mangrove rehabilitation (i.e. planted trees, replaced trees) including monitoring of tree nurseries.
Deliverables	This sub-activity will contribute to the project objective of peatland restoration and mangrove rehabilitation in the targeted areas across West Kalimantan Province. This sub-activity will produce, but is not limited to, deliverables as below: 1) At least twice a year (semi-annual) coordination meeting will be conducted between the provincial and regency governments with the Peatland and Mangrove Restoration Agency (BRGM). 2) At least one detailed technical restoration plan developed for peatland restoration and one detail technical rehabilitation plan developed for mangrove rehabilitation.

	3) FPIC evidence from all impacted villages from the peatland and mangrove restoration activities. 4) At least two trainings will be provided to the villagers to ensure the understanding and ability of communities to implement the restoration and rehabilitation activities. 5) At least two tree nurseries will be established to support the peatland and mangrove tree planting. 6) At least ten peat dams will be established and monitored. 7) An annual monitoring report is generated every year (after year 2) that describes restoration activities including the water & subsidence bars/piezometer and mangrove rehabilitation. The report will be developed by the community groups. 8) Restoration of 5,000 ha of peatland and 5,000 ha of mangrove forests.
Justification	Mangrove forests are the most carbon-dense forests in the tropics. They contain more than three times as much mean carbon per hectare as land based tropical forests (Donato et al., 2011). Indonesia's mangrove forests contain more than five times as much mean carbon per hectare as its upland tropical forests (Murdiyarso et al., 2015). Mangroves contribute 10-15 percent of coastal sediment carbon storage despite making up only 0.5 percent of the global coastal area (Alongi, 2014). Indonesia's mangroves contain 3.14 billion metric tonnes of carbon (Murdiyarso et al., 2015). This is one third of global coastal carbon stocks (Pendleton et al., 2012). Peatland restoration is among the most important activities to reduce emission from peat. By restoring peat, climate change will be mitigated through the reduced amount of peat emissions. Mangrove rehabilitation is part of climate change mitigation, but also increases the ecosystem function in mangrove. Hence, it is important to implement peatland and mangrove restoration across West Kalimantan province. The GCF fund will be used to support the peatland and mangrove restoration, within the targeted areas, outside the areas that will be restored by BRGM, in West Kalimantan province. This is to maximise effectiveness and to avoid redundancy in restoration activities. Hence, the 10,000 ha of peat and mangrove restoration is an addition to the restoration activities implemented by the BRGM.
Institutions involved (include roles)	GIZ (lead); BRGM; Provincial and regencies governments (especially KPH and Forestry Agencies); Communities' groups (main actors);
Sub-activity 3.2.1.5:	**Developing climate-resilient aquaculture infrastructure for coastal communities**
Baseline	Livelihood activities of coastal communities are threatened by climate change - for example flash floods and the ongoing salinization of soils are destroying yields. Additionally unsustainable aquaculture systems are degrading existing mangrove areas enhancing the vulnerability towards future climate risks. The total mangrove area in Ketapang and Kubu Raya Regency is 120,691 ha, 529 ha of which were rehabilitated by BRGM from 2021-2022.
Description	The project applies innovative adaptation mangrove development models for resilient aquaculture system in coastal areas, reducing the vulnerabilities of local communities, restoring ecosystems and mainstreaming climate change adaptation into plans and policies.

	Reduction of social/environmental vulnerabilities to climate change, aquaculture systems restoration of degraded Mangrove areas, creation of stable aquaculture microclimates. Trees help maintain natural ecosystems and increase the capacity for climate change adaptation by retaining water. Fish/shrimp aquaculture will assist farmers to adapt to salinization. Organic shrimp/fish farming re-establishes nature-based nutrient cycles and food webs, whilst mangrove restoration and integrating mangroves into shrimp ponds/ coastal embankments, reduces the risk of storm surges and coastal erosion. Generation of societal benefits due to climate change adaptation of local pilot farmers (2 Groups), who have been experiencing severe impacts from climate change, such as flash floods that destroyed their crop, crop failure caused by salinization, or losing shrimp ponds to coastal abrasion, will directly benefit from the adaptation measures by the aquaculture programme. Steps: 3.2.1.5.1. Study of Aquaculture approach in mangroves 3.2.1.5.2. Workshop on provincial levels for targeted Aquaculture 3.2.1.5.3. Train beneficiaries in organic shrimp farming 3.2.1.5.4. Beneficiaries trained in integrated mangrove shrimp cultivation 3.2.1.5.5. Establish mangrove nursery and planting of in and along shrimp ponds, as well as along stream embankments and shorelines 3.2.1.5.6. Procurement of production facilities and infrastructure Aquaculture 3.2.1.5.7. Production processes in aquaculture 3.2.1.5.8. Post harvesting and marketing 3.2.1.5.9. Models/ lessons learned/ recommendations shared with regency and provincial planning agencies (BAPPEDA), to mainstream aquaculture approach into their respective development plans (RPJMD) in line with national climate resilience policies.
Deliverables	This sub-activity will contribute to the project objective in developing climate-resilient aquaculture infrastructure for the coastal communities across West Kalimantan province. This sub-activity will produce, but is not limited to, deliverables as below: 1) One study report assessment report developed on the current approach of aquaculture development, including best practices, recommendation of business cases using a silvo-fishery approach 2) One pilot project of aquaculture in mangrove established 3) Two groups of aquaculture are established in two regencies
Justification	Coastal mangrove restoration, integration of mangroves into shrimp ponds and organic aquaculture interventions re-establish natural nutrient cycles and foods webs, improve coastal ecosystem health and reduce coastal abrasion.
Institutions involved (include roles)	GIZ (Lead) Provincial Marine and Fisheries Service (DKP) Faculty of Fisheries and Marine Sciences UMP, UNTAN, POLTEK Pontianak

Sub-activity 3.2.1.6:	Accelerate and enable access to potential financial streams for climate change mitigation and adaptation strategy
Baseline	Currently, there are only a few SF groups that are able to access different revenue streams. This caused some challenge to the communities after they have secured their SF permit. Most of the communities can access support to secure their SF permits but receive very little support to implement their Social Forest Management Plan (Rencana Kerja Perhutanan Sosial, RKPS) for maintenance of their license. Together with local partners FFI has enabled three SF groups to secure funding for 25 years (around 8 million USD) in West Kalimantan province, coming from private sector funding from conservation commitments (i.e. RSPO RaCP) alone, in addition to three SF groups that have accessed public funding (i.e. PSKL/BUPSHA). It is estimated that less than 30% of the existing SF groups have access to the different revenue streams that can be used to support the SF groups and KUPS unit activities. In addition, the development of the domestic carbon market brings opportunities for SF license holders to access funds for protecting natural resources. However, currently no methodologies are developed or approved by the SRN to account for and register afforestation / reforestation activities to participate in the domestic carbon market. This limits the scope of mitigation activities that can receive market incentives for the creation or maintenance of ecosystem services.
Description	This sub-activity is designed to enable social forestry (SF) groups to access different funding mechanisms to support sustainable financing for implementing their RKPS. There are three main potential financial streams that are targeted under this activity: 1) Public funding: The project will support communities to access funding from state-budget, such as the village fund (i.e. DD/ADD), aspiration fund (i.e. *dana aspirasi bupati*) allocated by Bupatis, Ministries support (i.e. BRGM, PSKL) that can be allocated to support the activities of SF groups and KUPS units. The activities to support access to public funds are: a. Facilitate communities to allocate village funding to support SF and KUPS groups activities through village meetings. b. Engage with the head of regencies (Bupati) to allocate state-budget under the aspiration fund, to be allocated to SF and KUPS groups. c. Coordinate with Ministries on potential funding access to support KUPS activities on the group, through meetings with assistance from KPHs. E.g. development partner FFI previously supported communities in Jambi, West Sumatra, and Bengkulu provinces to access public funding instruments under i) and ii) and around 50 m IDR (EUR 2,941) have been secured per instrument and year for participating villages. In Sumatra and West Kalimantan, instrument iii) has been used to secure around 50 m IDR (EUR 2,941) per village. 2) Private sector funding: The project plans to support SF Permit holders to access the funding from biodiversity liabilities (e.g. RSPO RaCP, FSC compensation[316]), private sector commitment in biodiversity and climate (i.e. Net Positive Impact, Net Zero Commitment) that can be allocated to SF groups. The activities to access the private fund are: a. Ensuring SF groups implement their RKPS in high quality and perform good organizational governance. This can be

[316] The FSC Remedy Framework (FSC Procedure FSC-Pro-01-007 V1-0) is effective since 1 July 2023. Two corporate groups in Indonesia with forest concessions in West Kalimantan are involved in remedy framework (FSC roadmap / pre-audit stage).

supported from GCF and/or donor funds, to support the RKPS implementation and capacity building.

b. Identify companies' needs and commitments in biodiversity and climate, related to the compliance of their business and/or customers to requirements such as from RSPO (for palm oil), FSC compensation (for logging concession), and SBTi (Science-based Target Initiative).
c. Facilitate meetings between the private sector and communities to provide assurance to both parties (communities & companies) on financial support (from private sector) and activities implementation (by SF groups). The indicator will be a signed agreement between the private sector and communities, witnessed by the government (provincial and/or regency) as the regulator.
d. Assist and support SF groups in developing the necessary documents that are required by the private sector to comply with their sustainability standards and/or commitments, such as RSPO (concept note, compensation plan), FSC and SBTi (project documents).
e. Assist and support the SF groups in developing annual monitoring reports, to be submitted to the private sector.

3) National Fund (Domestic Carbon Market, and BPDLH): under the National Fund, SF groups can access the domestic carbon market through regulations that support the implementation of RKPS activities. In addition, SF groups are also allowed to access different funding options managed by the Indonesia Environmental Fund (IEF, BPDLH). To enable SF groups to access this National Fund, there are some activities needed to be completed:

a. Assist communities to register their SF groups and their RKPS under the Sistem Registrasi National (SRN).
b. Assist SF groups to develop the DRAM (Dokumen Rencana Aksi Mitigasi) that describe the activities planned by the SF groups (in their RKPS) to contribute to mitigating climate change.
c. Facilitate the MoEF in doing validation and verification against the SF DRAM.
d. Engage with domestic private sector actors as a potential interest group for emission reduction certificates under the SRN DRAM to enhance long term investment, beyond the scope of the project.
e. Assist SF groups to develop proposals that relate with the call for proposal announced by the IEF to access different fund that can be used by SF groups in implementing their project.
f. Assist and support the SF groups in developing annual monitoring reports to be submitted to SRN and/or IEF.

4) Pilot activities to measure, verify, and report (MRV) biomass and carbon sequestration of afforestation / reforestation activities that are conducted in collaboration between grass and forest farmer groups (KTHs). Pilot activities will be led by Treeo, who developed an innovative approach for measuring biomass accumulation and carbon sequestration through afforestation / reforestation activities. The results of these activities shall inform national level decision makers about available methodologies for measuring the impact of Natural Climate Solutions, which could be included in the SRN (see sub-activity **1.1.2.3**). The pilot areas will be selected jointly with all relevant project stakeholders, including local communities.

In addition to the fund-specific activities above, communities will also be assisted on the use of funds, to ensure accountability and appropriate

	use of the fund to support SF management plan implementation. Furthermore, communities will also be assisted to develop SOPs for project implementation, and conduct project's monitoring and evaluation, as well as facilitating independent audits for the programme and finance.
Deliverables	This sub-activity will contribute to the project objective of accelerating and enabling access to potential financial streams for climate change mitigation and adaptation strategies. This sub-activity will produce, but is not limited to, deliverables as below: 1) At least 20 SF and other legal-CBFM scheme groups have access to the Public Fund, and/or Private Fund, and/or National Fund indicated by the signed agreements between IP groups and funders. 2) At least 20 fund-related documents are prepared by the IP groups to access different financial options. 3) At least 20 SF groups will be registered under SRN to enable options for accessing funding from the National Fund. 4) At least four trainings are conducted with 20 participants each (members of Forest Farmer Groups, KTHs) for measuring tree biomass and carbon sequestration in areas under Social Forestry licences
Justification	Currently, there are only a few SF groups able to access revenue streams. This causes challenges to the communities after they have secured their SF permits. Most of the communities can access support to secure their SF permit, but then face difficulties to secure support to implement their RKPS necessary to maintain their licenses.
Institutions involved (include roles)	GIZ (lead); Provincial and regency governments (especially KPH and Forestry Agencies); Communities' groups (main actors); IEF/BPDLH TREEO
Sub-activity 3.2.1.7:	**Social Forestry Support Programme funded by KfW**
Baseline	This sub-activity is closely related to sub-activity 3.2.1.1. and promotes the advancement of social forestry in Sanggau regency.
Description	The "Forest Programme V: Social Forestry Support programme" supports the Government of Indonesia to work with community forest user groups and local administrations to improve forest ecosystems and local livelihoods. The three intended outputs of the programme are: • Social forestry related capacity of all relevant stakeholders (such as PSKL, BPSKL, Dinas Kehutanan, Pokja PPS and KPH staff and communities in the field of social forestry) has improved. • Financially sustainable and climate-resilient forestry models are applied by local communities. • Harmonization of social forestry related policies within DitJen PSKL and between other involved agencies has improved. Forest authorities and communities are applying social, ecological and economical sustainable management in selected forest areas in order to improve the conditions of ecosystems and livelihoods of local community.

Deliverables	Social forestry related capacity of all relevant stakeholders (such as PSKL, BPSKL, Dinas Kehutanan, Pokja PPS and KPH staff and communities in the field of Social Forestry) has improved /
Justification	See justification under 3.1.1.
Institutions involved (include roles)	MoEF (lead) (partners such as PSKL, BPSKL, Dinas Kehutanan etc.) Local communities
Sub-activity 3.2.1.8:	**Channelling dedicated GCF proceeds (under this proposal) to local communities to implement social forestry licenses and related management plans as well as climate-resilient land-use plans in PROKLIM villages**
Baseline	Local community groups have received minor amounts of funding ($5,000 - $10,000) directly transferred from donors/funders/governments to the local community groups' bank accounts. This pilot/trial payments have been tested in 3-4 community groups and showed an independent and stronger project ownership by the local communities. This situation results in a diligent and active participation of all local communities, as they feel that this money is provided for them directly to run the activities that are important for them (sense of ownership). With the support from this GCF project, a more meaningful contribution can be managed by local community groups. It is expected that US$ 9 million will be allocated to support 100 local community groups during the project period. The selected local community groups will be part of the inclusive process that applies FPIC principles. The process will adhere to the IFC Performance Standards and the World Bank Environment and Social Standards, at the very least. The objective is to increase local community livelihoods through the dedicated GCF fund managed by the BPDLH. It is aimed to provide this fund to the IP groups, particularly groups that are forest dependent and have limited access to finance, health, and educations (often reflected by Development Village Index, *Indeks Desa Membangun*). By providing fund to the most in-need, a more meaningful impact for their livelihood will be provided, and hopefully more resilient communities will be created.
Description	This activity is to demonstrate institutional capacities and capabilities of the IP groups that have been improved during the project duration. This activity will ensure that the GCF fund allocated for IP groups in BPDLH, will be transferred to the IP groups. The mechanism for transfer of fund from BPDLH to the IP groups will be covered under activity 1.3.1, including the necessary documents needed by BPDLH to transfer the fund to the communities. Activity 1.3.1 will also cover the required process to transfer the funding, including a selection process & trainings of potential intermediary agencies if needed. It is expected that the enabling process will be completed in Y1 to3. There will be a ceremonial covered under activity 3.2.7 to mark the commencing of the fund transfer from BPDLH to IP groups. A total of 100 IP groups will receive fund transfers from BPDLH, with three years contract each. The first 30 IP groups can receive the payment as soon as the second year, while the other 70 can receive the payment after

	year 3. The first 30 IP are for the existing IP group with license, while the other 70 are the newly licensed IP groups. The amount of fund to be transfer for each IP group is expected to be EUR 50,000 per annum. This number is the average fund that is commonly used by funders to support local community activities. The amount of funding should already cover the cost of intermediary agency, if needed, by BPDLH. In addition, this sub-activity will make direct financial transfers from BPDLH to 50 PROKLIM Certificate Holders (village governments) to support the development of climate-resilience land-use plans (see sub-activity 1.1.1.2).
Deliverables	The deliverable for this activity is proof of transfers: • from BPDLH to social doretry groups' and PROKLIM villages' bank accounts, for every transaction • from BPDLH to 50 PROKLIM Certificate Holders (village governments)
Justification	This activity is needed to show that the main beneficiaries under this project are IP. And that IP have the potential to improve their capacities and capabilities to manage their own fund and to run their own activities that they deem important to secure their life, livelihoods, and culture. The dedicated GCF fund in BPDLH is solely used to benefit communities as beneficiaries.
Institutions involved (include roles)	GIZ (lead); Provincial, regency and village governments and forest agencies (especially KPH/FMU); Communities' groups (main actors); IEF/BPDLH (financial transactions)

5.7 Project Locations and Target Area Selection

The proposed project will cover the province of West Kalimantan while implementation on the ground will focus on five priority regencies covering 69.21% of total West Kalimantan area (10.5 m ha) and 82% (4.45 m ha) of the forested area of West Kalimantan. The proposed project location also includes the area defined as the REDD+ implementation and measurement area (referred to as WPK REDD+) and FOLU Net Sink 2030 which is determined based on a Location Priority Index (IPL).

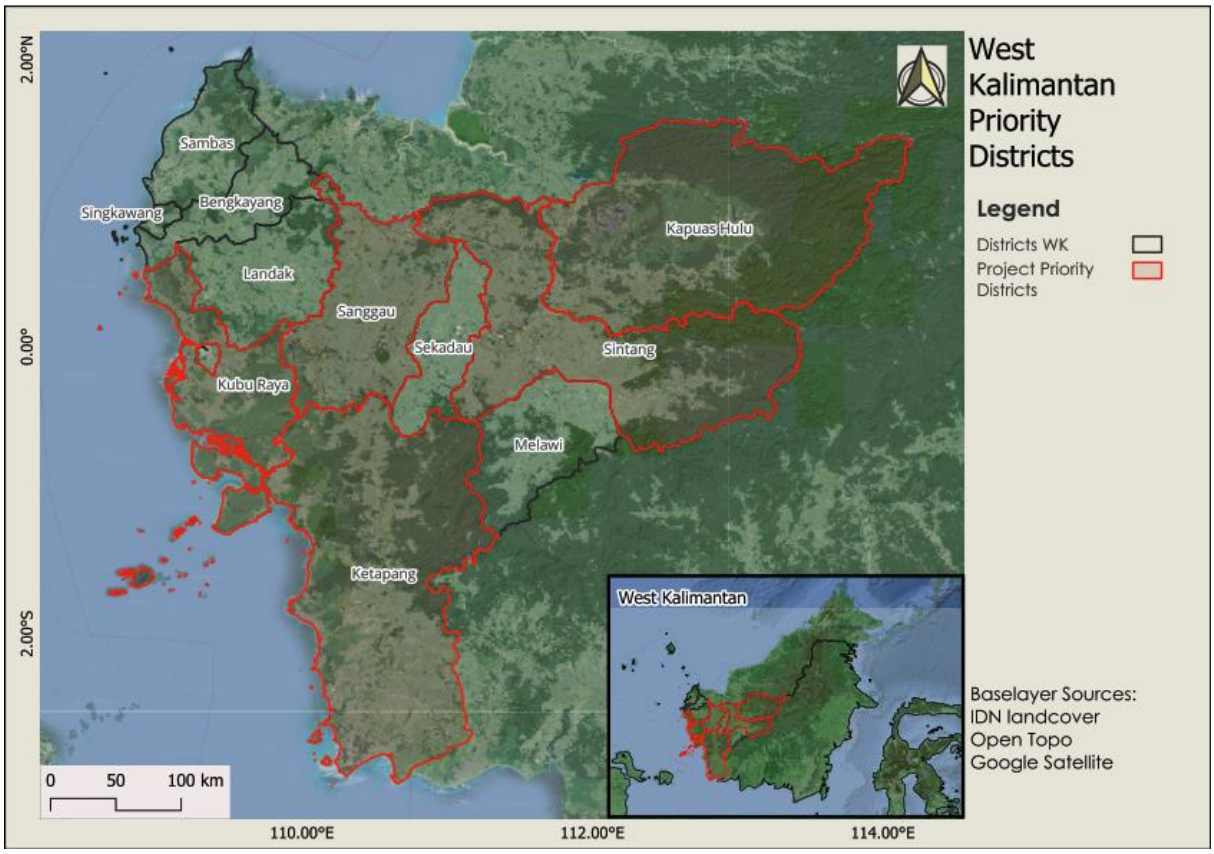
Field-level activities in the five priority regencies will cover:

1) 81.7% (4.51 million ha) of the total forest of West Kalimantan in 2020
2) 76.7% of 1.19 million ha of peat land area of West Kalimantan;
3) 71.2% (49.714 ha) contribution of annual deforestation in West Kalimantan (69.809 ha);
4) 69.6% (10.1 million tCO_{2eq}) of the total West Kalimantan 60% pledge target (14.1 million tCO_{2eq}).

The project area consists of Kapuas Hulu (annual deforestation 5,900 ha), Ketapang (annual deforestation 27,100 ha), Kubu Raya (annual deforestation 8,800 ha), Sanggau (annual deforestation 2,900 ha), and Sintang Regency (annual deforestation 4,700 ha). The five priority regencies have been selected by the provincial government through its interdisciplinary REDD+ working group based on the importance for achieving the objectives of this proposal. These regencies also the priority regency of FOLU The forests in these regencies are severely

threatened by deforestation and forest degradation. The selection is based on emission flows, forest stock, and forest cover ratio to regency area (see Figure 32).

Figure 32: Overview of five priority regencies of project area



As analysed by GoWK, this project will also target 7 FMUs beyond 10 FMUs at 5 target regencies to improve management plans and capacity building, while field activity will solely focus on 10 FMUs in 5 target regencies. This intervention addresses the importance of FMUs position in forest management at site level and ensures that all FMU plans are well established and fully aligned with mitigation and adaptation policies of West Kalimantan and the capacity of FMUs staff is balanced in all regions.

Within the target regencies, the project will engage with approx. 200 villages with a total forest area of 3.7 million ha. Special attention will be taken for peatlands in Ketapang, Kubu Raya and Kapuas Hulu. Peatland areas in these selected regencies cover around 56% or 903.000 ha of overall peatland in West Kalimantan (1.6 million ha). These are under significant threat of further degradation with main drivers being fires and land cover conversion and other forms of unsustainable peatland management. The project will build on a pre-existing he province of West Kalimantan already developed an Implementation System for Fire Risk and Early Warning Schemes.[317] Further detailed regency level climate and hazard information on each of the selected regencies are summarized in chap. 0 and have been assessed through a Climate Risk and Vulnerability Assessment (see Annex 2c).

[317] GoWK 2018: Implementasi Fire Risk System dan Sistem Informasi Deteksi dini Indeks Kerentanan.

5.8 Project Logical Framework

The following tables outline the project's logical framework at the GCF impact and outcome levels as well as at the project's component, output, activity and sub-activity levels.

E.2. GCF Impact level: Paradigm shift potential (max 600 words, approximately 1-2 pages)

This section of the logical framework is meant to help a project/programme monitor and assess how it contributes to the paradigm shift described in section D.2 above by applying three assessment dimensions - scale, replicability, and sustainability.

Accordingly, for each assessment dimension (see the definition per assessment in the accompanying guidance note), describe the current state (baseline) and the potential scenario (target) and rate the current state (baseline) by using the three-point-scale rating (low, medium, and high) provided in the guidance note. Also describe how the project/programme will contribute to that shift/ transformation under respective assessment dimensions (scale, replicability and sustainability). In doing so, please refer to section B.2(a) (theory of change).

Assessment Dimension	Current state (baseline)		Potential target scenario (Description)	How the project/programme will contribute (Description)
	Description	Rating		
Scale	Between 1990 and 2020 the forest area in West Kalimantan declined by 2.1 million ha (27%), from 7.5 million ha to 5.4 million ha, releasing over 23.3 million tCO2eq per year. At the time of this FP formulation (2022-2024) deforestation and forest degradation remain a major threat in the province due to its role as an important hub for producing soft commodities like palm oil. Smallholder farmers	Medium	The transformational changes triggered by the project will involve a move away from unsustainable expansion of agricultural production and exploitation of natural resources. Strengthened law enforcement and the sector wide adoption of conservation agriculture and social forestry will trigger the shift towards a low emission and climate resilient development pathway in West Kalimantan.	The intervention is projected to reduce emissions of around 15.5 million tCO_{2eq} over 7 years, with continued future impacts through a paradigm shift in the management of natural resources. The project will trigger policy and institutional transformations to support climate change adaptation and mitigation (e.g. within development plans and adaptation and mitigation strategies/ plans, and through developing institutional capacities), incentivize sustainable forest management, support and incentivize community and social forestry groups to sustainably manage and benefit from forests, and scale up the sustainable production of soft commodities while also contributing to the transparency and

	in the 5 target regencies are vulnerable to the impacts of climate change as business-as-usual practices put their livelihoods, food security and the ecosystem at risk (see FS Chapter 2.1 for further information).			traceability of the value chain through the provision of inclusive technical assistance, supporting the development of sustainable business cases, working with smallholders to strengthen market access and through supporting the development of a traceability system that improves monitoring and transparency. Scaling will also be facilitated through the engagement, capacity building and empowerment of diverse actors throughout project design and implementation, working with IP, private sector companies (including MSMEs and larger companies), and public sector actors, among others. For more information see Chapters D.2.2 and B.6, as well as FS (Annex 2a) Chapter 5.3 and Appendix 10.1.[318]
Replicability	At the time of this FP formulation (2022-2024) good examples of sustainable practices in the AFOLU sector are available in the province. However, these are isolated, lack coordination, and are often limited by NGO funding. The limited scale of these initiatives, pilot activities, and	Medium	By working closely with government agencies and the private sector, best practices in conservation agriculture and social forestry will set new standards and will be scaled across five regencies to contribute to sustainable rural development at landscape level. Through improved policies, skills and profitability of sustainable production, there will be spillover effects to other regencies in the whole province. As soon as the positive impacts of the measures are recognized in West Kalimantan, the province will serve as	The project will improve the institutional framework at the province level, which will facilitate the adoption of low emission and climate resilient practices across all regencies. It will ensure alignment with national priorities, while creating a more holistic planning mechanism and incentivizing low-carbon and climate-resilient investments in the AFOLU sector.[319] As the project is led by the provincial government, where institutional

[318] This project builds on best practices and lessons learned from projects and programs in the AFOLU sector over the last decades, both within Indonesia, West Kalimantan, and the broader region. Appendix 10.1 of the Feasibility Study provides more deailed information about the baseline projects their objectives, and the main areas of alignment and lessons learned for this GCF Project.
[319] This includes, for example, the integration of climate change, low-emission and climate-resilient AFOLU and REDD+ into landscape-level and provincial and regency planning (e.g. provincial development plans, provincial and regency level adaptation action plans), as well as sectoral regulations and plans (e.g. aligning provincial REDD+ policies with national mitigation policies – FOLU Net Sink 2030).

	approaches prevents the achievement of impacts at province level. To fully reach the paradigm shift towards low-emission and climate resilient forest and land use practices, additional technical and financial support is needed to replicate and scale-up investments in climate resilient and sustainable land management in 5 regencies.		a role model for sustainable soft commodity production across all provinces of Indonesia.	strengthening will be supported,[320] it will be more easily replicated in other provinces. Lessons learnt and best practices, including sustainable business and livelihood models, can be taken up by the government, the private sector and implementing agencies to replicate them in other provinces. For more information see Chapters D.2. and B.6., as well as FS (Annex 2a) Chapter 5.3.
Sustainability	The provincial government of West Kalimantan has a high ambition and commitment to implement the project to transform the AFOLU sector and contribute to the national climate targets. The relevant agencies for the AFOLU sector are operational and have made important progress in promoting on Climate Change and sustainable land use.	Medium	A paradigm shift would entail improved capacities of governmental institutions and the REDD+ taskforce to regulate and engage the private sector and local communities in forest protection and sustainable commodity production. Smallholders have the knowledge and capacity to produce sustainably, access premium markets and access financing mechanisms. Persisting policy gaps for climate change mitigation and adaptation in the land-use sector are filled. Alternative income opportunities for local communities (e.g. NTFP production) and sustainable business cases are institutionalized and give incentives to harmonize land use with nature protection. Financial mechanisms	The project aims to strengthen the capacity of governmental and non-governmental stakeholders, including smallholder producers, IP, and private sector actors, among others, trigger institutional learning, and foster the institutional framework for mainstreaming climate change adaptation and mitigation into the land-use sector. Good Agricultural Practices (GAP) and access to finance, which will be promoted by the project, will lead to productivity gains and improved market access for smallholders and will give an incentive for forest protection and low emission agriculture even after the project end. An improved enabling environment will be a strong foundation for the future implementation

[320]The Project will strengthen institutional capacities (e.g. MoEF) and coordination bodies (e.g. Provincial Body on Climate Change, multi-stakeholder forums). The engagement of youth (e.g. IFSA) throughout the project, including within the Provincial Body on Climate Change, will also ensure there is a future generation of capacitated professionals with the tools to scale climate action. By effectively building institutional capacities and strengthening the regulatory framework, in close alignment with government visions and strategies, the project will ensure the measures promoted by the project (including measures to strengthen GESI) are fully integrated into governance structures that create an enabling environment for replication and scaling throughout the project and beyond project closure.

	Limited financial and human resources of relevant actors resulted in slow progress towards achieving AFOLU targets and engaging the private sector. Private sector finance for climate action is considered critical to help fill financing gaps, however current investment in climate action is low.		are developed that leverage funding from the government, the private sector, and international donors (e.g. results-based payments).	of forest and land-based programs and financial mechanisms developed or used by the project will contribute to closing persisting funding gaps. For more information see the exit strategy in Chapter B.6., and the FS (Annex 2a) Chapter 5.5.

E.3. GCF Outcome level: Reduced emissions and increased resilience (IRMF core indicators 1-4, quantitative indicators)

Select appropriate IRMF core and supplementary indicators to monitor project/programme progress. More than one IRMF (core and or supplementary) indicators may be selected as applicable for each GCF results area and project/programme outcome (as defined in the table in section B.2(b)). If IRMF indicators are unable to measure any given project/programme outcomes, project/programme-specific indicators should be developed under section E.5 (project/programme specific indicators).

GCF Result Area	IRMF Indicator	Means of Verification (MoV)	Baseline	Target		Assumptions / Note
				Mid-term	Final[321]	
MRA4 Forestry and land use	Core 1: GHG emissions reduced, avoided or removed/sequestered	*Sources of information and methods used to collect and report data/information to measure progress against targets* **Government sources:** • Annual deforestation monitoring by MoEF • Reports from province level monitoring system	*The starting point or current value of the indicators before the implementation of the project* 29.6 million tCO2eq per year	*The estimated value of the indicator at the mid-point of the implementation* 3.6 million tCO2eq of avoided emissions and removals as compared to the	*The estimated value of the indicator at the completion of the implementation* 16.05 million tCO2eq of avoided emissions and removals as	*Externalities and factors outside project management's control that may impact the outcomes* *Data sources and methodologies applied for estimating baseline and targets* ENSO / El Niño could increase wildfire risk and related emissions.

[321] The final target means the target at the end of project/programme implementation period. However, for core indicator 1 (GHG emission reduction), please also provide the target value at the end of the total lifespan period which is defined as the maximum number of years over which the impacts of the investment are expected to be effective.

