FINAL REPORT

USAID LESTARI

AUGUST 2020

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Implemented by:
Tetra Tech
P.O. Box 1397
Burlington, VT 05402

Tetra Tech Contacts:
Reed Merrill, Chief of Party
Reed.Merrill@lestari-indonesia.org

Rod Snider, Project Manager
Rod.Snider@tetratech.com

Cover Photograph (clockwise from top left): Asmat District Field School – organic pesticide production; signing of Collaborative Peatland Management Agreement in Kahayan Hilir KPHP Unit XXXI area; training farmers in Aceh in cacao fermentation techniques

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ACRONYMS AND ABBREVIATIONS

AMDAL	Environmental Impact Analysis
AMEP	Activity Monitoring and Evaluation Plan
APBD	Regional Government Budget
BAPPENAS	Ministry of National Development Planning
BAPPEDA	Regional Development Planning Agency
BBBR	Bukit Baka Bukit Raya National Park
BBSDLP	Indonesian Center for Agricultural Land Resources Research and Development
BIG	Geospatial Information Agency
BKPH	Forest Gazettement Agency
BKSDA	Nature Conservation Agency
BLU	General Service Body / *Badan Layananan Umum*
BMP	Best Management Practice
BOSF	Borneo Orangutan Survival Foundation
BPDAS	Watershed Management Agency
BPSKL	Social Forestry and Environmental Partnerships Agency
BUMDes / Kam	Village-Owned Enterprise / *Badan Usaha Milik Desa/Kampung*
CA	Conservation Area
CDK	Forest Authority Branch Office / *Cabang Dinas Kehutanan*
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CLA	Collaborating, Learning, and Adapting
CMMP	Conservation Management and Monitoring Plan
DBH-DR	Revenue Sharing Funds for Reforestation
DED	Detailed Engineering Design
DG PSKL	Directorate General of Social Forestry and Environmental Partnerships
DLHK	Environment and Forestry Agency
DLI	Dinamika Lintasnusa Initiative
DPA	Budget Implementation Document / *Dokumen Pelaksanaan Anggaran*
DPM PTSP	One-Stop-Shop for Licensing / *Dinas Penanaman Modal Dan Pelayanan Terpadu Satu Pintu*
EIA	Environmental Impact Assessment
FCU	Forest Crime Unit
FGD	Focus Group Discussion
FIA	Forest Integrity Assessment
FKL	Leuser Conservation Forum / *Forum Konservasi Leuser*
FMU / KPH	Forest Management Unit
FPIC	Free, Prior, and Informed Consent
FREL	Forest Reference Emission Level
GGGI	Global Green Growth Institute
GHG	Greenhouse Gas
GIS	Geographic Information System
GOI	Government of Indonesia
HCV	High Conservation Value
HD	*Hutan Desa* / Village Forest
HKM	*Hutan Kemasyarakatan* / Community Forest
HPH	Timber concession / *Hak Pengusahaan Hutan*
IFACS	Indonesia Forestry and Climate Support Project
IPSDH	Directorate of Forest Resources Inventory and Monitoring
IWT	Illegal Wildlife Trade
J2SR	Journey to Self-Reliance
KLHK	Ministry of Environment and Forestry

KSDAE	Directorate General of Natural Resources and Ecosystem Conservation
KSM	Community Self-Help Group / *Kelompok Swadaya Masyarakat*
KTH	Forest Farmer Group / *Kelompok Tani Hutan*
LBA	Landscape Baseline Analysis
LCP	Landscape Conservation Plan
LEDS	Low Emission Development Strategy
LOP	Life of Project
LPHD	Village Forest Management Institution / *Lembaga Pengelola Hutan Desa*
LTTA / STTA	Long-Term Technical Assistance / Short-Term Technical Assistance
LWA	Lembaga Wana Aksara
M&E	Monitoring and Evaluation
METT	Management Effectiveness Tracking Tool
MMP	Community Forest Patrol / *Masyarakat Mitra Polhut*
MOU	Memorandum of Understanding
MRV	Monitoring, Reporting and Verification
MSF / MSI	Multi-Stakeholder Forum / Multi-Stakeholder Initiative
NCBA	National Cooperative Business Association
NGO	Non-Governmental Organization
NP / TN	National Park /*Taman Nasional*
NR	Nature Reserve
NTFP	Non-timber Forest Product
ODK	Open Data Kit
OIC	Orangutan Information Centre
PA	Protected Area
PEA	Political Economy Analysis
PET	Product Evaluation Tool
PES	Payment for Environmental Services
PerBup	Head of District Decree / *Peraturan Bupati*
PerKam	Village Decree
PPP	Public-Private Partnership
REL	Reference Emission Level
RF	Results Framework
Renstra	Strategic Plan
RIL-C	Reduced Impact Logging to Reduce Carbon Emissions
RKA	Government Work Plan and Budget
RKT	Provincial Development Plan
RPHJP	Long-Term Forest Management Plan
RPHJPd	Annual Short-Term Forest Management Plan
RPJMD	Regional Development Plan
RPJM Des/Kam	Village-level Development Plan
RPJP	Long-Term Management Plan
RSWR	Rawa Singkil Wildlife Reserve
RTRWK / RTRWP	District / Provincial Spatial Plan
SA	Strategic Approach
SCAA	Sustainable Cooperative Agribusiness Alliance
SEA / KLHS	Strategic Environmental Assessment
SIAT	Integrated Aceh Information System / *Sistem Informasi Aceh Terpadu*
SIKAWAN	Aceh Forest Information System
SIMTARU	Papua Management Information System for Spatial Planning
SLA	Sinar Lestari Agara
SLP	Sustainable Landscape Planning
SMART	Spatial Monitoring and Reporting Tool
SST	Sustainability Screening Tool
SOP	Standard Operating Procedure
TFF	Tropical Forest Foundation
TNGL	Leuser National Park / *Taman Nasional Gunung Leuser*
ToC	Theory of Change
TFF	Tropical Forest Foundation
UKCCU	United Kingdom Climate Change Unit
UPT	Technical Implementation Unit

USAID	United States Agency for International Development
USG	United States Government
UTZ	Certification Standard for Sustainable Agriculture
WCS	Wildlife Conservation Society
WCU	Wildlife Crime Unit
WR	Wildlife Reserve
WRU	Wildlife Response Unit
WWF	World Wildlife Fund

EXECUTIVE SUMMARY

USAID partnered with the Government of Indonesia (GOI) to reduce greenhouse gas (GHG) emissions and conserve biodiversity in carbon rich and biologically significant forest and mangrove ecosystems. USAID and the GOI achieved these goals through the USAID LESTARI project, implemented from August 2015 through September 2020. At the national level, LESTARI's main counterpart was the Ministry of Environment and Forestry Directorate of Conservation Areas. Key subnational partners included forestry agencies in the provinces of Aceh, Central Kalimantan and Papua. LESTARI was implemented under the leadership of Tetra Tech and a consortium of sub-contractor and local grantee partners. LESTARI's key outcomes included improved land use governance, enhanced protected areas management and protection of key species, sustainable private sector and industry practices, and expanded constituencies for conservation among various stakeholders.

The purpose of this Final Report is to formally document LESTARI project achievements against the objectives stated in the Activity Monitoring and Evaluation Plan (AMEP) over the five-year period of implementation. The intended audience includes USAID, GOI, as well as other donor organizations, NGOs, academic institutions, and other interested groups working on forestry and biodiversity conservation in Indonesia.

USAID designed the LESTARI project to align with and support GOI goals and commitments for land-based GHG emissions reduction, reduced deforestation, and key species conservation. USAID designed LESTARI to achieve the following eight key outcomes:

- At least 41% of total CO2-equivalent emissions reduced from land use, land use change and deforestation averaged across all landscapes within the project scope
- At least 8.42 million ha of primary or secondary forest, including orangutan habitat, under improved management
- Management of at least six conservation areas improved, resulting in the conservation of valuable orangutan and other key species habitat, and the reduction in poaching of threatened and endemic species
- At least ten public-private partnerships (PPPs) promoting Low Emission Development Strategies (LEDS) established
- Funding leveraged from public and private sources, representing co-investment in project outcomes
- Increased commitment of key private sector, government, and community stakeholders regarding the positive benefits of conservation and sustainable use of forests and the species they encompass
- Policies, laws, regulations, and procedures in support of LEDS and forest conservation and management increased, promulgated, and enforced at all levels
- Models for successful integration of district, provincial, and national low emissions development and forest conservation strategies developed and shared at all levels of government and with other key stakeholders

To facilitate achievement of these outcomes, LESTARI designed a comprehensive AMEP at the beginning of the project period. The LESTARI AMEP included 16 indicators and their respective targets used to quantify, track, evaluate, and report on progress. The LESTARI M&E team tracked and reported progress on a quarterly and annual basis. Indicators #1 (GHG emissions reduction) and #2 (areas under improved management) were the top-level indicators corresponding to the project's two key outcomes listed above. Indicators 3 through

16 were supporting indicators that tracked specific improved forest management and governance practices, in turn contributing to achievement of indicators #1 and #2 as well.

By the end of the project period, LESTARI achieved or exceeded 100% of the Life of Project (LOP) targets for 14 out of 16 indicators, summarized in the table below. Supporting data and details are provided in Section 1.4 while disaggregation per landscape is provided in Appendix 5.1.

LESTARI FINAL ACHIEVEMENTS VERSUS INDICATOR TARGETS			
Indicator	**LOP Target**	**Total Achieved**	**% Achieved Versus LOP Target**
#1 – Percentage reduction in GHG emissions as a result of USG assistance measured using actual emissions compared to the Reference Emission Level (REL)	41% (76,748,281 t.CO2-eq)	41.17%	100%
#2 – Number of hectares of biological significance and/or natural resources under improved natural resource management as a result of USG assistance	8.7 million	7.48 million	86%
#3 – Percentage reduction in poaching	40%	62%	156%
#4 – Number of public policies introduced, adopted, repealed, changed or implemented consistent with citizen input	28	30	107%
#5 – Number of sub-national government with improved licensing and permitting mechanism	8	2	25%
#6 – Number of Strategic Environmental Assessment (SEA) / Landscape Conservation Plan (LCP) recommendations related to land use, spatial planning, forest management, and biodiversity conservation incorporated into sub-national government policy, planning and program	6	13	217%
#7 – Number of Multi Stakeholder Initiatives (MSIs) or civil society advocacy initiatives which formulate and deliver policy-relevant inputs on sustainable forest and land management to decision makers	20	38	190%
#8 – Number of champions engaged in advocacy interventions	500	603	121%
#9 – Number of people reached by LESTARI communication programs to improve awareness and understanding of LEDS and biodiversity conservation	500,000	524,538	105%
#10 – Number of Conservation Areas (CAs) with at least 70 point in METT scores across LESTARI supported landscapes	6	6	100%
#11 – Number of Forest Management Unit (FMU) strengthened as a result of USG assistance	7	19	271%
#12 – Number of people receiving USG supported training in natural resources management and/or biodiversity conservation	10,000	13,378	134%
#13 – Amount of investment mobilized (in USD) for climate change as supported by USG assistance	20 million	33.8 million	169%

#14 – Number of people receiving livelihood co-benefits (monetary or non-monetary)	30,000	41,535	138%
#15 – Number of private sector firms that have improved management practices as a result of USG assistance	10	10	100%
#16 - Number of new USG-supported public-private partnerships formed	20	25	125%

Indicator #1: LESTARI recorded a 41.17% average annual GHG emissions reduction from the land use sector aggregated across all landscapes over calendar years 2016-2019 (100% achievement of LOP target). This is roughly equivalent to the emissions produced from 13.3 million cars being driven in one year. The achievement represents the aggregate contribution of LESTARI activities involving work directly with forest managers to reduce deforestation and forest degradation, including (1) national park and protected area staff with concrete and effective field activities like forest patrols; (2) FMU authorities at the landscape level with training and forest planning; (3) managers of production forests in Sarmi and Central Kalimantan through training in best practices and High Conservation Value (HCV) management and monitoring; and (4) with local communities that received social forestry permits and technical assistance for forest management, implementing green enterprises that safeguard forests, or co-management agreements with local government to protect traditional forests from deforestation. LESTARI utilized the GOI's National Forest Reference Emissions Level (FREL) methodology to conduct the land cover analysis and emission reduction estimates (Appendix 5.2).

Indicator #2: LESTARI facilitated improved management over 7.48 million hectares of forest and/or natural resources (86% achievement of LOP target). For reference, this figure is more than half the size of the island of Java or about the same size as the U.S. state of South Carolina. This was the second top-level indicator for LESTARI corresponding to concrete and clearly demonstrated improved forest management practices by forest area managers. Key partners included protected area authorities, FMU managers, private sector concession companies, community groups through co-management agreements, and district and provincial government agencies involved with spatial planning.

The COVID-19 pandemic significantly impacted full achievement of indicator #2. Key final year activities that could not reach timely completion included: SEA and spatial plan revision in Mappi District, Papua Province (435,000 hectares); participatory mapping with local communities in Potowaiburu Sub-district, Mimika District, Papua Province (72,000 hectares); adoption of conservation management and monitoring plans with timber concession partner PT. Diadyani in Papua Province (84,000 hectares); and institutional strengthening for FMU XXIX in Central Kalimantan (197,000 hectares).

In collaboration with partners and beneficiaries, LESTARI also achieved:

- USD 33.8 million in domestic resources mobilized (primarily from GOI national and provincial-level budgets) to support programs for sustainable forest management
- Six Conservation Areas (Leuser National Park, Singkil Wildlife Reserve, Sebangau National Park, Bukit Baka Bukit Raya National Park, Lorentz National Park, Cyclops Nature Reserve) with improved management capacity as measured by the METT score
- 62% reduction in poaching in targeted areas within Leuser National Park, Cyclops Nature Reserve, and Lorentz National Park as a result of intensive patrols
- 41,535 people from local communities receiving livelihood benefits including improved incomes and secure access to land

- 25 public-private partnerships formed to improve market access for local farmers and enhance value chains for sustainably produced forest commodities (e.g., coffee, rubber, cacao, and honey)
- 10 land-based private sector firms trained and adopted best management practices for reducing environmental impacts and conserving biodiversity within concession areas
- 30 national and sub-national public policies introduced addressing climate change and/or biodiversity conservation
- 524,538 people reached through various communications channels to improve awareness and understanding of low emissions development and biodiversity conservation
- 603 individual Champions from local government, NGOs, traditional community groups, women's groups, and private sector partners identified, trained, and engaged in advocacy interventions

Beyond indicator achievements, the LESTARI team leaves a legacy through the capacity, commitment, and leadership of partners and beneficiaries to continue advancing conservation and sustainable forest management challenges well beyond the project's completion. Through this legacy, USAID advanced its mission of assisting partners to transition to greater self-reliance.

Through the course of the project, LESTARI advanced self-reliance through empowering a broad range of multi-stakeholder Champions, supporting awareness campaigns and environmental journalists' networks, facilitating and supporting women's conservation groups, pairing technical assistance to local government agencies with building ownership and capacity in programming and budgeting, and strengthening the technical and management capacities of local grantee organizations. These stakeholders will continue to build on the knowledge, skills, and networks acquired under LESTARI while advocating for sustainable forest management policies and programs within their specific roles and organizations.

The key sections of the Final Report include: (1) Introduction that details achievement per indicator, (2) LESTARI Technical Approach that describes the specific activities and outcomes under each strategic approach, (3) Key Evaluation Questions summarizing the findings of the Final Internal Assessment, and (4) Appendices including supporting data. For further details and context, please refer to the LESTARI Final Internal Assessment report, which provides a critical analysis of project theories of change and intended outcomes, and the series of 12 LESTARI Lessons Learned Technical Briefs for in-depth information and analysis of various thematic areas addressed by the project.

RINGKASAN EKSEKUTIF

USAID bermitra dengan Pemerintah Indonesia untuk menurunkan emisi Gas Rumah Kaca (GRK) dan melestarikan keanekaragaman hayati di ekosistem hutan dan mangrove yang kaya karbon dan penting secara biologi. USAID dan Pemerintah Indonesia mencapai tujuan ini melalui Proyek USAID LESTARI, yang dilaksanakan dari Agustus 2015 hingga September 2020. Di tingkat nasional, mitra utama LESTARI adalah Direktorat Kawasan Konservasi, Kementerian Lingkungan Hidup dan Kehutanan. Mitra utama di daerah meliputi Dinas Kehutanan di Provinsi Aceh, Kalimantan Tengah dan Papua. LESTARI dilaksanakan dibawah kepemimpinan Tetra Tech, konsorsium mitra sub-kontraktor dan penerima hibah lokal. Hasil utama LESTARI mencakup perbaikan tata kelola penggunaan lahan, peningkatan pengelolaan kawasan lindung dan perlindungan spesies kunci, praktik berkelanjutan sektor swasta dan industri, serta perluasan konstituen untuk konservasi diantara berbagai pemangku kepentingan.

Tujuan Laporan Akhir ini adalah untuk mendokumentasikan secara resmi pencapaian Proyek LESTARI terhadap tujuan atau target yang tercantum dalam Rencana Monitoring dan Evaluasi Kegiatan selama periode lima tahun pelaksanaan. Pembaca yang disasar mencakup USAID, Pemerintah Indonesia, serta organisasi donor lainnya, LSM, lembaga akademis, dan kelompok berkepentingan lainnya, yang bekerja di bidang kehutanan dan konservasi keanekaragaman hayati di Indonesia.

USAID merancang Proyek LESTARI untuk menyelaraskan serta mendukung tujuan dan komitmen Pemerintah Indonesia untuk penurunan emisi GRK berbasis lahan, pengurangan deforestasi, dan konservasi spesies kunci. USAID merancang LESTARI untuk mencapai delapan hasil utama berikut:

- Setidaknya penurunan 41% dari total emisi CO_2eq dari rata-rata penggunaan lahan, perubahan penggunaan lahan, dan deforestasi di semua lanskap dalam lingkup proyek.
- Sedikitnya 8,42 juta hektar hutan primer atau sekunder, termasuk habitat orangutan dikelola lebih baik.
- Peningkatan pengelolaan setidaknya di enam kawasan konservasi, menghasilkan peningkatan konservasi orangutan dan habitat spesies kunci lainnya yang bernilai tinggi, serta berkurangnya perburuan spesies terancam dan endemik.
- Setidaknya sepuluh kemitraan publik-swasta (PPP) yang memromosikan Strategi Pembangunan Rendah Emisi telah dibentuk.
- Pendanaan yang dimobilisasi dari sumber publik dan swasta, mewakili investasi bersama dalam pencapaian tujuan proyek.
- Meningkatnya komitmen sektor swasta, pemerintah, dan masyarakat terkait manfaat positif konservasi serta pemanfaatan hutan dan spesies yang ada di dalamnya secara lestari.
- Kebijakan, undang-undang, peraturan, dan prosedur yang mendukung strategi pembangunan rendah emisi serta konservasi dan pengelolaan hutan ditingkatkan, diundangkan, dan ditegakkan di semua tingkatan.
- Model untuk integrasi pembangunan rendah emisi kabupaten, provinsi, dan nasional yang berhasil, serta strategi konservasi hutan dikembangkan dan didiseminasikan di semua tingkat pemerintahan dan kepada para pemangku kepentingan utama lainnya.

Untuk memfasilitasi pencapaian hasil-hasil diatas, LESTARI merancang Rencana Monitoring dan Evaluasi Kegiatan (*Activity Monitoring and Evaluation Plan* atau AMEP) yang

komprehensif di awal periode proyek. AMEP LESTARI mencakup 16 indikator dan target masing-masing indikator yang digunakan untuk mengukur, memantau, mengevaluasi, dan melaporkan kemajuan proyek. Tim M&E LESTARI memantau dan melaporkan kemajuan di setiap triwulan dan tahunan. Indikator # 1 (penurunan emisi GRK) dan # 2 (kawasan dengan pengelolaan yang lebih baik) adalah indikator tingkat atas yang sesuai dengan dua hasil utama proyek, sebagaimana tercantum diatas. Indikator 3 hingga 16 merupakan indikator pendukung yang melacak praktik pengelolaan dan tata kelola hutan yang lebih baik, yang pada akhirnya juga berkontribusi pada pencapaian indikator # 1 dan # 2.

Di akhir periode proyek, LESTARI mencapai atau melampaui 100% dari target proyek untuk 14 dari 16 indikator, yang dirangkum dalam tabel di bawah ini. Data dan detil pendukung disajikan di Bagian 1.4, sedangkan pemilahan informasi capaian per lanskap disediakan di Lampiran 5.1.

PENCAPAIAN AKHIR LESTARI VERSUS TARGET INDIKATOR			
Indikator	**Target Masa Keproyekan (LOP)**	**Total Tercapai**	**% Tercapai Vs Target LOP**
#1 – Persentase penurunan emisi GRK sebagai hasil dukungan Pemerintah Amerika yang diukur menggunakan emisi aktual dibandingkan dengan *Reference Emission Level* (REL)	41% (76,748,281 t.CO2-eq)	41,17%	100%
#2 – Jumlah hektar dengan kepentingan biologis dan/atau sumber daya alam dengan pengelolaan sumber daya alam yang lebih baik dari dukungan Pemerintah Amerika	8.700.000	7,48 M	86%
#3 – Penurunan persentase perburuan liar	40%	62%	156%
#4 – Jumlah kebijakan publik yang diperkenalkan, diadopsi, dicabut, diubah atau diterapkan sesuai dengan masukan masyarakat	28	30	107%
#5 – Jumlah pemerintah daerah dengan mekanisme perizinan dan perizinan yang lebih baik	8	2	25%
#6 – Jumlah rekomendasi Kajian Lingkungan Hidup Strategis (KLHS)/ Rencana Konservasi Bentang Alam terkait dengan penggunaan lahan, perencanaan tata ruang, pengelolaan hutan, dan konservasi keanekaragaman hayati yang dimasukkan dalam kebijakan, perencanaan dan program pemerintah daerah	6	13	217%
#7 –Jumlah inisiatif multi stakeholder atau inisiatif advokasi masyarakat sipil yang merumuskan dan menyampaikan masukan terkait kebijakan tentang pengelolaan hutan dan lahan berkelanjutan kepada para pengambil keputusan	20	38	190%
#8 –Jumlah champions yang terlibat dalam intervensi advokasi	500	603	121%
#9 – Jumlah orang yang dijangkau oleh program komunikasi LESTARI untuk meningkatkan kesadaran dan pemahaman tentang strategi pembangunan rendah emisi dan konservasi keanekaragaman hayati	500.000	524.538	105%
#10 – Jumlah Area Konservasi yang setidaknya mendapat poin 70 dalam skor METT di seluruh bentang alam yang didukung LESTARI	6	6	100%

#11 – Jumlah Kesatuan Pengelolaan Hutan (KPH) yang diperkuat dengan dukungan Pemerintah Amerika	7	19	271%
#12 – Jumlah orang yang menerima pelatihan dalam pengelolaan sumber daya alam dan/atau konservasi keanekaragaman hayati yang didukung Pemerintah Amerika	10.000	13.378	134%
#13 – Jumlah investasi yang dimobilisasi (dalam USD) untuk perubahan iklim yang didukung oleh Pemerintah Amerika	20.000.000	33,8 M	169%
#14 – Jumlah orang yang menerima manfaat tambahan untuk mata pencaharian (uang atau non-uang)	30.000	41.535	138%
#15 – Jumlah perusahaan sektor swasta yang telah meningkatkan praktik pengelolaan sebagai hasil dukungan Pemerintah Amerika	10	10	100%
#16 - Jumlah terbentuknya kemitraan publik-swasta baru yang didukung Pemerintah Amerika	20	25	125%

Indikator # 1: LESTARI mencatat penurunan emisi GRK tahunan rata-rata sebesar 41,17% dari sektor penggunaan lahan yang dikumpulkan di semua lanskap selama tahun kalender 2016-2019 (100% dari target LOP). Kira-kira setara dengan emisi yang dihasilkan dari 13,3 juta mobil yang dikendarai dalam satu tahun. Pencapaian tersebut merupakan kontribusi agregat dari kegiatan LESTARI yang melibatkan kerja langsung dengan pengelola hutan untuk mengurangi deforestasi dan degradasi hutan, termasuk (1) staf taman nasional dan kawasan lindung dengan kegiatan nyata di lapangan seperti patroli hutan; (2) Otoritas KPH di tingkat lanskap dengan pelatihan dan perencanaan hutan; (3) pengelola hutan produksi di Sarmi dan Kalimantan Tengah melalui pelatihan praktik terbaik serta pengelolaan dan pemantauan Nilai Konservasi Tinggi (NKT); dan (4) dengan masyarakat lokal yang menerima izin perhutanan sosial dan bantuan teknis untuk pengelolaan hutan, menerapkan usaha hijau yang melindungi hutan, atau kesepakatan pengelolaan bersama dengan pemerintah daerah untuk melindungi hutan tradisional dari deforestasi. LESTARI menggunakan metodologi Tingkat Emisi Referensi Hutan (FREL) Pemerintah Indonesia untuk melakukan analisis tutupan lahan dan perkiraan penurunan emisi (Lampiran 5.2).

Indikator #2: LESTARI memfasilitasi perbaikan pengelolaan 7,48 juta hektar hutan dan/atau sumber daya alam (86% dari target LOP). Sebagai referensi, angka ini lebih dari setengah ukuran Pulau Jawa atau hampir sama dengan negara bagian Carolina Selatan di AS. Ini adalah indikator tingkat atas kedua untuk LESTARI yang dengan konkrit dan jelas menunjukkan peningkatan praktik pengelolaan hutan oleh pengelola kawasan hutan. Mitra utama termasuk otoritas kawasan konservasi, pengelola KPH, perusahaan konsesi sektor swasta, kelompok masyarakat melalui kesepakatan pengelolaan bersama, dan instansi pemerintah kabupaten dan provinsi yang terlibat dalam perencanaan tata ruang.