		(reporting of measured ER against province FREL) **Project sources:** • Project M&E system (satellite based and accounting for policy documents and plans) • Mid-term evaluation report with information on CO2 emission reductions / sequestration	(based on 2nd FRL West Kalimantan; see Annex 22a)	baseline scenario	compared to the baseline scenario	
ARA1 Most vulnerable people and communities	Core 2: Direct and indirect beneficiaries reached	• Project M&E; annual project reporting • Evaluation reports to have information on adaptation impacts	0 beneficiaries	200.000 direct beneficiaries (100.000 men; 100.000 women)	**680.000 direct beneficiaries** (340.000 men; 340.000 women) through: - social forestry - conservation agriculture - climate resilient land use plans 1.700.000 indirect beneficiaries (850.000 men; 850.000 women) through: - strengthened resilience to impacts of climate change	Indirect beneficiaries: • The population of all five target regencies will benefit from adaptation measures through climate resilient land use plans; adaptation policies; trainings; and adaptation monitoring. • To avoid double counting, the number of direct beneficiaries is subtracted from the number of indirect beneficiaries. Direct beneficiaries: • Numbers are obtained by multiplying the number of targeted villages with the average population of villages according to the regency. The average population numbers per village are taken from the national statistical office (BPS, 2022).

						• The average family size in West Kalimantan is 5,5. Trainings to strengthen resilience will have an impact on household level.
ARA4 Ecosystems and ecosystem services	Core 4: Hectares of natural resources brought under improved low-emission and/or climate-resilient management practice	• Long-term forest management plans (RPHJP) elaborated by FMUs; participatory land use plans; Social Forestry licence documents (SK - Surat Keputusan) • Project M&E • Mid-term evaluation report to have dedicated section on adaptation impacts	0 ha under improved management	2.000.000 ha	6.700.000 ha will be under sustainable forest management based on long term forest management plans developed by Forest Management Units.	• The capacity building measures for Forest Management Units will directly improve their services and the quality of long-term forest management plans (RPHJP), which will strengthen sustainable forest management • The promotion of social forestry (pre- and post-license support) will engage local communities in sustainable forest management, contributing to reducing deforestation. • As the area under Sustainable Forest Management and under Social Forestry might be overlapping, the latter areas were subtracted from the total area.
ARA4 Ecosystems and ecosystem services	Supplementary 4.1: Hectares of terrestrial forest, terrestrial non-forest, freshwater and coastal marine areas brought under resoration and/or improved ecosystems	• Project M&E • Local regulations on HCV / HCS areas • Updated Peat Hydrological Unit map	0 h under restored or improved ecosystems	150.000 ha	520.000 ha of forests and other ecosystems will be improved through the expansion of HCV / HCS areas and the expansion of the peat inventory,	• The creation of wildlife corridors will effectively restore and improve ecosystems in APL areas (forest and non- forest land outside forest estate) • The expansion of the peat inventory will be the main input for the update of the

					which will lead to its protection.	Peat Hydrological Unit Map, which indicates peat areas protected by law. Hence, the inventory contributes to the conservation and restoration of peat ecosystems. The same approach was very successful in GIZ's ProPeat Project.

E.4. GCF Outcome level: Enabling environment (IRMF core indicators 5-8 as applicable)

Select at least two relevant IRMF core (enabling environment) indicators to monitor and elaborate the baseline context and project/programme's targeted outcome against the respective indicators. Rate the current state (baseline) vis-à-vis the target scenario and select the geographical scope of the outcome to be assessed. Describe how the project/programme will contribute towards the target scenario. Refer to a case example in the accompanying guidance to complete this section.

Core Indicator	Baseline context (description)	Rating for current state (baseline)	Target scenario (description)	How the project will contribute	Coverage
Core Indicator 5: Degree to which GCF investments contribute to strengthening institutional and regulatory frameworks for low emission climate-resilient development pathways in a country-driven manner	The Government of Indonesia has established ambitious climate targets for the land use sector that aim to turn the land sector into a net carbon sink (FOLU Net Sink 2030). The provincial Government of West Kalimantan has already elaborated the provincial plan for achieving their provincial FOLU Net Sink target. However, the institutional capacities and financial resources are currently	low	The regulatory framework at province and regency level including planning documents have integrated climate change mitigation and adaptation harmonizing economic development with WK's ambitious climate and biodiversity agenda, while considering the differentiated impacts of	The project will support the development of policies, planning documents and monitoring systems that strengthen the institutional framework for climate change adaptation and mitigation in the land use sector, including also key considerations for GESI (see Annex 8b). It will also develop the	Single sub-national area within a country

	insufficient to implement this plan. The subnational forest administration at province, regency, and FMU level needs to be strengthened to realize the targets outlined in the plan. The same is true for the provincial REDD+ Task Force (Pokja REDD+). While there was more progress on mitigation policies, regulations on adaptation and gender mainstreaming are still missing. In addition, there is a lack of monitoring systems for mitigation and adaptation that hinders monitoring and evaluation of climate action. Regarding low-emission policies, there is a lack of clarity regarding the role and duties of FMUs after the Job Creation Law (No. 11 of 2020 on Job Creation). This also affects the unclear working relationship between FMUs and the provincial forestry service, UPTs, and other stakeholders. Policies, protocols, and standards need to be developed or updated to reflect the need to build the needed capacity for GHG mitigation in the forestry sector.		climate change on men and women. The relevant institutions for the land sector have the capacity and knowledge to implement gender-responsive climate change and environmental regulations and policies. These institutions are informed by operational monitoring systems that improve decision making	necessary capacities among government officials and local communities for improved climate resilient and low emission land stewardship. For more information see FS Chapter 5.3.	

Core indicator 7: Degree to which GCF Investments contribute to market development/transformation at the sectoral, local, or national level	Poverty and a lack of alternative livelihood opportunities (e.g. off-farm employment) have resulted in a high dependence on agriculture and natural resources for household income in the project area. Smallholders lack capacities and financial means to adopt sustainable business models and access markets for certified products. Price premiums for sustainable production are not yet the norm. Further engagement of the private sector to support the development of sustainable value chains is required. While examples for sustainable production exist, the minority of companies is currently certified (e.g. ISPO or RSPO for palm oil or other). At the same time, regulatory measures from consumer countries are demanding higher transparency and traceability of forest risk products, which risks the exclusion of smallholders from the value chain.	medium	The increasing national and international demand in sustainable soft commodities (including NTFPs) is matched with local certified products from West Kalimantan and creates incentives for forest protection. The transparency and traceability of soft commodities is improved to access market segments with high sustainability requirements. Strong participation and engagement of the private sector triggers a competition for accessing price premiums.	Trainings on Good Agricultural Practices and agroforestry build capacities on sustainable agriculture and social forestry across stakeholders. Tools and procedures are developed to increase transparency and traceability of the value chain of key commodities. Multi-stakeholder coordination platforms at the province level will be established or strengthened to engage the private sector in sustainable sourcing and production. The certification of key commodities will be promoted at regency level through a jurisdictional approach. For more information see FS Chapter 5.3 and 5.4	Single sub-national area within a country

E.5. Project/programme specific indicators (project outcomes and outputs)

*This section should list out project/programme-specific performance indicators (outcomes and outputs) that are not covered in sections above (E.1-E.4). List down tailored indicators to monitor /track progress against relevant project/programme results (outcomes/outputs). AEs have the freedom to decide against which outcomes they would like to set project/programme specific indicators. If any co-benefits are identified in sections B.2(a)(b), and D.3, AEs are encouraged to add and monitor co-benefit indicators under the "**Project/programme co-benefit indicators**" section in table below. Add rows as needed.*

Please number each outcome and output as shown below to indicate association of outputs to the contributing outcome. The numbering for outputs under this section should correspond to the output numbering in annex 4 (detailed budget plan).

Project/programme results (outcomes/ outputs)	Project/programme specific Indicator	Means of Verification (MoV)	Baseline	Target		Assumptions / Note
				Mid-term	Final	
		Sources of information and methods used to collect and report data/information to measure progress against targets	*The starting point or current value of the indicators before the implementation of the project*	*The estimated value of the indicator at the mid-point of the implementation*	*The estimated value of the indicator at the completion of the implementation*	*Externalities and factors outside project management's control that may impact on the Component*
Outcome 1: Institutional regulatory frameworks able to attract investments into sustainable and climate resilient agricultural and agroforestry value chains are strengthened	A Provincial Body on Climate Change (PBCC) is legally established	• Evidence of legal establishment and approved ToR of the PBCC	0	0	1	*Data sources and methodologies applied for estimating baseline and targets* A permanent institutional arrangement of the Provincial Body on Climate Change (PBCC) with a strong legal foundation strengthens the authority of the institution and allows mainstreaming of climate change adaptation and mitigation into all relevant sectors and attract public and private finance in the province to address climate change.
Output 1.1: Strengthening institutional regulatory frameworks for	Number (#) of villages eligible to receive PROKLIM status	• Documentation for PROKLIM application	0			Desa Proklim (the "Climate Change Village") as a national but village-led

sustainable and climate-resilient landscape management.		• Project M&E		▪ 5 new PROKLIM villages	▪ 50 new PROKLIM villages	programme to respond to climate change at the local level will be further promoted.
	Number (#) regulatory frameworks established or revised to support the implementation of REDD+ and FOLU Net Sink 2030	• Project M&E • Documentation of revised or new regulatory framework documents	0	1	3	Province SRAP and FRL need to be updated and a transparent provincial MRV system needs to be established and aligned with the national monitoring system.
	Number (#) of Climate Adaptation Actions Plans (RAK API/RAP API) legalized	• Project M&E • Subnational regulations enacted by governor / bupati	0	2	6 (1 provincial adaptation action plan - RAP API; 5 regency adaptation action plan - RAK API)	The governor and *bupatis* (head of regency) show political will to comply with the requirement to enact subnational mitigation and adaptation plans as mandated by Presidential Regulation 98 / 2021
Output 1.2: Developed land use plans which consider climate change and identified HCV/HCS areas	Number (#) of subnational regulations on the protection of HCV / HCS areas	• Provincial and regency decrees on HCV / HCS areas	0	2	6 (one governor and 5 regency decrees on HCV / HCS areas)	The subnational governments (i.e. governor and *bupati* show political will to establish HCV / HCS areas on non-state forest lands)
	Extent (ha) of HCV/HCS areas accurately identified and integrated into land use plans.	• Approved participatory land use plans that feature HCV / HCS areas. • HCV / HCS area documents	0	30.000 ha	100.000 ha of forested land under protection (HCV / HCS area)	Application for the HCV / HCS areas on non-state forest land will be legally endorsed. Concessionaries agree to protect a part of their concession as a wildlife corridor or conservation area.
Output 1.3: Established and implemented dedicated grant mechanism provides adequate financing and meaningful engagement for IP involved in climate-resilient, low-emission	Roadmap for a provincial financing mechanism developed	• Project monitoring and evaluation reports • Documentation of relevant supporting documents of the roadmap	0	0	1	The roadmap will comprise several supporting documents including draft regulations for the official establishment of the provincial financing mechanism, an assessment

forest and landscape management and further financing mechanisms have been assessed						of potential financing sources.
	Number (#) of call for proposals under the dedicated IP grant mechanism	• Call for proposal documentation: • Implementation and monitoring reports • Closure reports	0	2	5	Five calls for proposals published and implemented over a time span of approximately five years, along with detailed documentation for each proposal supported
Outcome 2: Vulnerable local community's climate resilience and capacities to engage in sustainable commodity production and social forestry are increased.	Number (#) of smallholder farmers practicing climate resilient agriculture	•	0	4,000 (of which at least 1,200 are women)	10,000 (of which at least 3,200 are women)	10,000 smallholder farmers will adapt new climate resilient, low emission agricultural and agroforestry practices.
Output 2.1: Benefitting local communities produce sustainable agricultural and agroforestry commodities, accessing new markets for sustainable products, while an M&E framework is established that measures environmental compliance and ensures the scalability as well as replicability of sustainable practices.	Number (#) of farmer organizations supported to improve market access for sustainably produced, climate resilient, low-emission agricultural commodities	• Field survey results • Project M&E	0	5	25	A market for sustainably produced agricultural products exists.
	Area (ha) under climate resilient agriculture (e.g. agroforestry or climate smart agriculture)	• Project M&E; mid-term and end of the project evaluation • Annual monitoring reports	0	7,500 ha	20,000 ha	Smallholders in West Kalimantan cultivate on average 2,5 ha. We assume that around 80% of the smallholder agricultural area will be under climate resilient agriculture after capacity

						building measures (80% of 25.000ha). There is an incentive for smallholders to get product certification due to premium prices paid by buyers.
Output 3.1: Capacitated FMUs and private sector actors incentivized to engage in implementing climate informed protection and sustainable management of forest and peat ecosystems.	Number (#) of FMUs trained on thematic aspects related to organization development and technical aspects of forest management	• Project M&E • Documentation of trainings (attendance sheets, materials)	0	5	17	FMUs in West Kalimantan have limited capacities to comply with their responsibilities in forest administration and sustainable forest management.
Output 3.2 Supported Local Communities able to receive land use rights and implement different social forestry schemes.	Number (#) of social forestry groups and social forestry business units established with investable business plans and secured funding for implementation	• Baseline and endline survey • Project M&E • Mid-term review and final evaluation report • Social Forestry licences (SK - Surat Keputusan) for KTHs (Forest Farmer Groups) and KUPS (Social Forestry Business Units)	0	30	120	Capacity building, pre-license facilitation support and post-license business development support will enable forest farmer groups and social forestry business units to grow economically and manage forest resources sustainably.
	Area (ha) of new and strengthened community forest licenses	• Social Forestry licences (SK - Surat Keputusan) for KTHs (Forest Farmer Groups) and KUPS (Social Forestry Business Units)	0	60,000 ha	200,000 ha of new and strengthened community forest licenses	Local communities see social forestry as a desirable endeavor Government agencies process and release social forestry permits and continue to provide financial support through government funds.
	Area (ha) of degraded peatland and mangrove rehabilitated and restored to protect and enhance carbon stocks	• Peat and mangrove restoration plan including feasibility study • Annual monitoring reports on	0	3,000 ha	10,000 ha degraded peatland and mangrove rehabilitated and restored	Communities are willing to engage in peat and mangrove restoration.

		implementation of the restoration plan				There are no land use conflicts on the degraded areas to be restored.
Project/programme co-benefit indicators						
Co-benefit 1: Improved food security	Food-security index score increased	Project M&E	Baseline will be assessed at project start	Food-security index = baseline	Food-security index > baseline	Food-security index (IKP) is online available.
Co-benefit 2: increased income	Poverty-gap index	Project M&E	Baseline will be assessed at project start	Poverty-gap index = baseline	Poverty-gap index < baseline	Index Kedalaman Kemiskinan (P1) and information will be available sex-disaggregated
Co-benefit 3: Enhanced conservation of biodiversity and water resources	Additional peat and forest area (ha) under protection	Project M&E	0	150,000 ha	500,000 ha	Mapped peat area and approved HCV/HCS area legally protected

E.6. Project/programme activities and deliverables

All project activities should be listed here with a description and sub-activities. Significant deliverables should be reflected in annex 5 implementation timetable. Add rows as needed. Please number the activities as shown below to indicate association of activities to the related outputs provided above in section E.5. Similarly, please number sub-activities as shown below to associate to the related activity.

Activities	Description	Sub-activities	Deliverables
Activity 1.1.1: Inclusion of climate change adaptation in mid-term, spatial, and other regional development plans.	This activity focuses on enhancing and developing policies related to the adaptation to climate change. Capacity building measures will support the development of policies and ensure the adaptation mainstreaming in development or land use plans up to the village level. To ensure the implementation of adaptation measures, tools like a multistakeholder forums or the further enhancement of the existing early disaster warning system and the monitoring and reporting of such adaptation measures will be supported.	• Sub-activity 1.1.1.1: Develop adaptation policies at provincial level in line with national adaptation policies • Sub-activity 1.1.1.2: Build capacity and support implementation related to climate change adaptation for government agencies at provincial, Regency and village level • Sub-activity 1.1.1.3: Develop tools for the implementation of adaptation	1.1.1.1: (1) Provincial Action Plan on Climate Change Adaptation (RAP API) and 5 Regency Action Plans on Climate Change (RAK API) developed and legalized. 1.1.1.2: (2) Up to 50 villages in five target Regencies received PROKLIM status and climate-resilience land use plans developed at these villages. 1.1.1.3: (3) An adaptation working group developed and attached to the PBCC and legalized.
Activity 1.1.2: Strengthening mitigation actions through improved REDD+	This activity is targeting the mitigation side of enabling conditions and institutional frameworks for sustainable	• Sub-activity 1.1.2.1: Align the provincial REDD+ policies with the	1.1.2.1: (1) The provincial REDD+ documents (SRAP – Provincial Strategic Action Plan

implementation towards achievement of sub-national FOLU Net Sink 2030 targets	and climate-resilient forest and landscape management of West Kalimantan. It focuses on strengthening the implementation of existing provincial mitigation policies of REDD+ and FOLU Net Sink 2030.	current national mitigation policies and regulations • Sub-activity 1.1.2.2: Include mitigation policies into provincial development plans • Sub-activity 1.1.2.3: Support implementation of enabling conditions for mitigation activities • Sub-activity 1.1.2.4: Monitor and report on mitigation activities	and FRL – Forest Reference Level) are revised 1.1.2.2.: (2) REDD+ and FOLU Net Sink targets, programs and activities are set in the provincial development plans 1.1.2.3: (3) At least 3 regulatory frameworks are established to support the implementation of REDD+ and FOLU Net Sink 2030 (4) up to 420.000 ha of peat areas mapped for the national inventory. 1.1.2.4: (5) Provincial monitoring system is developed and aligned with the national monitoring system. (6) One annual greenhouse gas / and forest monitoring report (GHG / MRV report) developed
Activity 1.1.3: Strengthening the institutional framework for coordination of mitigation and adaptation activities across relevant stakeholders	The activity seeks to re-shape the provincial governance architecture, including the REDD+ Task Force as Provincial Body on Climate Change and its legal framework.	• Sub-activity 1.1.3.1: Enhance institutional arrangements for the Provincial Body on Climate Change, including stakeholder consultation and amendment of the supporting legal framework • Sub-activity 1.1.3.2: Support of activities of provincial body for climate change with capacity building measures, absorption of operational costs and outreach	1.1.3.1: (1) Amended regulation of REDD+ Task Force endorsed by Governor. (2) Operational procedures developed for the new structure of a Provincial Body on Climate Change. 1.1.3.2: (3) Up to 10 professional staff hired for daily management of Provincial Body on Climate Change.
Activity 1.2.1: Strengthening the legal and regulatory framework and implementation of High Biodiversity and Carbon Areas Management Plan (i.e., HCV/HCS) on non-state forest land	This activity is designed to protect remnant forests on non-state forest land (where forest conversion to non-forest is legal) through Regency's and Provincial's Regulations. This activity aims to ensure: (i) identification of High Biodiversity and	• Sub-activity 1.2.1.1: Identify areas and develop management plans for High Biodiversity and Carbon Areas within non-state forest land across West Kalimantan Province • Sub-activity 1.2.1.2: Develop and strengthen regulations at provincial	1.2.1.1: (1) Five Regencies Heads' decisions (SK Bupati) and one Provincial Governor's decision (SK Gubernur) on the identified areas and management plan of High Biodiversity and Carbon Areas in West Kalimantan Province 1.2.1.2:

	Carbon Areas; (ii) stakeholders legal standing on protecting and sustainable management of the areas by ensuring the process are procedural, gain support from the government (through Governor's and Bupati's Decisions) and secure support from the parliament (through Regency's and Provincial's Regulations) to enable permanence impact in regulatory framework; (iii) increased capacities of stakeholders in implementing the management plan for protecting and sustainable management of the High Biodiversity and Carbon Areas for mitigating and adapting to the changing climate; (iv) good governance for the implementation, and monitoring of the management plan	and regency levels, to govern the protection and sustainable management of the High Biodiversity and Carbon Areas. • Sub-activity 1.2.1.3: Increase stakeholders' capacities (i.e. companies, communities, provincial and regencies governments) in implementing the management plan for High Biodiversity and Carbon Areas within non-state forest land. • Sub-activity 1.2.1.4: Support and monitor the management plan implementation for High Biodiversity and Carbon Areas. • Sub-activity 1.2.1.5: Enable Jurisdictional Approach (JA) certification for Ketapang Regency as a replicable model to other regencies in West Kalimantan Province	(2) 100,000 ha of High Biodiversity and Carbon Areas designated as OECM (Other Effective Conservation Measure) under the Indonesia's Government terminology of Wildlife Corridor (*Koridor Hidupan Liar*, KHL) and/or High Conservation Areas (*Areal Bernilai Konservasi Tinggi*, ABKT) across West Kalimantan Province, 1.2.1.3: (3) BMPs, SOPs, and safeguard framework guidelines on high biodiversity and carbon areas management plan implementation for stakeholders (i.e., communities and companies) developed. 1.2.1.4: (4) Commitment letters from at least five companies to financially support the activities set under the management plan, beyond the project time. 1.2.1.5: (5) A landscape Jurisdictional Approach (JA) assessment is conducted and RSPO JA requirements (including internal controlling system) are fulfilled, as a prerequisite for RSPO JA certification
Activity 1.3.1: Developing sustainable financial mechanisms to ensure meaningful engagement of IP and support climate-resilient and low emission forest and landscape management in West Kalimantan	The activity seeks to emphasize and guarantee the inclusion and active participation of Indigenous People and (IP), recognizing their vital role in decision-making processes and promoting their engagement in sustainable development efforts. Additionally, this activity will improve the project portfolios of West Kalimantan as the funding will allow the province to increase the quantity, quality and diversity of initiatives and activities.	• Sub-activity 1.3.1.1: Implement an on-granting program focusing on Indigenous Peoples and (IP) in West Kalimantan • Sub-activity 1.3.1.2: Elaborate strategies, policies, and procedures for one or several financing mechanisms for climate resilient agriculture and forestry	1.3.1.1: (1) 5 calls for proposals published and implemented over a time span of at least five years. 1.3.1.2: (3) A roadmap on the design option of a potential provincial financing mechanism developed
Activity 2.1.1: Scaling up sustainable land and forest-based investment business model for West Kalimantan	Activity 2.1.1 provides support in designing and expanding a sustainable land and forest-based business model, to overcome barriers that impede the widespread adoption of sustainable agricultural practices. Through the	• Sub-activity 2.1.1.1: Design of a sustainable land and forest-based business model.	2.1.1.1: (1) At least 1 sustainable land and forest-based business model explored

	provision of support in designing and expanding a sustainable land and forest-based business model, this activity aims to facilitate and promote the engagement of investors, developers, and companies in purchasing from and investing in sustainable supply chains.		
Activity 2.1.2: Implementing and up scaling the adoption of proven approaches for reducing emissions and enhancing the sustainability and climate resilience of smallholders in key commodity supply chains (incl. agroforestry).	The activity promotes the implementation of measures to reduce the drivers of deforestation and forest degradation, to reduce CO2 emissions and to protect natural resources in the agricultural sector in West Kalimantan.	• Sub-activity 2.1.2.1: Improve capacities to implement resilient and sustainable smallholder farming • Sub-activity 2.1.2.2: Scale climate-resilient commodity and agroforestry with improved market access. • Sub-activity 2.1.2.3: Digital systems for value chain traceability and certification established, and improved access to services	2.1.2.1: (1) 25,000 ha of agricultural and forest land (farmland of direct beneficiaries) spatially analysed; (2) Development of one specific climate resilient and agroforestry model per commodity; (3) Training program designed and implemented for approximately 10.000 local farmers (at least 3.,200 are women). 2.1.2.2: (4) 5 local marketing support units and SOPs for agricultural products to strengthen local trade of sustainably produced commodities established (5) up to 25 farmer organizations are provided with technical and legal assistance 2.1.2.3: (6) Traceability systems for oil palm, rubber and other commodities adopted and 10.000 local farmers included.(at least 3.,200 are women). (7) GHG monitoring and reporting systems are aligned with national requirements and with GHG Protocol and SBTI FLAG guidance
Activity 2.1.3: Enhancing multi-stakeholder dialogue and platform for low-emission and climate-resilient agriculture and private sector investment	This activity seeks to establish multi-stakeholder Forum platforms (MSFs) on Regency level to promote investments into low-emission and climate-resilient agriculture of the Regencies private sector.	Sub-activity 2.1.3.1: Establish a commodity-based platform at Regency level and engage with provincial, national and international MSPs to promote dialogue on sustainable forestry & agriculture practices, investment	2.1.3.1: (1) One action plan for collaboration between the private and public sector in sustainable agriculture developed

		into sustainable supply chains and sustainable sourcing practices	(2) 10 multistakeholder forums for sustainable commodities established on regency level (3) up to 10 public private partnerships (PPP) for sustainable sourcing are established
Activity 2.1.4 GRASS - Greening Agricultural Smallholder Supply Chains in Kapuas Hulu.	This activity promotes sustainable agriculture based on a jurisdictional approach in the Kapuas Hulu biosphere reserve, which combines improved agricultural production methods with participatory land use planning. The integrated cultivation methods contribute to the build-up of organic soil matter, the binding of carbon, and the diversification of crops and field structures.	Sub-activity 2.1.4.1: Promotion of Sustainable Agricultural Smallholder Supply Chains in Kapuas Hulu	2.1.4.1: (1) Training of 1.100 smallholder farmers and 100 agricultural extension workers in climate resilient farming conducted (at least 330 are women) (2) 250 independent smallholder palm oil farms have been ISPO and/or RSPO certified
Activity 2.1.5 Improving sustainable landscape management and smallholder palm oil market inclusion (NISCOPS).	This activity seeks to achieve 8,000 ha of SHF oil-palm plantations to be under climate-adaptive practices in Indonesia by the end of the project	• Sub-activity 2.1.5.1a: Sustainable palm MSP's delivering on their commitments in key forest rich landscapes. • Sub-activity 2.1.5.1b: Investment and sourcing secured from partner companies in sustainable agriculture and forest restoration. • Sub-activity 2.1.5.2: Farmer empowerment and training to increase yields, climate resilience and gender inclusivity. • Sub-activity 2.1.5.3: Dialogue, brokering and de-risking of SH sourcing by international companies, in Europe and Asia. • Sub-activity 2.1.5.4a: Advice and insights on delivery of SH inclusive traceability with producer govts, companies and the EU. • Sub-activity 2.1.5.4b: Purpose-driven convening and dialogue with producer and consumer governments.	2.1.5.1: (1) Partnerships with a least 2 (international) supply chain actors established 2.1.5.2: (2) up to 24,000 smallholder farmers trained on GAP, CSA, ISPO-RSPO, and agroforestry business models (at least 7,200 are women) 2.1.5.3: (3) Partnerships with at least 2 mis established 2.1.5.4: (4) traceability tool developed and functioning

Activity 3.1.1 Supporting Forest Management Units (FMU) in the development and implementation of climate-informed forest management plans, including fire management	This activity focuses on building capacities in FMU organizations to ensure the sustainable management of 6.5 m ha in FMUs.	• Sub-activity 3.1.1.1: Develop climate-informed management plans of FMU units. • Sub-activity 3.1.1.2: Support FMU Organizations in 5 target Regencies to receive the status of "Effective FMU Organization". • Sub-activity 3.1.1.3: Building capacity for FMUs to implement climate-informed RPHJP and RPHJPd. • Sub-activity 3.1.1.4: Support FMU Organizations in 5 target Regencies in implementing climate-informed RPHJP and RPHJPd through the development of information systems and enhanced forest management practices.	3.1.1.1: (1) 34 revised FMUs management plans (RPHJP) with climate informed for management of production and protection areas and implementation of adaptation and mitigation activities developed. 3.1.1.2: (2) 9 Effective FMUs within 5 target regencies established 3.1.1.3: (3) 17 FMUs staff from all regencies trained on technical and organizational topics of forest management. (4) 50 staff of DLHK and FMUs licensed as civil servant investigators (at least 15 are women). (5) FMUs forest patrol system integrated with SMART Patrol 3.1.1.4: (6) At least, 20 agroforestry plots developed in ten FMUs within FMU managed areas. (7) At least, 5,000 seeds per FMU/year (total 250,000 seeds) planted in non-state forest areas adjacent to FMU managed areas. (8) At least, 20 business units of SF permit are registered in OSS system and non-tax revenue is paid annually.
Activity 3.2.1 Advancing social forestry implementation including building awareness of local communities of climate risks and risk-reduction practices	This activity aims at developing implementable activities on the ground that will restore degraded ecosystem, increase stakeholder capacities in adapting to the changing climate, and ensure access to different finance	• Sub-activity 3.2.1.1: Develop and implement SF management plans and support new SF permit proposal for local communities.	3.2.1.1: (1) 100,000 ha of forest are secured for local communities under the social forestry scheme

	sources that can be used to support the long-term operational activities by the community groups.	• Sub-activity 3.2.1.2: Develop and strengthen SF business unit (KUPS) to establish, improve, and escalate market, supply chain, and value-added communities' products, including the creation of KUPS models and capital supports. • Sub-activity 3.2.1.3: Build capacity for SF permit holders. • Sub-activity 3.2.1.4: Forest restoration and rehabilitation of mangrove and peat forest ecosystems conducted. • Sub-activity 3.2.1.5 Develop climate-resilient aquaculture infrastructure for coastal communities. • Sub-activity 3.2.1.6 Accelerate and enable access to potential financial streams for climate change mitigation (e.g. REDD+) and adaptation strategy, including eco-tourism, conservation commitment from private sector (i.e. RaCP), public fund (i.e. state-budget, aspiration fund), and Result Based Payment (i.e. BPDLH). • Sub-activity 3.2.1.7 Social Forestry Support Programme implemented by KfW • Sub-activity 3.2.1.8 Channeling dedicated GCF proceeds (under this proposal) to local communities to implement social forestry licenses and related management plans as well as climate-resilient land-use plans in PROKLIM villages	(2) 100,000 ha of social forests have an approved management plan (3) 10,000 ha of degraded peatlands and mangroves are rehabilitated and restored 3.2.1.2: (4) 100 SF business unit (KUPS) are established with investable business plans 3.2.1.3 (5) 600 people (at least 300 are women) of IP are trained in designing and operating KUPS 3.2.1.4: (6) At least ten peat dams will be established and monitored. 3.2.1.5: (7) One sustainable aquaculture pond is established as community adaptation strategy demonstration plot 3.2.1.6: (8) 100 SF groups secured funding through various financial streams for climate change mitigation and adaptation strategy 3.2.1.7: (9) Up to 30 villages in Sanggau supported to implement SF 3.2.1.8: (10) Dedicated funds for the implementation of social forestry licenses and PROKLIM villages transferred.

5.9 Project Budget and Source of Finance

The budget for the Project is summarised in

Component	Output	Indicative cost euro (€)	GCF financing		Co-financing		
			Amount euro (€)	Financial Instrument	Amount euro (€)	Financial Instrument	Name of Institutions
1. Institutional & Regulatory Frameworks	1.1	17,586,721	-	n/a	17,586,721	Grants	BMZ, MoEF
	1.2	2,661,213	2,661,213	Grants	-	Grants	-
	1.3	10,678,789	10,433,689	Grants	245,099	Grants	MoEF
2. Sustainable commodity production and social forestry	2.1	19,781,506	12,084,394	Grants	7,697,112	Grants	Solidaridad, BMZ-GRASS, MoEF
3. Management, protection and rehabilitation of forest and peatland ecosystems	3.1	16,219,437	9,571,893	Grants	6,647,543	Grants	MoEF
	3.2	21,659,076	18,268,877	Grants	3,390,199	Grants	KfW, MoEF
M&E		4,311,200	2,579,146	Grants	1,732,054	Grants	MoEF, BMZ, BMZ GRASS
Contingency		1,071,422	1,071,422	Grants	-	n/a	
PMC		6,225,388	2,814,117	Grants	3,411,271	Grants	BMZ, MoEF, Solidaridad, BMZ GRASS
Indicative total cost (EUR)		100,194,751	59,484,751		40,710,000		

Table 23. A description of the co-financing arrangements is described in chapter 6.

Component	Output	Indicative cost euro (€)	GCF financing		Co-financing		
			Amount euro (€)	Financial Instrument	Amount euro (€)	Financial Instrument	Name of Institutions
	1.1	17,586,721	-	n/a	17,586,721	Grants	BMZ, MoEF
	1.2	2,661,213	2,661,213	Grants	-	Grants	-

1. Institutional & Regulatory Frameworks	1.3	10,678,789	10,433,689	Grants	245,099	Grants	MoEF
2. Sustainable commodity production and social forestry	2.1	19,781,506	12,084,394	Grants	7,697,112	Grants	Solidaridad, BMZ-GRASS, MoEF
3. Management, protection and rehabilitation of forest and peatland ecosystems	3.1	16,219,437	9,571,893	Grants	6,647,543	Grants	MoEF
	3.2	21,659,076	18,268,877	Grants	3,390,199	Grants	KfW, MoEF
M&E		4,311,200	2,579,146	Grants	1,732,054	Grants	MoEF, BMZ, BMZ GRASS
Contingency		1,071,422	1,071,422	Grants	-	n/a	
PMC		6,225,388	2,814,117	Grants	3,411,271	Grants	BMZ, MoEF, Solidaridad, BMZ GRASS
Indicative total cost (EUR)		100,194,751	59,484,751		40,710,000		

Table 23: Budget Breakdown

6 Project Implementation

6.1 Organisational structures and implementation arrangements

Accredited Entity – Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

The Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH is a German-based private, limited liability, non-profit company owned by the Federal Republic of Germany; it is the Accredited Entity (AE) of this project, while the same GIZ with its management structure in Indonesia will operate as an Executing Entity (see next section). To avoid conflicts of interest, these two functions - accreditation and implementation function - are strictly separated, with different management structures within GIZ.

In its capacity as AE, GIZ will assume oversight responsibility of the project, as defined in the Accreditation Master Agreement (AMA) between GCF and GIZ. As AE, GIZ will administer project proceeds on behalf of the GCF and will provide oversight, guidance, and quality assurance of *Badan Pengelola Dana Lingkungan Hidup* (BPDLH) and SNAL as EEs receiving GCF funds through its relevant head office units as well as accompany monitoring and ensure regular reporting. In addition, GIZ will also be member of the project steering committee.

In order to implement the Project, GIZ will enter into the following legal arrangements (see Figure 9):

- The commissions by the German Federal Ministry for Economic Cooperation and Development (BMZ) to implement the GCF project.
- The Funded Activity Agreement (FAA) between GCF and GIZ as basis for the transfer of GCF proceeds to GIZ.
- The implementation agreement with MoEF as the political partner and Executing Entity of the project and to secure the co-financing of the Government of Indonesia.
- The grant agreements (i.e., subsidiary agreements) with BPDLH and SNAL as Executing Entities based on GIZ's standard operating procedures for grant agreements. The grant agreement with SNAL will also include the respective co-financing of the EE.
- A legal arrangement with KfW (providing funds to MoEF) to secure additional co-financing to the GCF project.

Additionally, there will be an internal task assignment from GIZ AE to GIZ EE for the implementation of the project.

Executing Entity – Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH (GIZ Indonesia)

GIZ has been operating in Indonesia since 1975 and currently employs approximately 410 staff members, most of them Indonesian nationals. Specifically, GIZ Indonesia has been working on climate change, forestry, and agricultural supply chains in Indonesia since the 1980s and current technical assistance in the green sector amounts to approx. EUR 45 million while GIZ's total portfolio in Indonesia is currently at approx. EUR 200 million.

In its capacity as EE, GIZ will implement its assigned activities with due diligence and efficiency. It will be responsible for:

- Managing the project budget assigned to GIZ as EE.
- Monitoring and evaluating implementation.

- Liaising with GIZ country office in Indonesia regarding budget and finances, records management, human resources, and procurement.
- Reporting to the BMZ regarding Germany's financial contribution to the project, as well as the overall progress of project implementation.
- Coordinating project implementation with the other EE, co-financing partners, counterparts, other relevant donors, and projects operating in the same technical and/or geographical area, as applicable.
- Liaising with and reporting to the Project Steering Committee (PSC).
- Liaising with and reporting to national line ministries involved in the project, as well as the NDA.
- Supporting the establishment and management of the Project Management Unit (PMU).

Executing Entity – Badan Pengelola Dana Lingkungan Hidup (BPDLH)

The Indonesia Environment Fund (*Badan Pengelola Dana Lingkungan Hidup* or BPDLH) is a public service agency (a BLU in Indonesia), a non-echelon unit accountable to the Ministry of Finance (MoF) which was established in October 2019 via MoF Decree No. 779/2019 (see Annex 2.2).

As a BLU, BPDLH has the legal flexibility and autonomous authority to manage its operations and is not dependent on the state budget (APBN) although it can source funds from it.

The BPDLH was established with the aim of developing a coherent vision and strategy for all funding streams to align with, overtime.

As a public service agency, the BPDLH is mandated to provide services to the public instead of prioritising profit-seeking and conducting their activities following the principles of efficiency and productivity. This is specifically set out in Presidential Regulation No. 23/2005 - Financial Management of Public Service Agencies.

In addition to the public benefitting from BPDLH 's support to the achievement of the Indonesian Government's environmental and climate commitments, the specific benefits include:

BPDLH will act as the main financing vehicle for channelling and distributing the GCF funds to the beneficiaries (i.e. provincial government institutions responsible to implement parts of the funded activity such as Dinas LHK, Dinas Perkebunan, Dinas Pertanian, Forest Management Units (FMUs), NGOs/CSOs, and village communities through grants either directly, or through implementing agencies.

In addition, BPDLH will manage the dedicated grant mechanism for IP which will follow standard operational procedures of the Terra Fund (in line with GIZ and GCF regulations) already in please within BPDLH. The mechanism will follow a Call for Proposal approach.[322]

BPDLH will act as a key Executing Entity to provide finance to all relevant stakeholders of the project and in this function it will:

- Coordinate with the project implementation partners (provincial government institutions, NGO/CSOs, and village communities to guarantee the integral fulfilment of the expected results of the project.
- Participate in both the Steering Committee and the Project Management Unit (PMU).

With respect to the dedicated grant mechanisms for IP BPDLH will:

[322] https://bpdlh.id/program/63d13b33-488e-4fa8-a5f9-377d4e8da1f3

- Ensure that all activities promoted and developed under the dedicated grant mechanism for IP are in accordance with the respective Grant Agreement with GIZ and the strategic guidance of the Project Steering Committee.
- Ensure submission of information to the Project Management Unit in case any modifications or updates are required at the operational or strategic level of the dedicated grant mechanism for IP.
- Develop the terms of reference for the calls for proposals jointly with GIZ EE.
- BPDLH will set up and chair a technical advisory board to the dedicated grant mechanism.

Under the supervision of GIZ AE, BPDLH will ensure that all GCF and GIZ fiduciary standards are followed, complying with the stipulations of the Grant Agreement, always within the legal framework of the project (AMA, FAA).

Executing Entity – Solidaridad Network Asia Limited (SNAL)

SNAL is part of the global network Solidaridad International (SI). SI, founded in 1969, is an international civil society organisation that facilitates the development of fair and profitable supply chains for small scale and family farmers. It provides scalable and economically effective sustainability solutions in agriculture and mining sectors in four integrally interconnected result areas:

- Training producers in good practices (farm or producer level)
- Building supportive business ecosystems (business level)
- Advocating for an enabling policy environment (policy level)
- Stimulate demand for sustainably produced goods (market level)

SI currently operates in over 40 countries, across five continents, through seven independently supervised regional expertise centres (RECs). The Asia REC (SAREC) located in India, oversees the operations of SI in 8 countries in Asia, including Indonesia. SNAL as Executing Entity for this project is the legal entity for SAREC.

SNAL, through its director and legal representative, Dr. Shatadru Chattopadhayay, founded and registered a Social Foundation in Indonesia called “Yayasan Solidaridad Network Indonesia” (YSNI) to implement projects in Indonesia initiated by SNAL.

YSNI works together with palm oil mills to help palm oil smallholders organise in well-governed farmer groups and trains these groups to improve efficiency, yield and market access while reducing negative social and environmental impacts. The palm oil sector in Indonesia has seen the adoption of sustainable commitments by larger companies in the form of various pledges around No Deforestation, No Peat, and No Exploitation (NDPE). YSNI has been supporting the implementation of scalable and economically effective sustainability solutions in agriculture within WK, Indonesia over the previous decade.

The grant agreement for the GCF project would be concluded between GIZ (AE) and SNAL (EE). Funds would subsequently be disbursed to YSNI from SNAL on the basis of a sub-grant. The implementation of the GCF project would therefore be carried out by YSNI. General tasks such as financial management, monitoring and reporting would be provided by SNAL.

SNAL via a sub-grant to YSNI will be responsible for the implementation of activity 2.1.2 “Implementing and up-scaling the adoption of proven approaches for reducing emissions and enhancing the sustainability and climate resilience of smallholders in key commodity supply chains (including agroforestry)”, activity 2.1.3 “Enhancing multi-stakeholder dialogue and platform for low-emission and climate-resilient agriculture and private sector investment”, and the solely own financed activity 2.1.5. “NISCOPS: improving sustainable landscape management and smallholder palm oil market inclusion”.

Under the supervision of GIZ AE, SNAL will ensure that all GCF and GIZ fiduciary standards are followed, complying with the stipulations of the Grant Agreement, always within the legal framework of the project (AMA, FAA).

SNAL via YSNI will also participate in the Project Management Unit (PMU) to guide implementation with local partners.

In addition, SNAL via YSNI will liaise and coordinate with other project partners to guarantee the integral fulfilment of the expected results of the project.

Executing Entity – Indonesian Ministry of Environment and Forestry (MoEF)

MoEF is the Indonesian ministry responsible for managing and conserving Indonesia's forests and the environment. MoEF Directorate Generals of high relevance to this project are Sustainable Forest Management (Pengelolaan Hutan Lestari , PHL), Forestry Planning and Environmental Management (Direktorat Jenderal Planologi Kehutanan dan Tata Lingkungan, PKTL), Climate Change Controlling (Direktorat Jenderal Pengendalian Perubahan Iklim, PPI), Social Forestry and Environmental Partnership (Perhutanan Sosial dan Kemitraan Lingkungan, PSKL), Watershed Management and Forest Rehabilitation (Pengelolaan Daerah Aliran Sungai dan Rehabilitasi Hutan, PDASRH).

In 2015, MoEF was appointed by the President as the national focal point to coordinate climate change efforts, including the climate change negotiation process. All organizations dealing with climate change, including the National Council on Climate Change (*Dewan Nasional Perubahan Iklim*, DNPI) and the REDD+ Agency were merged within a Directorate General on Climate Change (PPI) in MoEF. PPI has issued a national GHG inventory system and a national registry system for all climate actions. It oversees REDD+ and GCF implementation.

MoEF will act as an Executing Entity for the Social Forestry Support Programme funded by KfW.

Table 24: Responsible EEs per activity and sub-activity

Project Elements	Executing Entity[323]
Output 1.1: Strengthening institutional regulatory frameworks for sustainable and climate-resilient landscape management.	
Activity 1.1.1: Inclusion of climate change adaptation in mid-term, spatial, and other regional development plans.	GIZ
Sub-activity 1.1.1.1: Development of adaptation policies at provincial level in line with national adaptation policies	GIZ
Sub-activity 1.1.1.2: Capacity building and implementation support related to climate change adaptation for government agencies at provincial, Regency and village level	GIZ
Sub-activity 1.1.1.3: Development of tools for the implementation of adaptation	GIZ
Activity 1.1.2: Strengthening mitigation actions through improved REDD+ implementation towards achievement of sub-national FOLU Net Sink 2030 targets	GIZ
Sub-activity 1.1.2.1: Align the provincial REDD+ policies with the current national mitigation policies and regulations	GIZ
Sub-activity 1.1.2.2: Inclusion of mitigation policies into provincial development plans	GIZ

[323] *Where a Sub-Activity is implemented by more than one Executing Entity, a Lead Executing Entity – indicated in bold font – will coordinate the interventions of the other Executing Entities.*

Sub-activity 1.1.2.3: Support implementation of enabling conditions for mitigation activities	GIZ
Sub-activity 1.1.2.4: Monitoring and reporting of mitigation activities	GIZ
Activity 1.1.3: Strengthening the institutional framework for coordination of mitigation and adaptation activities across relevant stakeholders	GIZ
Sub-activity 1.1.3.1: Enhance institutional arrangements for the Provincial Body on Climate Change, including stakeholder consultation and amendment of the supporting legal framework	GIZ
Sub-activity 1.1.3.2: Support activities of provincial body for climate change with capacity building measures, absorption of operational costs and outreach	GIZ
Output 1.2: Developed land use plans which consider climate change and identified HCV/HCS areas	
Activity 1.2.1: Strengthening the legal and regulatory framework and implementation of High Biodiversity and Carbon Areas Management Plan (i.e., HCV/HCS) on non-state forest land	**GIZ**, BPDLH
Sub-activity 1.2.1.1: Identify areas and develop management plans for High Biodiversity and Carbon Areas within non-state forest land across West Kalimantan Province	**GIZ**, BPDLH
Sub-activity 1.2.1.2: Develop and strengthen regulations at provincial and regency levels, to govern the protection and sustainable management of the High Biodiversity and Carbon Areas.	**GIZ**, BPDLH
Sub-activity 1.2.1.3: Increase stakeholders' capacities (i.e. companies, communities, provincial and regencies governments) in implementing the management plan for High Biodiversity and Carbon Areas within non-state forest land.	**GIZ**, BPDLH
Sub-activity 1.2.1.4: Support and monitor the management plan implementation for High Biodiversity and Carbon Areas.	**GIZ**, BPDLH
Sub-activity 1.2.1.5: Enabling Jurisdictional Approach (JA) certification for Ketapang Regency as a replicable model to other regencies in West Kalimantan Province	**GIZ**, BPDLH
Output 1.3: Established and implemented dedicated grant mechanism provides adequate financing and meaningful engagement for IP involved in climate-resilient, low-emission forest and landscape management and further financing mechanisms have been assessed	
Activity 1.3.1: Developing sustainable financial mechanisms to ensure meaningful engagement of IP and support climate-resilient and low emission forest and landscape management in West Kalimantan	**GIZ**, BPDLH
Sub-activity 1.3.1.1: Implement an on-granting program focusing on Indigenous Peoples (IP) in West Kalimantan	**BPDLH**, GIZ
Sub-activity 1.3.1.2: Elaborate strategies, policies, and procedures for one or several financing mechanisms for climate resilient agriculture and forestry	**GIZ**, BPDLH
Sub-activity 1.2.1.3: Implementation of the Environmental and Social Management Plan (ESMP), Indigenous Peoples Plan (IPP) and Gender Action Plan (GAP) ensuring compliance with FPIC and safeguards	**GIZ**
Output 2.1: Benefitting local communities produce sustainable agricultural and agroforestry commodities, accessing new markets for sustainable products, while an M&E framework is established that measures environmental compliance and ensures the scalability as well as replicability of sustainable practices.	
Activity 2.1.1: Scaling up sustainable land and forest-based investment business model for West Kalimantan	**GIZ**, BPDLH
Sub-activity 2.1.1.1: Design of a sustainable land and forest-based business model.	**GIZ**, BPDLH
Activity 2.1.2: Implementing and up scaling the adoption of proven approaches for reducing emissions and enhancing the sustainability and climate resilience of smallholders in key commodity supply chains (incl. agroforestry).	**Solidaridad**, BPDLH

Sub-activity 2.1.2.1: Improved capacities to implement resilient and sustainable smallholder farming	**Solidaridad**, BPDLH
Sub-activity 2.1.2.2: Climate-resilient commodity and agroforestry scaled with improved market access.	**Solidaridad**, BPDLH
Sub-activity 2.1.2.3: Digital systems for value chain traceability and certification, and improved access to services	**Solidaridad**, BPDLH
Activity 2.1.3: Enhancing multi-stakeholder dialogue and platform for low-emission and climate-resilient agriculture and private sector investment	**Solidaridad**, BPDLH
Sub-activity 2.1.3.1: Establish a commodity-based platform at Regency level and engage with provincial, national and international MSPs to promote dialogue on sustainable forestry & agriculture practices, investment into sustainable supply chains and sustainable sourcing practices	**Solidaridad**, BPDLH
Activity 2.1.4 GRASS - Greening Agricultural Smallholder Supply Chains in Kapuas Hulu.	GIZ
Sub-activity 2.1.4.1: GRASS - Greening Agricultural Smallholder Supply Chains in Kapuas Hulu	GIZ
Activity 2.1.5 Improving sustainable landscape management and smallholder palm oil market inclusion (NISCOPS).	Solidaridad
Sub-activity 2.1.5.1a: Sustainable palm MSP's delivering on their commitments in key forest rich landscapes.	Solidaridad
Sub-activity 2.1.5.1b: Investment and sourcing secured from partner companies in sustainable ag and forest restoration.	Solidaridad
Sub-activity 2.1.5.2: Farmer empowerment and training to increase yields, climate resilience and gender inclusivity	Solidaridad
Sub-activity 2.1.5.3: Dialogue, brokering and de-risking of SH sourcing by international companies	Solidaridad
Sub-activity 2.1.5.4a: Advice and insights on delivery of SH inclusive traceability with producer govts, companies and the EU	Solidaridad
Sub-activity 2.1.5.4b: Purpose-driven convening and dialogue with producer and consumer governments	Solidaridad
Output 3.1: Capacitated FMUs and private sector actors incentivized to engage in implementing climate informed protection and sustainable management of forest and peat ecosystems.	
Activity 3.1.1 Supporting Forest Management Units (FMU) in the development and implementation of climate-informed forest management plans, including fire management	**GIZ**, BPDLH
Sub-activity 3.1.1.1: Development of climate-informed management plans of FMU units.	**GIZ**, BPDLH
Sub-activity 3.1.1.2: Supporting FMU Organizations in 5 target Regencies to receive the status of "Effective FMU Organization".	**GIZ**, BPDLH
Sub-activity 3.1.1.3: Capacity building for FMUs to implement climate-informed RPHJP and RPHJPd.	**GIZ**, BPDLH
Sub-activity 3.1.1.4: Support FMU Organizations in 5 target Regencies in implementing climate-informed RPHJP and RPHJPd through the development of information systems and enhanced forest management practices.	**GIZ**, BPDLH
Activity 3.2.1 Advancing social forestry implementation including building awareness of local communities of climate risks and risk-reduction practices	GIZ, BPDLH
Sub-activity 3.2.1.1: Develop and implement SF management plans and support new SF permit proposal for local communities.	GIZ, BPDLH
Sub-activity 3.2.1.2: Develop and strengthen SF business unit (KUPS) to establish, improve, and escalate market, supply chain, and value-added communities' products, including the creation of KUPS models and capital supports.	GIZ, BPDLH

Sub-activity 3.2.1.3: Capacity building for SF permit holders.	GIZ, BPDLH
Sub-activity 3.2.1.4: Forest restoration and rehabilitation of mangrove and peat forest ecosystems.	BPDLH
Sub-activity 3.2.1.5 Developing climate-resilient aquaculture infrastructure for coastal communities	BPDLH
Sub-activity 3.2.1.6 Accelerate and enable access to potential financial streams for climate change mitigation (e.g. REDD+) and adaptation strategy, including eco-tourism, conservation commitment from private sector (i.e. RaCP), public fund (i.e. state-budget, aspiration fund), and Result Based Payment (i.e. BPDLH).	BPDLH
Sub-activity 3.2.1.7 Social Forestry Support Programme implemented by KfW	MoEF
Sub-activity 3.2.1.8 Channelling dedicated GCF proceeds (under this proposal) to local communities to implement social forestry licenses and related management plans as well as climate-resilient land-use plans in PROKLIM villages	BPDLH

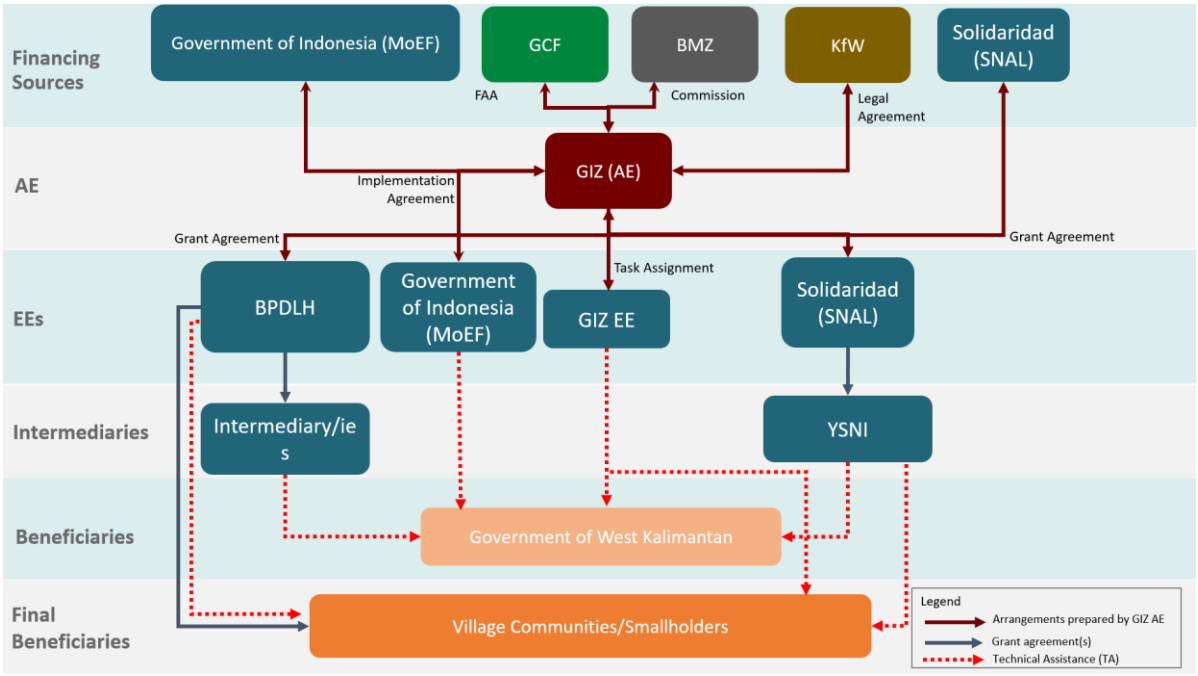
6.2 Legal and Contractual Agreements

The graph below illustrates the contractual arrangements foreseen between the main partners of the project. BMZ will be commissioning GIZ with the implementation of the overall project (commissioning agreement). GCF will transfer funds based on a Funded Activity Agreement (FAA) to the Accredited Entity GIZ. GIZ Indonesia (as EE) will receive an internal task assignment from the AE for the implementation of the project.

Furthermore, in order to implement the Project, GIZ will need to establish legal arrangements with MoEF, BPDLH, SNAL, and KfW:

- GIZ (AE) will sign an implementation agreement with the MoEF as the political partner and Executing Entity of the project (related to the BMZ commission and signed between GIZ and MoEF) to secure the co-financing of the Government of Indonesia.
- GIZ (AE) will sign a grant agreement (i.e., subsidiary agreement), based on GIZ standard operating procedures with BPDLH as Executing Entity.
- GIZ (AE) will sign a grant agreement (i.e., subsidiary agreement), based on GIZ standard operating procedures with SNAL as Executing Entity which will include own funds as co-financing contribution to the funded activity.
- GIZ (AE) will sign cooperation agreements with KfW, as co-financing partners of the project, providing funds to MoEF.

Figure 33: Contractual Arrangements



6.3 Flow of Funds Structure

Figure 34 below depicts the overall flow of funds for the project. Funds from GCF will be transferred to GIZ as AE, who will then transfer funds to the BPDLH. The BPDLH operates through two modes of delivery: a) sub-grants to final beneficiaries (i.e. IP under the TERRA fund managed by BPDLH and b) sub-grant(s) to intermediary agencies (*lembaga perantara*) which successfully completed the due diligence in line with BPDLH regulations. The intermediate agency will provide technical assistance to beneficiaries (i.e. local government partners in West Kalimantan) Further funds will be implemented directly by GIZ Indonesia or transferred to SNAL (in their respective role as EE). The Government of Indonesia through MoEF will provide co-financing.

Additional funds either from public sources or private sector actors (e.g. direct investors or RSPO RaCP) as a result from the provided TA within the activities under component 1 and 2 will be mobilized or leveraged. These funds will either flow directly to the project beneficiaries or through the financial mechanism planned under activity 1.3.1.

Figure 34: Flow of Funds

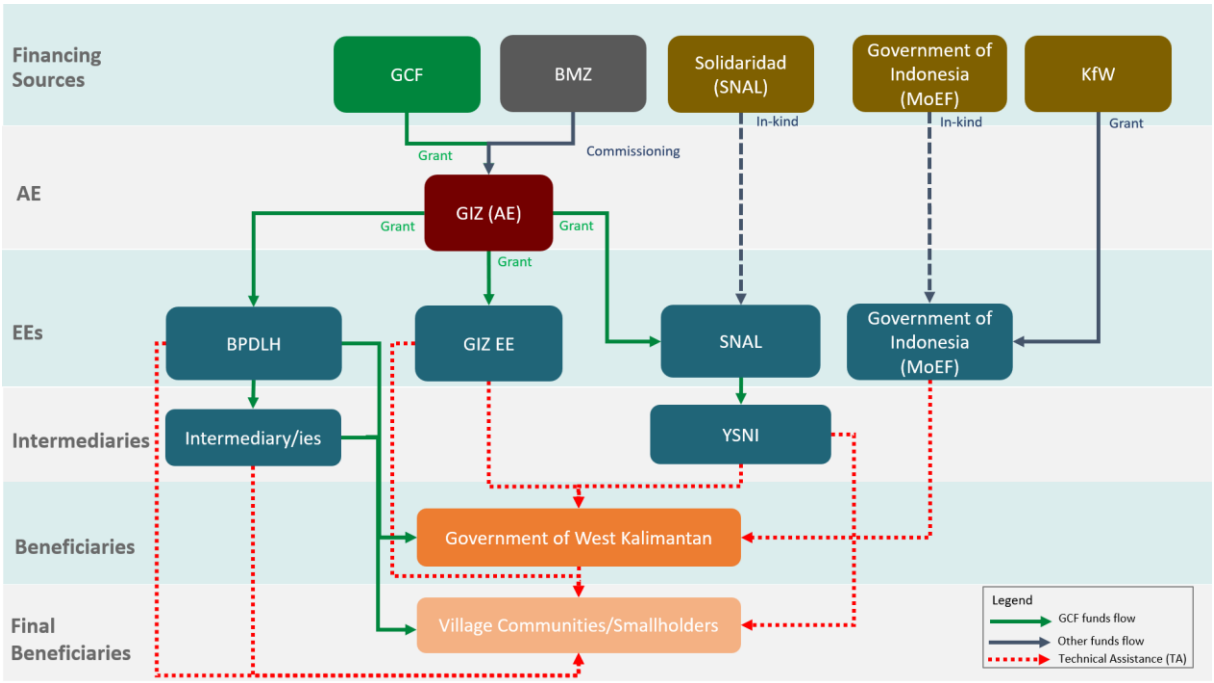
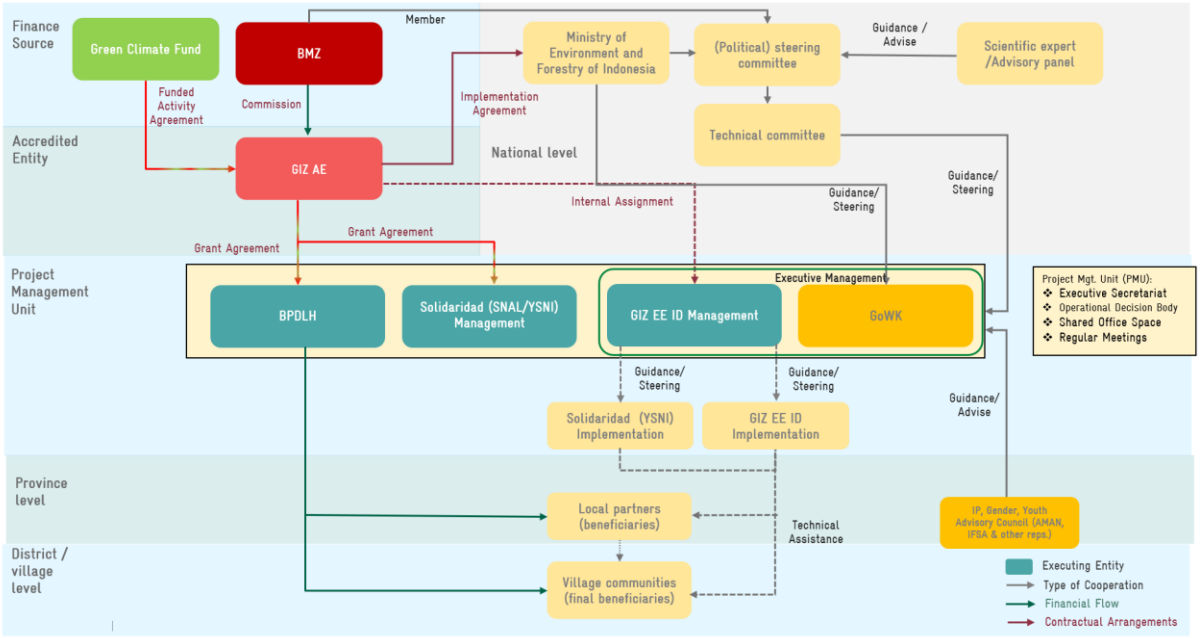


Figure 35 summarizes the main institutional arrangement and flow of funds including the Project Management Unit (PMU).

Figure 35: Institutional arrangements and flow of funds



6.4 Governance Structure

Project Governance

The project will follow a governance structure as shown in Figure 36. The highest level governance will be overseen by a Project Steering Committee (PSC), which will serve as the principal governing body for the project. The PSC will meet twice a year and will consist of representatives of the Indonesian national ministries and departments as well as BPDLH. The PSC will be responsible for political oversight and coordinating partner cooperation. The specific functions of the PSC will be to:

- Provide overall guidance for project implementation.
- Provide feedback and validation of annual work plans, annual reports and project evaluations.
- Ensure project progress and coherence with the (evolving) international and national policy context.
- Stay informed of project adherence with E&S Safeguards and Gender Action Plan objectives.
- Support the coordination of project activities across different line ministries and between the private and public sectors and civil society.