Pandemi COVID-19 berdampak signifikan terhadap pencapaian penuh indikator # 2. Kegiatan utama tahun terakhir yang tidak dapat selesai tepat waktu termasuk: KLHS dan revisi rencana tata ruang di Kabupaten Mappi, Provinsi Papua (435.000 hektar); pemetaan partisipatif dengan masyarakat lokal di Kecamatan Potowaiburu , Kabupaten Mimika, Provinsi Papua (72.000 hektar); adopsi pengelolaan konservasi dan rencana pemantauan dengan mitra HPH, PT. Diadyani di Provinsi Papua (84.000 hektar); dan penguatan kelembagaan FMU XXIX di Kalimantan Tengah (197.000 hektar).

Bekerja sama dengan mitra dan penerima manfaat, LESTARI juga mencapai:

- Mobilisasi sumber daya domestik sebesar USD 33,8 juta atau IDR 501,2 miliar (terutama dari anggaran pemerintah Indonesia tingkat nasional dan provinsi) untuk mendukung program pengelolaan hutan lestari.
- Peningkatan kapasitas pengelolaan enam Kawasan Konservasi (Taman Nasional Gunung Leuser, Suaka Margasatwa Rawa Singkil, Taman Nasional Sebangau, Taman Nasional Bukit Baka Bukit Raya, Taman Nasional Lorentz, Cagar Alam Cyclops) yang diukur dengan skor METT.
- Penurunan 62% perburuan di kawasan target di Taman Nasional Gunung Leuser, Cagar Alam Cyclops, dan Taman Nasional Lorentz sebagai hasil patroli yang intensif.
- 41.535 orang dari masyarakat lokal menerima manfaat mata pencaharian termasuk pendapatan yang lebih baik dan akses ke lahan yang terjamin.
- 25 kemitraan publik-swasta dibentuk untuk meningkatkan akses pasar bagi petani lokal dan meningkatkan rantai nilai untuk komoditas hutan yang diproduksi secara berkelanjutan (misalnya kopi, karet, kakao, dan madu).
- 10 perusahaan sektor swasta berbasis lahan telah dilatih dan mengadopsi praktik pengelolaan terbaik untuk mengurangi dampak lingkungan dan melestarikan keanekaragaman hayati dalam wilayah konsesi.
- 30 kebijakan publik nasional dan daerah yang terkait dengan perubahan iklim dan/atau konservasi keanekaragaman hayati.
- 524.538 orang dijangkau melalui berbagai saluran komunikasi untuk meningkatkan kesadaran dan pemahaman tentang pembangunan rendah emisi dan konservasi keanekaragaman hayati.
- 603 individu *champion* dari pemerintah daerah, LSM, kelompok masyarakat tradisional, kelompok perempuan, dan mitra sektor swasta teridentifikasi, dilatih, dan terlibat dalam upaya-upaya advokasi.

Selain pencapaian indikator, tim LESTARI meninggalkan warisan melalui kapasitas, komitmen, dan kepemimpinan mitra dan penerima manfaat untuk terus melanjutkan kerja menghadapi tantangan konservasi dan pengelolaan hutan lestari jauh sebelum proyek selesai. Melalui warisan ini, USAID memajukan misinya untuk membantu para mitra bertransisi menuju kemandirian yang lebih besar.

Melalui jalannya proyek, LESTARI meningkatkan kemandirian melalui pemberdayaan berbagai *champion* multipihak, mendukung kampanye penyadartahuan dan jaringan jurnalis lingkungan, memfasilitasi dan mendukung kelompok konservasi perempuan, memberikan bantuan teknis kepada lembaga pemerintah daerah dengan membangun kepemilikan dan kapasitas dalam pemrograman dan penganggaran, serta memperkuat kapasitas teknis dan manajemen organisasi penerima hibah lokal. Para pemangku kepentingan ini akan terus membangun pengetahuan, keterampilan, dan jaringan yang diperoleh melalui LESTARI sambil mengadvokasi kebijakan dan program pengelolaan hutan lestari dalam peran khusus dari organisasi mereka.

Bagian-bagian penting dari Laporan Akhir meliputi: (1) Pendahuluan yang merincikan pencapaian per indikator, (2) Pendekatan Teknis LESTARI yang menggambarkan kegiatan dan hasil spesifik dibawah setiap pendekatan strategis, (3) Pertanyaan Evaluasi Kunci yang merangkum temuan-temuan dari Penilaian Internal Akhir, dan (4) Lampiran termasuk data pendukung. Untuk detil dan konteks lebih lanjut, silakan merujuk ke laporan Penilaian Internal Akhir LESTARI, yang memberikan analisis kritis tentang teori-teori perubahan proyek dan hasil yang diharapkan, dan rangkaian dari 12 Ringkasan Teknis Pembelajaran LESTARI untuk mendalami berbagai bidang tematik yang dibahas oleh proyek.

Figure 1. LESTARI supported landscapes national map

1. INTRODUCTION

1.1 BACKGROUND

USAID partnered with the Government of Indonesia (GOI) to reduce greenhouse gas (GHG) emissions and conserve biodiversity in carbon rich and biologically significant forest and mangrove ecosystems. USAID and the GOI achieved these goals through the USAID LESTARI project. LESTARI's key outcomes included improved land use governance, enhanced protected areas management and protection of key species, sustainable private sector and industry practices, and expanded constituencies for conservation among various stakeholders. LESTARI was implemented under the leadership of Tetra Tech and a consortium of sub-contractor and local grantee partners. At the national level, LESTARI's main counterpart was the Directorate of Conservation Areas at the Ministry of Environment and Forestry (KLHK). Key partners at the landscape level included forestry agencies in the provinces of Aceh, Central Kalimantan and Papua. LESTARI was implemented from August 2015 through September 2020.

LESTARI activities targeted six strategic landscapes on three of Indonesia's largest islands, where primary forest cover remains most intact and carbon stocks are greatest. In northern Sumatra, the Leuser Landscape comprises significant portions of Aceh Selatan, Gayo Lues, Aceh Tenggara, and Aceh Barat Daya districts, and includes the Aceh portion of Leuser National Park and Singkil Wildlife Reserve. In Central Kalimantan, LESTARI worked in the Katingan-Kahayan Landscape, comprising Pulang Pisau, Katingan, and Gunung Mas districts; Palangkaraya municipality; and Sebangau and Bukit Baka Bukit Raya National Parks. LESTARI also worked in four landscapes in Papua. Sarmi and Cyclops Landscapes are located along the northern coast and comprise Sarmi district as well as Jayapura district and municipality. The Lorentz Lowlands Landscape, comprising Mimika and Asmat districts plus a large portion of Lorentz National Park, and the Mappi-Bouven Digoel Landscape are located along Papua's southern coast. LESTARI was managed from its headquarters in Jakarta, with offices in each landscape as well as the provincial capitals of Aceh, Central Kalimantan, and Papua.

LESTARI SUPPORTED LANDSCAPES			
Province	District / Conservation Areas	Landscape	Landscape Area (ha)
Aceh	Aceh Tenggara District	Leuser Landscape	1,593,657
	Aceh Selatan District		
	Gayo Lues District		
	Gunung Leuser National Park		
	Rawa Singkil Wildlife Reserve		
Province	District / Conservation Areas	Landscape	Landscape Area (ha)
Central Kalimantan	Katingan District	Katingan-Kahayan Landscape	4,517,549
	Pulang Pisau District		
	Sebangau National Park		
	Bukit Baka Bukit Raya National Park		
	Palangkaraya Municipality		

Province	Region / Conservation Areas	Landscape	Landscape Area (ha)
Papua	Mimika District	Lorentz Lowlands Landscape	4,795,848
	Asmat District		
	Lorentz National Park		
	Mappi District	Mappi-Bouven Digoel Landscape	3,303,933
	Bouven Digoel District		
	Sarmi District	Sarmi Landscape	1,017,078
	Jayapura District	Cyclops Landscape	46,683
	Cyclops Nature Reserve		

1.2 PURPOSE OF THIS REPORT

Per section F 4.10 of the LESTARI Contract Scope of Work, the Final Report discusses all activities and achievements of the Monitoring and Evaluation Plan objectives from the start of the project through its completion. The primary audience includes USAID and GOI for the purposes of accountability and learning from project successes and shortcomings. For USAID and GOI, this report may inform the design and implementation of future sustainable landscapes and biodiversity conservation programs and initiatives. A secondary audience may include other donor organizations, implementing partners, NGOs, academic institutions, and other groups working in the forestry and biodiversity conservation space in Indonesia.

For more detailed analysis of the project development hypotheses and theories of change, please refer to the LESTARI Final Assessment which analyzed a series of key questions through compilation of information from interviews with local government partners, case studies, and project documents. The results of the final assessment are summarized in Section 4 of this report. For in-depth information and analysis of specific technical topics addressed by LESTARI, please refer to the series of 12 LESTARI Lessons Learned Technical Briefs produced in the final year (see Appendix 5.5 for complete list and links for access).

1.3 KEY OBJECTIVES

As stated in the LESTARI Contract, project objectives were designed to be aligned with and in support of GOI goals and commitments for land-based GHG emissions reduction, reduced deforestation, and key species conservation. GOI has committed to reducing GHG emissions by 29% below the business as usual trajectory by 2030 unilaterally, and up to 41% below the baseline with bilateral or international assistance. As such, LESTARI targeted a 41% reduction in land-based GHG emissions in its landscapes by 2020. A thorough depiction of historical deforestation and degradation rates within LESTARI supported landscapes is presented in the Landscape Baseline Analysis (LBA).

The eight key outcomes expected to be achieved by the end of the project included:

- At least 41% of total CO2-equivalent emissions reduced from land use, land use change and deforestation averaged across all landscapes within the project scope
- At least 8.42 million ha of primary or secondary forest, including orangutan habitat, under improved management

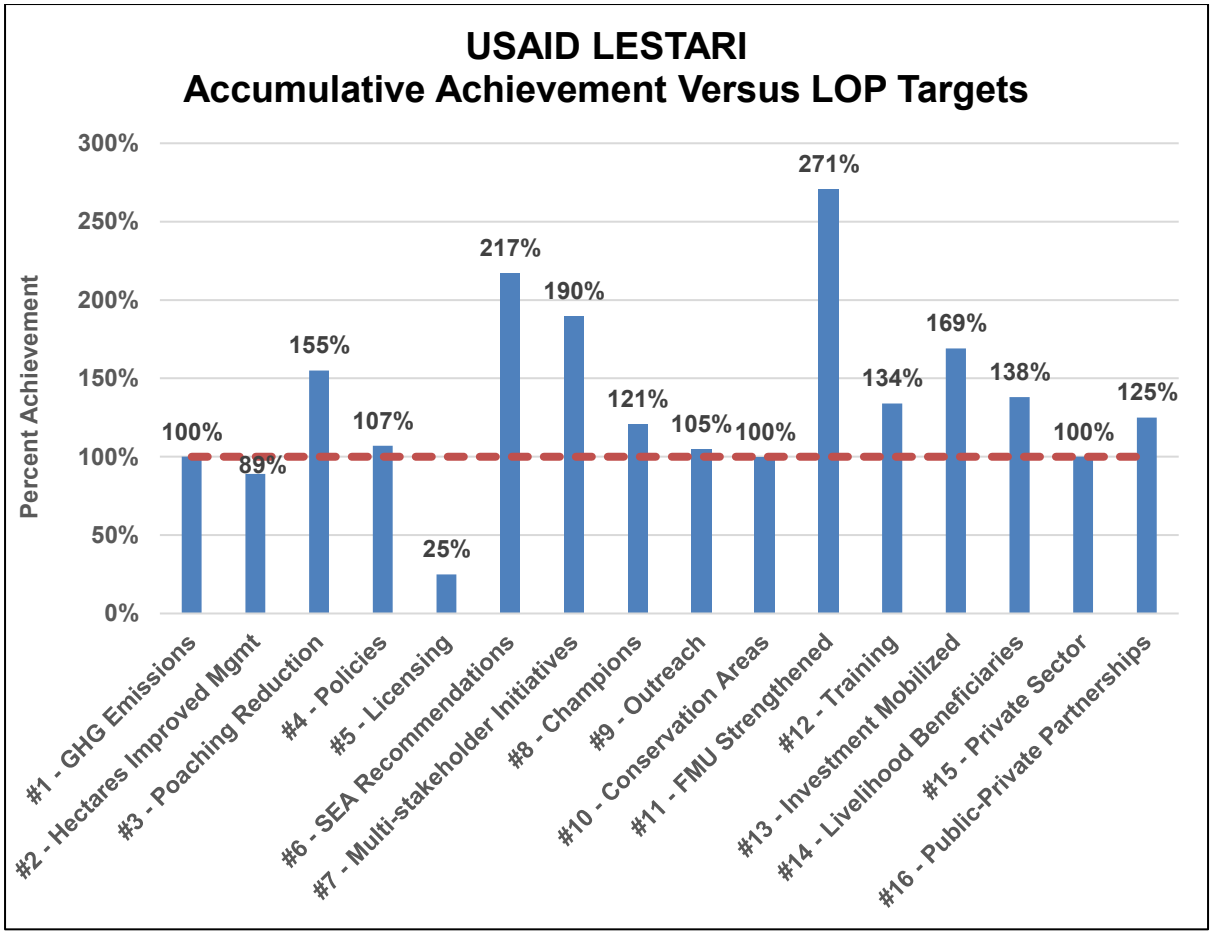
- Management of at least six conservation areas improved, resulting in the conservation of valuable orangutan and other key species habitat, and the reduction in poaching of threatened and endemic species
- At least ten public-private partnerships (PPPs) promoting LEDS established
- Funding leveraged from public and private sources, representing co-investment in project outcomes
- Increased commitment of key private sector, government, and community stakeholders regarding the positive benefits of conservation and sustainable use of forests and the species they encompass
- Policies, laws, regulations, and procedures in support of LEDS and forest conservation and management increased, promulgated, and enforced at all levels
- Models for successful integration of district, provincial, and national low emissions development and forest conservation strategies developed and shared at all levels of government and with other key stakeholders

1.4 INDICATORS & RESULTS

To facilitate achievement of these outcomes, the LESTARI team designed a comprehensive Activity Monitoring and Evaluation Plan (AMEP) at the beginning of the project period. Monitoring and evaluation was seen as critical for building a strong evidence base around LESTARI efforts to reduce GHG emissions and conserving biodiversity and for assessing the wide, diverse range interventions of strategic approaches to address those issues. It was a tool for identifying and documenting successful approaches, tracking progress toward common indicators, demonstrating that LESTARI efforts have had a measurable impact on expected outcomes, and have been implemented effectively.

The LESTARI AMEP included 16 indicators and their respective targets. The LESTARI M&E team compiled and reported progress on a quarterly and annual basis. Indicators #1 (GHG emissions reduction) and #2 (areas under improved management) were the top-level indicators corresponding to the project's two key outcomes listed above. Indicators #3 through #16 were supporting indicators (corresponding to the other key objectives) that tracked specific improved forest management and governance practices, in turn contributing to achievement of indicators #1 and #2 as well.

This section summarizes total progress against each indicator aggregated across all landscapes. For each indicator, supporting data and details are presented here and in relevant appendices (see Appendix 5.1 for disaggregation per landscape). For 14 out of 16 indicators, progress reached or exceeded 100% of their LOP targets. Two indicator targets (#2 – areas under improved management and #5 – improved licensing mechanisms) were not fully achieved. A discussion of the major challenges and shortcomings is provided.



Indicator #1: LESTARI recorded a 41.17% average annual GHG emissions reduction from the land use sector aggregated across all landscapes over calendar years 2016-2019 (100% achievement of LOP target of 41% emissions reduction). This is roughly equivalent to the emissions produced from 13.3 million cars being driven in one year[1].

- 2016: 41.16% reduction (15,362,309 tons CO_2-eq)
- 2017: 40.63% reduction (15,188,881 tons CO_2-eq)
- 2018: 39.17% reduction (14,665,850 tons CO_2-eq)
- 2019: 43.72% reduction (16,392,463 tons CO_2-eq)

This top level indicator for LESTARI reported reductions in GHG emissions from deforestation and degradation as compared to a baseline level. The target was a 41% reduction from the baseline in each year. The achievement represents the aggregate contribution of LESTARI activities involving work directly with forest managers responsible for protecting and sustainably utilizing the forest, including (1) national park and protected area staff with concrete and effective field activities like SMART (Spatial Monitoring and Reporting Tool) patrols; (2) FMU authorities at the landscape level with training and forest planning; (3) managers of production forests in Sarmi and Central Kalimantan through training in Reduced Impact Logging (RIL) and High Conservation Value (HCV) management and monitoring; and (4) with local communities that received social forestry permits and technical assistance for forest management, implementing green enterprises that safeguard forests, or co-management agreements with local government to protect traditional forests from deforestation.

[1] https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator

The National Forest Reference Emissions Level (FREL) methodology was used by the LESTARI GIS team to conduct the land cover analysis, and was chosen through an evaluation of current methodologies and approaches used in Indonesia. The FREL methodology is the most acknowledged and recognized by international, national and local institutions in the forestry sector. Using FREL, the GOI has been showing steady progress on proportioning targets to the provincial level. Additionally, the methodology used in FREL is consistent with its associated development of Measurement, Reporting and Verification (MRV) System developed by KLHK. Please see Appendix 5.2 for details including a breakdown of emissions data per landscape and year.

It is important to note that determining direct attribution and causality of project activities towards these results is challenging as LESTARI interventions occurred in a wide variety of socio-cultural, political, and economic contexts. They cannot easily be isolated from the impacts of government policies and programs, shifts in the national/landscape political economy, and other donor interventions within the same landscapes, among other factors. There is clear empirical evidence from the LESTARI Final Assessment that indicates the LESTARI project contributed to positively impact the reduction in deforestation and degradation, which reduced overall GHG emissions in targeted landscapes.

Indicator #2: LESTARI facilitated improved management over 7.48 million hectares of forest and/or natural resources (86% achievement of LOP target of 8.7 million hectares). For reference, this figure is more than half the size of the island of Java or about the same size as the U.S. state of South Carolina.

This was the second top-level indicator for LESTARI corresponding to project contributions towards concrete and clearly demonstrated improved forest management practices by the area managers. There were specific criteria and milestones required to count each land use type (protected area, FMU area, private sector concession, community-managed area) as 'under improved management.' This information is described in detail in the LESTARI AMEP. The LESTARI GIS team conducted routine spatial analysis to map these areas, avoid overlaps, and ensure they are located within landscape boundaries. A full breakdown of the LOP achievement is presented in the table below.

AREAS UNDER IMPROVED MANAGEMENT LIFE OF PROJECT ACHIEVEMENTS			
Approach	**Province**	**Region**	**Area**
Improved Protected Area management capacity as measured by METT score	Aceh	Gunung Leuser National Park	624,016
		Singkil Wildlife Reserve	81,802
	Central Kalimantan	Sebangau National Park	568,700
		Bukit Baka Bukit Raya National Park	134,558
	Papua	Lorentz National Park	1,056,852
		Cyclops Nature Reserve	31,480
Improved orangutan habitat protection	Aceh	Manggamat Protected Forest, Aceh Selatan District	39,581
Peatland restoration through FPIC with communities	Central Kalimantan	Block C-2 region, Pulang Pisau District	55,712
Improved capacity and institutional strengthening of Forest Management Units	Aceh	KPHL V	211,156
		KPHL VI	245,263
	Papua	KPHL VI	194,082
		KPHP LIII	53,389

Improved capacity and institutional strengthening of Forest Management Units	Central Kalimantan	KPHP XVI	119,189
		KPHP III	57,129
		KPHP XVII	436,154
		KPHP XVIII	138,283
		KPHP XXX	251,944
		KPHP XXXI	341,129
		KPHP I	6,861
		KPHP XXI	433
		KPHL IV	7,805
		KPHL XXXII	185,565
		KPHP XI	1,902
		KPHP XIX	21,505
		KPHP XV	107,844
		KPHP XIII	177,710
		KPHL XII	16,049
		TAHURA Lapak Jaru	4,117
Land under improved management through social forestry and conservation partnership	Aceh	5 social forestry, 7 Aceh forestry partnership, and 7 conservation partnership schemes	9,007
	Central Kalimantan	13 social forestry and 3 forestry partnership schemes	22,046
Co-management agreements with local communities for mangrove conservation and watershed protection	Papua	Nayaro Village	191,097
		Yepem/Agats Village	13,343
		Yamas & Yeni Villages	115,907
		Yepem bufferzone	18,646
		Ewer & Saw Villages	61,059
		Lorentz NP bufferzone	41,106
		Atuka, Tiwaka & Keakwa Villages	98,711
		Kokonao District	124,991
		Rawa Baki	123,289
10 private sector timber concession companies with improved management practices through adoption of reduced impact logging or conservation monitoring and management plans	Central Kalimantan	PT Fitamaya Asmapara	43,880
		PT. Hutan Domas Raya	99,870
		PT. Sikatan Wana Raya	49,400
		PT. Graha Sentosa Perm	44,970
		PT. Hutan Mulya	52,100
		PT. Kayu Waja	38,450
		PT. Sarana Piranti Utama	49,700
	Papua	PT. Wapoga Mutiara Timber	169,170
		PT. Salaki Mandiri Sejahtera	79,130
		PT Bina Balantak Utama	298,710
Areas set aside for conservation in district spatial plans	Papua	RTRW Boven Digoel District	511,373
		RTRW Mimika District	50,722
TOTAL			**7,476,887**

Three main factors impacted full achievement of the 8.7 million hectares target. First and most significantly, beginning in March 2020, impacts from the COVID-19 pandemic became widespread across Indonesia as the LESTARI team and partners were forced to cancel all field activities and in-person meetings, local government agencies closed their offices, and travel restrictions were put into place. Second, issues with consultants contracted by the Mappi District government created delays that slowed the integration of SEA recommendations (facilitated by LESTARI) into the revised spatial plan. Third, two private sector partners showed a lack of clear and timely commitment to implement their conservation management and monitoring plans during the final year. The LESTARI team also conducted insufficient advocacy and engagement with the companies' senior management to build their commitment.

The key final year activities in support of indicator #2 that were originally on track but could not reach timely completion for the reasons described above are listed below. Together these amount to 796,580 hectares which would have brought LESTARI to within 98% of the contractual target.

- SEA and spatial plan revision in Mappi District, Papua (435,902 hectares)
- Mapping and implementation of a co-management initiative with traditional communities (*Kampung Lestari* or Sustainable Villages) in Potowaiburu Sub-district, Mimika District, Papua (71,826 hectares)
- Co-management in buffer zone of Cyclops Nature Reserve, Papua (832 hectares)
- Adoption of conservation management and monitoring plan with PT. Diadyani in Papua (83,736 hectares)
- Adoption of conservation management and monitoring plans with two Dwima group concession partners in Central Kalimantan (2,341 hectares)
- Improved capacity and institutional strengthening of FMU XXIX in Central Kalimantan (196,943 hectares)

Indicator #3: LESTARI supported a 70% reduction in wildlife poaching in Leuser National Park, 46% reduction in Lorentz National Park, and 71% reduction in Cyclops Nature Reserve. Compared to the LOP target of 40%, this represents a 175%, 178%, and 115% achievement, respectively (an average of 156% among the three PAs).

Poaching data came from SMART patrols conducted in targeted resorts through partnership with PA management authorities, clearly demonstrating the deterrence effect of the patrols. A baseline poaching rate was calculated (measured as observed poaching incidents per 100 kilometers) in September 2016 and measured again throughout the project period. SMART patrols were also conducted in other protected areas within LESTARI supported landscapes (Singkil Wildlife Reserve, Sebangau National Park, Bukit Baka Bukit Raya National Park). However, poaching and wildlife trafficking were not the main threats in these locations as illegal logging, encroachment, and illegal gold mining were more prevalent.

	LEUSER NATIONAL PARK		CYCLOPS NATURE RESERVE		LORENTZ NATIONAL PARK	
Year	**Poaching Rate Change (incidents per 100 km)**	**Percent Reduction**	**Poaching Rate Change (incidents per 100 km)**	**Percent Reduction**	**Poaching Rate Change (incidents per 100 km)**	**Percent Reduction**
Year 2	9.6 to 7.7	20%	5.4 to 2.6	51%		
Year 3	9.6 to 2.4	75%	5.4 to 1.7	68%	25.5 to 23.8	7%
Year 4	9.6 to 0.96	90%	5.4 to 0.25	95%	25.5 to 4.01	84%
Year 5	9.6 to 0.63	93%	-	-	-	-
Average		70%		71%		46%
AMEP Target		40%		40%		40%
Achievement vs Target		175%		178%		115%
TOTAL AVERAGE ACHIEVEMENT	**156%**					

Indicator #4: **LESTARI supported the introduction of 30 national and sub-national public policies addressing climate change and/or biodiversity conservation (107% achievement of LOP target of 28 policies).** LESTARI technical assistance for these policies included support for formulating, drafting, lobbying, and disseminating with local government and civil society stakeholders.