In addition to the PSC a Project Technical Committee (PTC) will be established, which will serve as the principal technical advisory body to the project. The PTC will meet once year and will consist of representatives of the Indonesian national ministries and departments, representatives of the EEs and the subnational authorities of West Kalimantan. The PSC will be responsible for political oversight and coordinating partner cooperation. The specific functions of the Project Technical Committee (PTC) will be to:

- Provide technical input and advice to the project
- Review the Strategic Plan (RENSTRA) and Annual Working Plan (AWP) prepared by the project;
- Discuss the preparation and implementation of activities with the project;
- Carry out other tasks carried out by the PSC.

Project Management

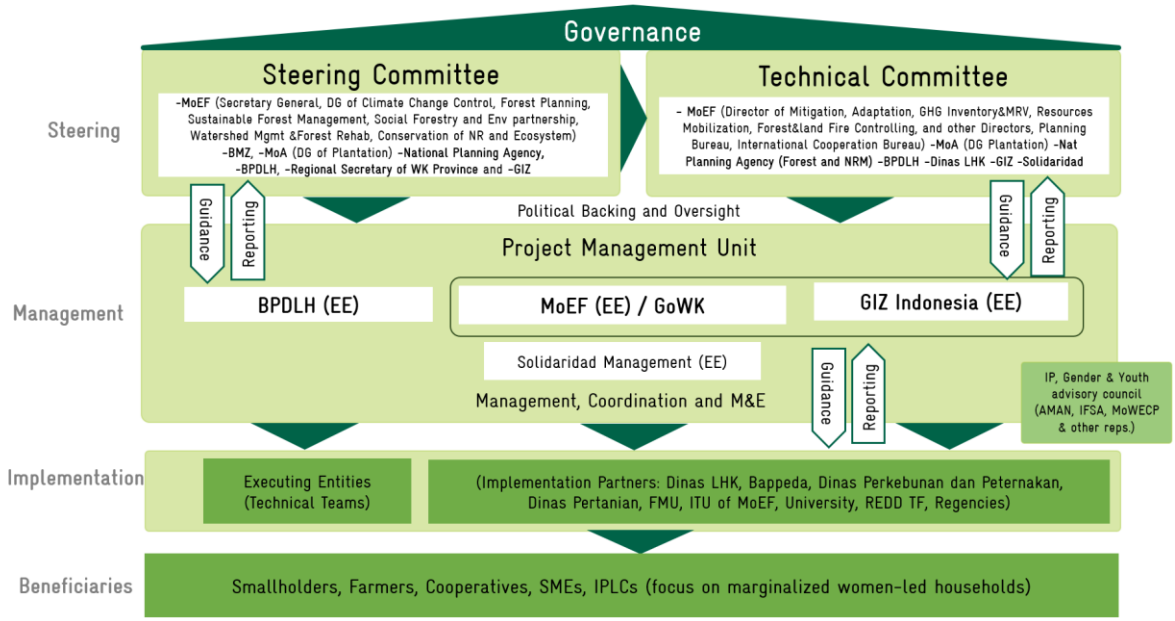
The Project Management Unit (PMU) will be responsible for day-to-day implementation of the project. The PMU will be headed by a Dinas LHK director on behalf of the government of West Kalimantan and members of the PMU will include staff from the four Executing Entities – BPDLH, Solidaridad and GIZ. The PMU will meet regularly with the following tasks:

- Enhance common understanding among Executing Entities on the theory of change and how transformation in the sector shall evolve.
- Discuss, monitor, and promote best possible synchronisation of implementation between the Executing Entities.
- Ensure overall project planning, implementation, monitoring, reporting and evaluation.
- Define, monitor and coordinate work plans.
- Ensure that budgets and work plans are on track.
- Identify and resolve bottlenecks and implementation challenges relevant at the project level.
- Monitor adherence to environmental, social, gender and fiduciary safeguards.
- Identify issues required to be brought to the attention of the PSC.

- Manage the procurement of consultants.
- Knowledge and learning management.

A number of project Working Groups will be established with different mandates and meeting frequencies, appropriate to their tasks. The Working Groups will be supported by GIZ and will each contain a representative from the PMU. The Working Groups are intended to provide objective, technically-strong, strategic monitoring of defined project activities, semi-detached from the PMU and unaffected by the day-to-day management that the PMU will be required to engage in. The Working Groups will involve stakeholders beyond the direct project stakeholders including from different sectors as well as private sector and civil society to ensure climate change mitigation and adaptation mainstreaming across relevant sectors.

Figure 36: Governance Structure



In addition, the PMU will receive guidance and inputs from an Indigenous Peoples, Gender, and Youth Advisory Council[324] which will play a pivotal role serving as a critical voice in ensuring the project's inclusivity, cultural sensitivity, and effectiveness. Through their advisory role, the council enhances project design, implementation, and monitoring processes, fostering partnerships built on mutual respect, trust, and shared responsibility, ultimately leading to more resilient and inclusive outcomes for all stakeholders involved.

6.5 Knowledge Management

The table below summarises the knowledge management for the Project.

[324] Members of the IP, Gender and Youth Advisory Council will include, amongst others, representatives of AMAN and the Internal Forestry Students' Association (IFSA) at Universitas Tanjunpura (UNTAN). The Ministry of Women's Empowerment and Child Protection (MoWECP) and women-led NGOs will be invited to the Council as well.

Table 25: Knowledge Management Plan

Knowledge Required and created by the Project

A.1. What knowledge is required by the Project during implementation?

As identified within the project activities scope, the knowledge required during project implementation encompasses 3 main streams, including knowledge to ensure paradigm shift, steer the process, and execute required activities. Concretely, the required knowledge is as follows:

- Knowledge of climate-resilient and low-carbon development, climate-informed planning, climate-resilient land-use planning, sustainable agricultural management, and climate-resilient agriculture for a paradigm shift toward sustainable development pathways.
- Knowledge to design, implement, monitor, and report mitigation and adaptation activities, ensuring that all stakeholders know the process, have know-how to implement well-organized processes and activities.
- Knowledge of sustainable agriculture and forestry land use and business management practices ensuring the ability to technically or practically execute each activity for sustainable impacts.

A.2. What processes and individuals will contribute to generating, processing and disseminating this knowledge?

The knowledge will be generated, processed, and disseminated through the following activities:

Output 1.1:

- Training on climate-resilient development, climate-resilient land-use planning, climate risk reduction
- Training on how to monitor and report mitigation and adaptation activities
- Training to PMU/ Provincial Body on Climate Change (PBCC) staff on managerial and technical aspects
- Training to climate finance facility on project portfolios development
- Workshops, discussions, consultations for knowledge exchanges on the development and implementation of policies, regulations, action plans, tools, guidebooks, systems, mechanisms, and reports with government, land managers, private sectors, NGOs, academia, and communities
- Technical assistance in the development and implementation of policies, regulations, action plans, tools, guidebooks, systems, mechanisms, and reports
- Outreach activities for awareness-rising to key stakeholders, including the youth generation, on mitigation and adaptation policies.
- Dissemination of activities, results, success and failure stories, experiences, and lessons learned to key stakeholders

Component 2:

- Training on climate-resilient agriculture that align with regenerative agriculture principles, including e-learning approaches
- Training on GAP, Best Management Practices (BMP), HCV, agroforestry, and peat management
- Training on extension models
- Training on digital and applied technologies
- Training to enhance local value adding: harvesting, storing & (post-harvest) processing of agricultural products to improve product quality,
- Training on business management and financial literacy
- Training on branding/marketing approaches
- introduction of improved planting materials and the introduction of sustainable business models
- Training on sustainability certification for palm oil, coffee, cocoa, pepper, rubber, GI, Internal Control System (ICS), and Health, Safety and Environment (HSE)
- Workshops, discussions, and consultations for knowledge exchanges on developing and implementing climate-resilient agriculture and sustainable agriculture practices.
- Technical assistance to smallholders and SMEs on the development and implementation of climate-resilient agriculture and sustainable agriculture practices

- Outreach activities for awareness-rising to buyers, producers, land managers, etc., on sustainable supply chains, green products, etc.
- Dissemination of activities, results, success and failure stories, experiences, and lessons learned to key stakeholders

Component 3:

- Training on the development of climate-informed RPHJP and RPHJPd for responsible staff at DLHK and FMU organizations
- Training courses on the implementation of technical guidelines for the assessments of Effective FMU Organizations for FMU Organization staff
- Training on Surveillance of Timber and Non-Timber Businesses
- Training on SMART Patrol for FMUs and SF permit holders
- Training on Community and Social Forestry Empowerment
- Training on Fire Danger Rating System (*Sistem Peringatan Bahaya Kebakaran*, SPBK)
- Training of Trainer (ToT) for extension staff and SF facilitator
- Training on SF management plans development, implementation, monitoring, and evaluation
- Training on SF business model development
- Training on SF boundary mapping and participatory mapping
- Training on tenurial conflict resolution
- Training on gender mainstreaming in SF management
- Workshops, discussions, consultations for knowledge exchanges on the development and implementation of forest management plans of FMU Organizations and SF permit holders
- Technical assistance to FMU organizations and SF permit holders on the development and implementation of climate-informed forest management plans that respect traditional knowledge
- Outreach activities for awareness-rising to buyers, producers, land managers, etc., on sustainable supply chains, green products, etc.
- Dissemination of activities, results, success and failure stories, experiences, and lessons learned to key stakeholders

With multiple entities involved from international, national, regional, and local levels as Executing Entities and Implementing Partners in generating, processing, and disseminating knowledge, the critical challenge will be to effectively and efficiently organize (inc. collecting, storing, structuring, categorizing, indexing, tagging, and accessing) all knowledge from project activity implementation so it can be re-accessed, and become useful information beyond Executing Entity and Implementing Partner actors to facilitate replication and scaling-up of project activities.

This project develops systems to document and disseminate information, lessons learned, and challenges, including project management manuals, documentation templates, FAQs, updates, status reports, and a project/portfolio master plan. The process will be crossed through an online system where a project-dedicated online-based information platform will be developed that link and interact with the monitoring system of mitigation and adaptation activities developed under sub-activities of 1.1.1.4 and 1.1.1.5. A special unit/division in the Project Management Unit (PMU) will be created for knowledge and learning management. Operational procedures will be developed guiding Executing Entities, Implementing Partners or users on type, requirement, outline, quality, capacity of data and information that can be uploaded and stored in the system, how the data will be organized, and how data can be accessed.

On top of that, the project will create institutional learning and strengthening of knowledge, collective learning processes, and institutions. Knowledge and learning management seek to improve project performance by leveraging and maintaining the value of the present and future knowledge assets. The key concepts adopted include converting data, organizational insights, experience, and expertise into reusable and useful information for people who need it. The project will promote the institutionalization of trainings, building on detailed documents, manuals and curricula, including training of trainers, to enable this knowledge to be effectively passed on and stored by various institutions. The project will

also respect traditional knowledge, and work together with IP through participatory and collaborative processes to identify opportunities to strengthen traditional knowledge.

This project can build up knowledge and learning process from the past GIZ FORCLIME. The interventions have changed the behaviour of local government organizations and were embedded in the regulatory framework, such as promoting transparency on budgeting in forest governance, capacity improvement of ASN, conflict resolution desk, and the Biosphere Reserve initiative in Kapuas Hulu. The university of UNTAN will support the project on knowledge management and research development topics.

A.3. Who are the key beneficiaries of the project-created knowledge?

- Government agencies at national, province, and regency levels responsible for regional development, AFOLU, and trade and investment include DLHK, BAPPEDA, DISBUN, DLH, Government Bureau of Regional Secretary (*Biro Pemerintahan Sekretariat Daerah*, BIROPEM), Economic Bureau of Regional Secretary (*Biro Ekonomi Sekretariat Daerah*, BIROEKON), PBCC, Investment and Permit Agency of West Kalimantan Province (*Dinas Penanaman Modal dan Pelayanan Terpadu Satu Pintu* DMPTSP), 17 FMU Organizations and others including village government as the lowest government level
- Smallholders: at least 14,000 smallholders
- Forest and land managers (PBPH, SF permit holders, Palm Oil Companies)
- Universities
- IP

Knowledge Products

B.1. What knowledge products will be created/supported by the Project?

- Documents of policy and regulation include RAP API, RAK API, revised provincial SRAP, updated FRL, revised land use plans at province and target regencies, High Biodiversity and Carbon Areas, Biodiversity Management Plan (*Rencana Pengelolaan Keanekaragaman Hayati*, RPKH), a provincial climate finance facility, funding mechanisms, adaptation working group, monitoring system, Effective FMUs, forest management plans, integrated area development, HCV/HCS management plan at site level
- Guidebooks or manuals on climate-informed land use planning, grant mechanism, and knowledge management
- Monitoring and evaluation report documents on the implementation mitigation and adaptation activities, including sustainable agriculture practices and forest management
- Activity report documentation outlining results and achievements, challenges, and lessons learned
- Training and workshop materials for all training and workshops in all components
- Outreach and campaign materials include fact sheets, printed books, press releases, audio, videos, photos, flyers, posters, teasers, banners, etc.
- Documents of research, assessment, identification and mapping, feasibility study, and financial analysis

B.2. How are the different needs of project beneficiaries addressed (e.g. gender, ethnic and educational backgrounds)?

- A thorough and participatory consultation process has been conducted that considered the diversity and heterogeneity of the beneficiaries and users in the project areas ensuring knowledge products address the different needs of project beneficiaries.
- To overcome language barriers in disseminating knowledge products, key strategies are:
    - Where possible, this project will ensure the availability of translators (either from within the community or from external sources, if necessary) to facilitate the dissemination of knowledge and information.
- Where available, field-project coordinator/staff/facilitator/trainer will be recruited from local people so they can translate knowledge products with the local language, diversity, and heterogeneity of the beneficiaries and users in the project areas. They will be trained on GESI, including the importance of respecting traditional knowledge.

- Knowledge products will be disseminated through local actors such as village leaders, youth representatives, CSOs, etc., which can absorb and translate knowledge products into local language, reflecting the diversity, and heterogeneity of the project's beneficiaries.
- To ensure acceptance, all knowledge products will be utilized with attention to i) the use of sensitive language and terminology that respects and values the diversity and equality of all people and avoids stereotypes, biases, jargon, or acronyms. ii) providing disaggregated data and evidence that shows the different impacts and outcomes of interventions or policies on different groups of people, iii) highlighting challenges, gaps, or opportunities that need to be addressed or explored further in the field, iv) featuring success stories or best practices that showcase how positive impacts have been achieved or promoted through the project activities.
- For wider distribution and easy to understand of knowledge products, complex materials will be converted into audio, videos, photos, flyers, posters, teasers, and banners.
- When developing knowledge products, the project will engage with a diverse and inclusive group of stakeholders in designing, developing, disseminating, and using the knowledge products to ensure that their voices, traditional knowldge, and diverse perspectives are represented and heard.

Knowledge Mainstreaming and Sustainability

C.1. How is the project's knowledge management approach linked to complementary information channels (e.g. government, donors, CSOs)?

The existing information-sharing networks and forums at national, provincial, and regency levels will be utilized to exchange knowledge and share lessons learned to support mitigation and adaptation activities. Additionally, the knowledge management approach developed within this project will be linked to the government-own information systems at national and provincial levels where relevant knowledge products can be disseminated through the system. Examples include project description, monitoring reports of mitigation and adaptation activities, and project achievement will be uploaded to the National Registry System (NRS) as well as a provincial monitoring system of mitigation and adaptation activities developed under sub-activities of 1.1.1.4 and 1.1.2.4. The interaction with the existing information system ensures information, lesson learned, and challenge of the project is constantly promoted over years beyond the project period and broader audience engagement.

C.2. How will knowledge benefits be sustained beyond the lifetime of GCF funding?

The project strategy to ensure knowledge benefits are sustained beyond the lifetime of GCF funding comprises of 3 aspects include: i) create institutional learning and strengthening of knowledge, collective learning processes and institutions, ii) promote the institutionalization of trainings, building on detailed documents, manuals and curricula, including training of trainers, to enable this knowledge to be effectively passed on and stored by various institutions, and iii) link the knowledge products with the existing information system at national and regional levels.

7 Project Funding Justification

7.1 Justification for GCF Funding Request

The project in West Kalimantan will be instrumental in achieving Indonesia's NDC targets and the national FOLU Net sink 2030 strategy and requires GCF funding for its implementation. The project aims to reduce deforestation in a hotspot with a large area of remaining natural forest cover. Over 3.8 million hectares of forests were lost from 2001-2022, making West Kalimantan the province with the 2nd highest forest loss in the country,[325] yet is still comprises 5.5 million hectares of natural forests and there is an urgency to reduce deforestation and strengthen the resilience of forest and agricultural ecosystems in the province. West Kalimantan is amongst the most vulnerable provinces in terms fires in Indonesia,[326] and is one of the poor provinces in Indonesia.[327] Over the last five years West Kalimantan has lost a total of 330,000 hectares due to wildfires.[328] In 2023 it was even the province most affected by forest and land fires with over 108.000 hectares burned. [329] In the intense fire season of 2019, the entire population of West Kalimantan suffered from heavy haze pollution and 10% of the total population were infected with severe respiratory infections.[330] Forest and land fires also caused land degradation and changes of forest functions and have generated negative impacts on the local economy.[331,332] There are incremental costs of inaction, and the slower vital adaptation and mitigation measures are implemented, the higher toll climate change will have on ecosystems, infrastructure and people's livelihoods, health and overall wellbeing.[333] Projections estimate that climate change impacts on agriculture, health and sea levels could lead to costs exceeding IDR 132 trillion (US$ 8.4 billion) in 2050 alone.[334]
The proposed project and interventions in West Kalimantan play an important role in helping the country to achieve their NDC and other national strategies, where the need for a more holistic cross-cutting and integrated approach is recognized. However, as previously highlighted, a major barrier to decrease emissions and increase climate resilience includes insufficient sustainable funding of mitigation and adaptation efforts.[335] It has been estimated that Indonesia alone requires more than IDR 4,000 trillion (US$ 285 billion) to achieve its climate change mitigation targets, of which only 30% is expected to come from the national budget.[336] This leaves a gap of at least US$ 145 million,[337] where the rest of the funds are expected to come through collaboration with regional governments, the private sector, multi-lateral and bilateral donors, and the public. Despite the urgent need for action, there is a lack of suitable financing alternatives for climate action in the AFOLU sector in general, including the cross-cutting measures outlined in this project. The following alternatives to GCF funds were assessed:

- **Public finance**: Overall, the GoWK has insufficient resources, funding, and technical capacities to implement its jurisdictional strategy interventions and green development objectives. In 2022 the annual budget for the Ministry of Environment and Forestry (MoEF) was IDR 6.5 trillion (US$ 413 million), of which approximately 60% is dedicated to the FOLU sector (for the entire country, covering 96 million hectares of forests). Focusing on the province of West Kalimantan, in 2023 the West Kalimantan Environment and Forestry services budget amounted to IDR 42.07 billion (US$ 2.67 million), which provides annual funding for FMUs, service units responsible for forest inventory and mapping, forest and land fire mitigation, forest park management, wetland ecosystem management, forestry museum, and nurseries. Considering West Kalimantan covers over 5.5

[325] https://www.globalforestwatch.org/dashboards/country/IDN/
[326] Sistem Informasi Data Indeks Kerentanan Perubahan Iklim (SIDIK), Climate Change Vulnerability Index Data Information System, MoEF, 2018
[327] Badan Pusat Statistik, 2018
[328] https://sipongi.menlhk.go.id/indikasi-luas-kebakaran
[329] https://databoks.katadata.co.id/datapublish/2023/09/05/area-kebakaran-hutan-di-kalbar-capai-1360-kali-luas-monas
[330] https://www.liputan6.com/news/read/4073808/504000-warga-kalbar-terjangkit-ispa-akibat-kabut-asap
[331] S D Jadmiko et al., 2017. Climate Changes Projection for Land and Forest Fire Risk Assessment in West Kalimantan, IOP Conf. Ser.: Earth Environ. Sci. **58** 012030.
[332] Climate change vulnerability and disaster risk in Melemba village, Kapuas Hulu. WWF Indonesia, 2016 .
[333] https://www.climatelinks.org/sites/default/files/asset/document/Indonesia%20Costs%20of%20CC%202050%20Policy%20Brief.pdf
[334] https://weadapt.org/knowledge-base/economics-of-adaptation/indonesia-costs-of-climate-change-2050/#:~:text=The%20total%20costs%20imposed%20on,economy%20as%20measured%20by%20GDP.
[335] See full list of barriers outlined in Section 4.2.
[336] https://en.tempo.co/read/1652326/bpdlh-ceo-djoko-hendratto-environmental-fund-management-agency-is-like-a-locker
[337] https://www.climatepolicyinitiative.org/publication/climate-aligned-investments-in-indonesias-financial-sector/#:~:text=To%20reach%20the%202030%20climate,in%20climate%20finance%20to%20close.

million hectares of natural forests, this is equivalent to roughly US$ 0.49 per hectare.[338] While budgets over the last two years have been stable and represent an increase from previous years,[339] it still remains far below needed levels to establish the necessary enabling conditions and implement urgently needed cross-cutting AFOLU measures. Overall, the fiscal transfer (e.g. from taxes, fees, and other revenues) from the national government is low. At the sub-national level in West Kalimantan, there are insufficient funds from the public sector.

GoWK lacks a robust jurisdictional financing mechanism and requires further investments to establish credible investment frameworks. Since the 2012-commitment for REDD+, there was no dedicated funding at the national or provincial level that comprehensively supports REDD+ at the West Kalimantan jurisdictional level. While overall public finance is insufficient to fund the full project, the Government of Indonesia is nonetheless committed to the Project, providing EUR 24.29m in co-finance.

- **REDD+ results-based payments:** Even with results-based payments of US$103.8 million for REDD+ in Indonesia from the Green Climate Fund for the results period from 2014-2016, only US$2.3 million will be allocated for West Kalimantan (cf. Decree SK.673/MENLHK/PPI/PPI.3/6/2023 about Investment Plan Results Based Payment), as funds will be distributed throughout the entire country, including other Provinces that have had more investment in jurisdictional REDD+ initiatives. Overall, RBP funds earmarked for West Kalimantan are insufficient to implement the necessary actions to overcome the barriers and facilitate a transformation towards more climate-resilient and low-emission development pathways, as described in section 5.3. Without investments to overcome the identified barriers, West Kalimantan will likely not manage to achieve substantial RBP in the future. The proposed project could help unlock additional RBP in the future, however funds are needed to support West Kalimantan to implement investments that reduce emissions from deforestation and forest degradation and strengthen the resilience of local communities and ecosystems.
- **Grants from other development partners:** Several other development partners are active in other parts of Indonesia, including Central and East Kalimantan. However, West Kalimantan has attracted comparatively less donor funds. Despite the tendency to overlook West Kalimantan, there is an urgent need to support the province. At the same time, previous activities focusing on REDD+ have had a strong focus on mitigation, and there is an urgent need to implement cross-cutting measures, strengthening the focus on adaptation to support the regional government and local communities to build their resilience and the resilience of the ecosystems upon which their livelihoods and wellbeing depends.
- Bilateral donor finance alone is insufficient to cover the full project cost, however significant co-finance has been secured to complement GCF funds. Building on their past support for Indonesia, and in particular West Kalimantan´s Forest and Climate Change Programme (FORCLIME), the German Federal Ministry for Economic Cooperation and Development commits EUR 10 million in grants as co-finance for the Project. Additional co-finance is anticipated to be provided by KfW (EUR 2.9 million) as contribution to activity 3.2.1 “Advancing social forestry implementation including building awareness of local communities of climate risks and risk-reduction practices”.
- **Concessional loans:** Conventional domestic investments provide less room for REDD+ or adaptation activities as they are focusing more on production activities. Also, interest rates are high (up to 7% for public financial institutions, 10-25% for private financial institutions and informal sector lending rates of 25%) with a short grace period. Much of the project activities are focused on generating non-financial benefits (i.e. activities that are not revenue generating), and instead focuses on setting up the necessary enabling conditions to facilitate future investments for replication and scaling. The FDB loan scheme under the Indonesian Environmental Fund (BPDLH) targets forestry companies, Social Forestry (SF) Communities, and individuals that manage forestry businesses (see section 3.5.2). It is regulated under PermenLHK P.59/MenLHK-Setjen/2015.[340] The facility aims to distribute funds to beneficiaries as low-interest loans for business activities that support, for example, community forest management, industrial plantation forests, or community plantation forests. However, it is challenging for communities to receive such a loan due to the collateral requirements. The SF permit cannot be used as collateral as is the case for a plantation

[338] Considering WK had a forest area of 5.5 million ha in 2020. Please refer to the Feasibility Study in Annex 2 for further information.
[339] See Chapter 3.5 of the FS for detailed information on national and sub-national budgets for the FOLU sector.
[340] https://jdih.menlhk.go.id/new2/uploads/files/P.59%20(4).pdf

permit .Debtors usually need to provide cash from other sources to be used as collateral. Also, the loan scheme does not include readiness financing and one of the main objectives of the GCF project is to create enabling conditions to prepare communities to be able to access alternative funding sources. However, for this to be a viable option basics like creating business associations in the villages, building business cases and supporting access to Social Forestry licenses is required. At the time of writing there are two projects in West Kalimantan making use of the BPDLH loan scheme (Crab and honey projects in Kubu Raya and a honey project in Kapuas Hulu). The economic and financial assessment (EFA) has assessed different funding options in detail (see section 7.3 or Annex 3).

- The main direct beneficiaries of the project are 680,108 persons (50% women), comprising community members in 200 target villages (50% women) engaged in forest management and 14,000 farmer households applying sustainable climate resilient agricultural and agroforestry practices. West Kalimantan has one of the lowest HDIs in Indonesia (ranking 30th out of 34 provinces), and target villages where the project will be implemented are largely located inside or in the vicinity of forest areas. Providing loans would put local populations at risk of indebtedness, given the lack of an enabling environment for cross-cutting investments in the AFOLU sector, as well as the high interest rates, short grace periods and longer-term returns associated with sustainable land and forest-based investments. In the case of smallholder palm producers, where there is a more established business model, the project will help them to access dedicated finance from BPDPKS's replanting fund, which is an important source of finance for replanting efforts in the sector.[341]
- **Private sector investments:** Securing private sector finance for a REDD+ project in West Kalimantan, Indonesia, particularly in the absence of sufficient enabling conditions, is currently not a viable option. Despite considerable progress in the development of the regulatory framework for a national carbon market, investors and carbon project developers are still reluctant to provide substantial funding due to an absence of robust business cases and confidence in the market. Similarly, *sustainable supply chains* is a relatively new policy field and consumer demand is slowly moving towards higher sustainability standards. While some big commodity traders are making efforts and invest in traceability of their value chain, these practices are yet to be mainstreamed. Investing in the traceability of smallholder products is especially costly and attracts little private sector interest, risking the exclusion of smallholder farmers from global value chains. Essential groundwork for establishing enabling conditions, robust investment frameworks, business cases, and building the capacity of GoWK for climate resilient land governance must be financed through grants, in a transition towards increased private sector funding into sustainable land use.

7.2 Choice of Instruments and Concessionality

Based on the analysis in section 7.1, grant finance from the GCF is the only viable option. Specifically, grants will support GoWK to set up the necessary enabling conditions (e.g. improved regulations, monitoring systems, investment frameworks, safeguards, capacities) that will facilitate effective implementation, unlock additional public and private funds and efficiently channel these funds for cross-cutting climate measures in the AFOLU sector, a sector which has been largely overlooked and underfinanced. Project efforts will enable replication and scaling beyond the project's lifetime helping overcome path dependencies and facilitating the long-term sustainability of measures beyond project close (see section 5.5 for more information on the project´s sustainability).

The project will further generate positive impacts for local communities that are on the frontlines of climate change, including women and indigenous peoples (among others), enabling them

[341] The Indonesia Oil Palm Estate Fund (Badan Pengelola Dana Perkebunan Kelapa Sawit , BPDPKS) distributes financial assistance to smallholders participating in Palm Oil Replanting program for smallholders (PSR) of IDR 30 million (equivalent to EUR 1.737 per ha / planters). There are three models of financing schemes that can be applied in this program based on the ability of smallholders. The first scheme is that the cost needs are met from the BPDPKS assistance fund of IDR 30 million/ha/grower plus the savings fund owned by the smallholders. The second scheme, the financing needs are met from two sources, namely utilizing BPDPKS assistance funds and "Kredit Usaha Rakyat" / Business Credit (KUR) from the bank. Meanwhile, in the third scheme, financing funds are obtained from three sources, namely BPDPKS assistance, smallholder savings, and KUR. for KUR's interest itself is around 6-7%/year.

to strengthen their resilience and benefit from sustainable land- and forest-based investments. Overall, approx. 16 million is expected to be channeled directly to beneficiaries (27% of GCF proceeds), who additionally will receive tailored technical assistance through inclusive and participatory processes. In the absence of GCF support, the region would be unable to undertake such ambitious measures. Ensuring clear alignment with the green growth plan and the FOLU Net Sink 2030 in West Kalimantan, this project is an opportunity to demonstrate an integrated approach to climate change mitigation and adaptation in the remaining vast forested landscape of West Kalimantan. Indirectly, the project will benefit over 1.7 million beneficiaries (at least 850,000 women) as a result of the adaptation co-benefits including reduced impacts of forests fires, clean air, and water supply, among others. The strengthening of institutional and landscape level planning systems to strengthen climate-informed planning and increasing the adoption of measures for REDD+ will also benefit the broader population of West Kalimantan. It will enable increased use and generation of climate information in planning and monitoring, and a strengthened enabling environment for investments in low-emission AFOLU and REDD+ in West Kalimantan.

7.3 Economic and Financial Assessment

An Economic and Financial Analysis (EFA) has been conducted to assess main financial and economic indicators of the planned project and to compare the financial viability of different funding instruments (for example loan and grant schemes). The EFA model is available as “Annex 03_Financial and Economic Analysis” and an additional report titled “Annex 3b_EFA” provides detailed explanations on the model and its results. In the following the key findings and parameters will be described.

For the purpose of the EFA, a screening was carried out to identify the most relevant activities leading to land use changes and having a financial or economic impact.

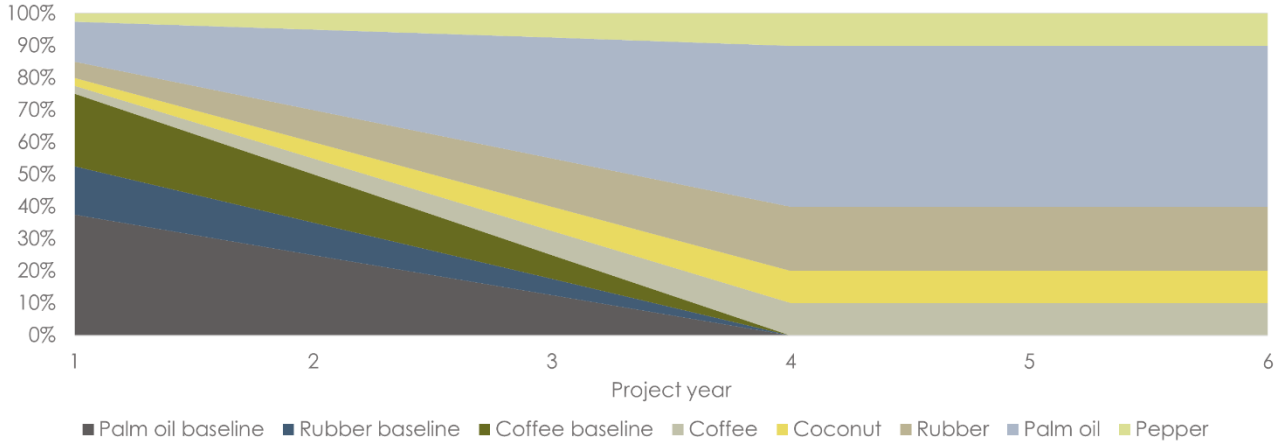
Under Component 1, 100,000 hectares of forest will receive a strengthening of the regulatory framework and the implementation of High Biodiversity and Carbon Areas (i.e. HCV, HCS) will be supported. Under Component 2, 25,000 hectares will move from unimproved and unsustainable land use to improved land use across several commodities. Under Component 3, new sustainable forest management plans (in the form of Social Forestry licenses) and communities with already existing licences will be supported across a total of 250,000 hectares of forested area (including 50,000 hectares that will be supported through the specific grant scheme targeting IP as part of activity1.3). Under activity 3.2.1.4 Forest restoration and rehabilitation of mangrove and peat forest ecosystems will conduct training and develop detailed-technical restoration plans that can be used to rehabilitate degraded peatland and mangrove ecosystems. The project will target 5,000 ha of peatland and 5,000 ha of mangrove. The total spatial scale of operations included in the EFA is thus 385,000 hectares and can be divided into activities with an impact through commodity land use changes and forestry land use change.

Other project considerations relevant to the EFA:

- Project activities promote the adoption of sustainable land management and aim to increase agricultural production, address drivers of deforestation and forest degradation and conserve biodiversity.
- Commodities taken into consideration are agricultural (oil palm, rubber, coffee, coconut, and pepper) and primary products (Non-Timber Forest Products (NTFPs)).

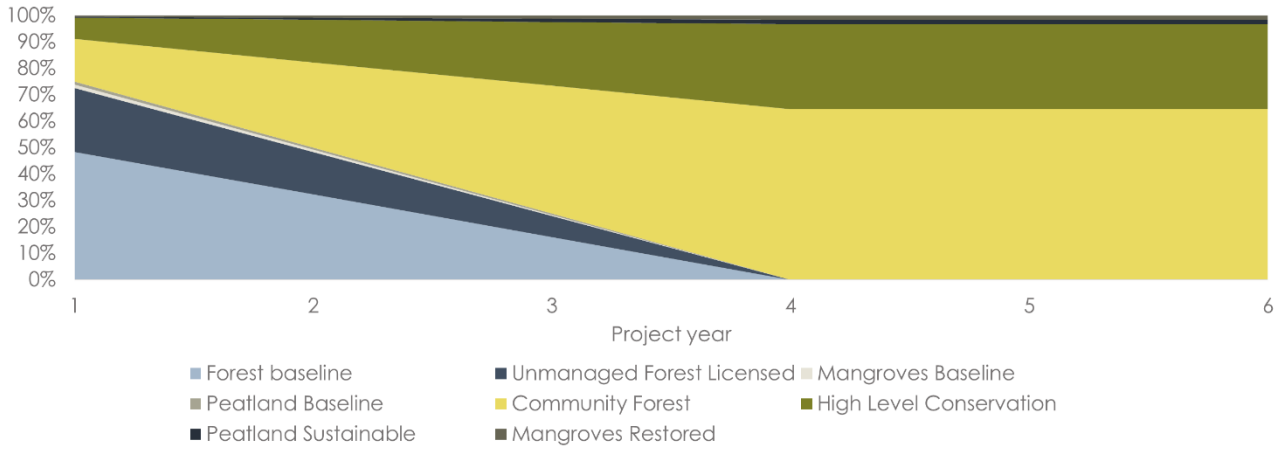
Figures 37 and 38 show the underlying assumption of the EFA model: through the project a transition from unsustainable agriculture to sustainable agriculture and unsustainable to sustainable forest management is envisioned.

Figure 37: Transition to sustainable agricultural land uses under component 2



Source: EFA

Figure 38: Transition to sustainable forest management under component 1 and 3



Source: EFA

The data collection has been a mix of literature review and stakeholder consultation (incl. data from previous Solidaridad, FFI and GIZ projects) as well as Indonesian government guidance on best practice and expected costs for coffee, palm oil and rubber plantations. The project budget has been provided by the GIZ team in their role as Accredited Entity.

Additionally, the following key assumptions are included in the EFA:

- • A discount rate of 12.03% has been used for the financial analysis. It was calculated as the weighted average cost of capital (WACC) The Economic analysis uses a social discount rate of 6% which shows a societal rate of time preference and includes to some extent the non-market value that society places on improved natural resource outcomes.[342]
- Further assumptions are, for example that 20% of farmers are expected to drop out of the program as part of activity 2.1.2 in Component 2.

[342] https://pubdocs.worldbank.org/en/115591526379293210/pdf/PAD-Annex-P159712-Economic-Financial-Analysis.pdf

- The conditions to test the loan analysis were a 25% informal sector lending rate, and a loan tenor of three years. We assumed that 100% of the financing is debt financed. The first period costs are taken to be investment costs in all models (this covers the costs of land preparation and high-quality inputs for the commodity and plantation models, and for the forestry models it covers the cost of licensing and forest rehabilitation to some extent).
- GHG benefits considered in the economic analysis with the outputs of a carbon ex-ante model and a carbon price based on the World Bank guidance on the shadow price of carbon starting at a price of EUR 40 per tCO2eq.

Main results financial analysis

The financial analysis focuses on the activities of each component of the project that has the potential to generate financial reflows through land use change. For the analysis a 12.3% discount rate was applied. Key financial performance indicators were calculated for baseline and project land uses for the discounted cashflows over the first 20 years and are listed in Table 26.

The financial analysis focuses on the activities of each component of the project that has the potential to generate financial reflows through land use change.

For example, in the palm oil BAU scenario, a farmer cultivates one hectare using traditional practices and family labour making an annual return of 1,152 EUR/ha. This covers an estimated EUR 159 in annual labour costs and other costs for small equipment. At a 12.3% discount rate, the NPV of BAU palm oil cultivation on one hectare of land over 20 years is EUR 838. Similarly, the coffee and rubber BAU models are based on traditional, low input level cultivation practices.

The BAU commodity models represent simple costs and revenues associated with production for coffee, rubber and palm oil. These include costs such as land preparation, planting, maintenance (weeding and pruning) and harvesting, as well as farm gate level revenues.

For the commodities, the improved land uses involve more investment towards professionalization and efficiency. For example, in the case of palm oil, the effect of enhanced capacities for labour and higher inputs were included, among other items. Detailed itemized costs are presented in the Excel model. For the forestry models, the forest BAU model includes a model of illegal coffee farming income from non-timber forest products, which is reduced over time at a rate of 2.6% per annum, in line with ongoing deforestation in Indonesia. These areas are converted into licensed, managed forest areas which include the cost of acquiring licensing, rehabilitation of forests and patrolling in the forested areas. For detailed information on the itemized costs please see the Excel model Annex 03_Financial and Economic Analysis.

Key financial performance indicators were calculated for BAU and project land uses for the discounted cashflows over the first 20 years and are listed in Table 26. A look at the values in the NPV column shows that most of the project NPVs are more attractive than their BAU counterparts. Furthermore, land degradation due to unsustainable management practices will reduce yields and thus revenue streams in the future if BAU activities were to be continued. Conservatively, this assumption was not considered in the model. For instance, the BAU coffee production system has an NPV of 1,417 € while the sustainable coffee production promoted by project activities under component 2 has an NPV of 5,990 €. The land uses affected by project components 1 and 3 increase in NPV from unsustainable forest BAU (320 €) and licensed forest BAU (1,011 €) to high-level conservation forest (847 €) and community forest (1,149 €). Peatland and mangroves in the BAU have an NPV of 0 € because there are no cost nor revenue streams associated with the land use (however, there are substantial carbon benefits and other ecosystem benefits from these land uses). The negative numbers under “Project other land use” peatland and mangroves are due to the costs that the restoration activities incur. Because carbon benefits are not considered in the financial analysis, there are no revenue streams and this is why the figures are negative. The analysis of NPVs of the

different cashflow models emphasize the impact potential of the project and the potential for scalability. The financial attractiveness of the land uses promoted by the project activities increase the likelihood of a sustainable development and permanence.

The IRRs were calculated for all land uses. Land uses that do not show an IRR either do not have a negative cashflow (e.g., the coffee BAU scenario does not require an initial investment) or the sum discounted cashflows is negative (e.g., the row “other land use peatland” does not have an IRR because the restoration activities are associated with costs, but there are no revenue streams considered in the financial analysis). For palm oil, significant capacity gaps, risk aversion, access to finance for the transition period and the need for immediate and continuous cash from the oil palm plantation, impose barriers for smallholders to transition from unsustainable to sustainable production systems (see section 7 in the annex of the EFA report for further explanations).

The breakeven points for the different land uses indicate that the sustainable land uses have periods of no cumulative net positive income for a period of 3 – 11 years. This highlights the need for external investment to promote sustainable land use within the project area. It also underpins the argument of additionality, as land uses promoted by the project components 1-3 in the absence of the project face investment barriers. Uncertainty and risk aversion prevent smallholder farmers from investing in sustainable development.

Table 26: Results of per hectare cashflow models

	MODEL	NPV (EUR)	IRR (%)	BCR (RATIO)	BREAKEVEN POINT (YEARS)
Unsustainable land use	Coffee BAU	1,417		3.2	0
	Rubber BAU	2,170		1.3	0
	Palm oil BAU	838		1.1	0
	Licensed forest BAU	1,011			0
	Forest BAU	320		5.2	0
	Peatland BAU	-			0
	Mangroves BAU	-			0
Sustainable land use	Coffee	5,990	34%	1.7	4
	Rubber	2,680	21%		7
	Coconut	-333	10%	0.4	11
	Palm Oil	1,661	39%		3
	Pepper	1,926	18%	1.1	7
	Community forest	1,149		5.7	0
	High Level conservation	847		11.3	0
	Peatland	-1,452		0.0	21
	Mangroves	-3,540		0.0	21

Source: see Excel model for details

The financial analysis has also been extended for the entire suite of activities across the 385,000 hectares of land for which project activities are foreseen to make changes to the land management. The landscape level analysis is essentially the same discounted cashflow analysis but involves upscaling of the per hectare models described in section 2.2 to the landscape level (including for example 5,000 hectares of rubber plantations, 12,500 hectares of palm oil, etc.), as well as including the project level implementation costs of the planned activities.

Results of the financial analysis of the whole project (including all components and project costs) are presented in Table 27. The results show that there is a significant improvement over BAU land uses in terms of NPV, however the benefit cost ratio is lower, reflecting the much higher associated costs. This strengthens the justification for the project intervention, because due to the high costs and the risk-aversion of smallholders it is unlikely that investments would

be undertaken in the absence of the project. The figures for total costs and revenues include the project costs borne by the project proponents as well as the costs incurring for the transition in land use management for smallholders and communities. In order to show the returns to GCF financing, without including project costs that will be covered by co-finance, returns have also been calculated for GCF financing by including only the GCF component of project costs.

Table 27 Financial results from GCF investment perspective over the landscape area

ECONOMIC INDICATOR	UNIT	INCLUDING TOTAL PROJECT COSTS	ONLY GCF FINANCING	BAU
NPV	EUR	318,059,062	346,969,309	302,678,447
BCR	Ratio	1.8	1.9	4.3
Total revenue	EUR	2,017,237,421	2,016,488,099	899,574,744
PV total revenue	EUR	715,516,789	714,844,784	393,499,347
Total cost	EUR	870,138,017	829,664,075	225,564,064
PV total cost	EUR	397,457,726	367,875,475	90,820,901

The results of the individual components are presented in Table 28. These results are split into component 2 which addresses agricultural production systems and component 1 and 3 which are associated with forest land use changes. Note that only the project costs associated with each component are included (not monitoring, PMC and contingency costs)[343]. The project case shows a significant financial return over the BAU. The IRR could not be determined in all the cases because the project does not run into negative net revenues in the early stages of the investment (in other words, the investment or project costs are less than the net revenue of the project activities overall).

[343] *Information how to split these costs between the two components was not available, and the amounts are very small compared to overall costs.*

Table 28: Financial results over the landscape area, by component

ECONOMIC INDICATOR	UNITS	PROJECT COMPONENT 2 (COMMODITY)	BAU COMPONENT 2 (COMMODITY)	PROJECT COMPONENT 1 AND 3 (FORESTRY)	BAU COMPONENT 1 AND 3 (FORESTRY)
Financial results					
NPV	EUR	29,908,696	30,503,240	296,720,282	284,741,578
BCR	Ratio	1.1	1.2	3.2	6.4
Total revenue	EUR	840,542,768	532,631,194	1,177,406,354	761,009,373
PV total revenue	EUR	282,844,134	214,458,118	432,677,829	337,707,518
Total Cost	EUR	619,297,613	456,872,919	239,210,653	131,546,953
PV total cost	EUR	252,935,438	183,954,879	135,957,547	52,965,940

In the EFA report, the following additional financial analysis can be found: self-financing of sustainable land uses, commercial loans, concessional loans and the grant financing.

Results of the economic analysis

In this section the results of the intervention at the landscape level are presented. The economic analysis applies to the entire project and uses the entire project budget (both GCF contribution and GCF plus co-finance) in economic NPV and IRR calculations. The lifetime of the project (period over which the project will bear its entire environmental benefits and socioeconomic co-benefits) is estimated at 20 years[344]. The economic analysis evaluates the costs and benefits at the global level by incorporating non-market externalities that are not easily monetized, such as the value of greenhouse gas (GHG) reductions. However, within the scope of this assessment, health benefits, social welfare, and ecosystem services have not been included given the difficulties in quantifying these benefits. The use of a social discount rate of 6% shows a societal rate of time preference and includes to some extent the non-market value that society places on improved natural resource outcomes[345].

The overall economic results for the model were calculated for project and BAU scenarios. There are two separate sets of economic results provided; one from the perspective of the GCF, which includes only costs borne by the GCF. The second set of economic results includes all project costs paid by the contributing funds (in other words including contributions from GIZ/ BMZ, Solidaridad, the Government of Indonesia and other partners).

Given the difficulties of valuing ecosystem services across the implementing activities it was decided not to include these in the analysis, aside from the value of sequestered carbon, for which there is good empirical evidence and defined prices. The project will also deliver significant environmental and social benefits including the improved resilience to climate change risks and the protection and enhancement of ecosystem services such as clean air, water sequestration, soil improvement as results from project activities. The project is expected

[344] This excludes the project's mitigation impact, as that is calculated against a FREL and only for the duration of the project implementation period.
[345] https://pubdocs.worldbank.org/en/115591526379293210/pdf/PAD-Annex-P159712-Economic-Financial-Analysis.pdf

to result in direct adaptation benefits through increased resilience of 680,108 people (of which 50% are women) who reside in approximately 200 villages by strengthening their awareness of climate change risk and risk reduction practices like climate-resilient and low-emission agriculture and forestry practices. The value of the resulting ecosystem services would only add to the positive economic return if included in the EFA model. Please refer to section 8 of this Feasibility Study for a detailed description of the project impacts).

Returns have also been calculated for GCF financing by including only the GCF component of project costs. The results are represented in Table 29. The analysis indicates that the project is financially even more attractive from a GCF perspective. Including the value of carbon, and using a 6% social discount rate, the intervention generates significantly improved returns relative to the financial case.

Table 29 Economic results from GCF investment perspective over the landscape area

ECONOMIC INDICATOR	UNITS	INCLUDING TOTAL PROJECT COSTS	ONLY GCF FINANCING	BAU
NPV	EUR	1,148,465,452	1,181,997,213	425,199,554
BCR	Ratio	3.1	3.3	4.2
Total revenue	EUR	2,701,841,152	2,016,488,099	899,574,744
PV total revenue	EUR	1,700,489,386	714,844,784	559,140,797
Total cost	EUR	870,138,017	829,664,075	225,564,064
PV total cost	EUR	552,023,934	367,875,475	133,941,243

Lastly, several sensitivity analyses were conducted assessing the returns to the project in the case of a reduction in revenues and an increase in costs. Results of the sensitivity analysis showed that the sustainable land use management promoted by the project remains profitable over most sensitivity levels. Only the 50% revenue loss scenario brings a negative NPV. Overall, this demonstrates the resilience of the project activities in coping with the uncertainties posed by climate change. An additional sensitivity analysis was conducted with different carbon price assumptions. The results show that the carbon price assumption does have a significant impact on the model output. However, it also shows that while the most extreme carbon price assumptions differ by a factor of 8 and higher, the outputs differ only by a factor of <2. This underpins the stability of the model predictions over a wider range of carbon price assumptions.

The detailed results are available in Annex 3 EFA.

8 Project Impacts and Co-Benefits

8.1.1 Climate Change Mitigation Impacts Overall GHG Mitigation Impacts of the Project

The estimation applies West Kalimantan's 2nd Forest Reference Level (FREL). It is aligned with the national 2nd FREL of Indonesia in terms of the methodology, including the activity data and emission factors. It estimates the annual net emissions for REDD+ baseline at 29.6 million tCO_{2eq}, which derived from deforestation (29.4 million tCO_{2eq}), forest degradation (0.8 million tCO_{2eq}), and enhancement of forest carbon stock (-0.6 million tCO_{2eq} per year). This project targets emission reductions of 2.3 million tCO_{2eq} of annual GHG emissions or 16.05 million tCO_{2eq} for the whole project duration pf 7 years. Further estimation of GHG impact to a longer project lifespan, expects total of 43.5 million tCO_{2eq} of emission reduction until 2045.

Table 30: Overview of mitigation potential attributes

	Project Duration (2025-2032)	Project lifespan (2025-2045)
Total	16.05 million tCO_{2eq}	43.5million tCO_{2eq} (considering the current project effectiveness and an adjusted FRL for future periods, which will be lower when updated every 10 years)
Expected annual emission reduction	2.3 million tCO_{2eq} per year	

The assumptions used for these estimates involve the potential scope of each project activity that cover the targeted forests and peatlands, as well as the potential impact of each project activity to contribute to direct or indirect mitigation efforts (see section Annex 22). This mitigation effort is expected to result in 52% of effectiveness in reducing the emissions in seven years and reduction of 8.7% annual baseline for the next reference period due to the mitigation impact from previous period. Estimation of emission reduction on 20-years project lifespan (2025-2045) used the similar ratio of annual emission reduction against the baseline and reduction of baseline emissions for the next update of the baseline.

Annual activity data, implied emission factors used in this analysis as well as the expected reduction of activity data based on the effectiveness factor resulted from this analysis.

Table 31: Historical activity data and assumed project impact

REDD+ Activities	Historical land use change (ha per year)	Assumed effectiveness factor of the GCF-programme	Computed avoided land use change due to GCF-programme (ha)	Implied Emission Factors (tCO2e/ha)
Deforestation				
Deforestation Emission - Biomass	66,475	55%	36,746	372.1
Peat Decomposition Emission (in deforested area)	25,443	57%	14,447	37.7

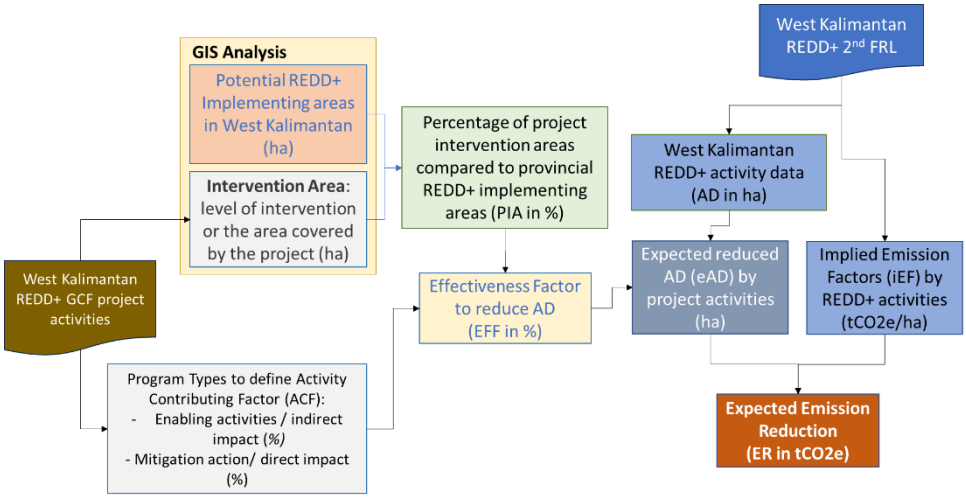
Peat fire emission	7,258	57%	4,121	509.0
AGB+DOM fire emission (in deforested area)	500	55%	276	50.3
Mangrove soil emissions (in deforested area)	215	69%	149	48.8
Forest Degradation				
Forest degradation emission - Biomass	3,928	54%	2,130	207.9
Peat Decomposition Emission (in forest degraded area)	508	0%	-	16.2
AGB+DOM fire emission (in forest degraded area)	5	54%	3	41.4
Enhancement of Forest Carbon Stock			-	
Enhance of forest carbon stock (EFCS) - Biomass	1,786	53%	939	-358.2
Peat Decomposition Emission (in EFCS area)	528	54%	287	41.8
Total and Average	**106,646**	**51%**	**59,098**	

A total of annual activity data of REDD+ in West Kalimantan is 106,600 hectares annually. With the average of effectiveness of 51% of the project activities to reduce the emissions, the expected reduced activity data is 59,000 hectares. The largest contribution are REDD+ activities related to reducing deforestation with total impacted activity data of 55,700 hectares (mostly from biomass loss, i.e. 36,700 hectares). The effectiveness factors range from 0% to 69%. Emissions from peat decomposition in forest degradation areas are not impacted by the intervention, due to the unavailability of primary peat swamp forests in the area. The emission reduction potential of project activities depends on their characterization as “enabling” or “direct” mitigation activities and the size of the area that the activity targets. Component 2 has the lower average of effectiveness in reducing the emissions, due to the nature of the activities, which are mostly indirect mitigation actions through the support of smallholders and their agricultural activities in relatively small areas. On the other hand, Component 1 and Component 3 have higher effectiveness to reduce emissions. Most of the direct mitigation activities are in Component 3 through the support of FMUs and the SF license holders on a total of 200,000 hectares. The activities in Component 1 are mostly enabling activities at province level, but covering large areas of implementation or the direct mitigation activity of establishing 100,000 hectare of Ecosystem Essential Areas.

8.1.2 Methodology GHG emissions reduction calculations [for mitigation projects]

To estimate the impact of the project, several factors are included in the calculation, including the types of intervention, potential implementation areas related to REDD+ activities, as well as emission baseline and the historical activity data (see Figure 39). A detailed description of the applied methodology for calculating GHG emissions is available in Annex 22.

Figure 39: Flow chart of method on estimating GHG impact



The total expected emission reduction (TER) was the sum of all expected emission reduction of i REDD+ sub-activity. The expected emission reduction of i REDD+ sub-activity (ER_i) was generated through the multiplication of the expected activity data of i REDD+ sub-activity (eAD_i) in hectares, and the associated implied emission factors (iEF_i) in tCO2/ha (see equation below).

$$TER = \sum ER_i$$

$$ER_i = eAD_i \times IEF_i$$

The expected activity data of i REDD+ sub-activity (eAD_i) is the activity data (such as, the size of deforestation) that are expected to be reduced due to the implementation of the project activities. The eAD_i was calculated using below equation, where AD_i is the activity data of i REDD+ sub-activities (see Table A22-8 in the separate Annex 22 on GHG emissions attached to the FP) and EFF is effectiveness factor, that represents the effectiveness of the programme activities to reduce the annual activity data.

$$eAD_i = AD_i \times EFF$$

$$EFF = ACF \times PIA_i$$

The EFF is calculated using the above equation. The EFF considers two factors, including:

1) Types of project activity, such as enabling activity or direct mitigation. The type of activity defines the activity contributing factor (ACF). The factors used for the calculation are 3.5% for enabling programme and for direct mitigation actions depend on the scale of the intervention areas.
2) The scope of implementing areas, which defines the proportion of implementing areas (PIA_i) to province level's implementing areas for example, the selection of priority regencies as the scope of project implementation will have higher PIA than the scope of village level.

8.2 Climate Change Adaptation Impacts

8.2.1 Key results of the climate risk assessment

The Climate Risk Assessment in West Kalimantan employed a robust methodology involving extensive data collection, analysis, and modeling. Various sources were utilized, including historical climate data, exposure and vulnerability indicators, and socio-economic factors, to evaluate the risks associated with climate change. The assessment utilized qualitative and quantitative approaches to comprehensively assess the impacts of climate change.

The Assessment identifies three primary hazards: Extreme high precipitation, increasing temperature, and long dry spells. The three indicators are identified as hazards because they are natural conditions that can increase risks if their indicator values are high, and vice versa. However, these conditions cannot be changed as they are natural occurrences.

Intermediate impacts occur when these hazards combine with vulnerable conditions. In this analysis, intermediate impact is divided into two stages. The first stage is biophysical impact, followed by the second stage, which is the impact on plantations and forests. Referring to the hazards, which are extreme conditions in temperature, precipitation, and dry spells, the biophysical impact is related to the potential of hydro-meteorological disasters such as floods, forest and peat fires, and droughts. Additionally, these hazards also have an impact on the loss of biodiversity. Under these conditions, another resulting impact is the potential loss of soil moisture, leading to increased land degradation and soil erosion. These biophysical loss impact on the crops. Plants experience water stress due to drought or disrupted growth due to reduced soil fertility as a result of soil erosion, which causes the erosion of organic matter in fertile soil. On the other hand, prolonged drought conditions also have an impact on the potential increase in plant pests and diseases, leading to a decrease in overall crop production. The impacts of these conditions result in a decrease in both quantity and quality of crop production.

The vulnerability in West Kalimantan was identified from the physical, social, economic, and technological conditions that the assessment identified. The identification process of vulnerability conditions is obtained through a previously conducted approach, using analysis results such as barriers as components that can increase the potential for such impacts. These barriers pose challenges and have physical, social, and institutional influences in efforts to reduce the impact. Four groups of barriers have been identified, namely governance, institutional and technical capacities, financial constraints, and market-related challenges.

The governance barriers encompass multiple components that contribute to the challenges in West Kalimantan. These barriers include the absence of climate change considerations in local land use planning, resulting in unclear or complex land tenure and use rights. This lack of clarity in land management rights is further compounded by inadequate coordination between key ministries and agencies. Additionally, there are gaps in forest and land governance at the sub-national level, which further hinder effective management efforts. Furthermore, the insufficient integration of indigenous and local communities in sustainable land and forest management exacerbates the challenges faced in the region. These governance barriers collectively pose significant challenges to address and become the vulnerability indicators in West Kalimantan.

The institutional and technical capacities barriers comprise several components, including insufficient institutional capacities for implementing and scaling-up sustainable AFOLU (Agriculture, Forestry, and Other Land Use) practices and a lack of technical capacities and support for communities. To address these barriers, several activities need to be implemented. One of the crucial activities is to advance social forestry implementation, which includes raising awareness among local communities about climate risks and promoting risk-reduction practices. Additionally, like the previously mentioned activities, it is important to incorporate climate change adaptation measures into mid-term, spatial, and other regional development plans.

The third groups of barriers identified in the area is related to financial challenges. The financial barriers encompass components such as insufficient sustainable financial mechanisms which is caused by the insufficient institutional budgets for FMUs mandated with overseeing forest land use. And the last identified barrier in West Kalimantan is related to markets. These market barriers are caused by the lack of a sustainable land and forest-based investment business models and access to markets. The vulnerability indicators analyzed will serve as components used to assess the level of vulnerability in the area, which will then be addressed through tailored adaptation measures.

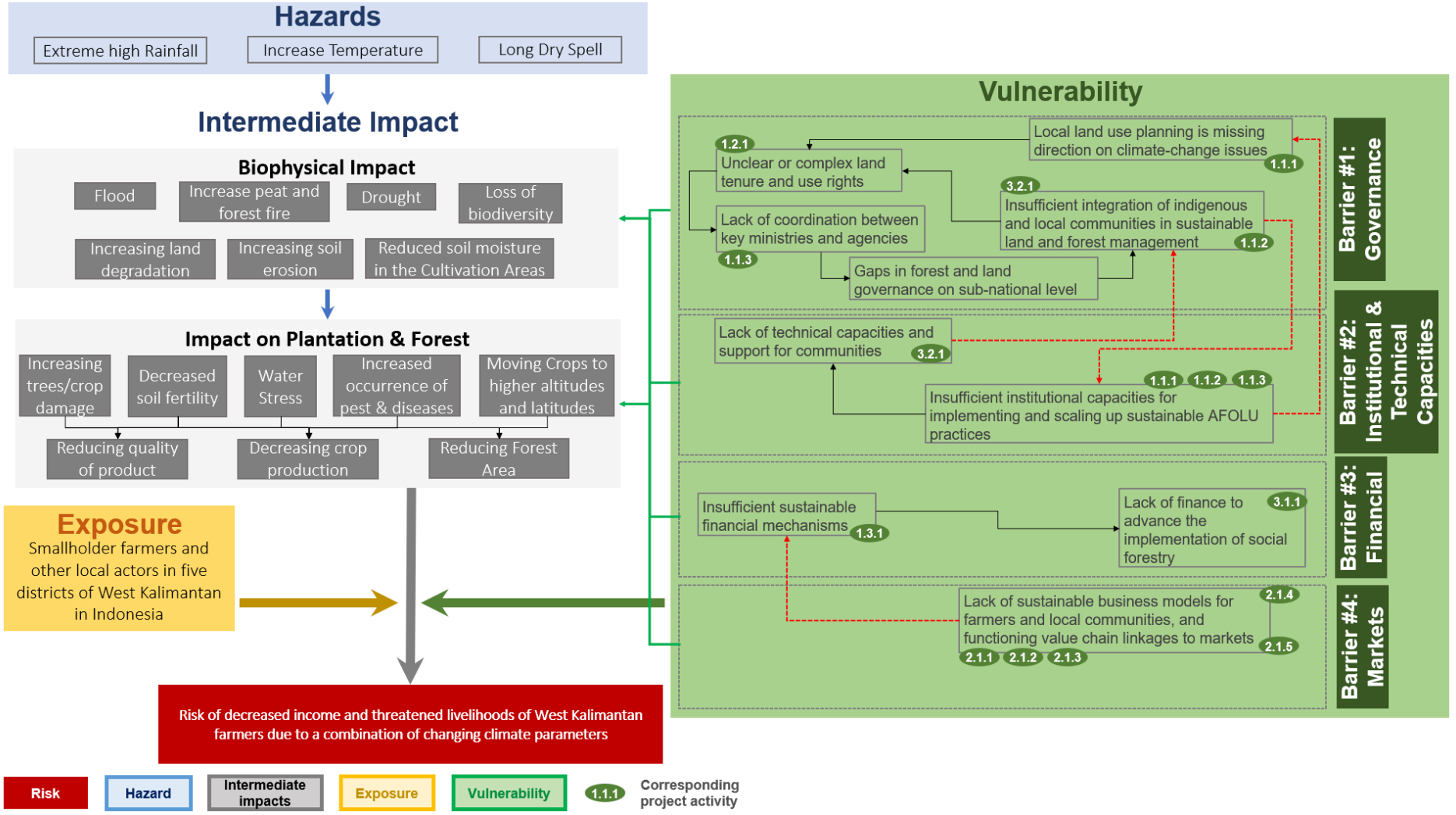
The exposure indicators as analyzed in West Kalimantan consist of the affected areas and the population affected, including the extent of agricultural and forest land impacted. The exposure

indicators in this case include smallholder farmers, as well as other stakeholders involved in agricultural and forestry activities. Additionally, the extent of forest land and agricultural land would also be considered as exposure indicators.