PUBLIC POLICIES SUPPORTED BY LESTARI		
No	**Policy**	**Level**
1	Bupati Regulation of Aceh Tenggara concerning Village Fund Utilization for Sustainable Forest and Environmental Development	Aceh
2	Governor Regulation of Province of Central Kalimantan No 49/2015 concerning the revocation of Governor Regulation No. 52/2008 regarding Land Clearing Guidelines	Central Kalimantan
3	Adoption of METT in 130 conservation areas through Minister Decree (SK 357/KSDAE-SET/2015)	National
4	Academic paper of draft local regulations on protection and management of buffer zone area of Cyclops Nature Reserve	Papua
5	District regulation (Qanun) on Environmental Protection and Management in Aceh Selatan	Aceh
6	Academic Paper for Provincial Regulation (Perda Provinsi) on Control of Forest and Land Fires in Central Kalimantan Province	Central Kalimantan
7	Papua Governor Decree on Land Use Permitting in Papua Province	Papua
8	Bupati Regulation of Aceh Selatan year 2017 concerning technical guidelines in forming village mid-term development plans and village annual plans	Aceh

9	Governor Regulation of Central Kalimantan No. 24 Year 2017 on Emergency Management of Forest and Land Fire	Central Kalimantan
10	Bupati Regulation No. 22 Year 2017 on Emergency Management of Forest and Land Fire	Central Kalimantan
11	Governor Decree on SOP for spatial management information database (SIMTARU) use in Papua Province	Papua
12	Bupati Regulation No.56 Year 2017 concerning Guidelines for Preparation of Village Budgeting and Expenditure Budget (APBK) FY 2018 in Gayo Lues District	Aceh
13	Draft Bupati Regulation regarding village authority in Pulang Pisau District	Central Kalimantan
14	Local regulation (Qanun) of Aceh Barat Daya No.2 Year 2019 on mid-term development plan of 2017-2022	Aceh
15	Governor Regulation of Aceh No. 16 Year 2018 regarding Aceh mid-term development plan of 2017-2022	Aceh
16	Local regulation (Qanun) No 1/2018 on RPJMK 2017-2022 of Gayo Lues District	Aceh
17	Draft Aceh Governor's Regulation 2018 on Guidance of Pola Kerjasama for FMUs in Aceh	Aceh
18	Draft Aceh Governor's Regulation 2018 on Integrated Aceh Information System (SIAT)	Aceh
19	Aceh Selatan Bupati Decree on procedures for revenue sharing of regional taxes with villages	Aceh
20	Aceh Selatan Bupati Decree on procedures for distribution and determination of village funds	Aceh
21	Aceh Selatan Bupati Decree on procedures the distribution and allocation of village funds	Aceh
22	Aceh Selatan Bupati Decree on priority use and implementation guidelines of village revenue and expenditures	Aceh
23	Director General of KSDAE Decree on Lorentz National Park zonation	National
24	Asmat Bupati Decree on recommendation for the proposed Rawa Baki Vriendschap forest area to be designated as a KEE	Papua
25	Bouven Digoel Bupati Decree on revocation of 3 companies' location permits in Bouven Digoel District	Papua
26	Director General of KSDAE Decree on Rawa Singkil Wildlife Reserve zonation	National
27	Director General of KSDAE Decree on the long-term management plan of Rawa Singkil Wildlife Reserve 2019-2028	National
28	Draft Bupati regulation concerning on deforestation control system in Gayo Lues District	Aceh
29	Draft Asmat Regent regulation regarding technical guidelines for development of village-owned enterprises (BUMK)	Papua
30	Director General of KSDAE Decree on the long-term management plan of Cyclops Nature Reserve 2020-2029	National

Indicator #5: **LESTARI supported 2 provincial governments to improve licensing and permitting mechanisms (25% achievement of LOP target of 8 sub-national governments).**

In Papua Province, LESTARI supported the development of the Sustainability Screening Tool (SST) to prevent land use permits from being issued in protected areas or overlapping with other permits. The SST is a web-based GIS application which allows the user to check suitability of a proposed permit site against existing data stored in the SIMTARU spatial planning database. The Papua Provincial Government formally adopted the SST into their online licensing system (known as e-PPO) at a launch event held in March 2019.

In Aceh Province, LESTARI assisted DLHK to design and develop a forestry database system known as SIKAWAN. Officially launched in February 2020, the system will help DLHK to conduct screening and analysis to provide recommendations for four important permits – Forest Partnership Permit (*Izin Pola Kerjasama*), Forest Release Permit (*Izin Pelepasan Kawasan Hutan*), Timber Forest Product Utilization Permit for Industrial Plantation Forest (*Izin Pemanfaatan Hasil Hutan Kayu untuk HTI*), and Environmental Permit (AMDAL). Most importantly, the system will allow DLHK to monitor FMU performance in reducing deforestation and degradation within Aceh Province. LESTARI also provided DLHK with a set of technical guidance documents which will enable them to operationalize the system without further assistance.

Overall, progress towards this indicator proved to be the most challenging and complex aspect of the project for a number of reasons. First, land use licensing is a politically sensitive topic across Indonesia and progress towards reform is highly dependent on the commitment of provincial level government stakeholders. Thus far the level of commitment has been insufficient, particularly in Central Kalimantan and to some extent in Aceh. Therefore, during the initial years of LESTARI, the focus was on developing and operationalizing a Sustainability Screening Tool (SST) in Papua. Rollout in the districts of Mimika, Asmat, Bouven Digoel, and Sarmi was hampered by technical obstacles such as lack of internet connectivity needed to access the SIMTARU spatial planning database, differences in licensing processes between the province and districts, and insufficient staff capacity for maintaining the system.
Second, over the past two years there have been various governance reforms driven from the national level which have changed the landscape of provincial permitting, with some new developments poorly coordinated and implemented – for example, OneMap and BIG's geoportal initiative, One Stop Shop, e-licensing, and the Sicantik system, coming from at least three different national ministries.

Third, Law 23 of 2014 on regional governments shifted more authority on land use permitting to the provincial level, meaning that SST work was refocused at the provincial level. Improving permit systems at the province level in just two or three provinces would still impact upon all districts in those provinces. This distinction was not captured in the LOP target (8 sub-national governments) for this indicator. While this law was passed in 2014, it did not come into full effect until after the start of the LESTARI project when indicator targets were established.

For deeper analysis of this complex topic, please refer to the Lessons Learned Technical Brief on Land Use Licensing Reform in Indonesia.

Indicator #6: LESTARI facilitated the incorporation of 13 SEA recommendations related to key conservation priorities into sub-national government plans, programs, and budgets (217% achievement of LOP target of 6 SEA/LCP recommendations).
LESTARI assisted provincial and district governments to conduct 11 total SEA in a

structured, rigorous, participative manner to evaluate the full extent of policies that potentially enable or stimulate environmental impacts and risks.

Two SEA recommendations in Aceh Province were incorporated into the DLHK Aceh Strategic Plan 2017-2022, which were:

- Increased support for social forestry
- Strengthening FMU institutions

Five SEA recommendations in Gayo Lues District were incorporated into the 2017-2022 Strategic Plans of the Home Affairs and Public Works Agency and the Environment Agency, which were:

- Development of roads and bridges to avoid protected areas
- Reduction of encroachment pressure on conservation areas
- Conservation of protected forests in the freshwater catchment area
- Promotion of agroforestry especially in the FMU area to strengthen the economic and ecological functions of the region
- Increased community participation in the protection/conservation of natural resources

Three SEA recommendations were incorporated into RPJMD of Papua Province and the 2018- 2023 Forestry Agency Strategic Plan, which were:

- Sustainable land use and land allocation
- Land and forest management in line with ecosystem conditions and local culture
- Reduction in deforestation and forest degradation

Three SEA recommendations in Central Kalimantan Province were incorporated into the Strategic Plans of the Public Works Agency (2017-2021), Agriculture Agency (2016-2021), and Forestry Agency (2016-2021), which were:

- Inventory and mapping of community land management in Central Kalimantan Province
- Pilot technical project for zero-burning land clearing (PLTB)
- Establishment of institutions for village-based forest management

Indicator #7: **LESTARI facilitated 38 Multi-Stakeholder Initiatives (MSIs) as a means to broaden citizen input in the formulation of policies and programs related to forest and land management (190% achievement of LOP target of 20 MSIs).** MSIs served as a bridge between local communities and local government by fostering participatory, inclusive, and transparent governance practices. Some key examples included:

- Public consultation for canal blocking and peatland restoration in Pulang Pisau District, in line with the principle of Free, Prior, and Informed Consent (FPIC)
- Development of the Strategic Plan and budget of DLHK Aceh
- Compilation of the Long-term Forest Management Plan for FMU V, Aceh
- Formation of multi-stakeholder working group on freshwater management in Asmat District
- Strategy and action plan development for key species conservation in Mimika and Asmat Districts
- Collaborative forest and land cover mapping in Leuser Landscape

Indicator #8: LESTARI identified and engaged 603 Champions (497 men, 106 women) from local government, private sector, and civil society in advocacy interventions (121% achievement of LOP target of 500 Champions). Champions included individuals who influence others (by persuasion or by example) to adopt more sustainable behaviors or policies in the landscape (i.e., behaviors or policies in line with LESTARI objectives) or

individuals who commit to forest conservation as demonstrated through significant actions. In order to count as a champion under this indicator, LESTARI must have strengthened their capacity through trainings, workshops, or one-on-one engagements. LESTARI Champions came from a broad range of roles and backgrounds including:

- Staff of district/provincial forestry agencies, BAPPEDA, and other government agencies
- National park management staff
- Forest Management Unit staff
- Local farmers and members of farmers' cooperatives
- Members of local NGOs, traditional/indigenous community groups, women's groups, and other community-based organizations
- Local media and journalists covering environmental issues
- Academics from partner universities
- Private sector staff

Empowering Champions was a major part of LESTARI efforts at building long-term constituencies for conservation. Champions will continue to play an important role in building awareness, serving as role models, and sharing the values of conservation with others in the community after completion of the LESTARI project, thereby contributing to sustainability. The stories, photos, and perspectives of 40 Champions were compiled in a *Champions of the Forest* publication and shared with KLHK and local government partners.

Indicator #9: **LESTARI supported communications channels reached 524,538 people (293,103 males; 231,435 females**) **to improve awareness and understanding of low emissions development (LEDS) and biodiversity conservation (105% achievement of LOP target of 500,000 people)**. Awareness raising events and campaigns were conducted directly by the LESTARI team and through partnerships with other networks and organizations such as INFIS-Mongabay. See Appendices 5.5 and 5.6 for details.

LESTARI SUPPORTED COMMUNICATIONS CHANNELS				
Communication Channel	**Men**	**Women**	**Total**	**Percentage**
Events	15,843	7,423	23,266	4%
Printed Media	42,227	38,640	80,867	15%
Blog	3,861	2,183	6,044	1%
Radio	59,749	47,503	107,252	20%
TV	3,570	3,430	7,000	1%
Website	111,315	103,304	214,619	41%
Social media	56,538	28,952	85,490	16%
TOTAL	**293,103**	**231,435**	**524,538**	**100%**

Indicator #10: LESTARI supported 6 Conservation Areas (CAs) to achieve at least 70 points in METT score (100% achievement of LOP target of 6 CAs). Consisting of 30 indicator criteria, METT (Management Effectiveness Tracking Tool) has been formally adopted by KSDAE as a means to evaluate and improve management effectiveness in terrestrial conservation areas throughout Indonesia. Through joint annual work plans with CA managers, LESTARI provided specific areas of assistance to enhance the METT score. These included training and implementation of SMART patrols, biodiversity surveys, community-wildlife conflict mitigation, management and zonation plan development,

participatory mapping, public consultations, and awareness raising campaigns. The 70-point METT score target coincides with the minimum target set by KSDAE in 2015.

METT SCORE IMPROVEMENTS SUPPORTED BY LESTARI		
Conservation Area	**Baseline METT Score (2015)**	**Final METT Score (2019)**
Gunung Leuser National Park	67%	70%
Rawa Singkil Wildlife Reserve	55%	78%
Sebangau National Park	62%	77%
Bukit Baka Bukit Raya National Park	64%	79%
Lorentz National Park	52%	70%
Cyclops Nature Reserve	43%	72%

Indicator #11: **LESTARI strengthened the institutional capacity of 19 Forest Management Units (271% achievement of LOP target of 7 FMUs).** The 19 FMUs included 15 from Central Kalimantan (covering 1.87 million hectares), two from Aceh (covering 456,419 hectares), and two from Papua (covering 247,471 hectares). See table under indicator #2 above for the complete list. With trainings and assistance from LESTARI, these FMUs completed five key management milestones to be counted as 'strengthened.'

- Approved long-term forest management plan
- Approved short-term forest management plans
- Improved institutional capacity
- Forms of co-management established with local communities
- Routine forest monitoring patrols conducted

Indicator #12: **LESTARI facilitated trainings for 13,378 people (10,397 men, 2,981 women) in natural resource management (134% achievement of LOP target of 10,000 people).** Training events included workshops, FGDs, meetings, field visits, public consultations, socialization, and one-on-one engagements. Relevant information from LESTARI-provided trainings was routinely uploaded to USAID's TraiNet database. See Appendix 5.3 for further details.

TRAININGS FACILITATED BY LESTARI				
Institution	**Men**	**Women**	**Total**	**Percentage**
Local government	2,450	344	2,974	21%
Community (farmer groups, social forestry groups)	7,646	2,596	10,242	77%
NGOs	71	21	92	1%
Private Sectors	230	20	250	2%
TOTAL	**10,397**	**2,981**	**13,378**	**100%**

Indicator #13: LESTARI mobilized USD 33.8 million in investment for forest and biodiversity conservation and climate change (169% achievement of LOP target of USD 20 million). The majority of this figure came from GOI budgets of various agencies and programs that were impacted by LESTARI through technical assistance and advocacy. Types of technical assistance for budget advocacy included helping partner agencies to navigate budget processes, conduct assessments of funding opportunities, determine needs and priorities, and align funding requests with detailed programs in order to better justify their proposals.

Overall this represents a significant achievement for domestic resource mobilization, ensuring that funds will be available to continue to address key conservation priorities after the LESTARI project. The table below lists the most significant sources of funds mobilized from each landscape.

INVESTMENT MOBILIZED BY LESTARI			
Landscape	**Leveraging Source**	**Total USD**	**Institution**
Leuser	DLHK budget allocation FY 2019 for social forestry and FMU strengthening	809,452	Provincial Government
Leuser	Village Fund (APBDes) FY 2019 for forestry and environment sectors in 233 villages in South Aceh District and 131 villages in Gayo Lues District	979,694	Village Government
Leuser	DLHK budget allocation FY 2020 for social forestry and FMU strengthening	2,039,905	Provincial Government
Leuser	Budget allocation from Watershed Management Agency (BPDAS) FY 2019 for Forest and Landscape Rehabilitation (RHL) in FMU V and FMU III areas	5,390,222	National Government
Katingan-Kahayan	BRG budget implementation FY 2019 for canal blocking and peatland restoration in Pulang Pisau District	440,158	National Government
Katingan-Kahayan	Public Works Agency FY 2016 budget for irrigation development and peatland management in Pulang Pisau District	3,236,640	District Government
Katingan-Kahayan	Central Kalimantan Forestry Agency budget allocation FY 2019 from Reforestation Fund (DBH-DR)	4,446,283	Provincial Government
Katingan-Kahayan	Central Kalimantan Forestry Agency budget allocation FY 2020 from Reforestation Fund (DBH-DR) and Provincial APBD	8,419,826	Provincial Government
Sarmi	PT BBU allocation of budget for implementing high conservation value forest monitoring and restoration activities	111,571	Private Sector

Lorentz Lowlands	Contribution from Tourism, Culture, Youth and Sports Agency FY 2018 and 2019 for mangrove ecotourism as pilot project for sustainable mangrove management in Mimika District	346,193	District Government
All landscapes in Papua	Budget FY 2019 of Papua Provincial Forestry Agency for 5 forestry programs influenced by LESTARI: (1) forest protection and management in conservation areas; (2) Cabang Dinas Kehutanan (CDK) management in province level; (3) reduction in illegal logging; (4) forest management in CDK; and (5) forest management in FMU areas	3,073,954	Provincial Government
TOTAL		**29,293,898***	

*An additional USD 4.5 million was leveraged from NGOs, private sector partners, and other GOI programs and budgets. Details can be found in LESTARI Annual Reports.

Indicator #14: LESTARI assisted 41,535 people (24,085 men, 17,450 women) from local communities to secure livelihood co-benefits (138% achievement of LOP target of 30,000 people). Improved livelihoods were achieved through Green Enterprise initiatives that focused on improving production and enhancing market access for key local commodities that are produced sustainably. Direct benefits to communities included increased incomes, improved capacity in sustainable farming practices, enhanced quality of products, and improved capacity in marketing and business management. Some of these initiatives included:

- Improved market access, price, and productivity of rubber, cacao, coffee, nutmeg, vanilla, sago, honey, and rattan farmers (Aceh, Central Kalimantan, Papua)
- UTZ certification and application of good agricultural practices for cacao farmers (Aceh)
- Development and launching of community-based ecotourism businesses (Aceh and Central Kalimantan)
- Secured rights for land access and management through social forestry schemes in Aceh and Central Kalimantan (i.e., Community Forestry, Kemitraan Konservasi)
- Participatory mapping and recognition of customary rights (Papua)

Indicator #15: LESTARI supported 10 private sector timber companies to adopt best management practices aimed at reducing environmental impacts and improving biodiversity conservation (100% achievement of LOP target of 10 private sector companies). For nine of these companies, field staff and management were trained in Reduced Impact Logging (RIL) – a set of modern logging practices that minimize waste and damage to the surrounding environment, enable faster regeneration, and reduce carbon emissions. LESTARI planned an approach for RIL trainings to (1) improve re-harvest planning (including production planning and environmental impact mitigation); (2) improve harvesting operations to minimize damage during operations (including improving road and infrastructure design and development, delineating no-go areas, reducing damage to residual forest stand); and (3) implement routine monitoring and adaptive management.

Besides RIL, LESTARI trained one timber company in High Conservation Value (HCV) monitoring for both company management and field staff. This training ensured that the production and utilization of timber forests are carried out by considering environmental and conservation values.

All ten partner timber companies agreed to adopt these best practices as standard operating procedure, allocating internal budgets to ensure implementation. The total forest concession area impacted is more than 925,000 hectares.

Indicator #16: LESTARI facilitated the formation of 25 new Public-Private Partnerships (PPPs) in support for LEDS (125% achievement of LOP target of 20 PPPs). These partnerships were formed between key stakeholders – farmer cooperatives/community groups, private sector buyers, local NGO partners, and/or LESTARI. The PPPs improved market access and livelihoods for local communities while encouraging the growth of quality, sustainably produced forest commodities. Most of the buyers were small to mid-sized firms with a presence at the landscape level or in nearby provincial capitals. The role of LESTARI was to facilitate these partnerships to bring mutual benefit to both parties so that there will be sufficient incentive and commitment to maintain the partnership for the long-term.

PUBLIC PRIVATE PARTNERSHIPS FACILITATED BY LESTARI			
No	**Landscape**	**Partnership**	**Key commodities**
1.	Leuser	Jaringan Madu Hutan Indonesia (national-level network) – Jaringan Madu Hutan Pining	Forest honey
2.	Leuser	PD. Dian Niaga – Jaringan Madu Hutan Pining	Forest honey
3.	Leuser	Bireun Cacao Plantation Cooperative (KPKB) – Cooperative Sinar Lestari Agara	Cacao
4.	Leuser	PT Kampung Kearifan Indonesia (JAVARA) – 1,000 cacao farmers in Southeast Aceh and Gayo Lues Districts	Organic cacao and intercropping
5.	Leuser	PT. Ecom Agroindustrial Corporation Ltd – 18 farmer groups in Southeast Aceh and Gayo Lues Districts	UTZ certification for cacao
6.	Leuser	Cooperative Sinar Lestari Agara – CV. Ku Dengo Su Gata	Fermented cacao
7.	Leuser	FORPALA – CV. Meutuah	Nutmeg oil
8.	Leuser	FORPALA – PT. Nudira	Nutmeg oil
9.	Leuser	BUMK Ceding Ayu – Jaringan Madu Hutan Pining	Forest honey
10.	Leuser	Cooperative Bireun plantation – Cooperative Sinar Lestari Agara	Fermented cacao
11.	Leuser	CV Ku Deungo Su Gata – Marpunge Cocoa Fermented Farmer group	Fermented cacao
12.	Leuser	PT PAS, Pacu Prima Cooperative – Inprosula	Agroforestry (coffee, avocado, lemon, stink bean, palm sugar)
13.	Katingan-Kahayan	CV. Mitra Sidirepo – 60 community rubber business groups in Pulang Pisau District	Rubber
14.	Katingan-Kahayan	PT. Insan Bonafide – five community rubber business groups in Pulang Pisau District	Rubber
15.	Katingan-Kahayan	Bank Indonesia Central Kalimantan Province – five community rubber business groups in Pulang Pisau District	Rubber

16.	Katingan-Kahayan	PT. BNI – four villages in Banama Tingang area	BUMK business
17.	Katingan-Kahayan	PT. BNI – 18 villages in Block C & Sebangau Kuala area	Rubber and BUMK business
18.	Katingan-Kahayan	PT. RMU – four forest farmer/community social forestry groups	NTFPs
19.	Katingan-Kahayan	Community social forestry group Batu Bulan – Fairventures Worldwide	Smallholder timber, cash crop farming and NTFPs
20.	Katingan-Kahayan	Community social forestry group Mierhayak – Fairventures Worldwide	Smallholder timber, cash crop farming and NTFPs
21.	Katingan-Kahayan	Forest farmer group Tiga Handil – CV Dinamika Lintasnusa Initiative	Agroforestry (calliandra, rubber, pineapple, lemongrass)
22.	Katingan-Kahayan	Forest farmer group Garung – CV Dinamika Lintasnusa Initiative	Agroforestry (calliandra, rubber, pineapple, lemongrass)
23.	Katingan-Kahayan	Yayasan Tambuhak Sinta (YTS) – PT. Kalimantan Surya Kencana (KSK)	Fisheries and agriculture products
24.	Katingan-Kahayan	PT. Citra Andalan Katingan Perkasa – community social forestry group Tampelas	Various tree species
25.	Katingan-Kahayan	PT. Citra Andalan Katingan Perkasa – community social forestry group Galinggang	Various tree species

1.5 SITUATION ANALYSIS

LESTARI was a contextually complex project where the same outcomes were not necessarily guaranteed in each province or landscape. Each landscape was different and varied significantly according to cultural contexts, political and socioeconomic backgrounds, and the biogeographic nature of the landscapes. A Situation Model was developed at the start of the project period to map the complexities of forest and land use dynamics in Indonesia, including challenges, barriers, drivers, opportunities, and entry points. The Situation Model was used to inform the design of an implementation strategy underpinned by Theory of Change (see Section 3 on LESTARI Technical Approach). A summary of the Situation Analysis taken directly from the AMEP is provided below.

Summary of Situation Analysis

Indonesia is considered 'mega diverse' country, contributing up to 70 percent of the globe's biodiversity. Indonesia contains Asia's largest continuous track of tropical rainforests and 10% of the world's forests containing unique and globally-valued species such as orangutan, tiger, elephant, and birds of paradise. Healthy and intact forest ecosystems are also an important safety net for at least 30 million Indonesian people that depend directly on forests for their livelihoods and daily needs.

However, deforestation, peatland degradation, and forest fires have put Indonesia among the top three largest emitters of greenhouse gases in the world. A 2010 report suggests that 85% of Indonesia's greenhouse gas emissions stem from land use activities with 37% due to deforestation and 27% due to peat fires (National Council on Climate Change, 2010). During the peak of the 2015 forest and land fire disaster in Indonesia, daily carbon emissions reached a staggering 15-20 million tons, or more than the daily 14 million tons emitted by the entire U.S. economy.

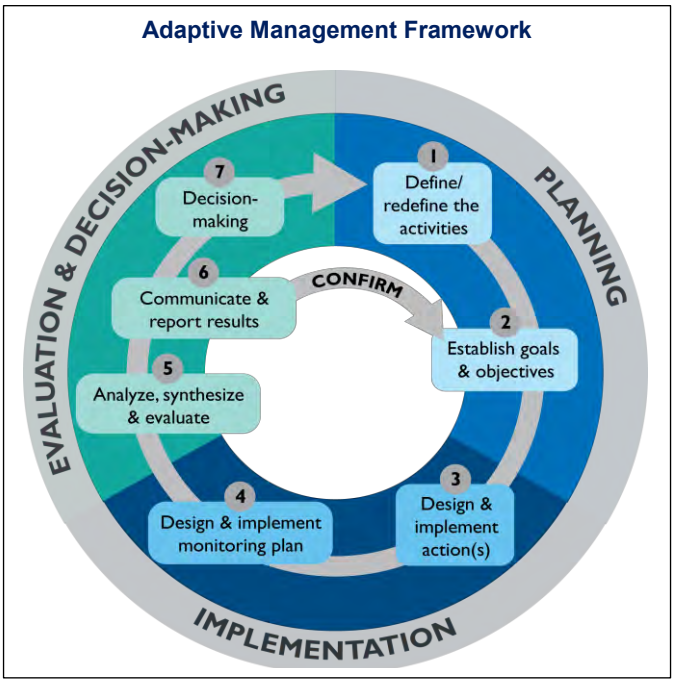
Over the last 20 years deforestation in Indonesia has been driven predominantly by unsustainable agricultural expansion, a result of complex dynamic of political, economic and institutional factors. Decision-making on land use involves a large array of laws and actors and the process is rarely transparent or consistent. Land use decisions are driven by economic incentives that prioritize extractive industries and agriculture over low emissions and conservation-oriented business models.

However, enabling conditions for a shift to more sustainable and responsible forest and land use management are finally emerging. For the last three years in a row, GOI has reported a promising decline in rates of deforestation nationwide. Civil society, particularly forest-dependent communities, are increasingly advocating for more responsible land and forest governance. A number of GOI initiatives are underway aimed at re-enfranchising communities with their forests, reducing land conflicts, reducing deforestation, and improving forest management capacity. The private sector is also demonstrating substantial leadership toward reducing large-scale deforestation. Increasingly, companies are demonstrating that good business integrates sustainable landscape and conservation management into their operations.

At the national and international level, GOI has commitments for reducing greenhouse gas emissions from the land use sector as part of the Paris Climate Agreement; is a signatory to the Convention on Biological Diversity and CITES treaties aimed at protecting endangered wildlife; and, as part of its Sustainable Development Goals, has mainstreamed low carbon development in the national development planning agenda.

Indonesian Law 23 of 2014 designates a significant amount of natural resource decision-making to provincial level governments. These regional agencies hold significant responsibility in managing vast forest areas, but are often lacking in technical, management, oversight, and collaborative management capacity. This creates the opportunity for donors and NGOs to support local government agencies to develop the knowhow and commitment for effective, inclusive, and collaborative forms of forest management. Effective co-management of forest areas requires cooperation and partnerships amongst a broad range of stakeholders including national and local government agencies, Forest Management Units, national parks, community-based organizations, NGOs, private sector partners, and academic institutions.

2. COLLABORATING, LEARNING, AND ADAPTING



LESTARI applied a Collaborating, Learning, and Adapting (CLA) approach to project management. This meant that project theories and approaches were continuously revisited and revised based on evidence and learning throughout the five-year period.

Early in the first year, LESTARI prepared the Activity Monitoring and Evaluation Plan document as guidance for the project to ensure accountability and learning. The document outlined M&E systems, protocols, and data collection methodologies. Detailed theories of change were developed through a collaborative process that included guidance and support from USAID/Washington and the Measuring Impact project. This established a clear and structured framework for activity implementation while allowing the LESTARI team to continuously assess key assumptions, learn from outcomes, and make adjustments accordingly. To facilitate the process of collecting data and reporting, LESTARI developed a user friendly Management Information System (MIS). Utilized by all staff, the MIS was used to effectively and efficiently manage activity implementation as well as to monitor progress of results.

In Year 2, an internal Mid-Term Assessment and Political Economy Analysis were conducted in each landscape, which revealed the importance of understanding local political economy dynamics in the forest and land use sector. Building on the overall Situation Model, landscape-specific situation models were developed. These led to more targeted initiatives based on the unique entry points and opportunities for engagement within each project landscape and fostered a more nuanced technical approach. One of the main initiatives pursued as a result of the Mid-Term Assessment was engagement in provincial-level government budget and programming cycles. In Central Kalimantan, for example, LESTARI assisted the Provincial Forestry Agency to unlock and allocate Reforestation Funds to tackle forest management priorities (see SA1).

In Year 4, the primary focus was on working with project partners and beneficiaries to instill greater self-reliance and sustainability in the implementation of the broad range of tools and approaches introduced by LESTARI. LESTARI's sustainability approach aimed to ensure tools, methodologies, and policies are institutionalized and embedded within government programs, allocated adequate budget for implementation, adopted and adapted as required, and implemented by partners with appropriate capabilities and sufficient buy-in. Details of the LESTARI sustainability framework are elaborated in the Final Year Work Plan.

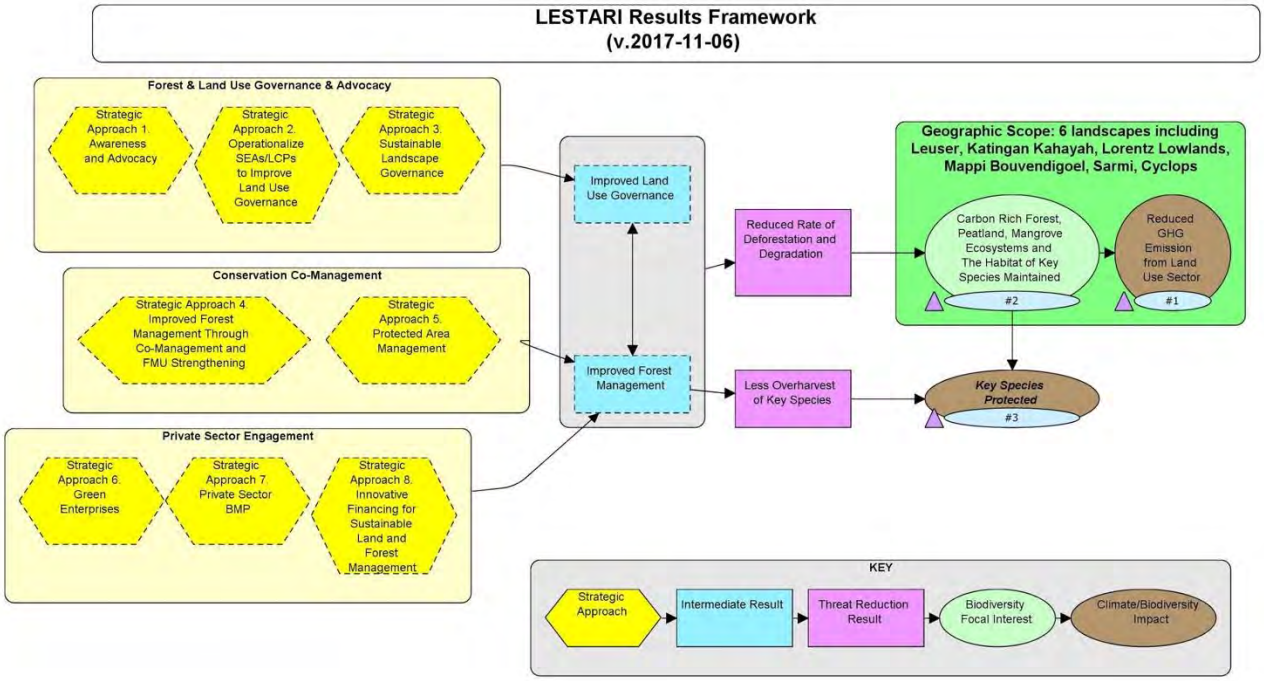
In the final year, a final internal assessment was conducted allowing for a final critical review of project theories of change and reflection on the progress and challenges over the past five years. A series of Lessons Learned Technical Briefs were produced and shared, detailing progresses, challenges, and remaining obstacles in specific technical areas addressed by the project. These knowledge documents capture the lessons learned over the course of LESTARI and will inform the design and implementation of future sustainable landscapes and biodiversity conservation projects in Indonesia and beyond.

3. LESTARI TECHNICAL APPROACH: THEORY OF CHANGE, ACTIVITIES, AND OUTCOMES

LESTARI designed an implementation strategy based on strategic approaches. Some of these were very specific, especially when dealing with technical issues, while others were governed by principles to allow for local flexibility. They were a blend of new and existing tools and approaches. Administratively, these approaches were key tools used across LESTARI's technical components: (1) forest and land use governance and advocacy; (2) conservation co-management; and (3) private sector engagement.

LESTARI TECHNICAL APPROACH	
Technical Theme	**Strategic Approach (SA)**
Forest and Land Use Governance and Advocacy	Awareness and Advocacy (SA1)
	Operationalize SEAs & LCPs to Improve Land Use Governance (SA2)
	Sustainable Landscape Governance (SA3)
Conservation Co-Management	Improved Forest Management Through Co-Management and FMU Strengthening (SA4)
	Protected Area Management (SA5)
Private Sector Engagement	Green Enterprises (SA6)
	Private Sector Best Management Practices (SA7)
	Innovative Financing for Sustainable Land and Forest Management (SA8)

The Results Framework below demonstrates the connection between strategic approaches, as they were designed to be closely integrated and mutually reinforcing. Importantly, the strategic approaches were adaptable and nuanced according to the context and opportunities in each targeted landscape.



A Theory of Change (ToC) was developed for each strategic approach consisting of results chains required to affect change and impact deforestation, degradation and biodiversity conservation. The ToC approach, required for all USAID biodiversity programming, is a systematic approach for designing project interventions and illustrates relationships and connections between project interventions, threats, assumptions, intermediate results, and higher-level goals and outcomes. The ToC is the basis of the development hypothesis, suggesting what impacts may occur if particular interventions or combinations of interventions are undertaken and are successful. Use of ToC was also based on a key recommendation from the IFACS Final Assessment, which found that key critical assumptions about the causal linkages between activities and higher level results had not been considered *due to limited use of program theory*.

The LESTARI theories of change proposed how project interventions would lead to achievement of the key project objectives: 41% reduction in GHG emissions from forest and land use sectors and 8.42 million hectares of forest, including orangutan habitat, under improved management. The ToC were critically reviewed and revised collaboratively during annual work plan sessions with the entire LESTARI team and USAID in order to ensure project interventions are leading to targeted outcomes.

This section summarizes the specific activities, achievements, challenges, and lessons learned in the implementation of each strategic approach and respective ToC over the five-year project period. The full ToC diagrams are presented in Appendix 5.8.

3.1 TECHNICAL THEME 1: FOREST & LAND USE GOVERNANCE & ADVOCACY

LESTARI 1 – Awareness and Advocacy

This cross-cutting strategic approach integrated activities to ensure all local stakeholders, including underrepresented and marginalized groups, are equipped to contribute to sustainable land use practices and policy through informed action. Policy influence and advocacy under LESTARI encompassed a wide range of activities. LESTARI defined policy influence and advocacy as an intervention intended to catalyze, stimulate or otherwise seed some form of change through different forms of persuasion. Key initiatives included media engagement; budget and policy advocacy; awareness raising campaigns; facilitating university partnerships to strengthen forestry curricula and e-learning opportunities; and capacity building for Champions, women's groups, and traditional community groups to more effectively engage in policy and planning processes. This strategic approach was pivotal to provide enabling conditions for other LESTARI strategic approaches to run effectively.

Budget advocacy activities were not undertaken early in the project, but as momentum and opportunities arose, LESTARI started to pursue budget advocacy in Year 3. For the policy advocacy, LESTARI piloted the use of media advocacy in Katingan-Kahayan Landscape starting in May 2016 for a six-month period. This strategy was used following the need to lift the voices of civil society organizations demanding government action on fire mitigation (as a response to the fire disaster in 2015).

Media advocacy initiatives were small-scale in the beginning, focused on advocacy for fire mitigation and promoting community best practices on mitigating forest and land fire through the use of mass media and social media. This proved an effective way to build constituents for conservation in Central Kalimantan and resulted in social change where many stakeholders moved towards fire mitigation and peatland restoration. To scale up this success, LESTARI expanded media advocacy to other landscapes in Aceh and Papua, as well as extended this work in Central Kalimantan.

The success of this SA was measured by three indicators: #8 – number of champions engaged in advocacy interventions, #4 – number of public policies introduced, adopted, repealed, changed or implemented consistent with citizen input, and #9 – number of people reached by LESTARI communications programs. The achievement of these three indicators exceeded 100%. Over the course of the project, LESTARI empowered 603 champions; strengthened 30 policies related to climate change, biodiversity conservation, forest monitoring and fire mitigation; and reached 524,538 individuals through media strengthening and communications activities. Though not measured by an indicator, LESTARI also recorded that the awareness and advocacy interventions led to 77 villages with pro-conservation village plans and programs.

Media Advocacy and Constituencies for Conservation

Recognizing the importance of media advocacy, as mapped in the Theory of Change for SA1, LESTARI rolled out a media advocacy program in partnership with Yayasan Rekam Jejak Nusantara (or INFIS) and Mongabay in Aceh, Central Kalimantan and Papua from 2016 to 2017. Through implementation, LESTARI learned that far beyond simply providing technical content, media advocacy mobilized a call for change. As an example, an article written by Mongabay entitled *Jalan Tanpa Izin*[2] exposed illegal forest clearing in Katingan District and influenced the Governor of Central Kalimantan to revoke the company's land use license. With regards to conservation, media advocacy was a tactic for constituent groups of conservation (potential advocates or champions) to communicate their own story in their own words to promote social change. While traditional campaigns seek to convince individuals to change their habits, media advocacy initiatives create pressure to change the environment which, in large part, determines these habits. The following activities, occurring through untransparent processes with minimal public input or engagement – ceased through media advocacy.

- Geothermal project in national park
- Power Plant development in protected forest
- Illegal mining in grand forest park
- Revocation of 98 mining business licenses that threatened orangutan habitat

Subsequently, LESTARI worked to develop outreach activities for knowledge dissemination. This included the regular production of project communication products such as Stories from the Field, Policy Briefs, Papers, and other communication products in multimedia form that raised awareness on key issues and also conveyed human-centered stories of LESTARI's programmatic interventions across the landscapes.

Figure 2. Media coverage of illegal gold mining in a protected forest area in Lapak Jaru, Central Kalimantan

LESTARI also closely engaged with national and landscape-based media and journalists through trainings, gatherings, and capacity building activities to improve coverage of key issues. In Aceh, LESTARI nurtured the establishment of *Forum Jurnalis Lingkungan* (Environmental Journalists' Forum). Through this media engagement, LESTARI succeeded to spark publication and public discussion on the most pressing local environmental issues such as forest and land fires, water resource preservation,

[2] https://www.mongabay.co.id/2017/05/24/jalan-tanpa-izin-akhirnya-gubernur-setop-sementara-pembangunan-rel-kereta-api-di-katingan/

sustainable forest management, mangrove and peatland conservation, and biodiversity protection. As of August 2020, FJL is active and currently focused on community-tiger conflict mitigation through coordination with other local NGOs in Aceh. In Papua, LESTARI supported training for local journalists to improve understanding of environmental issues and capacity to report on them, especially related to spatial planning. The journalist network formed increased the number of articles at the time of training but has yet to secure journalists' and civil society's commitment to monitor Papua's spatial plan and sustainable development in the future.

LESTARI supported gender inclusive approaches that build women's capacity to participate in environmental advocacy and policymaking processes. The mandate to be gender inclusive has been regulated in the Indonesian Constitution as well as the Convention on the Elimination of all Forms of Discrimination Against Women (CEDAW), which has been signed by Indonesia. Both documents emphasize that public and political domains are equally owned by women and men. One of the key gender initiatives supported by LESTARI involved a series of capacity building activities for women in Aceh and resulted in the development of a network of women communicators (*Perempuan Peduli Leuser/PPL* – https://perempuanleuser.com). This network consists of 22 women from four districts and one city in Aceh that has been using media strategically to promote conservation issues. This women's constituency has also been linked with local NGOs and the *Forum Jurnalis Lingkungan* in Aceh in order to ensure collective advocacy takes place. PPL is currently focused on developing a book, with support from their own funding sources, highlighting their conservation efforts in Leuser.

"Protecting the environment is the responsibility of all citizens, men and women alike. We must all take collaborative actions, however small, to protect nature."

-Ibu Masyitah, Member of PPL and LESTARI Champion

There is still a lot of work to do to empower women to actively and meaningfully engage in environmental issues in regions where LESTARI worked. Various cultural and structural obstacles still limit women's access to knowledge and resources, hindering them from taking advantage of their full potential. Unsurprisingly, many women internalize these disempowering messages and lack confidence about themselves. With a high risk of natural disasters and climate change impacts, local governments should empower women to play a more significant role in climate change mitigation.

Budget Advocacy

Moving from output to outcomes typically requires support from various sources, most notably budget availability. In the case of policy formulation, budget availability is pivotal to support policy implementation or enforcement. Thus, LESTARI carried out budget advocacy to ensure policy can be implemented with adequate resources. Over the five-year project period, LESTARI facilitated a total of USD 30.4 million in domestic resource mobilization for sustainable forest management from GOI national and regional-level budgets. Approaches for budget advocacy involved a series of meetings, trainings, formal and informal lobbying, media influence, and bridging communication among different agencies within local government, and between local and national government.

Optimization of the GOI's Reforestation Fund (DBH-DR) in Central Kalimantan contributed significantly to the achievement of Indicator #13. National revenue from the Reforestation Fund from 2014 to 2019 reached approximately USD 760 million (IDR 11 trillion). During the same period, funds transferred to regions in the form of DBH-DR reached approximately USD 275 million (IDR 4 trillion). Until 2019, the DBH-DR received cumulatively by Central Kalimantan reached around USD 85 million (IDR 1.23 trillion). This amount consisted of the remaining DBH-DR of regency/city which was around USD 39 million (IDR 560 billion) and provincial DBH-DR which was around USD 47 million (IDR 679 billion). The sizeable amount of the remaining DBH-DR that accumulated in the regional cash account was due to the very low absorption of the fund.

LESTARI saw an opportunity to support the Provincial Forestry Agency to optimize DBH-DR usage in Central Kalimantan as the province with the greatest accumulated DBH-DR nationally. In collaboration with the Provincial Forestry Agency, optimization of DBH-DR usage in Central Kalimantan was accomplished by increasing the active role of Forest Management Units (FMU) in formulating activity plans that are relevant to the needs of forest management and forest protection in their working areas. This was also an effort to increase institutional capacity, and to provide a more certain source of funds in the context of sustainable forest management.

Through a concerted effort, the Provincial Forestry Agency succeeded in optimizing the use of DBH-DR in 2019 by drafting the activities related to forest and land rehabilitation, social forestry, forest security and forest protection, and by controlling forest and land fires with a total budget of 63.2 billion rupiah (about USD 4.4 million) through a mechanism that precedes revised APBD of the 2019 fiscal year. In the 2020 budget year, the involvement of FMU in the drafting process of DBH-DR budgeting became more intensive. Through LESTARI support, the Provincial Forestry Agency encouraged each FMU to directly draft Work Plans and Budgets (RKA), no longer through the existing divisions of the Forest Agency as in previous years. For this reason, a Technical Implementation Officer (PPTK) was elected within each FMU. This encouraged the strengthening of FMU functions as forest managers at the site level. From the total DBH-DR budget allocation of 100 billion rupiah (about USD 7.1 million) for 2020, FMUs – for the first time – directly manage a budget of 34.13 billion rupiah (about USD 2.4 million). Please see the Lessons Learned Technical Brief on Optimization of Reforestation Fund in Central Kalimantan in Appendix 5.5 for further details.

Key Challenges, Lessons Learned, and Recommendations

Learning from LESTARI experiences, it is important to consider the following three key concepts when implementing an advocacy program:

- Understanding policy/political economy context – conducting Political Economy Analyses enabled LESTARI to design policy-influencing processes based on a solid understanding of the political and institutional context in each landscape.

- Understanding advocacy tactics – when considering how to engage in policy advocacy, it is important to adopt a nuanced understanding of when to use different tactics for engaging with, informing and attempting to influence policy in a given context. The LESTARI ToC helped the team to examine and unpack a range of tactics and policy-influencing activities and their underlying logic. The team continually drew on this Result Chain to design interventions and track progress of activities and quality of outputs.

- Applying adaptive management – some expected outcomes might be beyond the control of donor projects and their partners. It is important to identify the different effects that

interventions can have – from merely raising awareness on an issue to affecting policy language or steering implementation. Certain frameworks provide a more sophisticated understanding of the different types of effects that different types of interventions have on policy-making and intermediate outcomes. These frameworks can be used to explore the relationship between planned tactics and the extent to which they can influence policy, and then design outcomes accordingly. In short, adaptive management plays a pivotal role in dealing with the complex world of policy change.

LESTARI University Partnerships Initiative:

The USAID LESTARI University Consortium was led by Michigan State University (MSU) and worked in partnership with two local universities in Central Kalimantan – University of Palangka Raya (UPR) and Muhammadiyah University of Palangkaraya (UMP). The aim was to assist partner universities to build institutional and technical capacity, develop formal education curricula, create distance-learning toolkits, and implement a university-based service learning program with an emphasis on actionable forest carbon science and forest management.

The core of the initiative centered on co-developing an online Learning Management System (LMS) course on Peatland Forest Ecosystems and Climate Change Science. In order to generate real-world material for the course, the University Consortium also led: (1) a study projecting potential carbon sequestration in the Block C area of the ex-Mega Rice Project following canal blocking; (2) activities in developing community livelihood activities in the areas of canal blocking in Block C; and (3) developing and deploying community-based tools allowing social forestry communities to measure and monitor forest ecosystem services. These three activities produced data and information used in the LMS e-learning course as well as important stand-alone results. MSU was able extended the e-learning focus beyond course development and conducted training with university faculty and staff in using Moodle e-learning course development software.

In April 2019, MSU and partner universities held a symposium (pictured below) to launch the course developed over the previous three years. This event was attended by representatives from the UPR, UMP, Aceh Environment and Forestry Agency, UNSYIAH, and BKSDA. The course consists of 5 modules: (1) Ecology of Peatland Forest, (2) Biodiversity of Peatland Forest, (3) Peatland Forest and Forest Carbon, (4) Peatland Forest and Social Forestry, and (5) Peatland Forest and Indonesia's Contribution to Climate Change Mitigation and Adaptation. A certificate will be given to the user upon the completion of all the modules. This e-learning platform is targeted for final year undergraduates, graduates, postgraduates, lecturers, NGOs, and government officials working in environment and natural resource management.

The course can be accessed via https://lms.umpalangkaraya.ac.id/ or https://lms.upr.ac.id/. No fees are charged for access. MSU will provide login credentials to users who wish to take the course.

To further encourage the adoption of e-learning, members of the University Consortium conducted outreach through presentations and live demonstrations to various university and GOI agencies. UNSYIAH, FOReTIKA (Forum of Forestry Deans in Higher Education), and BRG (Peatland Restoration Agency) expressed interest in partnering for trainings in the use of Moodle e-learning software and designing their own e-courses. These engagements between consortium members and partners are expected to continue following LESTARI closeout.

LESTARI 2 – Operationalize SEAs & LCPs to Improve Land Use Governance

Strategic Environmental Assessments (SEA) are impact assessments applied to policies, plans and programs. They encompass systematic decision support processes that aim to ensure environmental sustainability in development policy, plan and program making[3] and so elevate environmental issues into higher levels of decision-making and especially land use governance. As 'governance improvement' mechanisms, SEA are meant to be structured, rigorous, and participative. Given the broad and complex nature of policies, plans, and programs that can affect the environment, and their multi-variate potential environmental outcomes that they enable, SEAs set out to provide focus and understanding to complex questions, problems, and alternatives that must be considered with big-picture environmental issues to enable better decision-making. SEAs are also data driven to create evidence-based recommendations for development using locally contextualized assessment methodologies and techniques. Importantly, SEA is a process rather than a discrete intervention that can be revisited repeatedly during policy development, implementation and evaluation. The SEA process can facilitate stakeholders to test assumptions, data and recommendations made, and enable adaptive management that allows revision, restructuring, or redesign of policies where necessary to mitigate further environmental damage or risk.

In Indonesia, SEAs are required by law for policies, plans, and programs that affect the environment.[4] Therefore, they can serve as effective mechanisms to improve land use governance by incorporating recommendations into government development planning processes that affect forest and land use – most notably Provincial and District Spatial Plans (RTRW), Provincial Development Plans (RPJM) and Agency Strategic Plans (Renstra).

Moreover, improved land use governance will not occur if the public does not demand healthy ecosystems and environmental service they provide. This demand is triggered by improved local level awareness, appreciation and advocacy to promote conservation and a vision for sustainable development. Thus, LESTARI, and during IFACS prior to it, supported multi-stakeholders to draft these visions in the form of landscape conservation plans (LCPs) that focused attention on aspects of spatial plans that required revision to safeguard critical forests and biodiversity. LCP provided important initial input for SEA processes where there was the opportunity for revision of spatial plans. As policies will not be effective without budgets to support implementation, LESTARI assisted multi-stakeholders to mobilize funds for government partners to carry out SEAs and land use policy recommendations in a more self-reliant manner. The progress of outputs and outcomes for this strategic approach was measured through four interrelated indicators:

- Indicator #6: Number of sub-national government incorporating high quality SEA-LEDS & LCPs into draft spatial plans, zonation regulation or draft mid-term development plan
- Indicator #12: Number of people receiving USG supported training in natural resources management and/or biodiversity conservation
- Indicator #4: Number of public policies introduced, adopted, repealed, changed or implemented consistent with citizen input
- Indicator #13: Amount of investment mobilized for climate change and biodiversity conservation as supported by USG assistance

[3]. The Theory and Practice of Strategic Environmental Assessment: Towards a more systematic approach. Fischer, T. (2007)
[4]. 2009 Environmental Management and Protection Law (Perlindungan dan Pengelolaan Lingkungan Hidup, No. 32 / 2009)

Importantly, SEA recommendations that impact forestry sector development that is prioritized in local development and spatial plans (e.g., certain area set-aside for conservation or reduced risk of deforestation) also provided significant contributions for Indicator #2: Number of hectares of forest and/or natural resources under improved natural resource management as a result of USG assistance.

As of the second quarter of the final year, all of these indicators reached or exceeded 100% of their respective targets. As with other strategic approaches, operationalizing SEAs and LCPs to improve land use governance was supported through two other strategic approaches, namely Awareness and Advocacy (especially of LCPs produced by multi-stakeholders) and Sustainable Landscape Governance that supported MSF, spatial data transparency and improved licensing mechanisms. The table below lists all provinces and districts where LESTARI supported the development and implementation of SEAs.

DISTRICT AND PROVINCIAL LEVEL SEA SUPPORTED BY LESTARI		
Province/District	**SEA for RPJM**	**SEA for RTRW**
Central Kalimantan Province	✓	
Aceh Province	✓	
Papua Province	✓	
Mimika District	✓	✓
South Aceh District	✓	
South East Aceh District	✓	
Gayo Lues District	✓	
Palangka Raya District	✓	
Mappi District		✓
Bouven Digoel District		✓

LESTARI implemented SEAs for both spatial plans (RTRW) and development plans (RPJM). Implementation was highly dependent on the opportunities and momentum that existed in each province or district for plan revision, especially the stage of election cycles in regard to development plans. Spatial plans can impact land use (enable extractive activities or protect specific areas) over a 20-year period, while development plans cover shorter term programs and budgets over five years of the term of a Governor or a District Head. Taking recommendations from the previous IFACS project which focused solely on SEA-RTRW, LESTARI prioritized SEA support on developing SEA recommendations for sub-national government development plans.

The development of RPJMs (and the SEA that must accompany it usually starts before the election of Governors or District Head and must be completed six months after their inauguration. With an understanding of the opportunities and potential, the LESTARI team first advocated for SEA implementation to accompany the RPJM for Central Kalimantan Province, followed by Papua and Aceh Province RPJMs. Where the opportunity arose, LESTARI assisted the development of SEA RPJMD in districts dependent on the election cycle and interest from local decision-makers. SEA RPJMD were facilitated in South Aceh, Southeast Aceh, Gayo Lues, Mimika and Palangkaraya Districts and were focused on recommendations that could be implemented by District Environmental Agencies and Public Works and Spatial Planning

Agencies, as responsibilities for forestry now lie at the provincial level with implementation in the field through FMUs and Forest Branch Offices (CDK) in Papua.