The impacts mentioned can ultimately lead to risks such as a decrease in agricultural and forestry production, economic losses for farmers, damage to forest ecosystems resulting in biodiversity loss, land conflicts between landowners and other users, and food insecurity in the affected areas. In this assessment the risk is defined as Risk of decreased income and threatened livelihoods of smallholder farmers in West Kalimantan due to a combination of changing climate parameters.

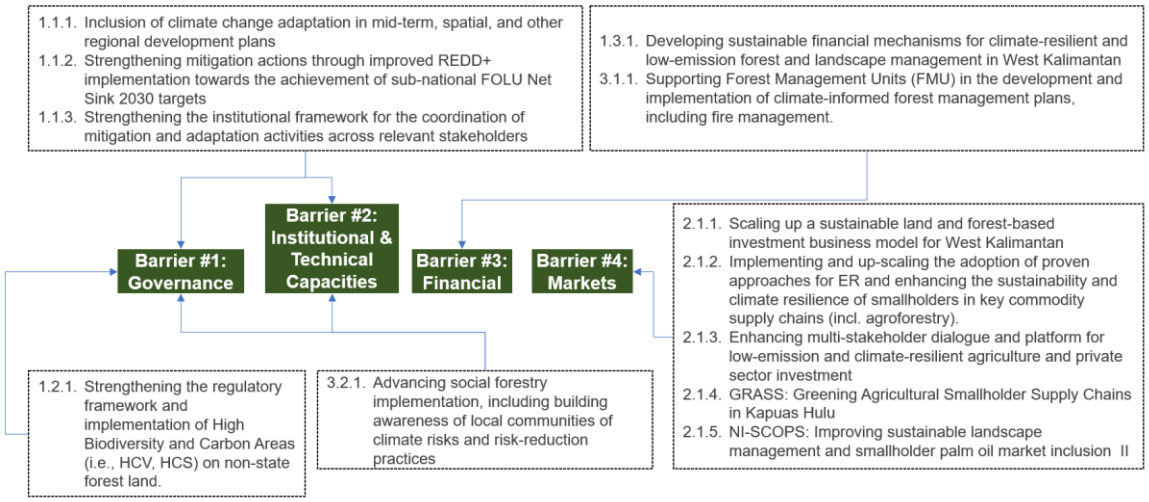
Figure 40 summarizes the key climate hazards identified in an impact chain.

Figure 40: Impact chain of the Climate Risk Assessment in West Kalimantan



Based on the impact chain analysis and the analysis of risk and vulnerability indicators, the core adaptation measures for West Kalimantan have identified adaptation measures as follows:

Figure 41: Visualizing the Interconnection of Barriers and Adaptation Measures



8.2.2 Adaptation impacts and core adaptation indicators

Overview

Although the project was initially designed as a mitigation project, it became clear through concept note stage that it does have adaptation merits. Hence, the current project design fully covers adaptation throughout its activities.

Climate change is projected to strongly impact West Kalimantan**,** where it will have a disproportionate impact on particularly vulnerable groups including poor households, agricultural and forest dependent communities, indigenous peoples, women, and disabled persons, among others. These communities, who are more dependent on climate-sensitive sectors and ecosystems, are particularly vulnerable to the rapid acceleration of climate related hazards and related risks, which are increasingly observed and projected to increase (see climate risk assessment and a summary in section 2.2). For example, agro-ecosystems and agricultural producers are affected by changes in rainfall, evaporation, run-off water and soil moisture. This will have negative impacts on local incomes and water security. In addition, rising temperatures are projected to lead to an increase in the incidence and range of pests and diseases. When combined with decreased rainfall and increased demand, higher temperatures will also present new challenges related to water storage. It is estimated that in total agricultural productivity will decrease by 17.9% due to climate change by 2080.[346] Increasing forest fires will lead to damages and losses of infrastructure, productive assets, and human lives. Large scale fires also result in the loss of ecosystem services, and generate negative health impacts on the local population due to smoke and haze.

Table 32 provides an overview of the main climate risks, how those impact different systems, proposed interventions and related adaptation benefits.

[346] https://www.futuredirections.org.au/publication/the-state-of-indonesian-food-security-and-nutrition/

Table 32: Overview of climate-related hazards and their impacts and how the project aims to address them

System	Threat / Climate Risk	Climate Change (CC) impacts and proposed interventions	Adaptation benefits	Mitigation benefits
Key agricultural production systems (oil palm)	Intensification and increase of extreme weather events (droughts, storm, rainfall) Intensification will be triggering increased susceptibility to pests & diseases Increasing temperatures and increasing dry spells (especially during the dry season)	**Impacts:** • Reduced productivity of palm oil due to changing rainfall patterns and increasing temperatures (Woittiez et al. 2017)[347] • Increased fire risk (Carlson et al. 2013)[348] • Increased Susceptibility to Pests and Diseases (Paterson & Lima 2018)[349]: **Interventions:** • Capacity building in good agricultural practices (GAP) to reduce use of chemicals, improve productivity and sustainability (Jelsma et al. 2017)[350] • Introduction of Agroforestry and Intercropping to enhance resilience to climate change and improve livelihoods (Purnomo et al. 2020)[351] • Soil management to reduce vulnerability to drought and enhanced soil health (Lamade & Bouillet 2005)[352] • Certification with sustainability standard and traceability for improved market access (Morgans et al. 2018)[353] Fire management to reduce haze and GHG emissions (Tacconi 2016)[354]	• Improved resilience to climate variability (Warner & Wiegel, 2021)[355] • Maintained or improved crop yields (Gorst et al. 2018)[356] • Soil protection, stabilization, and erosion control (reducing sedimentation, losses of water, soil material, organic matter and nutrients) • Micro-climate buffering (Hessen & Vandvik, 2022)[357] • Enhanced socioeconomic resilience (income increases and diversification) (Tanner et al. 2014)[358] • Cost efficiency of crop management	• Reduced GHG emissions • Increased soil organic carbon • Less fire related GHG emissions

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System	Threat / Climate Risk	Climate Change (CC) impacts and proposed interventions	Adaptation benefits	Mitigation benefits
Key agricultural production systems (rubber)	Intensification and increase of extreme weather events (droughts, storm, rainfall) Increasing temperatures and increasingly dry spells (especially during the dry season)	**Impacts:** • Intensification of pest infestation (Chakraborty et al. 2000)[359] • Increase and intensification of fires (van der Werf et al. 2010)[360] • Reduced latex productivity due to rubber tree's sensitiveness to temperature increase and prolonged dry periods (Zomer et al. 2014) [361] **Interventions:** • Agroforestry and intercropping (Roshetko et al. 2013)[362] • Capacity building in good agricultural practices (GAP) (FAO 2013)[363] • Soil management to reduce vulnerability to droughts (Vanlauwe et al 2014)[364] • Certification with sustainability standard and traceability for improved market access (Potts et al 2014)[365] • Fire management (Dennis et al 2005)[366]	• Improved resilience to climate variability (Warner & Wiegel, 2021)[367] • Maintained or improved crop yields (Gorst et al. 2018)[368] • Soil protection, stabilization and erosion control (reducing sedimentation, losses of water, soil material, organic matter and nutrients) • Micro-climate buffering (Hessen & Vandvik, 2022)[369] • Increased socioeconomic resilience (income increases and diversification)	• Reduced GHG emissions Multi-storey vegetation cover with higher GHG sequestration • Increased soil organic carbon • Less fire related GHG emissions

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[369] Hessen, D. O., & Vandvik, V. (2022). Buffering Climate Change with Nature. Weather, Climate, and Society, 14(2), 439–450. https://doi.org/10.1175/wcas-d-21-0059.1

System	Threat / Climate Risk	Climate Change (CC) impacts and proposed interventions	Adaptation benefits	Mitigation benefits
forests	Intensification and increase of extreme climate events (droughts, storm, rainfall) Changes in micro-climate	**Impacts:** • Intensification of pest infestation due to temperature increase and altered precipitation patterns (Brook et al 2008)[370]; • Increase and intensification of wildfires (Liu et al 2003)[371]; • Damage to forest ecosystems due to water stress (Phillips et al 2009)[372]; • Biodiversity decline (Brook et al 2008) • Landslides and erosion due to heavy rainfall events (van Aalst 2006)[373] • Decreased forest productivity (timber and non-timber forest products) (Meijard et al 2005)[374] • Flooding of forest ecosystems (van Aalst 2006) **Interventions:** • Conservation and sustainable management of forest ecosystems to maintain forest health and resilience against climate impacts (FAO 2018)[375] • Development of biodiversity management and adaptation plans for the forest sector (Lasco et al 2008)[376] • Establishment of GHG and fire monitoring and early warning systems (Tacconi et al 2006)[377] • Capacity building in fire management and fire preparedness with FMUs and community-based fire control groups (Masyarakat Peduli Api) (Chokkalingam et al 2007)[378] •	• Reduced wildfire risk (Keskitalo 2011)[379] • Strengthening fire preparedness (Halofsky et al. 2018)[380] • Faster response to wildfires • Reduced damage to ecosystems (Krofcheck et al. 2019)[381] • Adaptation of forest management to climate impacts • Improved health of local communities due to less fire/haze events and improved water availability (McVittie et al. 2018)[382]	• Conserved carbon stocks • Biodiversity conservation • Reduced fire related GHG emissions • Improved data collection and reporting regarding fire related emissions

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System	Threat / Climate Risk	Climate Change (CC) impacts and proposed interventions	Adaptation benefits	Mitigation benefits
peatlands	**Intensification and increase of extreme climate events (droughts, storm, rainfall)** **Changes in micro-climate**	**<u>Impacts:</u>** • Peat subsidence (lowering of water level and peat thickness) (Hooijer et al. 2006)[383] • Increase and intensification of wildfires (Page et al 2002)[384] • Mineralization of organic soils due to lowering of the water table, resulting in substantial GHG emissions (Hooijer et al 2010)[385] • Loss of carbon sequestration capacity (Leifeld & Menichetti 2018)[386] • Reduced biodiversity in peatlands and impacts of habitat degradation (Posa et al 2011)[387] • Water quality degradation (Moore et al 2013)[388] **<u>Interventions:</u>** • Restoration and protection of degraded peatlands to restore ecological functions (Jaenicke et al 2010)[389] • Construction of canal blocking for peat rewetting and management of the water table (Jauhiainen et al 2012)[390] • Trainings in mangrove and peat management (Murdiyarso et al 2015)[391] • Support the development of peat and mangrove inventory (Miettinen et al. 2017)[392] • Support the development of a peat and mangrove protection and management plans (Evans et al 2016)[393] Sustainable land use planning (prevention of agricultural expansion into peatlands) (Verchot et al 2007)[394]	• Reduced wildfire / peat fire risk (Hokanson et al. 2018)[395] • Improved health of local communities due to less fire/haze events and improved water availability (McVittie et al. 2018)[396] Protection of local livelihoods	• Reduced fire related GHG emissions • Biodiversity conservation • Less GHG emissions from peat soil mineralization (=decomposition) • Carbon storage in peat ecosystems

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System	Threat / Climate Risk	Climate Change (CC) impacts and proposed interventions	Adaptation benefits	Mitigation benefits
mangroves	**Intensification and increase of extreme climate events (droughts, storm, rainfall)** **Sea level rise** **Changes in micro-climate**	**Impacts:** • Increased vulnerability of ecosystems, communities, and livelihoods (DasGupta & Shaw 2013)[397] • Abrasion, sea water intrusion (Ward et al 2016)[398] • Reduced biodiversity in mangrove ecosystems and propagation of invasive species (e.g. Nipa palm) (Duke et al 2007)[399] • Reduced productivity (mangrove timber and non-timber products like crab, fish, shrimp) (Primavera 1998)[400] **Interventions:** • Restoration and protection of mangroves (Lewis 2005)[401] • Support the development of peat and mangrove inventory (Murdiyarso et al 2015)[402] Support the development of a peat and mangrove protection and management plans (Sasmito et al 2019)[403]	• Protection of local communities against floods and storms (Losada et al. 2017)[404] • Protection of local livelihoods • Improved health of local communities due to less fire/haze events and improved water availability (McVittie et al. 2018)[405]	• Less GHG emissions from mangrove degradation/deforestation • Carbon sequestration through increased biomass • Carbon storage in mangrove ecosystems • Coastal protection against erosion

Adaptation result areas[406]

Table 33 provides an overview of the GCF results areas and the corresponding core and supplementary indicators that are applied as per the GCF Integrated Results Management Framework (IRMF). The specific results areas and indicators are presented in greater detail in the following sub-sections.

[397] DasGupta, R., & Shaw, R. (2013). "Cumulative impacts of human interventions and climate change on mangrove ecosystems of South and Southeast Asia: An overview." *Journal of Ecosystems*, 2013.
[398] Ward, R. D., Friess, D. A., Day, R. H., & Mackenzie, R. A. (2016). "Impacts of climate change on mangrove ecosystems: a region by region overview." *Ecosystem Health and Sustainability*, 2(4), e01211.
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[405] McVittie, A., Cole, L., Wreford, A., Sgobbi, A., & Yordi, B. (2018). Ecosystem-based solutions for disaster risk reduction: Lessons from European applications of ecosystem-based adaptation measures. International Journal of Disaster Risk Reduction, 32, 42–54. https://doi.org/10.1016/j.ijdrr.2017.12.014
[406] More details on the estimation of direct and indirect beneficiaries and the estimation of area under improved management can be found in annex section 5.8 .

Table 33: Adaptation results area, and the corresponding core and supplementary indicators from the GCF Integrated Results Management Framework (IRMF)

Adaptation Results Area	IRMF core indicator	Supplementary indicators
ARA 1: Most vulnerable people and communities	Core 2: Direct and indirect beneficiaries reached	
ARA 4: Ecosystems and ecosystem services	Core 4: Hectares of natural resources brought under improved low-emission and/or climate-resilient management practice	Supplementary 4.1: Hectares of terrestrial forest, terrestrial non-forest, freshwater and coastal marine areas brought under restoration and/or improved ecosystems

MOST VULNERABLE PEOPLE AND COMMUNITIES

As described in Chapter 2.2, the project will work in some of the most vulnerable areas of West Kalimantan, focusing on a sub-set of the population who is particularly at risk – smallholder farmers, predominantly belonging to indigenous groups, highly vulnerable to climate change.

Core Indicator 2: Direct and Indirect Beneficiaries reached

For IRMF core indicator 2, the number of direct and indirect beneficiaries reached have been calculated based on the following approach and assumptions:

- **Direct beneficiaries**[407]**:** Direct beneficiaries are considered as the population of all villagers within the 200 target villages directly supported under social forestry, HCV/HCS implementation and smallholder farmers supported to apply climate resilient, low emission agricultural and agroforestry practices.

- **Indirect beneficiaries:** Indirect beneficiaries are considered the population in the 5 priority regencies and West Kalimantan as a whole covered by the project, minus the number of direct beneficiaries. The population in West Kalimantan will benefit from strengthened legal and regulatory frameworks including mainstreaming of climate resilient planning and improved ecosystem-based adaptation. In addition to indirectly benefiting from climate change adaptation measures, the population of West Kalimantan will also benefit from improved attractiveness of private sector engagement in climate resilient, low emission agricultural and agroforestry value chains. The population data was collected from the provincial bureau of statistics.

The project will directly support 680,108 persons (50% women – equivalent to 0.25% of the national population and 11.2% of the total population of West Kalimantan) to implement climate resilient practices, including climate resilient and low-emission agriculture, social forestry, as well as various measures of ecosystem-based adaptation including the rehabilitation of peat and mangrove areas. It will also contribute to increased generation and use of climate information in decision-making, through improved, climate informed planning at different levels. By supporting the implementation of FLR, ecosystem-based adaptation, sustainable forest management and low-emission and climate resilient agriculture, based on integrated planning processes, it will further strengthen awareness of climate threats and risk-reduction processes.

[407] On **direct beneficiaries**, we avoid double counting between individuals receiving support in adaptation to climate change (1.1.1), sustainable agriculture and supply chains (2.1.5) and Social Forestry (3.2.1) by working in different villages. The activities related to social forestry focus on the forest area, while the agricultural support focuses on non-forest land (APL). If there is an overlap in the area of direct and indirect beneficiaries, the direct beneficiaries are subtracted from the indirect beneficiaries. The targeted villages will be spread across the five regencies. The number of direct beneficiaries is estimated by multiplying the number of targeted villages by the project with the average number of inhabitants per village in the respective regency.

Indirectly, the project is expected to benefit 4,807,691 persons (50% women – equivalent to 1.7% of the national population) through investments in sustainable land practices that will maintain or improve the provision of vital ecosystem services, as well as through improved forest monitoring and strengthened government capacities on climate change mitigation and adaptation.

AREA OF ECOSYSTEMS

ARA Cored Indicator 4: Hectares of natural resources brought under improved low-emission and/or climate-resilient management practice

The hectares of natural resources brought under improved low-emission and/or climate-resilient management practices was calculated to reflect the total area managed by 17 FMUs in West Kalimantan, the advancing of social forestry implementation, and the implementation of climate resilient, low emission agricultural and agroforestry practices.[408]
The development of tools and strengthening institutional capacities on climate change adaptation within the AFOLU sector, supported throughout all 3 components as a cross-cutting element, will further facilitate replication and upscaling beyond project completion.

Supplementary 4.1: Hectares of terrestrial forest, terrestrial non-forest, freshwater and coastal marine areas brought under restoration and/or improved ecosystems

In terms of forest ecosystems, the project will support the establishment of wildlife corridors and HCV/HCS (High Conservation Value / High Carbon Stock) areas of 100,000 ha on non-forest land (APL), which is covered by forest. This conservation status will protect these areas from deforestation and conversion to agricultural use.
Under activity 3.2.1 the project will conduct peat and mangrove restoration through trainings, the development of detailed-technical restoration plans that can be used to rehabilitate degraded peatland and mangrove ecosystems and resoration measures under social forestry schemes. The activity targets around 5,000 ha of peatland and 5,000 ha of mangroves to be restored during the project time.
In addition, the project will support peat mapping (426,037 ha) for the actualization of the national peat inventory. This inventory will be used by MoEF to update the Peat Hydrological Unit map (scale 1: 50.000), which will be the legal basis for peat protection. All stakeholders on subnational level need to comply with peat protection according to this map.

8.3 Economic Co-benefits

Economic benefits of this project are:

Increased productivity and income of smallholders. Climate-resilient and sustainable farming and a supportive business ecosystem will increase productivity of commodities such as palm oil, rubber, coffee, cocoa, coconut, etc. Increased productivity increases income and benefits 14.000 farmers (direct).

Indirect beneficiaries cover 77,000 members of the direct beneficiaries' families (5.5 per direct beneficiary) and 42,000* members of their communities (3 per direct beneficiary). Climate-resilient and sustainable farming will be promoted through capacity improvement, climate-resilient business case development, and access to the market and financial mechanisms. Traceability systems for different agricultural supply chains will be developed, introduced, and scaled up to trace goods and products to their origin and comply with sustainability standards. Climate resilience and sustainable farming will also enable smallholder adaptive capacity, thus preventing productivity and income loss of smallholders.

[408] To avoid potential overlaps and double counting of ha, only the area under FMU was counted and the area brought under climate resilient, low emission agricultural practices on APL under component 2.

Sustainable livelihoods and the creation of alternative livelihoods of forest-dependent communities. The dedicated IP grant mechanism (Terra Fund) will benefit at least 100 business units (KUPS) of social forestry license holders and 100 indigenous community groups. The grant allows IP to maintain and improve their existing livelihood while creating alternative livelihoods for those still employed in unsustainable activities to generate income in the targeted landscape. The selection criteria for the grant proposals will include gender responsiveness, focussing on support for marginalized groups like indigenous women and women led households. Capacity building, support for business plans, supply chain development and traceability, adding product values, and market expansion support will be provided throughout the project. This will also comprise targeted support to enable women groups / women organisations to submit competitive proposals to the dedicated IP grant mechanism.

Equal rights of economic resources. This project provides security and assurance to IP and to control and manage their land, forest, water, etc., as the primary economic resources upholding through extending areas of social forestry or other community-based forest management schemes to be recognized by the government, including indigenous forest, while at the same time helping the community to improve the management of the existing rights that already granted to IP by the government.

Increased economic growth and job creation. The ability of SMEs to access financial services will increase the size and portfolio of investment within the province and improve the scale of business. Robust cooperation will also be developed with large enterprises to invest in sustainable supply chains that benefit smallholders and SMEs directly. The investment will trigger economic growth and job opportunity creation and dig multilayered effects for the side business to grow.

Reduced government and local community expenditure for mitigating disasters. Climate-informed planning, adopting climate-resilient AFOLU, and other measures taken by this project contribute to reducing additional costs spent by the government and community for mitigating disasters. Therefore, the government and likewise the community can add more budget to improve basic services or other purposes.

Table 34: Summary of project economic co-benefits and their contribution to the SDGs

SDG	Examples of relevant SDG target	Example of how the project contributes to SDG
SDG 1 End poverty in all its forms everywhere	▪ **1.2** By 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions ▪ **1.4** By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance ▪ **1.5** By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters	▪ Support the implementation of climate-resilient and sustainable farming and the promotion of a supportive business ecosystem. ▪ Support the recognition of natural resources management by IP under social forestry or other community-based forest management schemes. ▪ Capacity improvement of IP to manage the existing social forestry permits or other community-based forest management schemes toward improved livelihood and income ▪ Improve the resilient capacity of the community to prevent and mitigate disaster risks and events. ▪ Increase the involvement of private actors to invest in sustainable supply chains. ▪ Support climate-resilience land use plan development at

SDG	Examples of relevant SDG target	Example of how the project contributes to SDG
		provincial, regency, and village levels.
SDG 8 Decent Work and Economic Growth	▪ **8.3** Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises (MSME), including through access to financial services ▪ **8.6** By 2020, substantially reduce the proportion of youth not in employment, education or training	▪ Support smallholders and small, medium, and large Enterprises (SMELs) in accessing additional sources of finance for sustainability-oriented business and investments ▪ Provide capacity building on business, entrepreneurial, and vocational skills.

8.4 Environmental Co-benefits

Environmental benefits of this project are:

Improvements in soil quality, water retention, avoiding erosion, wildlife habitat and excessive sedimentation due to reduced deforestation and degradation. This project protects and maintains forest cover within the 5 target regencies, including peat and mangrove forests. These regencies cover 69.21% of the total West Kalimantan area (10.5 m ha) and 82% (4.45 m ha) of the West Kalimantan's forested area and are located at non- and state forest areas. Forest protection towards reduced deforestation, forest degradation, and biodiversity loss will be conducted to through several measures, among others, forest patrol support to FMU organizations (capacity and resources); law enforcement and coordination with key law enforcement institutions; funding support to IP to protect and manage forests within social forestry concessions and other community-based forest management schemes; and the creation of alternative livelihood and improved the existing livelihood. The forested areas protection in non-state forests will be measured through the involvement of natural forest conversion-based licenses (i.e. palm oil, timber plantation) and communities to protect and maintain the forested areas. Regulations at provincial and regency levels to govern the protection of forested areas will be enhanced.

Reduction of fire threats and risks due to unsustainable AFOLU management, including poor peatland management, thereby reducing the health impact on respiratory diseases resulting from forest fires. Peatland areas in 5 regencies cover around 77% out of overall peatland in West Kalimantan (1.19 million ha), and the threat is high – the main drivers are fires and conversion and unsustainable peatland management. This project supports peat inventory as a baseline to support the government in developing peat and mangrove protection and management plans, field protection activities, and peat restoration as the permanence strategy to reduce fire threats and risks. Companies will also be involved in concretized field actions on peat management and protection under HCV/HCS or EEA frameworks.

The unique biodiversity of West Kalimantan's protected areas and beyond is conserved to secure ecosystem services and provide habitat for endangered species. This project supports the development of a Biodiversity Management Plan (RPKH), ensuring biodiversity conservation measures are mainstreamed in provincial and regency development plans, which also cover the high biodiversity and carbon areas outside state forest areas. Funding for biodiversity will be mobilized from all sources (e.g private actors) to conserve and sustainably use biodiversity and ecosystems such as from RaCP and other conservation commitments. Law enforcement will be enhanced by improving the presence of civil servant investigators and coordination with law enforcement agencies to reduce the poaching and trafficking of protected

species of flora and fauna and address both the demand and supply of illegal wildlife products. RPKH will also be used by forest conversion-based licenses (i.e. palm oil, timber plantation) or communities to strengthen the management framework of high conservation and carbon values and ecosystem essential areas outside non-state forest areas.

The adoption of sustainable agricultural practices supports food security and sustainable production practices in the long term. Climate-resilience land use plans up to the village level secure communities' food production areas, thereby improving food security. Climate-resilient and sustainable farming and a supportive business ecosystem will improve production practices and climate-resilient value chains. In the long term, climate-resilient and sustainable farming enhances soil quality, reduces soil degradation, erosion and sedimentation, and reduces agrochemical use (and thus the risk of soil and water contamination and potential health impacts).

Table 35: Summary of project environmental co-benefits and their contribution to the SDGs

SDG	Examples of relevant SDG target	Example of how the project contributes to SDG
SDG 6 Clean Water and Sanitation	• **6.6** By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes	• Support field forest protection and restoration activities conducted by FMU organizations • Strengthen community-based forest protection and conservation activities under social forestry or other community-based forest management schemes.
SDG 13 Climate Action	• **13.1** Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries • **13.3** Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning • **13.b** Promote mechanisms for raising capacity for effective climate change-related planning and management in least developed countries and small island developing States, including focusing on women, youth and local and marginalized communities	• Increase the number of PROKLIM villages and the quality of mitigation and adaptation activities within the village level. • Strengthen the Provincial Body of Climate Change to coordinate and execute mitigation and adaptation activities within the province. • Improve key stakeholder coordination on climate change mitigation and adaptation activities. • Support to develop and strengthen climate-informed plans at the provincial, regency, and village levels, including for forest managers. • Create and strengthen climate change-related policies and regulations to support field-level mitigation and adaptation activities.
SDG 15 Life on Land	• **15.1** By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements	• Improve HCV/HCS and ecosystem essential areas management by companies and communities, and simultaneously increase the number of HCV/HCS and Ecosystem Essential Areas (EEA) protection

SDG	Examples of relevant SDG target	Example of how the project contributes to SDG
	• **15.2** By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally • **15.5** Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species • **15.7** Take urgent action to end poaching and trafficking of protected species of flora and fauna and address both demand and supply of illegal wildlife products • **15.a** Mobilize and significantly increase financial resources from all sources to conserve and sustainably use biodiversity and ecosystems	status under local regulatory frameworks. • Support to restore peat and mangrove ecosystems • Support for sustainable social forest management, including other community-based forest management approaches • Support to develop biodiversity management plan at the province and regency level • Increase the number of civil servant investigators and coordination across law enforcement agencies • Mobilize biodiversity funding from private actors to support field protection and restoration activities.
SDG 12 Sustainable Production and Consumption	• **12.2** By 2030, achieve the sustainable management and efficient use of natural resources • **12.8** By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature • **12.a** Support developing countries to strengthen their scientific and technological capacity to move towards more sustainable patterns of consumption and production	• Support the implementation of climate-resilient and sustainable farming and the promotion of a supportive business ecosystem. • Outreach activity related to climate change mitigation and adaptation to key stakeholders, including youth generation towards sustainable development with nature • Collaborate with Universities to increase research subjects on climate change and applied technology development for IP.

8.5 Social Co-benefits

Social benefits of this project are:

Enhance social safety nets for the local population, especially women who are crucial in agricultural and forestry production. Improved productivity and income of smallholders and improved livelihood and the creation of alternative livelihood will enhance access to health and education services and quality, thereby improving social safety nets for the local population. The recognition of natural resources through social forestry and other Community Based Forest Management (CBFM) schemes provides tenure security and assurance for the local population over natural resources. The recognition guarantees economic, social, and ecological benefits could be maintained by the local population in the long term. It also reduces social conflict due to unequal land distribution and ownership. The development of a supportive business ecosystem for smallholder also improve social safety nets for smallholders by reducing social conflict between mills and smallholder growers through fair trade, market assurance of smallholder production, etc.

Health. Deforestation and forest degradation aggravate the vulnerability of 5.1 million people in West Kalimantan and transboundary vulnerability to extreme weather events and increase the risk of fires, floods, droughts, landslides, and soil erosion. The GCF project reduces these risks through reducing deforestation and forest degradation, and strengthening the climate resilience of vulnerable communities dependent on the particularly vulnerable AFOLU sector. Climate-informed planning and REDD+ measures promoted by the project will reduce forest fires, which will positively impact the respiratory health of local people. The project helps reduce the significant health disadvantages and transboundary impacts that occur due to forest and peat fires.

Inclusion of indigenous community groups. This project develops a dedicated IP on-granting mechanism for indigenous people (Terra Fund), targeting at least 25 proposals to strengthen tenure security and rights of IP, especially women. This project contributes to increasing Indigenous peoples' resilience to respond to climate vulnerability and risks, by providing sufficient efforts to integrate them into sustainable land and forest management and improve technical capacities to implement climate-smart agricultural practices and sustainable forest management through technical assistance and on-granting programs. The selection criteria for the grant proposals will include gender responsiveness, focussing on support for marginalized groups like indigenous women and women led households. At the same time indigenous women groups / women organisations will get targeted support in proposal writing and the submission process.

Improved food security. The implementation of climate-resilient and sustainable farming and the promotion of a supportive business ecosystem will double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, and family farmers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment. It also ensures sustainable food production systems and implements resilient agricultural practices that increase productivity and production, help maintain ecosystems, strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters, and progressively improve land and soil quality. The traceability system developed under this project ensures the proper functioning of food commodity markets and their derivatives and facilitates timely access to market information. Agricultural research, extension services, and technology development will be enhanced as part of the climate-resilient and sustainable farming.

Improve business, entrepreneurial, and vocational skills. Capacity building will be provided to the community, also targeting women and youth generations. Improved capacity allows the community to develop and implement their business systematically. Moreover, innovation and invention of the existing business process or new business cases will flourish at the local levels, fostering economic growth and job creation at local levels.

Table 36: Summary of project social co-benefits and their contribution to the SDGs

SDG	Examples of relevant SDG target	Example of how the project contributes to SDG
SDG 2 End hunger, achieve food security and improved nutrition and promote sustainable agriculture	• **2.3** By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment • **2.4** By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production,	• Support value chain improvement of key commodities • Support smallholders to produce certified products for national and international markets • Increase the involvement of public or private financial institutions to support smallholders to improve value chains • Improve private sector involvement to support

SDG	Examples of relevant SDG target	Example of how the project contributes to SDG
	that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality • **2.a** Increase investment, including through enhanced international cooperation, in rural infrastructure, agricultural research and extension services, technology development and plant and livestock gene banks in order to enhance agricultural productive capacity in developing countries, in particular least developed countries • **2.c** Adopt measures to ensure the proper functioning of food commodity markets and their derivatives and facilitate timely access to market information, including on food reserves, in order to help limit extreme food price volatility	smallholder in increasing their productivity and capacity, including market access
SDG 4 Quality Education	• **4.3** By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university • **4.4** By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship	• This project provides training for communities in the target villages to improve their forest management and governance under social forestry and other types of community-based forest management, including the capacity to improve their livelihood
SDG 11 Sustainable Cities and Communities	• **11.b** By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement	• Support the development of a climate-resilience city towards mitigation and adaptation to climate change. • Support the development of climate-informed land use plans at the province, regency, and village level
SDG 16 Peace, Justice and Strong Institutions	• **16.6** Develop effective, accountable and transparent institutions at all levels • **16.7** Ensure responsive, inclusive, participatory and representative decision-making at all levels	• Strengthen the monitoring system and online mitigation and adaptation activities platform to ensure transparency and accountability. • Strengthen the Provincial Body on Climate Change of West Kalimantan Province to ensure alignment of mitigation and adaptation

SDG	Examples of relevant SDG target	Example of how the project contributes to SDG
		actions at the provincial level with policies at the national level, including coordination across AFOLU sectors.
SDG 17 Partnerships for the Goals	• **17.14** Enhance policy coherence for sustainable development • **17.17** Encourage and promote effective public, public private and civil society partnerships, building on the experience and resourcing strategies of partnerships	• Create and strengthen mitigation and adaptation policies at the provincial, regency, and village levels. • Improve the involvement of private actors to improve sustainable value chains of key commodities in West Kalimantan. • Promote, develop, and strengthen multi-stakeholder platforms at the provincial and regency levels to address gaps in climate-resilience development.