Incorporation of SEA recommendations into development plans allows for programming and budgeting by sub-national governments and thus a greater opportunity to achieve the objectives for which SEA recommendations are designed and developed. The provincial RPJM document once drafted, is used as a framework for government agencies to develop their own five-year Strategic Plans (*Renstra*) and, focusing on Provincial Forestry Agencies in Aceh, Central Kalimantan and Papua, programs and budgets derived from SEA recommendations were embedded into Forestry Agency *Renstras*. This meant that activities originating from SEA recommendations incorporated into the RPJM would be implemented on the ground. Throughout the process, the LESTARI team ensured consistency with the SEA recommendations through the RPJM document and down into *Renstra* programs and budgets. This shift in focus to RPJM and *Renstra* was driven by the need to 'follow the money' to achieve tangible improvements in forest management as supported by the findings of a Political Economy Analysis conducted during the mid-term period of LESTARI. Coupled with budget advocacy, at both national and sub-national levels, providing support for SEA RPJM was a very effective strategy that delivered priority forest management programs, activities and budgets for regional implementation thus 'operationalizing SEA recommendations' (see Figure 3).

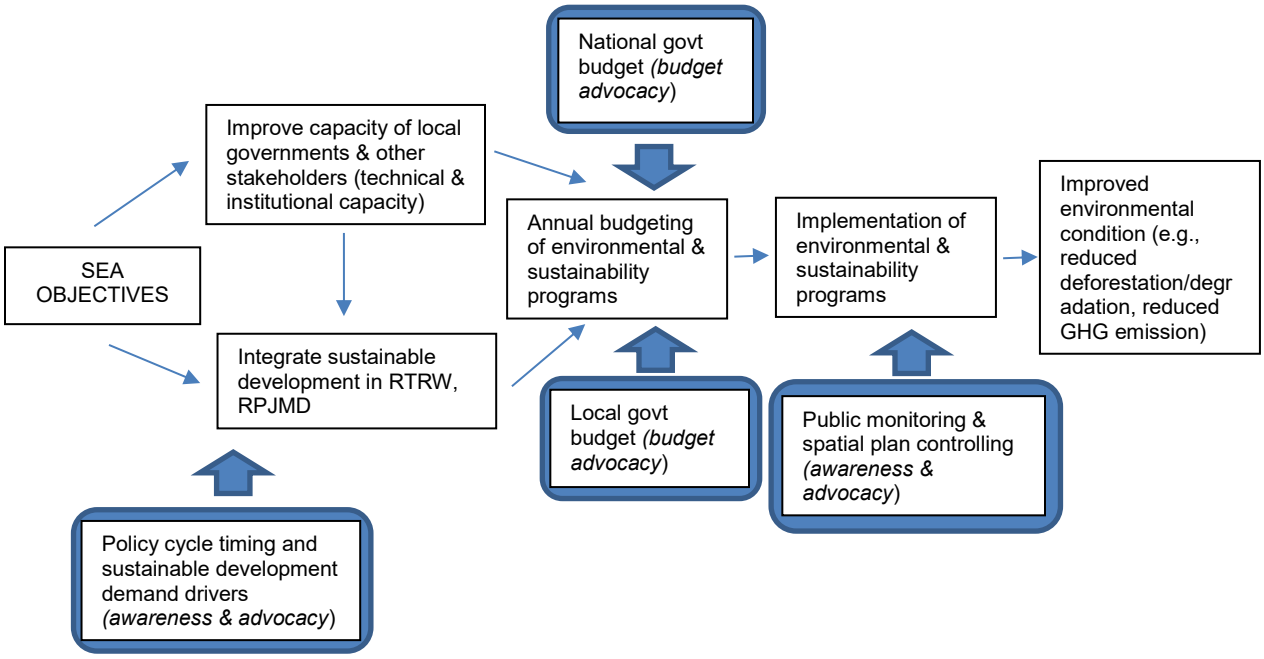


Figure 3. Flow of SEA implementation from planning, budgeting, outcomes, and monitoring

The following is a sample of the major SEA for Provincial RPJM that were incorporated into the RPJM documents and *Renstra* of both provincial and district levels.

SUMMARY OF SEA INTEGRATION SUPPORTED BY LESTARI			
Landscape	**SEA Implemented**	**Summary of SEA Recommendation**	**Integration of Recommendations**
Leuser	RPJM Aceh	Increase support for Social Forestry	Aceh Forestry Agency Renstra 2017-2022
Leuser	RPJM Aceh	Strengthening for FMU institutions	Aceh Forestry Agency Renstra 2017-2022
Leuser	RPJM Aceh	All development of new roads and bridges to minimize cutting through protected areas	Gayo Lues District Public Works and Spatial Planning Agency Renstra 2017-2022; Gayo Lues District Housing Agency Renstra 2017-2022
Leuser	RPJM Aceh	Improvement of Green Economic development to reduce pressure on protected forests and National Park	Gayo Lues District Environmental Agency Renstra 2017-2022
Leuser	RPJM Aceh	Improved conservation efforts in protected forest to protect water resources	Gayo Lues District Environmental Agency Renstra 2017-2022
Leuser	RPJM Aceh	Ecotourism and environmental services development in conservation areas and accelerate implementation of agroforestry in FMUs to strengthen economic and ecological functions	Gayo Lues District Environmental Agency Renstra 2017-2022
Leuser	RPJM Aceh	Increase involvement and participation of communities in protecting and conserving natural resources	Gayo Lues District Environmental Agency Renstra 2017-2022
Katingan-Kahayan	RPJMD Central Kalimantan	Inventory and mapping of community managed land in Central Kalimantan	Central Kalimantan Public Works Agency Renstra 2017-2021
Katingan-Kahayan	RPJMD Central Kalimantan	Pilot project for land clearing without use of fire	Central Kalimantan Agriculture Agency Renstra 2016-2021
Katingan-Kahayan	RPJMD Central Kalimantan	Facilitation of Village forest management structures / organizations	Central Kalimantan Forestry Agency Renstra 2016-2021
Papua	RPJMD Papua	Land Use and allocation of protection, conservation and production area that fulfils regulations and accommodates traditional adat communities and livelihoods	Papua Province RPJMD 2019-2023
Papua	RPJMD Papua	Forest and land restoration considering ecosystem and local traditional communities needs	Papua Province RPJMD 2019-2023
Papua	RPJMD Papua	Guarantee a reduce rate of deforestation caused by development every year	Papua Province RPJMD 2019-2023

Due to these recommendations being incorporated into *Renstra* and with provincial government budget advocacy (under SA1), LESTARI documented USD 18.8 million in domestic resources mobilized for sustainable forest management from the GOI national and regional-level budgets. As stated above, timing was key to success that allowed budget advocacy within an environment of political receptivity for improvement. In Aceh and Papua, there was momentum to redraft the five-year strategic plan (*Renstra*) and budgets for the provincial forestry agencies. In Central Kalimantan, LESTARI assisted the development of *Renstra* for the Forestry Agency and influenced the development of an annual budget plan through optimization of the Reforestation Fund in line with SEA recommendations.

Please see the Lessons Learned Technical Briefs on Domestic Resource Mobilization and SEA for Improved Land Use Governance in Appendix 5.5 for further details.

GOI BUDGET MOBILIZED BASED ON SEA RECOMMENDATIONS			
Landscape	**Agency**	**Recommendation**	**Budget (USD)**
Leuser	Provincial Environment and Forestry Agency	2019 and 2020 Annual budget for social forestry and FMU strengthening	2,849,357
Katingan-Kahayan	Provincial Forestry Agency	2019 budget from reforestation fund (DBH DR) for FMU and Social forestry	4,446,283
Katingan-Kahayan	Provincial Forestry Agency	2020 Budget from reforestation fund (DBH DR) for FMU and Social forestry	8,419,826
Papua	Provincial Forestry Agency	Papua Province Forestry Service Program DPA TA 2019 for 5 forestry activities	3,073,954
TOTAL			**18,789,420**

While IFACS built the capacity of subnational partners to conduct SEAs, the SEA documents were generally only used to meet administrative requirements for spatial plans to be approved. However, since the advent of Governmental Regulation No. 46 / 2016 concerning the Management Procedures for conducting SEA and the subsequent Ministerial Regulation No.69 of 2017 concerning the Implementation of Government Regulation Number 46 of 2016, the need for adherence to SEA recommendations has been greatly strengthened. Now, recommendations drafted by the multi-stakeholder SEA teams for development or spatial plans must be accommodated. The new regulations also focus on quality assurance, and validation of SEA recommendations are passed into draft policies, plans and programs. The increased awareness of these regulations and elevated importance of SEAs enabled valuable collaboration between LESTARI and district and provincial governments. LESTARI only facilitated SEA where governments were ready for self-management (*swakelola*) where government agencies owned and led the process from beginning to end. Through this process, 313 people were trained in SEA development and writing, providing valuable contributions for improved environmental management and sustainable development.

With these regulations in place LESTARI was also confident that SEA for RTRW would have an impact on improving land use governance. As the role of spatial plans is pivotal in defining protection areas and production areas (that ultimately impact where economic activities can be carried out) the revision of spatial plans takes time and must follow a systematic process.

Before spatial plan revision can start, the need for a revision must be demonstrated through an evaluation of current development issues, existing development that has taken place and the relevance of existing spatial plans. The role of LCPs was critical during this process and used for Mimika, Mappi and Bouven Digoel SEA RTRW revisions. LESTARI facilitated development of LCPs based on critical ecosystems and high conservation values that were at risk of being designated production zones in the RTRW. High conservation values applied reflected important sustainable development issues and included culturally sensitive areas, areas that provide essential ecosystem services (such as mangroves and water catchments), areas used for community needs as well as unique and rare ecosystems requiring protection. The LCPs for Mappi and Bouven Digoel Districts recommended over 1,000,000 hectares for increased protection under the spatial plan.

The potential for delivering impact on the ground through a LCP-SEA approach for revising RTRW is potentially very significant and long lasting. Throughout the five-year project period, recommendations influenced draft spatial plans in Bouven Digoel and Mimika Districts. Key recommendation in common between Mimika, Mappi and Bouven Digoel Districts included the need to safeguard cultural values of local communities, providing equitable opportunities for community economic needs and development such as agroforestry, sustainable and appropriate infrastructure development and services, and importantly, a review of patterns of land conversion and land management that affect high conservation value and high carbon stock forests. This has resulted in large areas of planned land use / functional change.

In Bouven Digoel, improvements to the revised draft spatial plan (2018-2038), compared to the existing plan (2011-2031), included:

- the total land area under protection increased by 699,059 ha, from an area of 506,789 ha to 1,205,848 ha (138% increase)
- a 56% reduction in areas planned as production forests (production forests and limited production forests)
- a 18% reduction in areas available for conversion for palm oil plantation leading to total forest loss, in the favor of community-based horticulture and agroforestry.

Interestingly, areas for the conservation of spiritual and cultural values did not exist at all in 2011. The SEA recommended that a total of 814,393 hectares should be reserved for this purpose. Although to date the draft spatial plan process is still under way and decrees for the revisions have not yet been issued, the SEA process is guaranteed under the new SEA regulations. In addition, the process has increased awareness and more local debate about environmental issues that has led to the issuance of a decree from the District Head of Bouven Digoel in 2018 that revoked location permits for three palm oil companies. In Mimika, more modest gains were made as a large proportion of the district was already designated as protection area (including over 810,000 hectares of Lorentz NP and over 355,000 hectares of Protection forest (*Hutan Lindung*). However, gains for environmental protection and avoiding future deforestation were made by increasing the protection areas by 42,398 hectares (including mangrove and swamp forest areas) compared to existing spatial plan, and a reduction by 152,527 hectares of Conversion Production Forest that could be used for plantation estates. See Figure 4 below for a visual representation of areas impacted by SEA recommendations in Mimika, Mappi, and Bouven Digoel Districts.

Key Challenges, Lessons Learned, and Recommendations

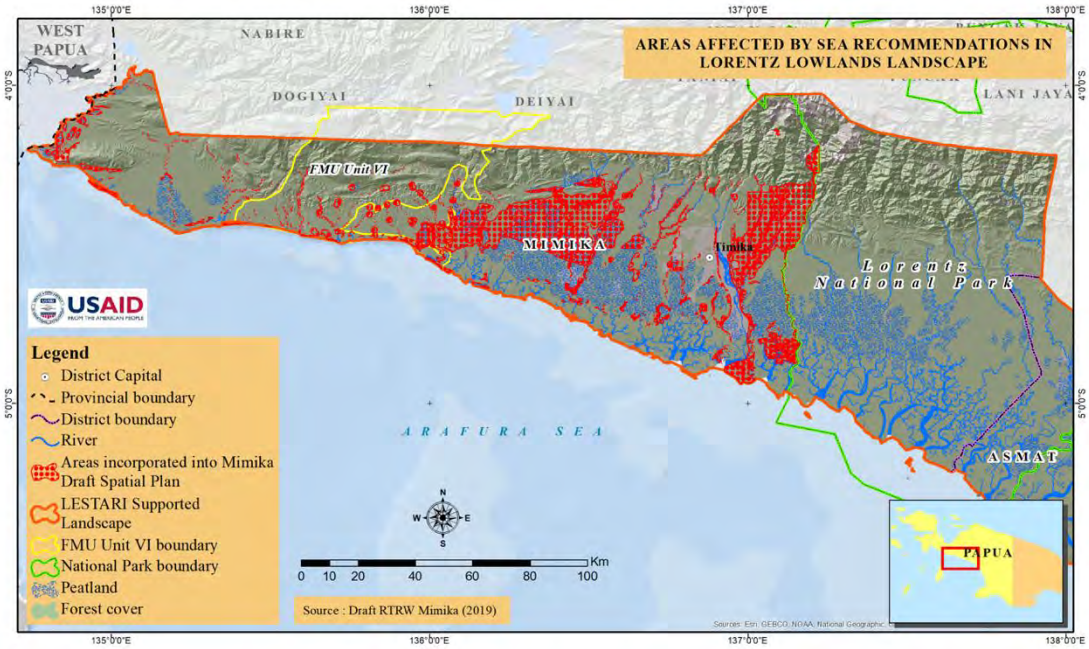
- SEA has been shown to improve governance decision-making and enable strategic thinking for complex environmental and development problems by providing focus and understanding within the big-picture sustainable development context.

- SEA is still relatively new for many sub-national governments and many planning agencies (BAPPEDA) will out-source SEA to consultants. To achieve greater leadership of the SEA process by sub-national government resulting in greater self-reliance, assistance from development partners and donors will be probably be needed but should be coupled with mechanisms that encourage improving sub-national government competency and internal capacity, such as a score-card or tracking tool.

- Integrating SEA recommendations in planning documents does not result in sustainable development scenarios if they are not funded. Therefore, LESTARI prioritized assistance for SEA for RPJMD as this provided greater opportunities to ensure SEA recommendations are programmed and budgeted as compared to SEA for RTRW.

- Timing is key as opportunities to impact RPJMD through SEAs are dependent on election cycles of Governors and District Heads. For SEA for RTRW, at least three years are needed to see impacts on the ground as the spatial plan approval process is lengthy.

- The key to the successful implementation of the alternative scenario formulation is group discussions, involvement of relevant stakeholders, and experts/resource persons that are appropriate to the content. As well as increasing the public's awareness about the important role of SEAs in policy, plan and program development, public consultation allows for citizen-based inputs for sustainable development.



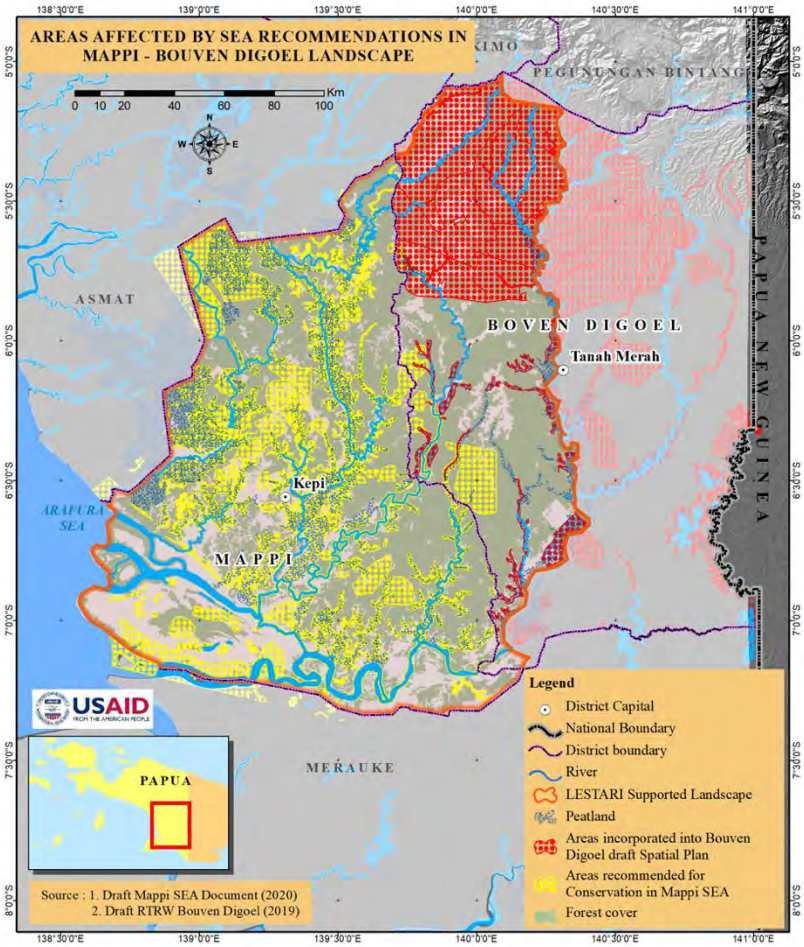


Figure 4. Depiction of areas impacted by SEA-RTRW in Mimika (above), Mappi, and Bouven Digoel Districts (below)

LESTARI 3 – Sustainable Landscape Governance

Poor land governance is a key driver behind unsustainable land use in Indonesia. This results in land and forest degradation as well as deforestation. Key factors include misallocation of resource management rights; uncertainty of land access; lack of Free, Prior and Informed Consent (FPIC) in land acquisition; widespread land conflict; land use permit processes which are not transparent; and failure to enforce environmental safeguards to stop unsustainable illegal practices.

The Sustainable Landscape Governance strategic approach contributed to strengthening civil society participation in the formulation of land use related policy and improving land use licensing systems involving civil society participation in permit monitoring. These initiatives proceeded differently in each province, adapting to local governance priorities and political will.

To track the progress of this strategic approach, LESTARI assigned two interrelated indicators, #5 – Number of sub-national governments with improved licensing and permitting mechanisms and #7 – Number of Multi Stakeholder Initiatives (MSIs) or civil society advocacy initiatives which formulate and deliver policy-relevant inputs on sustainable forest and land management to decision makers. At the level of policy formulation, as marked by Indicator #7, this approach proved promising to improve forest governance in LESTARI supported landscapes, most notably from the aspect of participation. The achievement (190%) was nearly double the target. When it comes to the higher-level outcome, in which improving licensing mechanisms was the main focus, the achievement (25%) was far below the target.

The result above was not surprising as land use permitting systems in Indonesia are surrounded by political and procedural complexities that lead to multiple rent-seeking opportunities. Reforms to land use governance tend to face resistance from economic and political elites currently benefiting from weak land use licensing, and whose interests are thereby threatened by improved governance. Implementing these reforms can be an arduous process, with political will, government staff expertise, and properly structured incentives needed to drive implementation, meaning that it may not occur within a short or predictable timeframe. The absence of these crucial factors is the primary reason that the target could not be achieved within the project period.

MSIs

Good governance is characterized by the respect for legal certainty, transparency and free flow of information, significant public participation (expression of voice and choice), equality, accountability, effective and coordinated management of public resources. Numerous governance challenges exist in all LESTARI supported landscapes. One of those was addressed by LESTARI through Multi-Stakeholder Initiative (MSI) approach. Over the course of the project, LESTARI initiated, facilitated and/or strengthened 38 MSIs across the landscapes – 19 in Aceh, nine in Central

> A multi-stakeholder initiative (MSI) is a series of interactions through which a set of relevant stakeholders (for example local government officials, civil society organizations, citizens, private sector representatives) debate, discuss, and analyze an issue related to land and forest management or biodiversity conservation. Subsequently, they collaborate to formulate recommendations relevant to policy design, revision, implementation or enforcement. Recommendations must be delivered to relevant decision-making policy makers (USAID LESTARI AMEP, 2017).

Kalimantan, and ten in Papua. These MSI processes led to improved policies related to biodiversity conservation, forest management, watershed protection, fire mitigation, land use rationalization, among others.

When designing MSI, LESTARI did not take a single approach. Some MSIs occurred in the form of Multi-Stakeholder Fora, with a stable institutional structure and regular discussion (e.g., Forum Hapakat Lestari in Pulang Pisau, Pokja Perubahan Iklim in Mimika, MSF in Asmat District), or they were more temporary processes created around a particular issue and relevant set of stakeholders (e.g., MSI in Boven Digoel for land rationalization in concession area of PT Tunas Sawa Erna, formulation of Singkil Wildlife Reserve management plan). The key was that the MSI led to substantive interaction between stakeholders, clear recommendations which can be implemented, and the delivery of these recommendations to the relevant policy makers. In some contexts, it was not feasible to create a full MSI, and thus civil society advocacy was selected as the appropriate route for amplifying citizen voices on a certain issue. This occurred for the cases of destructive activities threatening protected areas (see SA1). Where there was strong government engagement on the issue, an MSI was established to make further progress towards solutions which consider the needs and interests of multiple stakeholder groups. MSIs thus served as a bridge between citizens and local government and fostered trust-based relationships built upon mutual respect.

Since LESTARI began supporting MSI, two key responses were recorded from partners. Discussions became more open and hierarchies were broken down. Positions became less important; it was the content and quality of the debate that mattered. Both responses demonstrated the emergence of trust. MSIs processes facilitated by LESTARI created valuable coalitions. They brought together stakeholders that should, but generally do not, coordinate with each other. As a result of the MSI, based on interviews conducted during the Final Assessment, people believe public participation has improved and as a consequence so has governance. LESTARI had been instrumental in either establishing fora or rejuvenating existing fora, providing both capacity building opportunities and some funding to support activities such as trainings and workshops.

The local government agencies appreciated the participatory processes in the fora and as a result, relations between intergovernmental institutions have improved. In brief, the social trust and awareness of the people toward environment conservation had been enhanced. The MSI has instigated a new informal norm that can facilitate cooperation amongst members that come from varying sectors and backgrounds. Two specific examples of good governance advanced through MSIs facilitated by LESTARI are summarized in the following boxes.

Some lessons learned from LESTARI's experience supporting MSI approach include:

- During IFACS, the MSF (a forum not an Initiative) was highly dependent on personalities rather than on systems or organizations. Learning from this experience, LESTARI invested in identifying and empowering as many Champions as possible so the spirit of environmental conservation and sustainable natural resource management can be diffused widely. LESTARI documented the successes of these individuals in the book 'Champions of the Forest[5].'

- Identification of issues and stakeholders – stakeholders are defined as individuals or groups with interests in certain decisions, able to influence decisions, or directly or indirectly influenced by a policy. Identifying all stakeholders was an important step before commencing with the multi-stakeholder process itself.

[5] Accessible at https://pdf.usaid.gov/pdf_docs/PA00WKRR.pdf

- Stakeholder preparation – capacity building should take place to prepare the stakeholders for dialogue. This covered capacity to understand the issues and to communicate then and ideas for resolution. It must be acknowledged that SA3 is not inseparable with SA1 Awareness and Advocacy. For example, when LESTARI facilitated the process of FPIC in peatland restoration (Block C, Central Kalimantan), stakeholders were equipped with a series of trainings and discussions about peatland hydrology, FPIC methodology, and communication skills aimed at building shared understanding and agreement on alternative solutions to present during conflict resolution dialogues.

- Power imbalance – even though MSIs were designed with participatory principles in mind, some meetings were still controlled by those in positions of authority. Therefore, multi-stakeholder meetings should develop a two-phase process: one phase where all stakeholders are trained in interpersonal communication and negotiation skills through constructive education, training and comparative studies; and a second phase where stakeholders can use their individual strengths in influencing other stakeholders to support their interests. In the end, multi-stakeholder initiatives are exercises for all that lead to a more democratic, transparent, and accountable social order.

Strengthening Women's Roles In Conservation Through Multi Stakeholder Fora

Women in Indonesia often play a marginal role in managing natural resources. There are several mediating factors that can explain the phenomenon including cultural restrictions, double burden, and poverty. Bouven Digoel Regency in Papua Province is no exception. The culturally and biologically rich regency suffers from the lack of women's participation in the public sphere. Fortunately, there is reason to believe that the problem will be gradually solved. In Tanah Merah – the regency capital – a simple effort to increase women's participation in the management of natural resources while improving their economic independence has been initiated.

Magdalena Kombutinggan is one of the passionate initiators. Supported by three other women, she founded Papuan Women Service Center (LP4I) in 2015. Through the organization, she assists Papuan women in developing new, simple, and creative sources of income. In Tanah Merah, women have always been involved in managing natural resources and protecting the environment. Some women, for example, sustainably manage household waste and cultivate gardens in their yards. However, the majority of women still find it hard to access natural resources. One of their obstacles is limited vacancy. Economic empowerment is therefore required.

Economic development and sustainable natural resource management do not have to be in opposition to each other. This has been proven by Mama Magdalena and LP4I. However, more women are still needed to participate in all facets of public life and all levels of policymaking. In an attempt to realize this, LESTARI held a workshop about gender sensitization in Multi-Stakeholder Forum (MSF) in March 2017**.** The workshop aimed to raise key stakeholders' awareness of the importance of mainstreaming gender and allowing broader and more meaningful participation of women in natural resource management planning and policy development. Throughout the workshop, participants were guided to identify and understand the impact of natural resource management policies on women. With gender-sensitive approaches, key stakeholders are expected to be able to incorporate gender integration action plans into the MSF. In the long run, participants can hopefully play a more active role in advocating gender-sensitive natural resource management policies. Mama Magdalena felt that the workshop gave her a fresh perspective on women's issues. She believes that women, economic development, community, and conservation are interdependent. "Grassroot initiatives should also be followed by related advocacy efforts on the public policy level. For example, women should be encouraged to participate more in the MSF to express their aspirations and push policymakers to implement gender-sensitive environmental policies," she said.

Community Engagement in Peatland Restoration: Free, Prior, and Informed Consent

The Challenge. Recurring forest and land fires in Indonesia result in devastating impacts to the health and economy of local communities, as well as biodiversity loss and skyrocketing greenhouse gas emissions. According to the World Bank, in 2015, this human-induced disaster cost Indonesia USD 16 billion in total damages. In Central Kalimantan Province, the threat is made worse by large drainage canals that remove moisture from the peat, leaving the soil highly prone to fire. Following the 2015 fires, various government agencies, including the Ministry of Public Works, Peatland Restoration Agency (BRG) and local government, were spurred into action to restrict water flow out of the peatlands in Pulang Pisau District, Central Kalimantan. The initiative aimed to keep water levels high and peatlands moist during the dry season, provide adequate drainage to mitigate flooding in the rainy season, and enable limited access for local communities in support of sustainable livelihoods.

FPIC. In support of this initiative, LESTARI facilitated a model stakeholder engagement activity involving the facilitation of FPIC in villages covering around 30,000 ha of degraded peatland. This peatland is part of an area that covers less than 5% of the province yet accounted for 30% of all fire impacts in 2015. FPIC facilitation ensured that communities are well informed about canal blocking; have an opportunity to provide inputs; and give their willing consent to construct, maintain, and protect the dams. Notably, local communities were able to influence the design of dams so that their small boats can pass through spillways in order to maintain their livelihoods. LESTARI provided technical and financial support for the FPIC process mediated by the district-level multi stakeholder forum named Forum Hapakat Lestari. It adhered to both USAID and BRG social safeguard guidelines for FPIC.

Landmark Achievement. The FPIC process was widely embraced by local communities and government agencies and culminated in formal recognition (*Berita Acara*) that provides legal legitimacy. BRG acknowledged that this is a first for Indonesia in peatland restoration through canal blocking based upon FPIC. Moving forward, BRG has made it clear that any party that conducts canal blocking nationwide must be subject to commitments for FPIC.

Improved Land Use Licensing and Permitting
The success of Indicator 7 related to MSI and public participation did not guarantee a linear relationship with Indicator 5, which concerned transparency in land use licensing and permitting. Processes for obtaining new land use permits and information on existing land use permits generally have not been managed well in Indonesia. It is well-known that transactions tend to occur behind closed doors. Political leaders can issue permits to small companies set up by their associates and then sell the companies; companies operate without having the full set of permits; permit information is not maintained by local governments or made available to the public; and oversight by government and civil society based on this information is thus hampered.

LESTARI's AMEP was developed early on in the project, based on the Scope of Work, written at the time when much authority for permits was still devolved to the district level. As a result, the AMEP included Indicator 5 on a number of sub-national governments with improved licensing and permitting mechanisms, with a target of eight sub national governments, and an ambitious definition of what 'improved' would entail. However, the context for permit systems has changed in Indonesia, in two key ways. First, Law 23 of 2014 came into effect and re-centralized authority over a number of natural resources related licensing from the district level to the provincial level. Second, reforms aimed at improving licensing governance driven by the national government are being implemented primarily at provincial level.

Following adaptive management, LESTARI's work on improving licensing systems and practices was refocused at the provincial level, primarily in Papua and Aceh. The objective of this work was to improve licensing systems as they impact upon LESTARI districts, but this was done by focusing on provincial licensing systems rather than district licensing systems. The target of eight sub national governments was established with district governments in mind. If licensing systems in Papua and Aceh are improved at province level, this would impact upon the four LESTARI districts in Aceh and the six in Papua, meaning that a total of 12 sub national governments would be affected (ten districts and two provinces). While LESTARI remained focused on achieving the greatest impact on improved licensing systems, in accordance with changing circumstances and opportunities, the project ran out of time to witness the full operationalization of two systems built in Aceh and Papua.

In Papua, LESTARI assisted the Provincial Investment Agency (DPMPTSP Papua) through the development of the Sustainability Screening Tool (SST), which aimed to prevent land use permits from being issued in protected areas or overlapping other permits. The SST is a web-based GIS application which allows the user to check suitability of a proposed permit site against existing data stored in the SIMTARU spatial planning database. The proposed site is screened against the provincial spatial plan, and Ministry of Environment and Forestry's land use designations, and the existing set of licenses stored in SIMTARU, and a report is issued which shows any overlaps. The user can utilize this information to help prevent the issuing of new licenses which would overlap with other licenses or be located in areas not allowed by the spatial plan. The SST accesses the SIMTARU database through a secure electronic connection. LESTARI therefore supported both SST and SIMTARU, as they are linked. USAID has long been supporting spatial planning and SIMTARU in Papua, starting with the ESP project in 2004.

DPMPTSP Papua, which officially owns and houses SST, publicly launched SST in March 2019 at the provincial level. Technical development work was completed and integrated within the online permitting system in Papua (PPO) and linked to SIMTARU. Workshops and trainings were held with the Regional Development Planning Agency(BAPPEDA), DPMPTSP, and the Communications and Information Agency (Diskominfo) to increase capacity of using SST, and SOPs were ratified to guide the use of SST. However, obstacles still exist including licensing staff circumventing online submissions, security issues of the

SIMTARU database, and lack of official endorsement through a Governor's decree. Ideally SST would be available and utilized by government (and non-government) stakeholders at the district level, but application is hampered by technical obstacles such as lack of internet connectivity needed to access the SIMTARU spatial planning database and differences in licensing processes between the province and districts. Due to slow uptake at the district level, district level application was not pursued.

Despite the challenges, there are Champions within DPMPTSP (Pak John Way) and BAPPEDA (Ibu Vera) that understand the importance of a fully functioning SST and continue to advocate for its link to SIMTARU. Moving forward, this will require support from a Governor's Decree. The LESTARI team coordinated with the UKCCU-funded project on Papua Spatial Planning, which will continue to support SIMTARU following LESTARI.

Following SST launch, LESTARI shifted emphasis to work with district government stakeholders to develop a Free, Prior, and Informed Consent (FPIC) evaluation toolkit and a policy for its adoption that mandates transparent dialogue and community consent prior to the issuing of business licenses. The application of FPIC meets core principles of good governance as specified in the AMEP for Indicator #5. To date, a draft regulation, academic paper and technical guide for demonstrated and documented involvement of traditional communities in licensing and environmental permits have been created. COVID-19 delayed full finalizing this important regulation within the Provincial Environment Agency. The former head of the agency, the key figure championing the FPIC regulation, was moved to an expert advisory role. However she has expressed commitment to continue advocating for its endorsement once government operations continue as normal.

In Aceh, developing an SST was not possible due to the lack of a permit database, and transitions to the national One Stop Service (OSS) online permit system (with SICANTIK cloud database) which are underway but uncoordinated and unclear. LESTARI shifted focus to a number of initiatives which were expected to contribute to improved permit governance. These included assisting FMU V to develop an improved forest monitoring system (under SA4); supporting the Environmental Journalists Network to build a network of Citizen Journalists who are capable of reporting threats to forests from the field (under SA1); finalization of the new SIAT (Integrated Aceh Information System) regulation on government data use and transparency; supporting the DLHK to develop a database to organize agency data (including forestry permits and social forestry areas) so that better permit decisions can be made; and accelerating implementation of the online OSS system for vetting and approving permit applications.

The objectives of this initiative in Aceh included:

- DLHK Aceh has a database system that allows them to provide sound technical recommendations for licensing and permitting within forest areas. The database system (SIKAWAN, described below) should be transparent, accessible for public monitoring, and integrated to reduce the multiple versions of forest data.
- SOP is available for data management.
- Deforestation indicator is used by the provincial government as a performance indicator and monitored together with civil society on a regular basis.

LESTARI facilitated DLHK Aceh to develop the provincial forestry database system. The system, known as SIKAWAN (*Sistem Kawasan Hutan Aceh*), represents the first effort within DLHK to ensure transparent forestry and land use licensing for sustainable forest management. The system was aimed at helping DLHK to conduct screening and analysis to provide recommendations for four important permits – Forest Partnership Permit (*Izin Pola Kerjasama*), Forest Release Permit (*Izin Pelepasan Kawasan Hutan*), Timber Forest Product Utilization Permit for Industrial Plantation Forest (*Izin Pemanfaatan Hasil Hutan Kayu untuk*

HTI), and Environmental Permit (AMDAL). Most importantly, the system will allow DLHK to monitor FMU performance in reducing deforestation and degradation within Aceh Province. It is a crucial step for improving environmental governance in Aceh Province, enabling this agency to better manage and protect the globally-valued Leuser forest ecosystem.

SIKAWAN can be accessed through http://sikawan.inweb.id/. The official launching of SIKAWAN was originally planned to coincide with the LESTARI Closeout Event on April 8-9, 2020. However, the event was canceled due to the COVID-19 pandemic. Nevertheless, DLHK launched the system at a technical coordination meeting, and LESTARI equipped them with a set of technical guidance manuals which will enable them to operationalize the system without further assistance. The technical guidance includes: SIKAWAN Roadmap, User Manual, Technical Document and Data Dictionary, as well as Standard Operational Procedure (SOP). Although the full functioning of SIKAWAN will still require time and resources, the existence of the roadmap will guide DLHK for the enhancement of the system.

Figure 5. Technical manuals supported (first) and developed (second) by LESTARI to guide DLHK in assessing FMU performance and conducting spatial analysis on land cover.

In regards to the adoption of the deforestation indicator, LESTARI worked with DLHK Aceh to finalize an FMU performance appraisal instrument that aims to provide a reference for DLHK in assessing the performance of the FMU objectively, measurably, and rationally. The five FMU performance assessment indicators include: deforestation rate, area of forest and land rehabilitation, quality of budget management, management area, and contribution to regional revenue. Regularly assessing these important, fundamental indicators will create the right incentives for DLHK Aceh to reduce deforestation and improve forest management. The adoption of this high-level outcome indicator into day-to-day forest management practices will encourage forest managers to think in a more innovative manner beyond their *business as usual* practices in halting deforestation. LESTARI also assisted DLHK to develop a technical guidance document for assessing FMU performance and applying performance-based budgeting. Likewise, LESTARI provided a manual to carry out spatial analysis to determine deforestation rate and forest and land rehabilitation.

In Central Kalimantan, the political and bureaucratic support for improving permit systems and permit monitoring was not strong. In the absence of such opportunities, LESTARI practiced adaptive management and devised other approaches to strengthen governance in ways that reduce risks to forests and peatlands. These included supporting accelerated social forestry implementation to further sustainable livelihood opportunities for communities (thus supporting social forestry as an alternative to more potentially threatening land use permits); integrating forest monitoring into the work of FMUs; and training various stakeholders on how to use the Open Data Kit application to conduct field monitoring and identify infractions which could threaten forests and biodiversity.

Please see the Lessons Learned Technical Brief on Land Use Licensing Reform in Indonesia in Appendix 5.5 for further details on this complex topic.

3.2 TECHNICAL THEME 2: IMPROVED CONSERVATION & FOREST MANAGEMENT

LESTARI 4 – Improved Forest Management Through Co-Management and FMU Strengthening

The conservation movement has embraced the idea that Protected Areas (PAs) cannot exist as islands, but are a part of a larger, more complex landscape. Therefore, it is unlikely that PAs alone will be successful in conserving biodiversity if they are surrounded by degraded habitats that lead to regional and global climate change. The integrity of the surrounding landscape also needs to be maintained if the biological systems inside PAs are to be preserved. LESTARI supported building capacity and commitment for co-management among relevant stakeholders in areas adjacent to PAs (national park, wildlife reserve) and protected forests (within FMU). This is essential for threat reduction through more transparent, negotiated agreements where roles and responsibilities between stakeholders (local communities, local government, national park, wildlife reserve, FMU) are clearly defined. While working under government frameworks for building co-management (e.g., social forestry and conservation partnership in Aceh and Central Kalimantan), LESTARI also found other innovative approaches that were more adaptable to local context and culture, and highly appreciated by local traditional communities (e.g., Kampung Lestari in Papua, described below).

> "Our individual efforts to protect forests as water resources will be successful if supported by the surrounding villages. So, this community meeting is important, and I expect that we will come to a mutually beneficial agreement. I have to thank to LESTARI for their tireless efforts to facilitate the engagement between KPH and villages in the water catchment zone."
>
> -Pak Bakrie, KPH VI Representative during community meeting for RPJMDes in Lawe Cimanok Village, South Aceh

When facilitating co-management agreements between communities and forest authorities, LESTARI also encouraged and bridged 'integrated planning' at the site level. This does not mean that there was a single planning document used by various stakeholders, but rather that rural communities were included in the forest authorities' planning processes and vice versa. Rural communities surrounding PAs were highly involved during zonation processes as well as in the development of long-term forest management plans both in national parks and FMUs. On the other hand, forest authority representatives were also engaged during the formulation of village development plans (i.e., RPJMDes/RPJMK). Regional planning at a landscape level is critical to the long-term protection of ecosystem processes, and rural communities directly dependent on these processes must be recognized as part of the

ecological landscape. In addition, local people have much to offer in terms of traditional knowledge and experience in traditional land uses. PA authorities can also offer strategic environmental awareness raising opportunities for a variety of audiences, thereby enhancing the relationship between the community and the landscape.

The progress of outputs and outcomes for this strategic approach was measured by three interrelated indicators.

- Indicator #11: Number of Forest Management Unit (FMU) strengthened as a result of USG assistance
- Indicator #12: Number of people receiving USG supported training in natural resources management and/or biodiversity conservation
- Indicator #14: Number of people receiving livelihood co-benefits (monetary or non-monetary)

LESTARI recorded more than 100% achievement for all three indicators. Importantly, the success of SA4 should not be considered in isolation since it was designed to contribute to higher-level objectives, such as reduction in deforestation and related GHG emissions and areas under improved management, as depicted in the ToC. Please see Appendix 5.2 for further information. A summary of key activities related to SA4 is presented below and depicted in the maps in Figure 6.

Co-management
Relevant actors included Park Authorities, Nature Conservation Agency (BKSDA), Provincial and District government Forestry Agencies, FMUs, civil society organizations, and forest-dependent village communities living adjacent to PAs. LESTARI supported co-management initiatives via various schemes such as social forestry (Village Forest and Community Forest), Sustainable Villages (*Kampung Lestari*), and Conservation Partnership (*Kemitraan Konservasi*) among stakeholders in areas adjacent to PAs. In summary, co-management initiatives facilitated by LESTARI enabled legal access to land or strengthened sustainable management of forest by traditional communities, covering in total more than 78,657 hectares and 18,118 beneficiaries from local communities. The principal focus of the co-management approach was to build capacity and commitment of relevant stakeholders to collaboratively and sustainably manage the forest. An important aspect of this approach involved increasing community awareness about co-management including benefits, negotiated with government through social forestry, Conservation Partnership schemes and the Sustainable Villages initiative (in Papua). Where relevant, co-management initiatives were synergized with LESTARI's work on supporting community livelihoods through Green Enterprises (see SA6).

Social Forestry is a form of co-management regulated by the government and has been a key policy priority of the Jokowi administration. LESTARI facilitated social forestry in Leuser and Katingan-Kahayan Landscapes. LESTARI also advocated for other forms of social forestry that were appropriate in Aceh through the Aceh forestry partnership scheme known as *Pola Kerjasama* (Qanun 7/2015). Under this scheme, LESTARI assisted the Aceh provincial government in developing technical implementation guidelines and facilitated dialogue between the Director General of Social Forestry and Environmental Partnerships (PSKL) in Jakarta and the Acting Governor of Aceh to resolve the constraints for social forestry implementation in Aceh Province. In addition to assisting social forestry groups obtain permits, LESTARI facilitated development of forest management plans and small-scale forestry business plans to be used after permits were issued. LESTARI's efforts assisted in securing community access to forest land and built community capacity to manage their forest areas sustainably. The initiative was in line with the GOI's target of 12.7 million hectares of forests to be managed by communities through social forestry schemes.

Conservation Partnerships are a form of co-management between the community and PA authorities to assist community beneficiaries to acquire limited but secured access for livelihoods. An example from Leuser NP is highlighted below.

Conservation Partnership in Alur Baning:
A Model for Ecosystem Restoration through Community-National Park Cooperation

Alur Baning, is a block within Leuser NP under the management of Lawe Malum Resort. Administratively, this block is adjacent to five villages in Babul Rahmah Sub-District, Southeast Aceh District. For almost two decades, the forest area in Alur Baning suffered from uncontrolled deforestation due to encroachment, mostly for oil palm plantations. Forest authorities rarely enforced regulations, and as a result more and more forest areas were occupied by local communities and organized groups. LESTARI provided a grant to Forum Konservasi Leuser (FKL), a local NGO focused on Leuser conservation, to help address the problem. Using the Conservation Partnership scheme, which was regulated in 2018 under an official decree from the Director General of KSDAE, FKL assisted communities to develop cooperation agreements with Leuser NP authorities aimed at restoring the degraded and deforested areas.

After almost 24 months, FKL successfully facilitated three Conservation Partnership agreements between community groups (Tenda Biru, Aiso Ise, and Sada Roha) and Leuser NP. As a result, ecosystem restoration activities commenced, with a high level of community involvement, in an area within the park covering 300 hectares of forest. The agreements have provided a win-win for both communities and the environment. The agreement provides legal access for communities to utilize limited and defined areas of land, while the forest ecosystem is being gradually restored from monoculture oil palm to multi-purpose tree species. While communities are yet to obtain economic benefits, they are confident that within the next four to five years they will be able to harvest crops and get income. Meanwhile communication and coordination between stakeholders have already improved, and thus conflicts have been reduced, Moreover, having official Conservation Partnership agreements in place has enabled the village government to allocate their Village Funds to contribute toward the ecosystem restoration efforts.

An additional example of Conservation Partnership supported by LESTARI, for ecotourism and orangutan habitat conservation in Sebangau National Park, is described under SA8.

Sustainable Villages (or *Kampung Lestari*) is a form of co-management developed by the LESTARI team in Papua to strengthen traditional forest management and conservation at the village level. The initiative was focused primarily in Mimika and Asmat Districts that contain over 400,000 hectares of mangroves – important for their rich carbon stocks and ecosystem services that local communities depend upon for their livelihoods. Kampung Lestari is implemented through three related elements: (1) planning and policy governance (through development of a pro-forest RPJMK); (2) encouraging sustainable use of natural resources (through facilitation of natural resources 'field schools', development of Village owned enterprise units – BUMKam, and development of village-level or traditional adat regulations regarding natural resource use); and (3) forest protection and monitoring actions (community forest protection groups formed and routine patrols). There was an emphasis of integrating local and traditional knowledge and wisdom with formal government village planning. While village units remained largely independent, community forest protection groups were assisted by government agencies (CDK, FMU, and national park authorities) charged with forest management and environmental conservation where needed, such as evicting illegal loggers where persuasive actions proved ineffective.

SUMMARY OF CO MANAGEMENT INITIATIVES SUPPORTED BY LESTARI			
Landscape	**Co management Scheme**	**Total Area Covered (ha)**	**Total Beneficiaries**
Leuser	5 social forestry	3,790	2,608
Leuser	7 conservation partnership in Leuser National Park (*Kemitraan Konservasi*)	653	1,439
Leuser	7 forest partnership (*Pola Kerjasama*)	6,548	1,968
Katingan-Kahayan	18 social forestry	21,895	11,116
Papua	27 sustainable villages initiatives	786,881	987
TOTAL		**778,657**	**18,118**

FMU Strengthening

LESTARI supported strengthening of Forest Management Units (FMUs), which is the smallest forest management unit system at grassroot level as mandated by Law No. 41 Year 1999. The GOI expects FMUs to be the basis for implementation of sustainable and equitable forest management. These emerging institutions are responsible for the day-to-day management of vast areas of biodiverse forest outside of the Conservation Area system, and hence engagement with FMUs was considered an important opportunity.

In total, LESTARI assisted 20 FMU units in Aceh (two FMUs), Central Kalimantan (16 FMUs), and Papua (two FMUs) covering a total management area of 6.4 million hectares. LESTARI assisted partner FMUs through the following five milestones of FMU operationalization: (1) formulation of the Long Term Forest Management Plan (RPHJP), (2) formulation of the Short Term Forest Management Plan (RPHJPd), (3) facilitation of collaborative forest management through schemes such as social forestry, (4) increased capacity of FMUs' human resources, (5) implementation of protection and security of forest areas. The determination of the five milestones is based on norms and regulations that have been prepared by the GOI both at the central and regional levels.

LESTARI supported FMUs showed significant improvements in planning and budgeting, properly equipped staff with enhanced skills, facilitating collaborative partnerships with communities and the private sector, and operation of an integrated forest area monitoring and protection system using tools and SOPs.

SUMMARY OF FMU ASSISTED BY LESTARI						
No	FMU	RPHJP	RPHJPd	Co management	Capacity Building	Forest Monitoring**
1	FMU VI Aceh	✓	✓	8	✓	SMART Patrol
2	FMU V Aceh	✓	✓	2	✓	SMART Patrol
3	FMU I Central Kalimantan	✓	✓	1	✓	ODK Collect
4	FMU III Central Kalimantan	✓	✓	2	✓	ODK Collect
5	FMU IV Central Kalimantan	*	✓	1	✓	ODK Collect
6	FMU XI Central Kalimantan	✓	✓	1	✓	ODK Collect
7	FMU XII Central Kalimantan	*	✓	1	✓	ODK Collect
8	FMU XIII Central Kalimantan	*	✓	1	✓	ODK Collect
9	FMU XV Central Kalimantan	*	✓	3	✓	ODK Collect
10	FMU XVI Central Kalimantan	✓	✓	4	✓	ODK Collect
11	FMU XVII Central Kalimantan	✓	✓	1	✓	ODK Collect
12	FMU XVIII Central Kalimantan	✓	✓	4	✓	ODK Collect
13	FMU XIX Central Kalimantan	✓	✓	1	✓	ODK Collect
14	FMU XXI Central Kalimantan	✓	✓	-	✓	ODK Collect
15	FMU XXIX Central Kalimantan	*	✓	1	✓	ODK Collect
16	FMU XXX Central Kalimantan	✓	✓	2	✓	ODK Collect
17	FMU XXXI Central Kalimantan	✓	✓	2	✓	ODK Collect
18	FMU XXXII Central Kalimantan	*	✓	1	✓	ODK Collect
19	FMU VI Papua	✓	✓	-	✓	-
20	FMU LIII Papua	*	✓	-	✓	-

* As of June 2020, RPHJP is awaiting endorsement from KLHK.
** Milestones for forest protection include availability of patrol SOP, patrol method, and implementation of patrol. All FMU partners in Aceh and Central Kalimantan already have SOP, use a specific patrol method such as SMART (Aceh) or ODK Collect (Central Kalimantan), and undertake routine patrols in their respective forest areas.

Key Challenges, Lessons Learned, and Recommendations
Community empowerment is both desirable and critical to the success of collaborative management. Through program implementation, LESTARI learned that co-management can promote more democratic processes, equality in opportunity to take part in decision-making, economic and technical efficiency because resource users have more clearly defined responsibilities for their actions, and commitment towards sustainable forest management. Not all communities, however, are equipped to participate fully at the co-management level; they may need additional training to build experience and confidence to address problems that can be solved locally. Realizing the importance of capacity building for implementing co-management, LESTARI provided a large number of trainings related to natural resource management (see Appendix 5.3).

From the implementation of SA4, LESTARI also learned that local communities are most interested in conservation when they perceive it to be compatible with earning a livelihood. Interest in learning new techniques that are environmentally sound usually exists only to the extent that they will maintain or increase current levels of production. There is also an interest in learning about alternative income generating activities that may or may not be natural resource based. Sustainability is a concern, though probably not an immediate priority.

Capacity building should be integrated within co-management programs. This is needed to bring communities and forest authorities together and to foster collaboration between them. Through their community outreach programs, forest management agencies can and should assist local communities, but they are often limited in what they can do. Forest managers should facilitate community participation and inter-institutional collaboration without dominating the process. Creating a situation in which communities become too dependent on the forest authorities detracts from the development of the community's co-management capabilities and, in the long term, undermines sustainability.

Please see the Lessons Learned Technical Briefs on Village-based Forest Management, FMU Strengthening, and Collaborative Forest Management with Traditional Papuan Communities in Appendix 5.5 for further details.