8.6 Gender Co-benefits

All project activities will proactively involve empowerment elements for vulnerable village women, including promoting their leadership roles in local structures and ensuring a quota of at least 30% females in village committees. The project will include training on business skills development for vulnerable women to help address common participation gaps and barriers, including financial support. The project will seek economic opportunities for vulnerable women related to agroforestry, forest management and climate-resilient agricultural activities. It will also strengthen awareness for vulnerable women and men within the project area on climate risks and best practices to reduce these risks and strengthen the resilience of local communities and ecosystems. The project will prioritize on identifying and targeting vulnerable women to participate in activities such as training, economic activities, and climate awareness raising.

The project has developed a Gender Assessment (GA) and a Gender Action Plan (GAP). The GAP forms the basis for operationalizing the results and recommendations of the gender analysis. It contains specific gender elements to be implemented through project implementation, where gender equality is considered a cross-cutting element throughout the project's components and activities.

Table 37: Summary of project co-benefits and their contribution to the SDGs

SDG	Examples of relevant SDG target	Example of how the project contributes to SDG
SDG 1 End poverty in all its forms everywhere	• **1.4** By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership	• Promote the involvement of women within the key structures of forestry business units and/or

SDG	Examples of relevant SDG target	Example of how the project contributes to SDG
	and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance	forest management institutions at the village level or at cooperatives and farmer groups.
SDG 4 Quality Education	• **4.3** By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university	• Support capacity building and resources needed by woman to do forestry and agricultural business to address participation gaps and barriers.
SDG 10 Reduced Inequalities	• **10.2** By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status	• Project activities will proactively involve empowerment elements for village women, promoting their leadership roles in local structures, including ensuring a quota of at least 30% female.

9 Project Risk and Mitigation Approaches

The project was categorized as a GCF Category B. Category B projects are defined as: "*activities with potential mild adverse environmental and/or social risks and/or impacts that are few in number, generally site-specific, largely reversible, and readily addressed through mitigation measures*." For GIZ, Category B equals a project with "*potentially rare or locally limited occurrence, largely reversible consequences, easy to manage*." For both organizations, the emphasis is on risks that are "*site specific*," few in number and can be adequately managed with ease.

Table 38 provides an overview of the main technical and operational, financial and governance risks associated with the project. Avoidance and/or mitigation measures are also presented for each risk. Environmental and social risks are considered in the ESIA, the ESMP and the ESMF (Annex 6a). Gender-specific risks are considered in the GA (Annex 8a) and the GAP (Annex 8b).

Table 38: Overview of Project Risks

Selected Risk Factor 1: Changes in political circumstances due to regime and bureaucracy changes at the national and provincial levels		
Category	**Probability**	**Impact**
Governance	High	Medium
Description		
Political changes during project implementation and beyond may affect the paradigm shift and commitments to sustainable development.		
Mitigation Measure(s)		
• The project has been designed in close coordination with the government of Indonesia and the local government of West Kalimantan and is aligned with key national development strategies and climate change policies, including short-, medium- and long-term strategies. • In addition, activities in Component 1 will support the strengthening of the institutional framework, where activities have been designed to adapt to any political circumstance, and support mainstreaming of climate risk and vulnerability and climate-resilient and low-emission AFOLU throughout policies, addressing gaps and inconsistencies in the policy and institutional framework.		
Selected Risk Factor 2: Gaps in coordination between key ministries and agencies		
Category	**Probability**	**Impact**
Governance	High	Medium
Description		
Misaligned coordination or different agendas of ministries and agencies could limit the effectiveness of the project to meet its goals, as the project's landscape level approach requires cross-sectoral coordination.		
Mitigation Measure(s)		
• The project supports inter-sectoral coordination through its cooperation with the provincial government, including the strengthening of specific task forces/committees in Component 1 (e.g. REDD+ Task Force to become the provincial body on climate change) to promote coordinated and holistic planning at the landscape level. Such support will be further institutionalized, and policies revised to enable more coordinated planning for climate-resilient and low-emission AFOLU at the landscape level.		

- Consultations with public and private actors across sectors have been conducted during the project development process, and their feedback informed the project design.

Selected Risk Factor 3: Unclear or complex land tenure and/ or land use rights could lead to conflicts

Category	Probability	Impact
Governance	High	Medium

Description

Land tenure and land use rights are often complex and unclear (e.g. overlapping concessions with protected areas or customary land) could result in land grabbing, land use conflicts or expansion of agri-business or forest plantations into protected areas or customary areas.

Mitigation Measure(s)

- Participatory land use planning processes under sub-activity 1.1.1.2 will help clarify land tenure and land use rights. Support to strengthen the regulatory framework and institutional capacities under Component 1 will further help to mitigate this risk.
- The project will establish conflict resolution desks in each of the regencies of the intervention area, based on the successful example of Kapuas Hulu (see IPP - Annex 6c). These desks will support local communities in solving land conflicts in collaboration with government entities and other stakeholders.
- Components 2 and 3 will develop approaches that provide opportunities for businesses and local communities to benefit from sustainable land- and forest-based investments.
- The project will ensure free, prior and informed consent (FPIC) procedures are closely followed during project planning and implementation. The specific procedures will be developed during project development and informed by stakeholder consultations. The project´s ESIA and ESMP further describe the project´s complaints and grievance and redress mechanism (GRM), while ensuring both to be accessible and culturally appropriate.
- The dedicated small grants mechanism for Indigenous Peoples is supporting clarifying land tenure, addressing Gender and *Adat* rights and conflicts.

Selected Risk Factor 4: Human resources and capacity to support project implementation are insufficient

Category	Probability	Impact
Technical and operational	High	Low

Description

High turnover, and insufficient capacities and human resources could limit the efficiency and effectiveness of project implementation and monitoring.

Mitigation Measure(s)

- A capacity needs assessment was conducted in the project development process and informed the design of project activities of Component 1 that ensure that there is a clear and tailored strategy to build the needed capacities to support project implementation.
- The project development process emphasized knowledge management and learning, and the corresponding sub-chapter in the Feasibility Study (see section 6.5) lays out how knowledge is effectively managed and transferred. Where possible the project will promote the institutionalization of trainings, building on detailed documents, manuals and curricula, including training of trainers, to enable this knowledge to be effectively passed on and stored by various institutions.

- A clear and robust human capacity development strategy (see section 3.2) has been established to enable efficient and effective project management. It will emphasize knowledge and capacity improvement for any person involved in the project.

Selected Risk Factor 5: Misuse of Funds

Category	Probability	Impact
Governance	Medium	Medium

Description

Corruption or the misuse of funds are a potential risk to resources available under this project.

Mitigation Measure(s)

- Enhanced due diligence process has been carried out with BPDLH and under the project funding will be provided to hire further staff at BPDLH that can support financial management at different levels.
- Monitoring for the use of funding will be regularly conducted to recipients or sub-recipients of award funds ensuring transparency and accountability.
- Rigorous GIZ international financial management rules and regulations and procedures will be used for the project.

Selected Risk Factor 6: Low demand for sustainably produced commodities on (global) markets or market fluctuations affect the financial viability of investments and sustainable practices

Category	Probability	Impact
Technical and operational	High	Medium

Description

Investments in sustainably produced commodities might not occur due to a lack of demand on global markets. Also, different investments and financiers ask for different set of requirements. Without sufficient capacity and a good strategy, the project may not be able to leverage much needed investment to scale up the impact. At local level, the lack of (global) demand for sustainable agricultural commodities, and resulting low prices, reduces the financial viability of sustainable practices.

Mitigation Measure(s)

- Under Component 2 a robust strategy has been developed to engage the private sector (financiers, mills, traders, growers, concessions, smallholders, etc).
- The project will benefit from the knowledge and the capacity from previous GIZ projects and their experiences with private sector cooperations (e.g. GIZ FORCLIME that is in active cooperation with the company ‘continental’ for rubber production).
- Prepare investment pipelines development toolkit as part of Activity 1.3.1.
- Traceability of sustainably produced commodities will improve access to premium markets for local communities.
- Match making between producers and sellers through dialogue platforms (activity 2.1.3) will ensure price stability and market access for sustainably produced agricultural commodities.
- Product diversification through agroforestry will reduce the exposure of farmers to price volatility and market fluctuations (activities 2.1.3 and 3.2.1).

Selected Risk Factor 7: Natural hazards slow-down or halt project implementation

Category	Probability	Impact

Other	Medium	Medium

Description

Floods, storms, landslides or forest and peat fires have been significant natural hazards in the past and can even be aggravated by climate change.

Mitigation Measure(s)

- Climate-risk and vulnerability assessments, including the risk of climate-related natural hazards (e.g. floods), have been conducted at the landscape level and within the project area to facilitate climate-informed land use planning, enabling the adoption of suitable low-emission and climate-resilient practices. Thus, the project will help to increase the resilience of vulnerable communities and the ecosystems upon which they depend.
- Forest fire prevention and rewetting of peat areas will increase climate resilience and is part of the overall design of the project.
- Nonetheless, the project will also consider these risks in the planning and design of the project. More detailed information is provided in the project's environmental and social impact assessment and management plan.

Selected Risk Factor 8: Profitable investments may create adverse impacts and incentivize further expansion and clearing of forest

Category	Probability	Impact
Other	Low	Medium

Description

If sufficient safeguards, monitoring and enforcement are not in place there may be increased clearing of forest (or mangroves for aquaculture).

Mitigation Measure(s)

- Climate-informed land use planning will help clarify implementation boundaries, as well as monitoring and enforcement of land use plans.
- Capacity building and institutional strengthening will build the capacities of key stakeholders in WK on climate action, and best practices to reduce deforestation and promote sustainable climate-resilient and low-emission investments.
- Project support to strengthening monitoring under Component 1 will improve the monitoring of investments, which will help closely monitor, mitigate and manage risks (e.g. land owners need to develop plans and report to a monitoring portal that allows the provincial government to monitor activities).
- Support to the regulatory framework and institutional strengthening under Component 1 will ensure a robust framework is in place, as well as improved capacities for planning, implementation and monitoring.
- The Environmental and Social Impact Assessment (ESIA) and Management Plan (ESMP) identified potential impacts and risks, and elaborates clear strategies to avoid, mitigate or manage these risks.
- Awareness raising on the importance of forest protection for climate change mitigation and adaption is a cross-cutting topic throughout project activities.
- Support of forest tenure clarity for IPs and local communities will secure tenure rights and reduce the risk
- Traceability and monitoring mechanisms supported by the project will help increase transparency and accountability.

Selected Risk Factor 9: Risk of money laundering, terrorist financing, prohibited practices and sanctions

Category	Probability	Impact
Prohibited practices	Low	High

Description

Potentially the project funds could be used for money laundering, terrorist financing, or other prohibited practices.

Mitigation Measure(s)

- The UN sanction list will be screened to ensure that no EE, implementation partner or other beneficiary is listed.
- GIZ as AE will determine the Procurement and Consultant Guidelines, which have been reviewed and accepted by GCF during the accreditation process. GIZ´s guidelines will ensure high standards to mitigate potential risks.
- Project procurement will be transparently documented, as per the Procurement Plan in Annex 10a to the FP. A Procurement Operational Manual, with guidelines and templates to provide guidance for the implementation of the procurement plan, will be developed.

Selected Risk Factor 10: Risk of social conflicts due to discrimination of certain groups (e.g. gender inequality/exclusion of indigenous peoples)

Category	Probability	Impact
Other	Medium	Medium

Description

The project may create social conflicts if certain groups of society do not have equal opportunities to benefit from project activities, for example due to gender inequality the access of women could be limited or indigenous peoples not adequately integrated.

Mitigation Measure(s)

- The project has been designed through participatory practices, including with feedback from women and IP, including indigenous women (see Stakeholder Engagement Plan in Annex 7a). Participatory processes will continue to be implemented throughout the project (e.g. participatory development of management plans), and spaces for providing feedback will be provided to reflect on project implementation.
- Specific targeted activities to strengthen gender equality and social inclusion, while safeguarding the rights of women and IP, are included within the ESMP (Annex 6b), GAP (Annex 8b) and the IPP (Annex 6c).
- To support IP, the project will set up and implement an on granting mechanism specifically for IP, which will support targeted measures for these groups (see Activity 1.3.1 in Chapter B.3.). All project activities will proactively involve empowerment elements for village women, including promoting their leadership roles in local structures. (More detailed activities are outlined in the Gender Action Plan of the project).
- The project's GRM will be communicated to all beneficiaries in culturally appropriate ways, and in local languages, and those who have a grievance or complaint may file it through the GRM (more detailed information on the GRM is provided in Chapter 5 of the ESMP in Annex 6b).

Selected Risk Factor 11: Corruption and collusion between private sector (e.g. plantations) and public authorities

Category	Probability	Impact
Prohibited practices	Medium	Medium

Description

Corruption and collusion between private sector companies like oil palm plantations and public authorities at various levels have been an underlying driver of deforestation in the past. Private actors have been successful in bending legislation with illegal financial contributions (e.g. to receive licenses or to avoid legal consequences due to violations of the law).

Mitigation Measure(s)
• The project will conduct capacity development with public servants and local communities in dedicated corruption prevention trainings. This aims to raise awareness, educate stakeholders about their rights and responsibilities, and showcase effective anti-corruption measures and how safe communication channels can be accessed to report illegal activities on the ground. In the long term, this will also foster a culture of integrity and ethical behaviour. • Support on supply chain transparency will increase the corporate social responsibility profile of commodity producers and hold them accountable for their environmental impact on ecosystems. At the same time this will provide an opportunity to access premium markets for sustainable products (i.e. the EU). • Synergies will be sought with the ongoing GIZ project “Corruption Prevention in the Forestry Sector”, which is closely working with the national corruption prevention agency (KPK). Training modules for corruption prevention trainings with FMUs, private sector, and local communities will be shared, building on the knowledge and experiences of this project.

Selected Risk Factor 12: Community resistance to new practices		
Category	**Probability**	**Impact**
Technical and operational	Low	Medium

Description
Different circumstances lead to a low adoption of new sustainable practices. The traditional practices may be preferred due to various reasons, for example they are accustomed to BAU practices, lower workload or lower costs (especially up-front or in the short term). Also, the price premiums for sustainably produced commodities might be low, and enforcement of sustainable practices may be weak.

Mitigation Measure(s)
• The project has been developed through participatory processes, engaging with diverse stakeholders. Stakeholders expressed interest and support in the project, as outlined in the Stakeholder Engagement Plan and Consultation Records (Annexes 7a and 7b). Thus, the proposed approach and practices are expected to be aligned with stakeholders’ interests. Participatory approaches, including ensuring space for feedback (as described in Annex 7a), will be maintained throughout project implementation. • Support will be made to strengthen regulatory and policy frameworks (e.g. under Component 1) and build institutional capacities. This will be aligned with national policy directions, but will also help create an enabling environment to create a more permanent shift, including with supportive regulations, strategies and public sector support. • The project builds on good practices implemented by GIZ and Solidaridad, as well as other key stakeholders in WK, Indonesia and the region (see Annex 2a Feasibility Study, Appendix 10.1). The targets set build on experiences implementing similar activities and projects, and are considered realistic yet ambitious – considering also the challenges to build capacities and support a transition to more sustainable pracitices. • Model farms will be used to encourage reluctant farmers to change towards sustainable practices and certification (“seeing is believing”). In the past, the premium prices obtained through certification alone (e.g. RSPO) constituted an effective incentive. The project will also communicate diverse benefits through the project, including increasing productivity, diversifying incomes/ production systems, strengthening resilience to climate change, and finding alternatives to costly inputs (e.g. circular practices). • Supply chain approach: Mills will ask suppliers to produce sustainably due to changes in demand (market pressure towards sustainability). Support for improved monitoring and traceability systems will also provide additional support to farmers to strengthen market access and increase overall transparency and monitoring in the sector (e.g. helping to demonstrate whether agricultural goods are deforestation-free). The project will also strengthen business case development, ensuring more robust and profitable sustainable businesses. • Previous training need assessments will be conducted prior to the implementation of trainings in good agricultural practices

- Chapter B.6 provides additional information on how sustainability will be supported, including additional measures that focus on social sustainability (e.g. work with IP and communities), among other factors.

10 Appendix

10.1 Relevant Baseline Projects and programmes in the Sector

Table 39: Baseline projects and programmes

Project Title: Forest and Climate Change-Financial Cooperation (FORCLIME-FC)	
Funding entity	KfW
Timeframe	Phase I 2012-2020 and Phase II 2021-2022 (Completed)
Total budget	EUR 20 million
Geographical scope	• Kapuas Hulu Regency, West Kalimantan • Malinau Regency, North Kalimantan • Berau Regency, East Kalimantan
Project objectives and components	• This project aims to reduce GHG emissions from the forest sector while improving the livelihoods of Indonesia's poor rural communities. Project components include the implementation of participatory land use planning, agroforestry development, forest patrol, demonstration plot for livelihood improvement, support for sustainable forest management certification, non-timber forest development, and social forestry programme.
Linkage/relevance for GCF project	• FORCLIME-FC activities are linked with activity 3.2.1 Advancing social forestry implementation, including building awareness of local communities of climate risks and risk-reduction practices. The GCF project is designed based on lessons learned from FORCLIME-FC approaches in developing demonstration plots and developing social forestry in Kapuas Hulu Regency. The GCF project will continue to intervene in villages previously facilitated by FORCLIME-FC, and results from FORCLIME-FC will be capitalized as a basis for this project intervention at villages in Kapuas Hulu Regency.
Achieved results / impacts	• Project results include GHG emissions reduction was 300.000- 400.000t CO2e; total degraded area planted 2.458.349 trees; Regency Regulation on Village Boundaries (25 villages in Kapuas Hulu, 6 in Malinau and 14 in Berau); Increased forest cover and reduced deforestation and forest degradation; Total funding disbursed for demonstration plot activities: Kapuas Hulu with IDR 28,817,431,069 (EUR 1.7 million) ; Berau with IDR 3,990,401,821 (EUR 234,730), and Malinau with IDR 145,790,000 (EUR 8,576); Improved Village Development Index (VDI) from developing villages to developed villages; Regular training conducted to improve community capacities; Social forestry development has been conducted in 18 village forests and 1 partnership forest in Kapuas Hulu, Berau dan Malinau; and NTFP product improvement are facilitated (production, branding, and marketing) with total 101 business units established.

Project Title: Forests and Climate Change Programme-Technical Module (FORCLIME-TC)	
Funding entity	BMZ
Timeframe	Phase I 2009-2011, Phase II 2012-2015, Phase III 2015-2017 and Phase IV 2017-2020 Phase V 2021- present

Total budget	EUR 40,000,000
Geographical scope	Indonesia and 5 provincial jurisdictions of West Kalimantan, North Kalimantan, East Kalimantan, Central Sulawesi and Papua
Project objectives and components	• The FORCLIME-TC project aims to reduce GHG emissions from the forest sector while improving the livelihoods of Indonesia's poor rural communities. Project components include 4 strategic areas: • Strategic Area 1: National and Regional Policy Framework. FORCLIME provides policy advice and support for the preparation and improvement of relevant regulations and planning documents for sustainable forest management and biodiversity conservation at the national and sub-national levels. • Strategic Area 2: Sustainable Forest Management (SFM). FORCLIME supports the Government of Indonesia in terms of technical cooperation for the planning and implementation of sustainable forest management (SFM) • Strategic Area 3: Human Capacity Development. FORCLIME provides assistance relating to human-resource capacity development at both the national and sub-national levels in order to support sustainable forest management that benefits and that contributes to the welfare of communities • Strategic Area 4: Integrated Biodiversity Conservation and Watershed Management in the Lore Lindu Landscape/Biosphere Reserve. Integrated Biodiversity Conservation and Watershed Management in the Lore Lindu Landscape/Biosphere Reserve.
Linkage/relevance for GCF project	• FORCLIME-TC activities are linked closely with activity 1.1.1, activity 1.1.2, activity 1.1.3, activity 3.1.1 and activity 3.2.1 For activity 1.1.1, activity 1.1.2, activity 1.1.3, FORCLIME-TC has been supported GoWK to develop and strengthen legal framework which serve as a basis for GoWK to further strengthening mitigation and adaptation policies for the GCF project such as the development of the provincial SRAP policy, FRL, forest carbon inventory guidelines, MRV and Operational Plan of FOLU Net Sink 2030 of West Kalimantan. Moreover, FORCLIME-TC also supports to strengthen institutional arrangement of REDD+ Task Force. Last but not least, FORCLIME-TC is supports the GoWK to develop a project concept note and full funding proposal to Green Climate Fund. The GCF project is designed based on lessons learned and modality of FORCLIME-TC strategies and approaches in strengthening mitigation policies in the province and results from FORCLIME-TC will be capitalized as a basis for this GCF project intervention.
Achieved results / impacts	• As of 2022, key results of FORCLIME-TC for specific project area intervention in West Kalimantan Province include: i) Preparation of funding mitigation and adaptation proposal of GoWK to Green Climate Fund, ii) Implementation of International Seminars and Conferences on, iii) Climate Change and Sustainable Development in West Kalimantan, and iv) Support for the implementation of climate change-related policies in West Kalimantan.

Project Title: Forest Investment Programme (FIP-1)	
Funding entity	Asian Development Bank
Timeframe	2018 – 2024 (project activity implementation is already finished)
Total budget	US$ 17 million
Geographical scope	Sintang and Kapuas Hulu Regency, West Kalimantan Province

Project objectives and components	• The objective of the FIP-1 project is to improve REDD+ implementation in project areas of West Kalimantan Province, providing increased environment and livelihood benefits. Project components include 3 aspects: 1) To implement community-focused and gender responsive REDD+ pilot (through investing in activities such as community-based land use planning, community-led forest monitoring and forest fire management, community-assisted forest regeneration and maintenance, and community-based ecotourism in 4 FMUs 2) To provide support in harmonizing sub-national fiscal policies on REDD+ with national policies 3) To strengthen institutional and technical capacity of FMUs, regency and the province in REDD+ implementation area, including through non-monetary incentives, monitoring and safeguard systems and equitable and gender-responsive benefit sharing arrangements
Linkage/relevance for GCF project	• FIP-1 activities are linked with activity 1.1.2 related to the monitoring system development of mitigation activities. FIP-1 supported REDD+ Task Force in developing the MRV system legalized under PERGUB. The system is subject to revision in the GCF project due to the changes in national reference and accounting system of GHG emissions. Additionally, FIP-1 activities are linked with activity 3.2.1 of the GCF project to advance social forestry implementation, including building awareness of local communities of climate risks and risk-reduction practices. There is a potential overlap of village intervention areas between FIP-1 and GCF project. The GCF project will draw upon FIP-1 experiences in facilitating villages and possibly conduct knowledge exchanges on gaps and the strategies and approaches to force the process in the ground towards advanced social forestry management. Results of the FIP-1 project will be capitalized as a basis for this project intervention at villages in Sintang and Kapuas Hulu Regency.
Achieved results / impacts	• As per June 2022, key results for component 1 includes 1,880 h of community-based agroforestry; 6,000 ha of community-based assisted natural regeneration; 17,000 ha of the area is brought under CBFM/Social Forestry agreement; 5,000 ha forest is directly protected and 91,000 Ha is indirectly protected; 17 targeted villages received the livelihood improvement programme; Four villages within the BKDS National Parks involved in the ecotourism programme; 34 units of clean water facility and 17 packages of road construction, two green school; and two packages of micro-hydropower plan. • Component 2 includes Three sub-national regulations on REDD+ are drafted; Grievance redress mechanism on tenure and REDD+ operationalized; At least 50 staff (15 women) trained in REDD+ planning, implementation and communication; and Safeguards and REDD+ community-based monitoring system and activity registry. • Lastly, component 3 includes Guidelines for integrating natural capital considerations into fiscal policies and incentive mechanisms drafted; At least three sub-national policies (fiscal, benefit sharing and incentive mechanisms) harmonized with national policies; and three gender-responsive proposals for mobilizing sub-national REDD+ funding developed.

Project Title: KALFOR - Kalimantan Forest	
Funding entity	Global Environment Facility (GEF) Trust Fund
Timeframe	2017 – 2024 (ongoing implementation)

Total budget	US$ 59,050,000 comprising of a grant from GEF-Supported funding of US$ 9,000,000 and the parallel co-finance from the Government of US$ 50,000,000 and UNDP of US$ 50,000
Geographical scope	• Ketapang and Sintang Regency, West Kalimantan • Kota Waringin Barat Regency, Central Kalimantan • Kutai Timur Regency, East Kalimantan

Project objectives and components	• KALFOR is designed to back up the Government's programme to maintain the remaining forests located outside state forest zones (APL) in Kalimantan's lowland and montane areas in the face of the growth and development of the estate crop sector by addressing sustainable management of forest, environment, and ecosystems.
	• Project components include 3 primary aspects:
	  ○ Component 1: Mainstreaming of forest ecosystem service and biodiversity considerations into national, provincial, and regency policies and decision-making processes for forest area planning and management
	  ○ Component 2: Development and demonstration of strategies for integrating forest area planning, management and conservation with estate crop spatial planning and management across four regencies of Kalimantan (Ketapang, Sintang, Kota Waringin Barat, and Kutai Timur) and at target landscapes within those regencies
	  ○ Component 3: Testing / demonstration of incentives mechanism(s) to reduce deforestation associated with the estate crops sector

Linkage/relevance for GCF project	• KALFOR activities are linked with activity 1.2.1, which is related to High Conservation Value Forest (HCVF) protection and management and activity 3.2.1 where KALFOR intervenes community-based forest management in APL. There is a potential overlap of village intervention areas between KALFOR and GCF project. GCF project will draw upon KALFOR experiences in facilitating villages and possibly conduct knowledge exchanges on gaps and what would be the strategies and approaches to force the process in the ground towards advanced social forestry management. The results of the KALFOR project will be capitalized as a basis for this project intervention at villages in Ketapang and Sintang Regency.
Achieved results / impacts	• As per June 2021, key results of KALFOR project such as the project increased APL forest cover under enhanced protection by 278,144 ha; KALFOR drafted or contributed to 11 national or provincial instructions, regulations or decrees supporting APL forest conservation, and in which biodiversity and ecosystem services have been mainstreamed to an extent; commitments in the regencies to conserve 166,480 ha; KALFOR has trained a large number of villagers; Various regulations have been examined for their use as incentive schemes, though few involve performance-based financial payments for environmental conservation; KALFOR contributed to an MOEF umbrella framework on PES and conducted an ecosystem services and economic valuation study; The project also initiated pilot collaborations between companies and the communities living in their concession areas; KALFOR has produced a large number of quality communication products and channels to increase stakeholders' and the general public's understanding of the need for APL forest conservation and what activities KALFOR has been undertaking for this goal; The project has contributed to an MOEF web portal on forest planning for the whole country.

Project Title: SEGAR - Sustainable Environmental Governance Across Regions	
Funding entity	USAID
Timeframe	2021 – 2026 (ongoing implementation)
Total budget	US$ 32.7 million
Geographical scope	• Aceh Tamiang, Aceh Timur and Aceh Utara Regency, Aceh Province • Kubu Raya, Sanggau, Sintang and Ketapang Regency, West Kalimantan Province • Kota Waringin Barat and Seruyan Regency, Central Kalimantan Province • Berau, Kutai Timur and Mahakam Ulu, East Kalimantan Province
Project objectives and components	• This project aims to advance Indonesia's development goals of balancing biodiversity conservation and sustainable land use with inclusive economic and livelihood development by bringing together government, businesses, and local communities to make business-as-usual commodities production less harmful to the environment, more beneficial to local farmers, and more profitable for businesses.. Project component include i) Strengthened inclusive environmental governance in targeted subnational jurisdictions that advance biodiversity conservation, sustainable forest management, and sustainable land use; and ii) Increased implementation of environmental and social sustainability goals within private sector natural resources commodity production supply chains that reduces threats to biodiversity and greenhouse gas emission from land use.
Linkage/relevance for GCF project	• Potential activity overlap is with sub-activities of 1.2.1, 2.1.1 and 2.1.2 of GCF project. USAID SEGAR targets HCVF/HCS areas and co-funding projects with private sectors, both forestry and palm oil plantation, to invest in sustainable supply chains. GCF project will draw upon USAID SEGAR's experiences in facilitating sustainable supply chains and possibly conduct knowledge exchanges on gaps and what would be the strategies and approaches to force the process in the ground towards sustainable supply chains.
Achieved results / impacts	• Currently under implementation in West Kalimantan, started in the early 2022

Project Title: Governor’s Climate Forest Task Force (GCF-TF) Window-B	
Funding entity	Norwegian Kingdom via UNDP
Timeframe	2021 – 2023 (Completed)
Total budget	US$ 1,426,491
Geographical scope	• West Kalimantan Province and pilot projects in Kubu Raya Regency
Project objectives and components	• Objectives of Window B GCF TF project are i) advance implementation of the jurisdictional model and REDD+ Taskforce capacity that is well connected for MRV and ii) Wide-scale adoption of sustainable forestry & agriculture practices, trade, and investment in Kubu Raya. Project components include i) to advance implementation of the jurisdictional model and REDD+ Taskforce capacity that is well connected for MRV, ii) to prepare long-term financial solutions for the implementation of the Jurisdictional model and Provincial REDD+, iii) to leverage support in improving field-level results for Forest, Mangrove and Peatland Rehabilitation and Protection, and iv) To scale of sustainable agriculture practices, trade, and investment in Kubu Raya.

Linkage/relevance for GCF project	• The Window B GCF TF project results will be used to strengthen REDD+ Task Force and REDD+ implementation in the GCF project. Window B GCF TF project focused on strengthening enabling environments of REDD+ in West Kalimantan and implementing the REDD+ pilot project at the regency level – Kubu Raya. The results of this project are linked with activity 1.1.2, activity 2.1.1, and activity 2.1.2. For activity 2.1.2, the GCF project is potentially continued Window B GCF TF project. The project successfully encouraged 1000 smallholders in Kubu Raya Regency to receive a Cultivation permit (*Surat Tanda Daftar Budidaya*, STDB) and prepared those farmers for RSPO/ISPO certification.
Achieved results / impacts	• As of June 2023, key results of Window B GCF TF project are i) 3 Standard Operating Procedure (SOP) for REDD+ Taskforce on working arrangements developed and operationalized for the REDD+ Taskforce and Protection Production Inclusion Compact Kubu Raya, ii) 2 report documents on sub-national MRV and SIS, iii) 1 project with forestry and plantation concessions and/or a secured with co-funding, iv) 1 investment portfolio developed, v) 10x training were conducted for SF business units, and 5 business proposals are prepared and submitted to the potential buyers/investors/business partners, vi) 1000 smallholders obtained STDB with 2 cooperatives and 30x series of training conducted, and vii) 2 co-funding project are developed with forestry and plantation company for sustainable forest and land management practices.