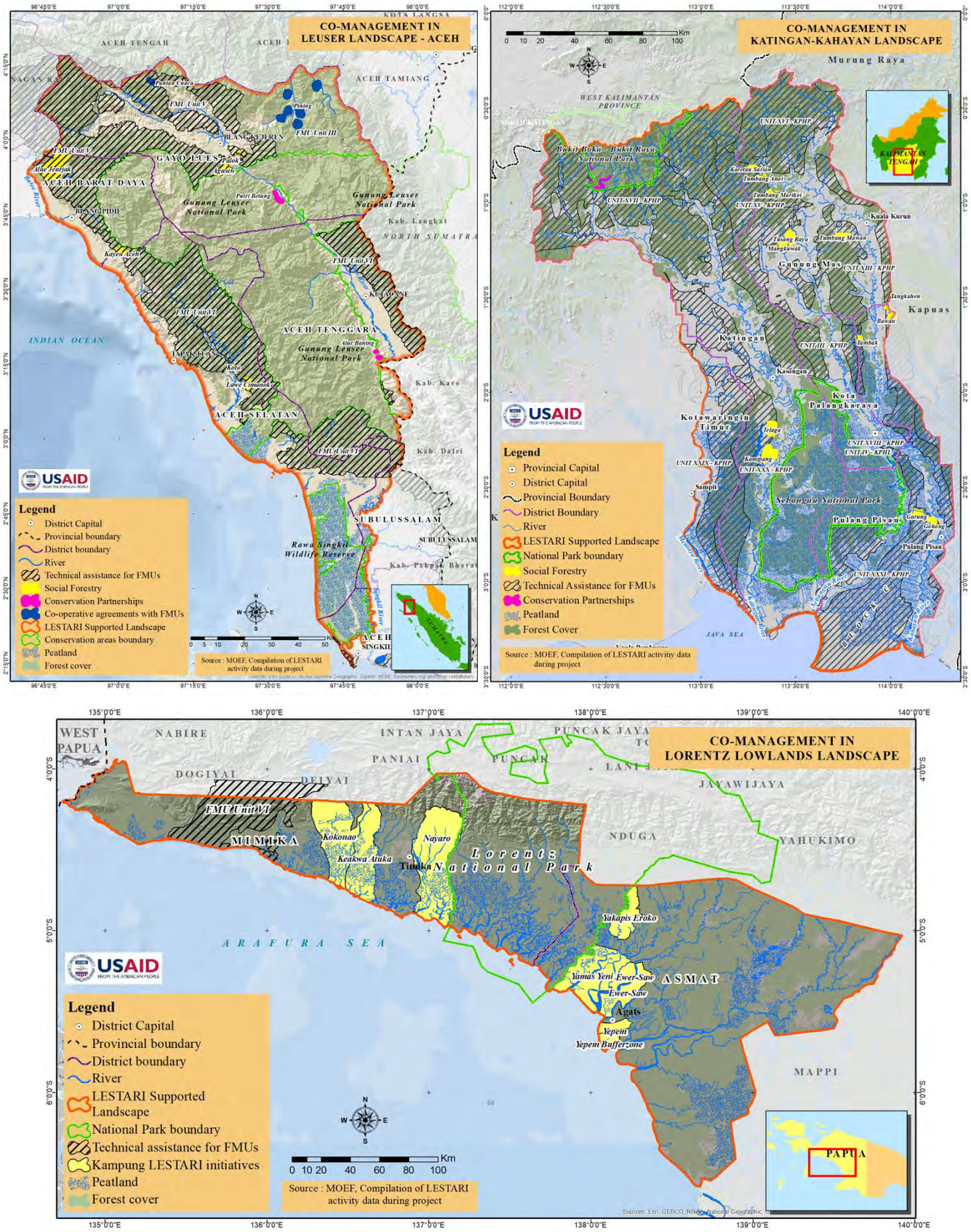


Figure 6. Locations of co-management initiatives in Leuser, Katingan-Kahayan, and Lorentz Lowlands Landscapes

LESTARI 5 – Protected Area Management and Key Species Conservation

The management of protected areas is a keystone of biodiversity and ecosystem conservation efforts. Six priority PAs formed the center-piece in four of LESTARI supported landscapes – Gunung Leuser National Park and Rawa Singkil Wildlife Reserve in Leuser Landscape, Aceh; Sebangau National Park and Bukit Baka Bukit Raya National Park in Katingan-Kahayan Landscape, Central Kalimantan; Lorentz National Park in the Lorentz Lowlands Landscape, Papua; and Cyclops Nature Reserve in the Cyclops Landscape, Papua.

Management of PAs[6] in Indonesia is the sole responsibility of KSDAE. The overall focus of this SA5 was to help build staff and institutional capacity of partner PAs, resulting in more effective management. Key activities included protection patrols in core conservation areas and combating poaching and deforestation. However, traditional PA management has sometimes been done in 'isolation' from the Provincial, District, Village and traditional community governance structures that can impact them. As LESTARI operated through a landscape approach, another key focus for improving protected area management was through building partnerships through multi-stakeholder processes in PA evaluation, planning and increasing awareness of the benefits of PA conservation.

The driver of poaching is the illegal wildlife trade (IWT). IWT (as well as the illegal timber trade) involves well-organized criminal networks over a wide area skilled in avoiding detection from poorly resourced law enforcement agencies. In Indonesia, illegal trade in wildlife impacts endangered and protected species such as tiger, elephant, pangolin, sunbear, helmeted hornbill, and pig-nosed turtle. This is pushing many of these species to the brink of extinction. In parallel to the improvements in PA management, LESTARI also aimed to reduce the IWT by tracing perpetrators through Wildlife Crime Units in Leuser landscape and highlighting wildlife smuggling through multi-stakeholder efforts in Papua.

The progress of outputs and outcomes for this strategic approach was measured by four interrelated indicators.

- Indicator #3: Percentage reduction in poaching in focus area
- Indicator #7: Number of Multi Stakeholder Initiatives or civil society advocacy initiatives which formulate and deliver policy-relevant inputs on sustainable forest and land management to decision makers
- Indicator #10: Number of Conservation Areas with at least 70 point in METT scores across LESTARI supported landscapes as result of USG assistance
- Indicator #14: Number of people receiving livelihood co-benefits (monetary or non-monetary)

All indicators associated with PAs reached or exceeded 100% of their respective targets. Notably, improved conservation outcomes in PAs were also impacted by the confluence of other strategic approaches, especially co-management around PAs (SA4), and provided input for SEA recommendations (SA2).

[6] The term used in this report to encompass national parks, nature reserves, wildlife reserves, grand forest parks, and other types of terrestrial areas under KSDAE authority (also referred to as Conservation Areas)

The key technical areas for which LESTARI provided support in each PA are summarized in the table below. Specific activities were identified in collaboration with partner PA managers through joint annual work plans, which ensured smooth coordination and understanding of responsibilities. Figure 10 depicts maps of each PA and locations of patrols and other field activities.

MAIN AREAS OF TECHNICAL ASSISTANCE PROVIDED BY LESTARI TO PARTNER PA							
Landscape / Protected Area	METT Evaluations	SMART Patrol	Management Planning (RPJP)	Zonation Revision	Conservation Partnerships	Biodiversity Surveys and Monitoring	Species Conservation
Gunung Leuser National Park	✓	✓			✓	✓	✓
Rawa Singkil Wildlife Reserve	✓	✓	✓	✓		✓	
Sebangau National Park	✓	✓			✓		
Bukit Baka Bukit Raya National Park	✓	✓				✓	✓
Lorentz National Park	✓	✓	✓	✓		✓	✓
Cyclops Nature Reserve	✓	✓	✓	✓		✓	

LESTARI focused on the socialization and application of the Management Effectiveness Tracking Tool (METT) to assess management effectiveness in protected areas that constituted the core area of four out of six landscapes. The METT system is based on an assessment of 30 parameters that integrate elements of the IUCN-World Commission on Protected Areas Framework (PA legal status, planning, inputs, implementation, outputs, and outcomes). The METT scores enable park managers and project implementers to identify needs, constraints, and priority actions to improve protected area performance. It provides a standardized mechanism for monitoring progress towards effective management over time and has been adopted for improving management of Indonesia's protected area network for 2015-2019. The minimum target to be met by PA authorities by 2019 was a score of 70%.

During the first year of LESTARI the baseline METT score was established by the Director General of KSDAE. After the publication of METT baseline results, LESTARI advocated for METT to be conducted in a participatory manner with multiple stakeholders in the landscape affected by the PA thereby increasing local ownership of PA management. LESTARI was involved in discussions with KSDAE for the development of METT evaluation guidelines and facilitated the training of METT evaluators. In the landscapes, LESTARI facilitated multi-

stakeholder METT baseline workshops to build capacity for METT assessments. For most stakeholders from local government, NGOs, communities and the private sector, this was the first opportunity to become involved in PA management albeit an initial evaluation of management effectiveness. These METT workshops also allowed PA authorities to advocate for greater support to improve on management weaknesses. Based on the METT baseline, low performing management areas were highlighted, and this provided impetus to work with LESTARI and local stakeholders for improvement. Collaborative work plans were developed with PA authorities and LESTARI based on immediate needs to increase the METT score.

LESTARI facilitated the basic planning documents of PAs. The 2015 baseline METT assessments revealed that Cyclops NR, Rawa Singkil WR and Lorentz NP zonation plans (spatial management plans) required improvement. The spatial arrangement of management zones, such as core protection zones, rehabilitation zones and multiple use zones, is an essential precursor for improving PA management as they lay out areas for specific conservation management needed and a robust protection system that protects all important ecosystems and biodiversity while allowing use of the park as mandated by law. During the course of LESTARI, project zonation plans were finalized for all three of these PAs. The processes involved team formation, management zone design (or block design in WR and NR), and compilation by engaging spatial analysis experts, public consultations, and document approval by KLHK. In Lorentz NP, the zonation revision also accommodated strategic activities such as National Strategic Areas (Kawasan Strategis Nasional/KSN) and infrastructure development (national roads, ports, telecommunication towers, ports, airport); incorporated important places for indigenous communities (hunting areas, sacred areas, villages and settlement data); included future potential utilization of the park for ecotourism; and development dynamics of surrounding administrative districts (Mimika, Paniai, Puncak, Puncak Jaya, Lanny Jaya, Jayawijaya, Nduga, Asmat, Intan Jaya, and Yahukimo). All zonation / blocking plans were approved by KSDAE.

Following on from zonation revision, long-term management planning (RPJP) was facilitated by LESTARI in the same three PAs. While the Cyclops NR RPJP was largely completed independently by BBKSDA Papua with regular inputs from the LESTARI team, the LESTARI team provided significant inputs for Rawa Singkil WR including multi-stakeholder collaboration for park management, peatland conservation regulations, land and water planning, and importantly, refined conservation aims and goals. In Lorentz NP, the LESTARI team applied the Theory of Change approach to define threats and drivers to key biodiversity and ecosystems, and designed strategic approaches to effectively conserve them (in a similar fashion to designing the LESTARI implementation strategy). This approach highlighted the need for collaborative management with communities, local government, and private sector among nine strategic approaches defined. As demanded by government regulations concerning PA planning, the revision of the PA zonation and long-term management plans were participatory with key stakeholders providing valuable inputs while at the same time increasing their ownership of PAs, especially among local communities. One strategy to increase multi-stakeholder initiatives included the establishment and operationalization of the Collaborative Forum for Lorentz NP management (*FKPTNL*) that will assist with coordination and synergized management between district and provincial level governments and park authorities. The decree for establishment has been signed by the governor but the forum does not yet fully function and therefore not counted under indicator #7 – Multi-Stakeholder Initiatives.

Implementation of conservation activities focused on conservation patrols to reduce the threats from illegal poaching, encroachment, logging, and mining. In order for patrols to be effectively executed, capacity of PA authority staff was prioritized. Training programs focused on technical skills and the use of tools designed to facilitate better management and effectiveness of day-to-day responsibilities. SMART (Spatial Monitoring and Reporting Tool) was a priority tool applied throughout all six PA. SMART is a decision support system that uses field collected data on mobile devices and desktop analysis with online software to analyze and map threats and biodiversity needs that rangers and other staff find during patrols, and assists them to respond accordingly. Fundamentally, collated data from patrols is used by the SMART system to help managers monitor wildlife and ecosystem protection effectively and help them focus efforts to counter encroachment, poaching and other illegal activities with their limited financial and human resources and thus improve conservation decision making.

Figure 7. SMART patrol conducted in Cyclops Nature Reserve in areas prone to illegal encroachment

Ranger patrols are an essential part of PA management and were a central part of the LESTARI strategy towards improving management of PAs. LESTARI invested significantly in training and then implementation of SMART patrols, initially collating baseline data for poaching and other illegal activities in as wide an area as possible and subsequently focusing patrols on areas at risk. Over the five years of LESTARI implementation, the project supported a total of 90 SMART ranger patrol teams across six PAs. 599 separate patrols (most multi-day) were conducted with a total logged patrol length of over 30,000 kilometers. In total, this resulted in the removal of 283 snare traps and the detection of 3,660 illegal logging incidents that were reported to authorities.

SMART patrols have received endorsement from KSDAE to be applied in all protected areas in Indonesia. However, the presence or absence of support from partner institutions will greatly affect the quality and quantity of the implementation of the patrols on the ground. In LESTARI supported PA, SMART patrols will still be implemented without external support as the park authorities have been intensively trained in the SMART system. However the patrols will likely involve a smaller number of teams, less frequency, and over a shorter time period. In Leuser NP, LESTARI only supported four SMART patrol teams, but there was a total of 24 SMART patrol teams funded by NGOs. Leuser NP were able to fund all patrol cost in all 25 resorts but budgets were sufficient for seven days patrol/month. With additional support from donors/NGOs the patrol duration was extended to 14 days/month. In Bukit Baka Bukit Raya National park, LESTARI only worked in the Central Kalimantan side, but additional patrol support was provided by an NGO partner for the West Kalimantan portion of the park. This shows that partner support is still one of the main factors needed to make up for PA funding shortfalls and contribute to on-the-ground forest protection in PAs.

SMART patrols were used to establish baseline poaching rates (measured as number of observed incidents per distance patrolled). Of the six PAs, three were measured for poaching of key species (Gunung Leuser NP, Lorentz NR, Cyclops NR), while poaching was not a priority issue in Sebangau NP, Bukit Baka Bukit Raya NP and Rawa Singkil WR. While data was limited to samples from the first year of SMART patrols, subsequent data from SMART showed significant reductions in poaching rates in all three PAs. By Year 4 of the project, poaching was

reduced by 90% Gunung Leuser NP, 95% in Cyclops NR, and 88% in Lorentz NP indicating the deterrence effectiveness of SMART patrols in the areas supported by LESTARI.

DECLINE IN POACHING RATE IN THREE TARGET PA					
Protected Area	Active Poaching (AP) Incidents/100km				% AP Reduction vs Baseline
	2015 2016 (Baseline)	2016 2017	2017 2018	2018 2019	
Gunung Leuser NP	9.6	7.7	2.4	0.96	90 %
Cyclops NR	25	7	3	1	95 %
Lorentz NP	-	33.79 (Baseline)	26.5	4	84 %

LESTARI facilitated biodiversity surveys in Leuser NP, Lorentz NP and Cyclops NR. Surveys in Leuser NP involved an extensive camera-trapping program that aimed to estimate the abundance of KLHK priority wildlife species such as Sumatran tiger and Sumatran rhino. The surveys used a camera capture-mark-recapture approach as a means of understanding the importance of the Leuser Landscape for biodiversity, evaluating conservation interventions (SMART patrol and human-tiger conflict mitigation), and identifying priority habitat for increased protection and improved spatial planning. KLHK identified priority species whose population should be increased by 10% from 2015-2019. For the Leuser landscape, these include Sumatran tiger, Sumatran elephant, Sumatran rhino, and Sumatran orangutan. However, baseline population data on these species, except for orangutan, in this landscape are lacking, and this has hindered conservation efforts. Camera trapping is proven approach for scientifically assessing multiple species that is highly applicable in this biodiversity-rich landscape.

Key achievements from camera-trap program include:

- First ever science-based camera trap survey completed for western Leuser and one high quality species dataset compiled.
- Confirmed presence of 49 species, including the Critically Endangered Sumatran elephant, Sumatran rhino, Sunda pangolin, and Sumatran orangutan, as well as Asian wild dog, which is one of the most elusive mammal species on Sumatra and a predator undergoing rapid decline across its Southeast Asia range.
- First Sumatran tiger population baseline determined for the Leuser landscape and priority tiger habitat identified to enable population recovery through SMART patrols.

Figure 8. Two prime adult Sumatran tigers (male and female) recorded in the Leuser Landscape

Information generated from the survey was also used to support two questions within the METT assessment (i.e., inventorying natural resources and management of natural resources). LESTARI recommended Leuser NP authorities to conduct a repeat camera survey to estimate tiger population trends. Given that these data would enable KLHK to assess several trends for its priority species, joint funding between NP and partners of the survey should be discussed.

From the survey, LESTARI also learned that contrary to previous knowledge, tigers were recorded in the hill, submontane and montane forest habitat types, but not the lowland forest study area, which is typically prey-rich prime tiger habitat. The results clearly show the core areas that must continue to be protected by the SMART patrols, especially where tigers are reproducing. This approach would then enable tiger population recovery into the lowland forests, which would normally represent high quality tiger habitat. During the development of long-term management plan (RPJP) of Leuser NP, the result of camera trap survey was used to determine priority areas for key species management and SMART patrol planning.

In Lorentz NP, biodiversity baselines were carried out in the Lorentz 'coast to highlands transect', including a parrot inventory and population survey and routine pig-nosed turtle surveys. These surveys documented overall diversity of mammal, bird, reptiles, amphibians, insects, plants and ethno-botany. The inventory and pig-nosed turtle surveys also measured threats to the target species and these results will serve as a baseline for biodiversity and threat monitoring in the future. LESTARI also supported the release of confiscated pig-nosed turtles to their native aquatic habitats in Lorentz NP buffer zone areas. This was a major multi-stakeholder initiative that gained much support from government, civil society and private sector stakeholders in the Lorentz Lowlands Landscape. In one release event in May 2019, more than 5,000 baby turtles were released following seizure by local authorities in Timika.

LESTARI worked with three local NGOs focused specifically orangutan conservation under grant scheme – *Yayasan Orangutan Sumatera Lestari-Orangutan Information Center* (YOSL-OIC), Borneo Orangutan Survival Foundation (BOSF, see box below) and *Forum Komunikasi Kehutanan Masyarakat* (FKKM).

OIC worked in South Aceh to conserve orangutan habitat in protected forests (e.g., FMU, community forest). They also worked with South Aceh government to address human-orangutan mitigation conflict. Key achievements included improved management of 61,000 hectares of orangutan habitat in Menggamat protected forest; 1,183 hectares forest area within FMU VI under improved management through social forestry schemes; the implementation of Human-Orangutan Conflict Response Unit; and the establishment of Orangutan Task Force of South Aceh District under local government coordination and budget. During the project lifespan, conflict response team evacuated and relocated 28 orangutans from the conflict areas.

Orangutan populations were also monitored in Rawa Singkil WR and Bukit Baka Bukit Raya NP. In Rawa Singkil WR, FKKM in collaboration with BBKSDA Aceh conducted orangutan surveys. Three stages of surveys attempted to analyze population density, characteristics of nests, preference of trees for building nests, tree structure and composition within orangutan habitat. From the survey, FKKM reported that orangutan population density averaged 1.524 individuals per square kilometer, indicating a healthy and stable population. However, the research also revealed that over the last 20 years, Singkil WR has lost around 20,000 hectares from the surrounding forest buffer zone area, highlighting the threats facing the orangutan population in this area. FKKM also helped BBKSDA to develop an orangutan database in Singkil WR as a starting point for the development of orangutan research center. The database served as the first consolidated database for biodiversity and ecosystem conditions for Rawa Singkil WR.

Conserving the Critically-Endangered Orangutan: Asia's Only Great Ape Species

The orangutan is Asia's only great ape and is only found on the islands of Borneo and Sumatra as three co-generic species, *Pongo pygmaeus*, *Pongo abelii*, and *Pongo tapanuliensis*. The majority of orangutans (90%) are situated in Indonesia (Indonesian Borneo-Kalimantan and Sumatra), while the remaining 10% can be found in Sabah and Sarawak in Malaysia.

Currently all three orangutan species are threatened by extinction due to habitat loss and hunting. It is estimated that the Bornean orangutan population has decreased by more than 80% within the last three generations. The World Conservation Union (IUCN Red Data List 2007) classifies the orangutan as critically endangered. The orangutan is also listed in Appendix I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), and is a protected species under Indonesian law.

Under its key species conservation initiatives, LESTARI placed a special emphasis on orangutan and orangutan habitat conservation. This was highlighted by the partnership with LESTARI grantee organization Borneo Orangutan Survival Foundation (BOSF). BOSF specializes in rescuing and rehabilitating lost or injured orangutans, an increasingly common occurrence as their forest habitats shrink and they end up on community plantations where the risk of human-wildlife conflict is high. Following successful months or years-long rehabilitation at the BOSF Nyaru Menteng facility, orangutans are released back to the wild where they are routinely monitored to ensure successful adaptation to their new environment.

With support from LESTARI from 2016 to 2020, the BOSF team successfully rehabilitated and released 165 Bornean orangutans into the protected forests within Bukit Baka Bukit Raya National Park. 152 of these orangutans (92%) were able to successfully adapt to their new environment. Six orangutans were later found dead and seven had to be taken back to the rehabilitation facility due to failure to adapt. The reintroduction was complemented by capacity building for national park staff and conservation awareness-raising for communities in nearby villages.

Release events were often attended by officials from KSDAE Jakarta and USAID/Indonesia and garnered significant local and national media coverage. To commemorate the 100th orangutan release under the partnership between LESTARI and BOSF, and to stimulate national awareness on orangutan conservation, CNN Indonesia was invited to join the release trip. This resulted in a CNN Indonesia special report aired nationally in August 2018 on the threats facing orangutan conservation in Kalimantan and USAID efforts to support this important cause.

To improve co-management and shared responsibility for PA management, LESTARI helped to facilitate Conservation Partnership Agreements between communities and Leuser NP, and secured commitment from the community to stop further encroachment in return for future guaranteed access to limited areas for cultivation (see SA4). A grant supported by LESTARI successfully removed oil palm planted illegally inside of the national park and replanted the 1,000 hectare area for indigenous commercially valuable species with farmer groups. In Bukit Baka Bukit Raya NP, involvement of communities in patrolling reduced the incidence of small-scale unlicensed gold mining (from 51 cases observed in 2017 to none in 2020). In Papua, tackling encroachment, illegal logging and poaching must be done sensitively as patterns of traditional ownership predated the establishment of PA the system by millennia. LESTARI and BBKSDA facilitated the expansion of community patrol groups known as Forest Ranger Community Partners (Masyarakat Mitra Polhut – MMP). MMP now exist in five traditionally owned areas (*wilayah adat*) within the Cyclops NR and are the frontline conservation enforcement mechanism for the reserve. A similar approach was taken by Lorentz NP as three MMP groups were formed that monitored several hundred thousand hectares of lowland forest and mangroves though SMART patrols.

Improvement of PA management was evaluated during the mid-term to adjust prioritization of the above approaches and finally in 2019 to gauge any improvement made. By the end of LESTARI, all six PA exceeded the 70% target set by KSDAE.

SUMMARY OF METT SCORES FOR PROTECTED AREAS SUPPORTED BY LESTARI			
Protected Area	**Baseline**	**Midterm**	**Final**
Gunung Leuser NP	65	75	71
Rawa Singkil WR	55	66	81
Sebangau NP	62	73	77
Bukit Baka Bukit Raya NP	64	74	79
Lorentz NP	52	60	70
Cyclops NR	43	61	71

Through the use of METT, improvements were achieved through better planning, capacity building, implementation, and monitoring of both threats and conservation outcomes. Awareness of the importance of conserving these areas also increased with key stakeholders affected by the PA as well as increased public involvement in management of PA.

To reduce poaching demand, LESTARI supported Wildlife Crime Units (WCU) and Forest Crime Units (FCU) in Leuser and surrounding areas to monitor and report wildlife trafficking (and illegal logging) to government agencies that could then arrest and prosecute perpetrators. To gather data and information on illegal forest and wildlife activities the teams established and utilized an informant network throughout North Sumatra and Aceh Province. Illegal wildlife trafficking networks have been mapped by the WCU and informants, 'kingpins' within the trade network identified, suspects targeted and monitored by government law enforcement agencies. This has led to 26 sting operations and the arrest of 54 wildlife poachers and traffickers. 85% have been prosecuted and the remainder await trial. The Forest Crimes Unit together with data provided by SMART patrol teams have resulted in 24 law enforcement operations and 26 arrests. Please refer to the LESTARI Year 3 and Year 4 Annual Reports for a list of media coverage relating to cases in which the WCU/FCU assisted in investigation.

As the habitat of species decreases, the likelihood of community-wildlife conflict increases, particularly in regions bordering PAs. Community-Wildlife conflict takes the form of crop-raiding and attacks on livestock, and often results in the killing of wildlife such as endangered tigers, elephants and orangutan as local communities seek to protect their assets and safety. LESTARI supported dedicated Wildlife Response Units (WRU) around Leuser NP to work together with BKSDA Aceh to reduce these conflicts. WRU rapidly responded to community reports of conflicts and also established conflict mitigation measures aimed at preventing future conflicts and further escalation. During LESTARI implementation, WRU responded to 257 local community reports of human-wildlife conflicts (107 tiger, 93 elephant, 52 orangutan, and five other species).

Figure 9. WRU assisting the community in a conflict-prone area to build a tiger-proof enclosure to protect livestock

In order to boost community self-reliance in mitigating conflict with wildlife, LESTARI supported the development of 'Self-sufficient Villages' (*Masyarakat Desa Mandiri* or MDM). The MDM initiative was implemented in seven villages in Leuser Landscape and aimed to increase community awareness and capacity to handle human-wildlife conflict independently as well as prevent future conflicts. Improving the community's ability to handle conflict incidents at an early stage crucially affects the following situation or outcome. Community groups involved in MDM were equipped with technical and institutional capacity in dealing with human-wildlife conflicts. A key feature was construction of tiger-proof livestock enclosures. Using MDM as a model, the WRU and BKSDA empowered 221 communities and trained 1,251 community members. Since 2015, no tigers have been killed due to wildlife conflicts in this landscape (compared to an average of 1.6 tigers/year in the eight years preceding LESTARI).