Project Title: Strengthened Systems for Community-based Conservation of Forests and Peatland Landscapes in Indonesia (CoPLI)	
Funding entity	GEF Trust Fund
Timeframe	2021-2025 (Ongoing)
Total budget	US$ 21,000,000 with various agencies GEF-IFAD, GoI, Private Sectors and instruments (Grant, Loans, In-Kind, Public Investment)
Geographical scope	• Gunung Palung National Park in Ketapang Regency • Danau Sentarum National Park (DSNP) in Kapuas Hulu Regency
Project objectives and components	• This project aims to conserve globally important biodiversity and enhance livelihoods through a strengthened institutional framework and community-based conservation of peatland ecosystems. Project components include i) strengthening the institutional framework for peatland and biodiversity conservation and development of a multi-stakeholder partnership framework to provide underlying sustainable; ii) community-based management and conservation of peatland systems in targeted landscapes; and iii) knowledge exchange for forest and peatland conservation and management.
Linkage/relevance for GCF project	• A potential area overlap of the CoPLI project with the GCF project is possibly happening. Villages around Gunung Palung National Park in Ketapang and Danau Sentarum National Park in Kapuas Hulu might be part of the GCF project area intervention. GCF project will draw upon CoPLU experiences in facilitating multi-stakeholder partnerships and community-based management and conservation. Knowledge exchanges on gaps and the strategies and approaches to force the process on the ground would be conducted to implement activity 2.1.3 and activity 3.2.1 of the GCF project.
Achieved results / impacts	• Currently under implementation in West Kalimantan

Project Title: Forest Programme V (FPV): Social Forestry Support Programme	
Funding entity	KfW
Timeframe	2021 – 2027 (ongoing with project preparation phase in Sanggau Regency)
Total budget	EUR 11.5 million
Geographical scope	• Sanggau Regency, West Kalimantan Province • Sikka Regency, Southern East Nusa Province • Garut Regency, West Java Province • Madiun Regency, East Java Province
Project objectives and components	• FPV project's objective is that poor rural communities' livelihoods are sustainably improved through the protection of natural ecosystems and sustainable forest management (SFM), and greenhouse gas emissions are reduced from decreasing deforestation and land degradation. Project components include i) social forestry capacity for PSKL, KPH, Dinas Kehutanan, Pokja PPS (Social Forestry Permit Acceleration, *Percepatan Perhutanan Sosial*) improved; ii) financially sustainable and climate resilient social forestry models are applied by local communities; and iii) harmonization of social forestry policies and practice in PSKL and other related stakeholders is improved.
Linkage/relevance for GCF project	• FPV activities are linked with activity 3.2.1 of the GCF project related to advanced social forestry implementation, including building awareness of local communities of climate risks and risk-reduction practices. There is a potential overlap of village intervention areas between FPV and GCF projects where FPV already selects 17 village forests as project area intervention. Further coordination and communication will be conducted with FPV for alignment
Achieved results / impacts	• Currently under implementation in West Kalimantan

Project Title: TFCA (Tropical Forest Conservation Act)	
Funding entity	Debt for Nature Swap partnership between the Government of Indonesia (GoI) and the Government of the United States of America (USA)
Timeframe	2012 – 2022 (Ongoing negotiation for project continuation beyond 2022)
Total budget	US$ 28.5 million
Geographical scope	Priority regency locations: • Berau, Kutai Barat and Mahakam Ulu Regency in East Kalimantan Province • Kapuas Hulu Regency in West Kalimantan Province Other strategic investment regency locations: • Lamandau in Central Kalimantan • Kutai Kartanegara, Kutai Timur, and Balikpapan City in East Kalimantan • Malinau, Nunukan, and Tarakan City in North Kalimantan; • 14 regencies/cities in West Kalimantan.
Project objectives and components	• The objective of this project includes several aspects: o Protect important forest biodiversity, rare and endangered species, ecosystems, watershed ecosystem services, connectivity between forest ecological zones, and forest corridors that have benefits for biodiversity and climate change at global, national, and local levels;

	○ Improve community livelihoods around forests through sustainable natural resource management and low-emission community land use while still paying attention to forest protection principles; ○ Carry out various activities to reduce emissions from deforestation and forest degradation to achieve significant emission reductions in each target regency while supporting the implementation of biodiversity conservation; and ○ Provide support for the exchange of ideas and share experiences related to the implementation of forest conservation and REDD+ programmes in Indonesia and inform the development of national conservation and REDD+ frameworks • Project component for 2018-2022: ○ Conservation of key and endangered species in Borneo includes, but is not limited to Orangutans, Sun Bears, Proboscis Monkeys, Sinyulong crocodiles, estuarine crocodiles, Siamese crocodiles, Arowana, Borneo Langur, Banteng, Rhinoceros, Elephants, Hornbills, and Gibbons. ○ Protection and conservation of forests and biodiversity in protected areas and/or outside protected areas through the development of social forestry schemes and/or partnerships with permit holders/area managers ○ Multi-stakeholder management of landscapes as habitat for key and endangered species in Kalimantan ○ Protection of endangered rare plants/trees in Kalimantan ○ Development of sustainable community business prototypes and in line with the value of forest protection through increasing the value and marketing of local commodities of non-timber forest products, agriculture/plantations and fisheries, including the development of environmental services to support sustainable forest management ○ Development of land-based and non-land-based mitigation actions related to forest and biodiversity conservation (fire prevention, climate villages, restoration, peatland and mangrove management, and others) ○ REDD+ scenario development and/or funding initiatives ○ Mitigating the impact of the parallel border and cross-Kalimantan Road construction on forests and biodiversity ○ Technical support for strengthening social forestry/community-based forest management, ecotourism development, institutional strengthening of Kalimantan TFCA partners, and community economic business development (Scaling Up) related to conservation efforts
Linkage/relevance for GCF project	• TFCA activities are linked with activity 1.2.1 on HCV/HCS protection and management, where TFCA has contributed to HCV/HCS protection under Ecosystem Essential Areas regulatory framework and biodiversity conservation. An exchange will be conducted with TFCA related to activity 1.2.1. Additionally, activity 3.2.1 of the GCF project on advancing social forestry implementation, including building awareness of local communities of climate risks and risk-reduction practices also link. Project area intervention overlap is possible between TFCA and GCF projects where TFCA also focussed on facilitating social forestry in Kapuas Hulu Regency. The GCF project will continue to intervene in villages previously encouraged by TFCA and its partners, and results from TFCA projects will be capitalized as a basis for this project intervention at villages in Kapuas Hulu Regency.
Achieved results / impacts	• As of the end of 2020, the key results are: • The total area of forests and ecosystems intervened by partners is 765,375.63 ha. Of the total area intervened, 516,521.12 ha of area has

	management legality with 7 protection schemes, namely: Cooperation with National Parks, Regional Regulations (Perda) Mangrove in APL, Marine, Coastal and Small Islands Conservation Areas (Kawasan Konservasi Perairan, Pesisir, dan Pulau-pulau Kecil, KKP3K) including reserve areas for KKP3K, Decree of the Regent of Regional Protected Areas, Social Forestry, and KEE. • Conservation activities for 11 flagship species: orangutans, Sumatran rhinos, mahakam porpoises, Borneo bulls, hornbills, arowanas, elephants, proboscis monkeys, crocodiles, storm storks, and Borneo langurs. • 4920 people have been involved in various economic initiatives such as business development of honey, tengkawang, mawang fruit syrup and jam, improvement of rubber production, production of natural weaving and dyes, handicrafts, cracker business, ecotourism, agroforestry, agriculture, fisheries, and livestock. • The total products developed are 87 products, with 67 products can be categorized as non-timber forest products, while the remaining 20 are ecotourism sites. • The area of rehabilitated or enriched land is 1005.81 ha. • A total of 177 policies were generated/refined/operationalized by partner projects.

Project Title: Sustainable Agriculture Supply Chain in Indonesia (SASCI)	
Funding entity	BMZ
Timeframe	2019 – 2022 (Completed)
Total budget	EUR 4 million
Geographical scope	Kapuas Hulu Regency, West Kalimantan Province
Project objectives and components	• The SASCI project aims to promote sustainable agricultural supply chains for renewable raw materials with global markets established. Project components include i) strengthening the capacity of smallholder farmers for sustainable production of palm oil and natural rubber; ii) increasing the capacity of government organisations, civil society actors and the private sector for sustainable agricultural commodity supply chain implementation, including conflict-resolution mechanisms; iii) strengthening national initiatives for the implementation of sustainable agricultural commodity supply chains; and iv) smallholder farmers in Kapuas Hulu Regency, West Kalimantan have access to global markets (with products traceable to production sites)
Linkage/relevance for GCF project	• Results of SASCI activities are linked with activity 2.1.2 related to sustainable supply chain improvement and activity 2.1.3 on the multi-stakeholder forum establishment and strengthening. Activity 2.1.2 of the GCF project can draw upon the successful SASCI programme in developing sustainable supply chains for rubber commodities, including rubber market transformation through linking smallholder products with the international market (Continental) and developing a traceability system. While activity 2.1.3 of the GCF project will be linked with the existing multi-stakeholder forum of Kapuas Hulu Biosphere Reserve initiated by SASCI and its partners. The results of the SASCI project will be capitalized as a basis for this project intervention at villages in Kapuas Hulu Regency.
Achieved results / impacts	• Key impacts of the SASCI project include: • Strengthening the capacity of smallholder rubber farmers with a total of 397 natural rubber farmers were actively participating (out of 455 farmers officially registered in the traceability system). During 2020, 257 of the

	actively participating smallholders sold 34.3 tons of good quality rubber in 11 monthly sales sessions. • Strengthening the capacity of palm oil smallholder farmers with the support to rubber smallholders continues and the project expands its support to some 250 independent palm oil smallholder farmers in Silat Hilir sub-district. • Increased smallholder income on average 16.6% higher • Reduced GHG emissions due to reduced deforestation: based on official deforestation monitoring data by the Ministry of Environment and Forestry (MoEF), the deforestation in Kapuas Hulu within legally protected forests was lower than the year before, with only 462 hectares of deforestation registered, corresponding to 0.17 Mt CO2e. • Improved women participation in the supply chains: out of the total 399 family data sets recorded, 238 (60%) responded that both spouses work on the rubber plot. Overall, 39% women (154) and 61% men (243) attended project capacity building events and are actively producing and selling good quality natural rubber. • Support to Multi Stakeholder Forum for Kapuas Hulu Biosphere Reserve ongoing. The support is being scaled up in 2021 by strengthening the Secretariat and by collaborating with UNESCO, the Sustainable Districts' Association, and a consultancy on "Green Economy". • A Traceability system (from smallholder farm to global buyer in Europe) for rubber in place (RubberTrace). A Traceability system for palm oil is being implemented (Bentang Sawit). • A delivery agreement with a global rubber buyer (Continental AG) is in place but a similar agreement is still outstanding for delivery of palm oil.

Project Title: The Sustainability and Value Added in Agricultural Supply Chains in Indonesia Project (SASCI+)	
Funding entity	BMZ
Timeframe	2020 – 2025 (ongoing)
Total budget	+- EUR 7.3 million
Geographical scope	• West Kalimantan (Betung Kerihun Danau Sentarum Kapuas Hulu Biosphere Reserve) • Central Sulawesi (Lore Lindu Biosphere Reserve).
Project objectives and components	• By increasing the sustainable production of agricultural commodities and strengthening downstream processing and market linkages, the project aims to increase the farmers' incomes, safeguard natural resources, and establish sustainable supply chains by 2025. SASCI+ follows a jurisdictional approach trying to align the interests of multiple stakeholders, including governments, businesses, local communities, and NGOs. Coordination among these stakeholders in target areas contributes towards conservation and sustainability of the supply chain. Through this approach, the project aims to establish long-term market access and security of supply.
Linkage/relevance for GCF project	• SASCI+ activities are linked with activity 2.1.2 related to sustainable supply chain improvement and activity 2.1.3 on the multi-stakeholder forum. activity 2.1.2 of the GCF project can further collaborate and exchange with SASCI+ activities in developing sustainable supply chains for palm oil in Sanggau. GCF project activities will possibly continue and further enhance SASCI+ activities in Sanggau.
Achieved results / impacts	• Currently under implementation in West Kalimantan

Project Title: Sustainable Agriculture for Forest Ecosystems (SAFE)	
Funding entity	BMZ and Europe Commission
Timeframe	2022 – 2026 (ongoing)
Total budget	+- EUR 4,6 million
Geographical scope	• West Kalimantan • Central Sulawesi
Project objectives and components	• This project aims to provide technical assistance, strengthening capacity, scaling up traceability systems and supporting reliable and stable partnerships, including through exchange and learning amongst a wide range of actors. Project components include i) improved capacities for sustainable use of forest landscapes, ii) improved mechanisms for sustainable supply chains, iii) Smallholder are empowered for sustainable use of forest landscapes, iv) Smallholder are empowered for sustainable use of forest landscapes
Linkage/relevance for GCF project	• SAFE activities are linked with activity 2.1.2 related to sustainable supply chain improvement and activity 2.1.3 on the multi-stakeholder forum. activity 2.1.2 of the GCF project can further collaborate and exchange with SAFE activities in providing technical assistance, strengthening capacity, scaling up traceability systems and supporting reliable and stable partnerships. Consultation will be conducted to ensure no overlaps of village intervention areas and duplication of activities at field level
Achieved results / impacts	• Currently under implementation in West Kalimantan

Project Title: Improving the Management of Peatlands and the Capacities of Stakeholders in Indonesia (Peat-IMPACTS Indonesia)	
Funding entity	BMU - International Climate Initiative [IKI]
Timeframe	2020 – 2023
Total budget	EUR 4,062,457
Geographical scope	• Ogan Komering Ilir Regency, South Sumatra • Kubu Raya Regency, West Kalimantan
Project objectives and components	• The overall objective of Peat-IMPACTS Indonesia is to support the achievement of sustainable, climate-smart management of Indonesia's peatland through a transformative landscape approach, combining technical and institutional capacities in peat landscape restoration in alignment with the public and private sectors. Project components include i) Risks and opportunities, livelihoods and conservation, including fire prevention, options for peat restoration are identified and action plans are agreed upon at the peat-, hydrological-unit/landscape level; ii) Peatland management and restoration plans are mainstreamed and integrated into low carbon development plans; iii) Capacity of farmers to improve their livelihoods through paludiculture and agroforestry is strengthened. Good practices collaboratively defined between local governments, NGOs, private sector and farmers in managing their peatland are established at site level; iv) Multiple points for policy interventions in restoration, payment for ecosystem services, REDD+ and adaptation strategies, and public-private-partnerships are leveraged; v) Capacity in realistic accounting of peatland emissions, including from

	fire, in Government submissions to the United Nations Framework Convention on Climate Change (REDD+, NDC, national GHG accounting) is strengthened; vi) National, multi-sectoral bodies with responsibility for managing peatlands improve coordination. Comprehensive approaches to addressing the problems and becoming climate resilient are developed.
Linkage/relevance for GCF project	• Potential activity overlap is with activity 1.1.1 and activity 1.1.2 of the GCF project. Peat Impact supports the development of regulatory frameworks such as peat protection and management policies at the province and regency levels. The document could be used as a basis or reference for the GCF project in developing adaptation and mitigation policies at the province and regency levels. A potential area intervention overlaps possibly happened with activity 3.2.1, where the GCF project also targets peat rehabilitation activity in Kubu Raya Regency.
Achieved results / impacts	• No official report has been published to date by the project.

Project Title: The Food Systems, Land Use and Restoration Impact Programme (FOLUR): Enabling environment for sustainable value chains and integrated landscape management	
Funding entity	Global Environment Fund
Timeframe	2021 – 2027 (ongoing)
Total budget	GEF Trust Fund US$ 16.2 million and co-funding US$ 132.5 million
Geographical scope	Aceh, North Sumatera, West Kalimantan, South Sulawesi and West Papua
Project objectives and components	• The goals of this project include developing integrated landscape management systems, promoting sustainable food production practices and responsible value chains, conserving and restoring natural habitats. Knowledge management, coordination, collaboration, and monitoring and evaluation practices will be developed and fortified through capacity building. Project components consist of 4 aspects: i) enabling environment for sustainable value chains and integrated landscape management, ii) promotion of sustainable crop production and responsible value chains, iii) conservation and restoration-rehabilitation of natural habitats, and iv) knowledge management, coordination, collaboration, and monitoring & evaluation.
Linkage/relevance for GCF project	• Potential activity overlap is with activity 1.2.1of the GCF project, where FOLUR targets activity implementation related to conservation and restoration-rehabilitation of natural habitats. While both FOLUR and GCF projects under activity 2.1.1 and activity 2.1.2 share a similar intervention targeting sustainable value chains and integrated landscape management and promotion of sustainable crop production and responsible value chains. FOLUR targets Sanggau Regency as the priority project area intervention with potential overlap with the GCF project.
Achieved results / impacts	• Currently under implementation. Project commenced in Sanggau Regency in the beginning of 2023.

Project Title: Indonesia REDD-plus RBP for results period 2014-2016	
Funding entity	Green Climate Fund

Timeframe	2021 – 2025 (ongoing)
Total budget	US$ 103.8 million
Geographical scope	Indonesia include West Kalimantan
Project objectives and components	• The objectives of this project are iIncreasing the welfare of communities around the forest and reducing emissions from forests & land for 2023 and above with the use of 2014-2016 RBP funds. Project components include to strengthening coordination and implementation of REDD+ (Component 1) and supporting the decentralization of sustainable forest governance by expanding and improving the implementation of Social Forestry (PS), development of Forest Management Units (KPH), forest and land rehabilitation, fire control, and ensuring sustainable livelihoods (Component 2).
Linkage/relevance for GCF project	• This project is significantly linked with activities in Component 1 and Component 3 of the GCF project. There are potential overlaps between activities and project area interventions of the RBP project with the GCF project initiated by Government of West Kalimantan. Coordination between GoWK and GIZ as AE with MoEF and BPDLH have been conducted for alignment and no duplication or overlaps. Further coordination will be conducted to ensure the alignment. Results of RBP project are referenced and can support the implementation of activity 1.1.1, 1.1.2, and 1.1.3.
Achieved results / impacts	• As of December 2022, key results are: • Implementation of output 1 in 7 (seven) Echelon I MoEF, 5 (five) Echelon I BRGM, UNDP and BPDLH • Implementation of output 3 at BPDLH • Absorption of funds for Output 1 and 3 amounted to US$ 2.18 million • Withdrawal of output 2 funds. The first phase involved collecting MoV for Key Performance Indicators (KPI) in the form of quality indicators and safeguard implementation indicators by 5 echelon I units of the Ministry of Environment and Forestry and BRGM which resulted in RBP payments to BPDLH of US$ 47.08 million

Project Title: Fund for the Prosperity and Sustainable Economy of Indigenous Peoples and Local Communities (TERRA Fund)	
Funding entity	Ford Foundation
Timeframe	2021 – 2023 (ongoing)
Total budget	US$ 1 million
Geographical scope	20 provinces in Indonesia include West Kalimantan
Project objectives and components	• The objective of this project is to achieve NDC 2030 target and the Sustainable Development Goals (SDGs) by providing financial support to indigenous peoples or community groups living in surrounding forest areas to help them develop sustainable income generation that protect forests and at the same time reduce poverty. Project components include • Reducing rates of deforestation and land degradation through biodiversity conservation, optimized ecosystem services, water infiltration protection, integrated fire management. • Adoption of sustainable agroecological practices by smallholders and marginalized farmer groups, including the adoption of agroforestry practices, integrated crop-livestock-tree systems.

	• Equitable access for indigenous peoples, local communities, women and vulnerable groups to the utilization of natural resources. • Increasing energy efficiency and utilization of renewable energy. • Initiating small-scale and environmentally friendly community businesses and increasing market access for farmers and local communities.
Linkage/relevance for GCF project	• This project is linked with activity 1.3.1 where TERRA Fund collaborates with BPDLH to channel their grant funding to beneficiaries include Indigenous People and Local Community (IP) and university. The GCF project can draw upon successful collaboration between BPDLH and Ford Foundation to develop grant mechanism of the GCF project to IP under activity 1.3.1. Additionally, TERRA fund is linked with 3.2 where TERRA fund's key focus is to provide funding to IP to further develop their business or access to natural resource management. Exchange on knowledge and lessons learned has been conducted with BPDLH for grant mechanism of the GCF project
Achieved results / impacts	• As of Mei 2023, key results are: • BPDLH has entered into partnerships with 7 selected Intermediaries, spread across 7 provinces, namely Aceh, North Sumatra, Riau, West Java, Central Java, East Java and West Kalimantan, with an estimated target beneficiary consists of 37 KTH with an estimated number of members of about 4800 (1400 women, 3400 men) people of the community. Cooperation This collaboration benefits the equivalent of channelling funds of IDR 8,837,800,000 (EUR 519,870.59). • In addition to Intermediary Institutions, BPDLH has collaborated with 14 Community Service teams from 12 universities who will carry out activities in 14 villages with a target of 500 beneficiaries (200 men, 300 women) and 13 research teams from 12 Universities. This collaboration is equivalent to the distribution of funds of IDR 1,985,200,000 (EUR 116,776.47). BPDLH organizes training for 30 intermediary institutions to support the capacity building of intermediary institutions in the proposal preparation and programme management programmes. This training includes training on proposal writing, programme planning (substance, environmental and social safeguards and finance), reporting, monitoring and evaluation.

10.2 Regulations relevant to the project

Type of Regulation	Title	Abbreviation
Law	The Development and Strengthening of the Financial Sector	UU 4/2023
Law (Omnibus)	Job Creation	UU 6/2023
Law	Law Establishment	UU 15/2019
Law	Local Government	UU 23/2014
Law	Forestry	UU 41/1999
Law	Principal Provisions of Forestry	UU 5/1967
Law	Provincial Enterprise	UU 5/1962
Government Regulation	Environmental Protection and Management	PP 22/2021
Government Regulation	Forestry Administration	PP 23/2021
Government Regulation	The Administration of the Agricultural Sector	PP 26/2021
Government Regulation	Provincial Enterprise	PP 54/2017
Government Regulation	Amendments to Government Regulation Number 28 of 2011 concerning Management of Natural Reserve Areas and Nature Conservation Areas	PP 108/2015
Government Regulation	Forest Management, Forest Management Plans, and Forest Utilization	PP 6/2007
Presidential Regulation	Integrated Planning for the Acceleration of Social Forestry Management	PERPRES 28/2023
Presidential Regulation	Implementation of Carbon Economic Value to Achieve Nationally Determined Contribution Targets and Control of Greenhouse Gas Emissions in National Development	PERPRES 98/2021
Presidential Regulation	Indonesia Sustainable Palm Oil (ISPO)	PERPRES 44/2020
Presidential Instruction	Biodiversity Mainstreaming in The Development Plan	INPRES 1/2023
Presidential Instruction	Conversion Prohibition of Primary Natural Forests and Peatlands	INPRES 5/2019
Presidential Instruction	National Action Plan on Sustainable Palm Oil	INPRES 6/2019
Presidential Instruction	Postponement and Evaluation of Palm Oil Plantation Licensing and Increasing Palm Oil Plantation Productivity	INPRES 8/2018
Regulation	Ecosystem Restoration in the Production Forest	Permenhut 159/Menhut-II/2004
Regulation	Carbon Trading Procedures in Forestry Sector	Permen LHK 7/2023
Regulation	Carbon trading through carbon exchanges	OJK 14/2023

Regulation	Amendments to the Regulation of the Minister of Environment and Forestry Number P.16/MENLHK/SETJEN/SET.1/8/2020 concerning the Strategic Plan of the Ministry of Environment and Forestry for 2020-2024	Permen LHK 1/2022
Regulation	Human Resource Development, Research and Development, Rejuvenation, and Facilities and Infrastructure for Palm Oil Plantations	Permentan 3/2022
Regulation	Guidelines for the Implementation of Carbon Pricing	Permen LHK 21/2022
Regulation	Assignment of Some Government Affairs in the Environment and Forestry Sector to 7 (Seven) Governors for Peat Restoration Activities for Fiscal Year 2021	Permen LHK 2/2021
Regulation	Forest Management, Forest Management Plans, and Forest Utilization in Protected Forests and Production Forests	Permen LHK 8/2021
Regulation	Social Forestry Management	Permen LHK 9/2021
Regulation	Facilitation of Community Plantation	Permentan 18/2021
Regulation	Use, Monitoring and Evaluation of Forestry Natural Resources Profit Sharing Funds Reforestation Funds	PMK 216/PMK.07/2021
Regulation	The Implementation of Indonesia Sustianable Palm Oil	Permentan 38/2020
Regulation	Forest Utilization Partnership in the Forest Management Unit	Permen LHK P.49/MENLHK/SETJEN/KUM.1/9/2017
Regulation	The Implementation of Reducing Emissions From Deforestation And Forest Degradation, Role of Conservation, Sustainable Management of Forest and Enhancement of Forest Carbon Stocks	Permen LHK P.70/MENLHK/SETJEN/KUM.1/12/2017
Regulation	Use, Monitoring and Evaluation of Forestry Natural Resources Profit Sharing Funds Reforestation Funds	PMK 230/PMK.07/2017
Regulation	Hutan Hak (Community Forest)	Permen LHK P.32/Menlhk-Setjen/2015
Regulation	Pollution Prevention Mechanism and/or Environmental Damage Related to Forest and/or Land Fires	Permen LH 10/2010
Decree of Director of Forest Utilization of Directorate General of Sustainable	Technical Guidance on Effective FMU Organizations Towards Independent Community and Sustainable Forest	SK Dir BRPH SK.16/BRPH/PKPH/HPL.0/12/2022

Forestry Management		
Regulation of Directorate General of Social Forestry and Environmental Partnership	Guidelines of Social Forestry Facilitation	Perdirjen PSKL P.1/PSKL/KELING/KUM.1/1/2019
Regulation of Directorate General of Conservation of Natural Resource and Ecosystem	Technical Guidance on High Conservation Areas	Perdirjen KSDAE P5/KSDAE/2017
Decree	Forest Area and Water Conservation of West Kalimantan	SK Menhut SK.733/Menhut-II/2014
Decree	Determination of Forest Areas in the Provinces of West Kalimantan, Central Kalimantan, South Kalimantan and East Kalimantan.	SK Menhut 47/KPTS-II/1998
Decree	Indicative Mapping of Social Forest Areas	SK.2111/MENLHK-PKTL/REN/PLA/0/4/2020
Decree	Indicative Mapping of Social Forest Areas	SK.8878/MENLHK-PKTL/RED/PLA.0/12/2021
Circular Letter	Issuance of Permits in High Conservation Value Forest Areas	SE Men ATR 10/SE/VII/2015
Provincial Regulation	Agriculture Land Clearing with Local Wisdom	PERDA 1/2022
Provincial Regulation	Forest and Land Fire Control	PERDA 2/2022
Provincial Regulation	Integrated watershed management	PERDA 2/2021
Provincial Regulation	Protection and Management of Peat and Mangrove Ecosystems	PERDA 8/2021
Provincial Regulation	Peat and Mangrove Protection and Management	PERDA 8/2021
Provincial Regulation	The General Plan for Sustainable Plantation Development	PERDA 28/2020
Provincial Regulation	Forest Management	PERDA 8/2019
Provincial Regulation	Sustainable Land-Based Enterprises	PERDA 6/2018

Provincial Regulation	Environmental Protection and Management	PERDA 4/2014
Provincial Regulation	Spatial and Regional Planning	PERDA 10/2014
Governor Regulation	Sustainable Palm Oil Plantation Action Plan 2022 – 2024	PERGUB 3/2022
Governor Regulation	Non-Timber Forest Product Development	PERGUB 33/2022
Governor Regulation	Forest and Land Fires Prevention and Mitigation	PERGUB 97/2022
Governor Regulation	Monitoring, Reporting, and Verification of REDD+ activities	PERGUB 201/2021
Governor Regulation	Provincial Action Plan on GHG Emission Reduction 2020-2030	PERGUB 125/2020
Governor Regulation	Procedure and mechanism to conserve areas within private concessions	PERGUB 60/2019
Governor Regulation	Sustainable Development Goals	PERGUB 61/2019
Governor Decree	The Establishment of Task Force of Reducing Emission of Deforestation and Forest Degradation of West Kalimantan	KEPGUB 928/DLHK/2022
Governor Decree	GHG Emission Reduction Target from Deforestation and Degradation	KEPGUB 1215/DLHK/2020

10.3 Exclusion list

Table 40: Exclusion list of items prohibited for use of matching grants[409]

No.	Exclusion List
1	Production or trade in any product or activity deemed illegal under national laws or regulations or international conventions and agreements.
2	Production or trade in weapons and munitions.
3	Production or trade in alcoholic beverages (excluding beer and wine).
4	Production or trade in tobacco.
5	Gambling, casinos and equivalent enterprises.
6	Trade in wildlife or wildlife products regulated under CITES.
7	Production or trade in radioactive materials. This does not apply to the purchase of medical equipment, quality control (measurement) equipment and any equipment where the radioactive source to be trivial and / or adequately shielded.
8	Production or trade in or use of unbounded asbestos fibres. This does not apply to purchase and use of bonded asbestos cement sheeting where the asbestos content is less than 20%.
9	Projects that involve conversion or degradation of critical forest areas or related critical natural habitats.
10	Production or trade in wood or other forestry products other than from sustainably managed forests.
11	Production or trade in products containing PCBs (Polychlorinated Biphenyls).
12	Production or trade in pharmaceuticals subject to international phase outs or bans.
13	Drift net fishing in the marine environment using nets in excess of 2.5 km. in length.
14	Projects involving the commercial manufacturing of ozone-depleting substances (ODS) or the production or use of persistent organic pollutants (POPS) that are banned or scheduled to be phased out of production and use by international agreement during the life of the project.
15	Production or trade in pesticides / herbicides subject to international phase outs or bans as agreed by GOI based on Stockholm convention.
16	Projects requiring compulsory land acquisition causing displacement of people or communities from private or public lands or any negative impacts on livelihoods.
17	Projects located in areas of significant settlement of tribal / indigenous people and adversely affecting the culture, livelihood, and way of life of tribal people.
18	Production or activities involving harmful or exploitative form of child labour or forced labour.
19	Projects located in sensitive ecological areas and world heritage locations.

[409] GIZ “ESG toolkit”, - https://www.giz.de/de/downloads/ESG toolkit.xlsx

20	Projects in or impacting areas on the National and United Nations List of National Parks and Protected Areas.
21	Extraction or infrastructure projects in or impacting: protected area Categories I, II, III, and IV (Strict Nature Reserve / Wilderness Areas and National Parks, Natural Monuments and Habitat / Species Management Areas), as defined by the International Union for the Conservation of Nature. Projects in IUCN Categories V (Protected Landscape / Seascape) and VI (Managed Resource Protected Area) must be consistent with IUCN management objectives. Areas protected by the Ramsar Convention are considered within the appropriate IUCN Category to which they are assigned.
22	Production, trade, storage, or transport of significant volumes of hazardous chemicals.