To create public awareness and commitment from multi-stakeholders toward MDM, LESTARI facilitated a media visit (as part of media advocacy efforts under SA1) on January 2020. Four national and one local media outlet took part in the visit. Links to media articles published are listed below:

- https://masakini.co/news/rusa-sering-diburu-giliran-harimau-masuk-kebun-warga/
- https://indonesiainside.id/news/nusantara/2020/01/24/jejak-harimau-ditemukan-di-subulussalam-aceh-pawang-dikerahkan
- https://masakini.co/news/kisah-sukses-ksm-sepakat-bersama-atasi-konflik-satwa-di-batu-napal/
- https://masakini.co/news/konflik-satwa-liar-di-aceh-terus-meningkat/
- https://mediaindonesia.com/read/detail/285485-dalam-10-tahun-konflik-manusia-dan-satwa-liar-meningkat-di-aceh
- https://sains.kompas.com/read/2020/01/24/110200423/konflik-satwa-penyebab-kematian-gajah-tertinggi-di-aceh?page=2
- https://sains.kompas.com/read/2020/01/24/110200423/konflik-satwa-penyebab-kematian-gajah-tertinggi-di-aceh?page=2
- https://kompas.id/baca/lain-lain/2020/01/24/gajah-jinak-untuk-menghalau-gajah-liar-di-aceh-selatan-2/

Key Challenges, Lessons Learned, and Recommendations

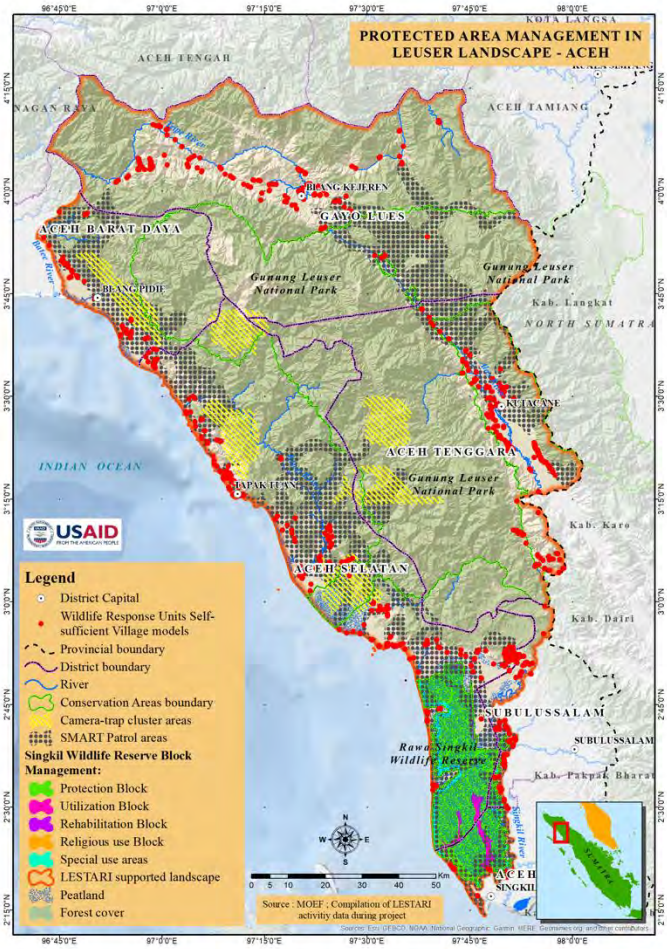
- One important factor that contributed to successful coordination was taking part in joint annual work plan development with PA managers, clearly demonstrating how LESTARI would help to fill gaps and align with PA managers' own objectives.

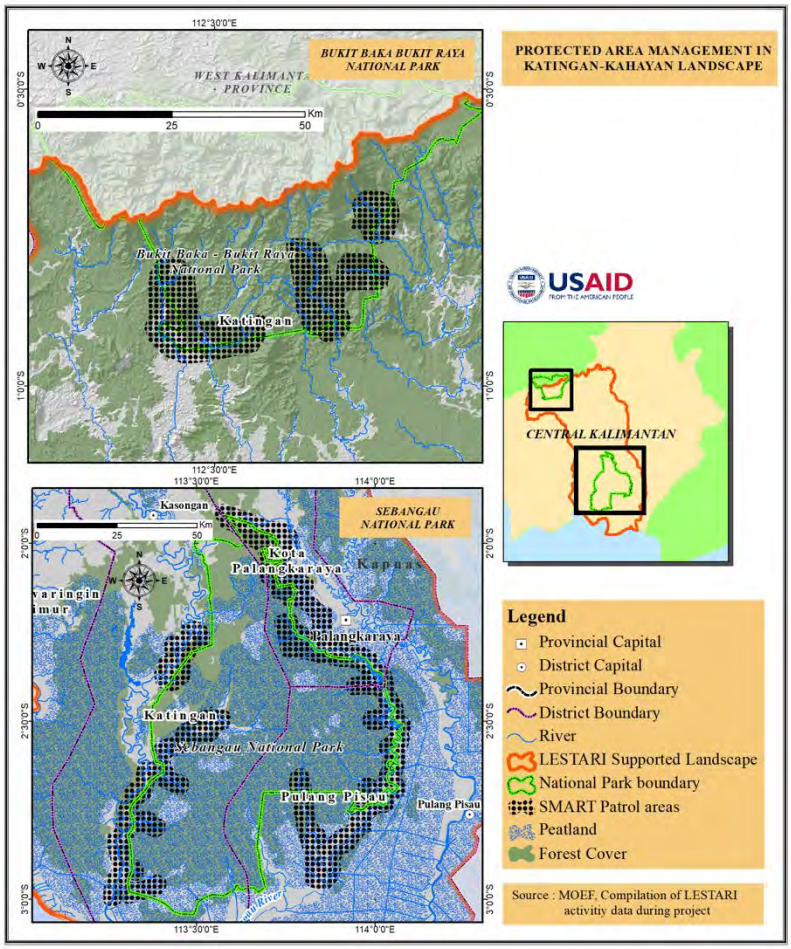
- The METT tool itself has limitations and does not necessarily reflect actual PA management conditions on the ground. In addition, until now there has been no incentive and disincentive scheme for PA managers who have reached or failed to reach the target score of 70%.

- Greater local law enforcement efforts are required for SMART patrols to be effective and act as deterrents to committing wildlife crimes. Numerous patrol and community empowerment measures will be futile if clear and consistent law enforcement measures are not taken against perpetrators.

- A lack of funding will hinder sustainability of patrols. Although some NGO partners have committed to support SMART in some locations, PA managers must be able to find funding potential from other, more sustainable sources. Partnering with local communities to train community-led patrol groups is one strategy to cover broader areas in a cost-effective manner.

- Project efforts to tackle human-wildlife conflicts in Aceh, a key livelihoods issue, enabled good relations to be developed and maintained throughout the project. This has created a community conservation constituency with a shared sense of responsibility for forest and wildlife protection. However, BKSDA Aceh faces funding shortfalls and requires support to swiftly respond to incidents of human-wildlife conflict, as conducted under LESTARI. Greater investments should also be put into replicating MDM in forest-edge communities, using the demonstration villages to show how village budgets can be used to sustainably finance this approach.


PROTECTED AREA MANAGEMENT IN LEUSER LANDSCAPE - ACEH
ACEH TENGAH
NAGAN RAYA
ACEH TAMIANG
KOTA LANGSA
BLANG KEJEREN
GAYO LUES
ACEH BARAT DAYA
BLANG PIDIE
Gunung Leuser National Park
Kab. Langkat
NORTH SUMATRA
KUTACANE
ACEH TENGGARA
INDIAN OCEAN
TAPAK TUAN
Kab. Karo
ACEH SELATAN
Kab. Dairi
SUBULUSSALAM
Rawa Singkil Wildlife Reserve
Kab. Pakpak Bharat
USAID
Legend
District Capital
Wildlife Response Units Self-sufficient Village models
Provincial boundary
District boundary
River
Conservation Areas boundary
Camera-trap cluster areas
SMART Patrol areas
Singkil Wildlife Reserve Block Management:
Protection Block
Utilization Block
Rehabilitation Block
Religious use Block
Special use areas
LESTARI supported landscape
Peatland
Forest cover
Source : MOEF ; Compilation of LESTARI activitiy data during project


PROTECTED AREA MANAGEMENT IN KATINGAN-KAHAYAN LANDSCAPE
BUKIT BAKA BUKIT RAYA NATIONAL PARK
WEST KALIMANTAN PROVINCE
Bukit Baka - Bukit Raya National Park
Katingan
USAID
CENTRAL KALIMANTAN
SEBANGAU NATIONAL PARK
Kasongan
Kota Palangkaraya
Kapuas
Sebangau National Park
Pulang Pisau
Legend
Provincial Capital
District Capital
Provincial Boundary
District Boundary
River
LESTARI Supported Landscape
National Park boundary
SMART Patrol areas
Peatland
Forest Cover
Source : MOEF, Compilation of LESTARI activitiy data during project

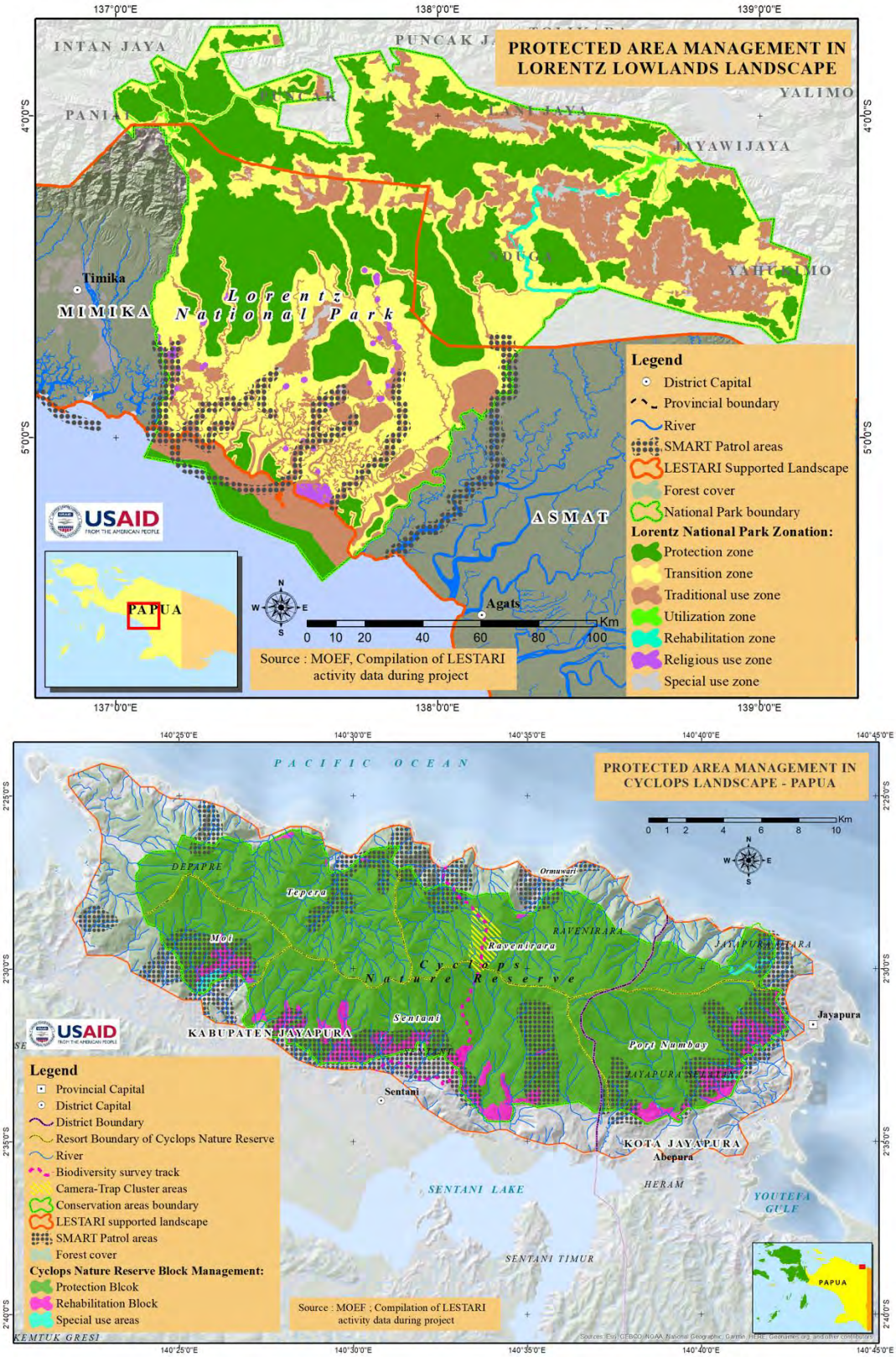


Figure 10. Depiction of six LESTARI supported PAs and coverage of SMART patrols, WRU, and other field activities

3.3 TECHNICAL THEME 3: PRIVATE SECTOR ENGAGEMENT

LESTARI 6 – Green Enterprises

SA6 involved supporting community livelihoods through improved production and enhanced market access of key local commodities that are produced sustainably. LESTARI assistance for Green Enterprises aimed to contribute to the achievement of the project's overall objectives in reducing deforestation and degradation, and associated land-based greenhouse gas emissions. The project theory of change for this approach is that if local communities in focal areas are able to secure sustainable and sufficient economic benefits from Green Enterprises, then pressures for forest encroachment will be reduced. LESTARI also aimed to facilitate partnerships for Green Enterprises so that they bring fair and lasting benefits to communities and their partner buyers, enabling the partnerships to continue after LESTARI closeout. This is expected to contribute to greater self-reliance of project beneficiaries.

This strategic approach was measured through four interrelated indicators:

- Indicator #12 - Number of people receiving USG supported training in natural resources management and/or biodiversity conservation.
- Indicator #13 - Amount of investment mobilized (in USD) for climate change and biodiversity conservation as supported by USG assistance.
- Indicator #14 - Number of people receiving livelihood co-benefits (monetary or non-monetary).
- Indicator #16 - Number of new USG-supported public-private partnerships (PPPs) formed.

All of these indicators exceeded 100% achievement of their respective targets. The LESTARI team based site selection for green enterprise initiatives on the potential for reducing biodiversity conservation threats to the forest, and hence they were largely located in communities living adjacent to protected areas or other high carbon value forest. The potential sites were also limited to the project-supported landscapes in the provinces of Aceh, Central Kalimantan, and Papua. The process for supporting a sustainable livelihood business model depended on a range of factors such as condition and threats to forests, local commodity potential, and access to markets. Some initiatives focused on fostering strong relationships between communities and forest management authorities (such as FMUs) while others focused on opening access to premium markets through sustainability certification. Below are several main principles followed by LESTARI in assisting Green Enterprises development that are common to all areas.

- Robust identification of potential field sites, including main threats and issues driving deforestation, natural resources availability, and challenges faced for reducing threats and overcoming issues.
- Development of scalable business models that can be implemented across multi-stakeholders but tailored to the local needs.
- Engagement and introduction of the market/buyers directly to producers/farmers to enhance direct benefits that leads to a more viable business model.
- Focus on long-term commitments for sustainable market access.

In Aceh, the landscape consists mostly of protected areas or high conservation value forest surrounded by smallholder agriculture and agroforestry production. The main threat impacting forest is encroachment from local communities for the development of agricultural plantations. Thus the main LESTARI initiative was to support a partnership model that allows local communities access to limited areas outside of protected forests through government programs such as social forestry.

In Central Kalimantan, one of the main threats addressed through Green Enterprises is forest and land fire, especially on peatland. LESTARI (as well as the previous USAID IFACS project) supported rubber-based business models that improved productivity of areas that were frequently burned and contributed to improved community livelihoods. At the same time, the initiative enhanced management and oversight capacity over these important peatland areas, contributing their restoration, protection, and resulting fire risk reduction.

In Papua, the LESTARI focus was to assist traditional communities to better manage their forest resources, reduce encroachment, and sustain the ecosystem services provided by forests such as protection from landslides and provision of freshwater.

The main Green Enterprise initiatives supported by LESTARI are summarized below.

SUMMARY OF GREEN ENTERPRISE INITIATIVES SUPPORTED BY LESTARI		
Landscape	**Type of Intervention**	**Number of Beneficiaries**
Leuser	Improved cacao pre and post-harvest practices, enhanced market access, and ensure sustainability through UTZ certification	2,117
	Coffee agroforestry	1,344
	Nutmeg agroforestry, improved post-harvest practices, product diversification, enhanced market access	838
	Improved forest honey pre and post-harvest practices, enhanced market access	807
	Establish alternative livelihood from permaculture implementation, palm sugar production, and small-scale ecotourism	478
Katingan-Kahayan	Rubber agroforestry to enhance productivity and reduce fire risk	5,849
	Pilot of partnership for sustainable rattan with FMU XVII	19
Papua	Cultivation of vanilla agroforestry outside of Cyclops Nature Reserve, Jayapura	174
	Sustainable sago production and diversification	605
	Establish alternative livelihoods from flower cultivation in Cyclops Nature Reserve buffer zone, Jayapura	152
TOTAL		**12,383**

Over the course of the project, Green Enterprise initiatives supported by LESTARI benefited more than 11,000 farmers and their families. 25 public-private partnerships were formed between community groups, government agencies, and private sector buyers. Direct benefits to communities included increased incomes, improved capacity in sustainable farming practices, enhanced quality of products, and improved capacity in marketing and business management. Each initiative is described below. For further details please refer to the Lessons Learned Technical Brief on Public-Private Partnerships for Green Enterprise Development in Appendix 5.5.

UTZ Certification for Sustainable Cacao in Gayo Lues and Aceh Tenggara Districts, Aceh Province

This initiative served as a pilot project for improving the livelihoods of cacao farmers in the bufferzone of a protected area through implementation of a certification standard that applies sustainable agricultural practices, improves overall production quality, and reduces the likelihood of forest encroachment into the protected area.

Originally, this initiative started under the USAID IFACS project and continued with LESTARI through technical training for cacao farmers located around high conservation value forest in the bufferzone of Leuser National Park, a biodiversity hotspot and UNESCO World Heritage Site. The trainings covered good agricultural practices based on the UTZ standard, organization and financial management, and cooperative establishment. LESTARI facilitated a partnership between farmers and ECOM, one of the largest agricultural commodity buyers in the region. The partnership provided market access for farmers, and importantly, partnership with a buyer that values sustainability and is willing to pay a price premium for sustainability-certified products. ECOM, financed the entire certification process while LESTARI provided technical training for farmers.

During the process, the farmers established a cooperative (*Koperasi Sinar Lestari Agara*) with LESTARI assistance in order to provide a common platform to do business with the private sector partner. For the first phase, 300 farmers (under LESTARI assistance) with a total area of 275 hectares have committed to implement the UTZ standard and are members of the cooperative that sells to ECOM. More farmers are expected to join if the first phase is successful.

Figure 11. Partnership model for cacao certification initiative supported by LESTARI

Following an official external audit, the UTZ certification was successfully obtained in February 2020. ECOM holds the official certification while each participant farmer will be

given a member card. This certification has already provided multiple benefits to the farmers such as gaining enhances skills and knowledge on sustainable agriculture practice, receiving premium price for the cacao beans and better access toward the market. This success is expected to attract more farmers to join the partnership, and hence contribute to its growth and sustainability. As per the agreement with the cooperative, ECOM will be responsible for extending the certification next year, including the financing the process.

Figure 12. Basic training for farmers in UTZ certification standards

Coffee Agroforestry in Gayo Lues District, Aceh Province

This initiative aimed to improve sustainable livelihood opportunities for the local community through multi-stakeholder partnerships with the private sector (investment and market access) and FMU (access to land and routine monitoring). Through these partnerships, it was expected that forest encroachment will be reduced and forest rehabilitation will be increased, while local communities secure livelihood benefits through coffee agroforestry.

The Pantan Cuaca region in Gayo Lues District is well-known for its arabica coffee production, but farmers still struggle with conventional agriculture practices that yield low quality coffee beans. Coffee plantations are also often located inside the forest estate, which is managed by FMU V. LESTARI worked with FMU V and coffee farmers to acquire the necessary land use permit – *Kemitraan Kehutanan* (Forest Partnership), a type of social forestry permit. The permit proposed an area of approximately 1,000 hectares of degraded land for productive agroforestry systems with coffee and other non-timber forest product (NTFP) commodities. The permit provided access to the land for farmers while reducing the need for illegal encroachment into forest areas. The permit has a strict zero deforestation requirement, which was clearly socialized to all participant farmers. Detailed mapping was conducted jointly with farmers and FMU V. 280 hectares were planned for coffee agroforestry cultivation with the remaining areas to be restored with other allowable NTFP species.

Through grantee partner Inprosula, various technical and managerial trainings were provided to the members of the cooperative. LESTARI coordinated with national and sub-national government agencies to provide equipment for the cooperative to improve efficiency in coffee bean processing. LESTARI also connected the farmers with a private sector partner, CV Kobas. CV Kobas agreed to serve as a long-term buyer after the farmers were able to meet the first large purchase order, showing their commitment and capacity to providing high-quality products. As a result of this series of assistance, LESTARI observed significant improvements in the quality of beans that increased the price fetched by 25-50%. CV Kobas and the cooperative are currently negotiating purchase volumes for the next order, which had been delayed due to the COVID-19 pandemic.

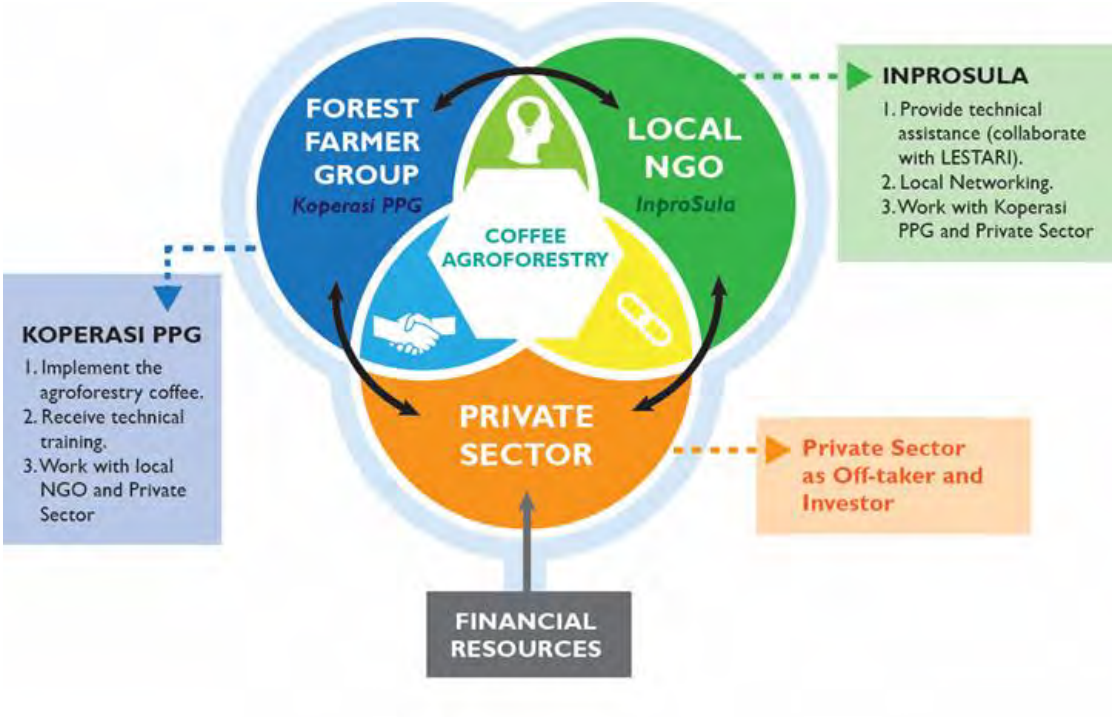


Figure 13. Multi-stakeholder partnership model for coffee agroforestry initiative supported by LESTARI

In addition to the above, LESTARI observed changes in practices that demonstrate increased awareness of farmers in maintaining healthy surrounding forest ecosystems. Prior to the project, approximately 86 hectares of lemongrass plantations existed in the area. Driven by the high price of essential oils, this lemongrass cultivation was being conducted unsustainably and contributing to forest loss. Along with this coffee agroforestry initiative, a total of 36 hectares of this area were voluntarily converted by the farmers themselves into a coffee agroforestry area, thus adding to the total degraded areas restored to productive forests.

Figure 14. Coffee seedlings and training to improve coffee bean quality

Development of Sustainable Rattan Business in Katingan District, Central Kalimantan Province

This pilot project aimed to provide training for the FMU in sustainable forest-based business development. This is an important responsibility of FMUs, but capacity is often lacking in these new and emerging institutions. It was expected that building the capacity of FMUs, including facilitating partnerships with local communities and the private sector for fair benefit-sharing, will lead to improved sustainable forest management and improved community livelihoods.

Under this initiative, LESTARI successfully collaborated with FMU XVII on sustainable rattan development by facilitating a two-way partnership between a Forest Farmer Group (*Kelompok Tani Hutan – KTH*) and private sector (PT. Sahabat Rakyat), with the FMU (represented by the FMU Employee Cooperative – *Koperasi Karyawan*) acting as the middle manager. In this model, the FMU Koperasi Karyawan is the central player that has agreements with both the KTH (to buy) and private sector (to sell). Through direct involvement of the FMU, the initiative aimed to enhance FMU capacity in facilitating, monitoring, and managing similar partnerships for sustainable NTFP utilization.

Figure 15. Partnership model for sustainable rattan initiative supported by LESTARI

Through the KTH, the community receives several types of income: (1) for raw rattan material sales to the FMU Koperasi Karyawan with a price premium for quality (IDR 4,000/kg compared to a typical price of IDR 2,000-2,5000/kg in this region) (2) wages for rattan processing (smoking) work, and (3) sales of processed rattan to the FMU Koperasi Karyawan. The first order from the private sector partner was six tons of semi-processed rattan to be sent to Cirebon, West Java. Various technical trainings for processing raw rattan were also given by the private sector partner, demonstrating their commitment to the partnership.

Although some improvements in rattan quality and processing techniques have been made, most farmers still struggled to keep up with the volume demanded by buyers while adhering to quality standards. They still require follow up trainings and technical support. In addition, the licensing mechanism through the FMU needs to be simplified so that the process of selling rattan runs smoothly without excessive administrative burden.

Figure 16. Rattan processing training with farmers and FMU XVII

Rubber Agroforestry in Pulang Pisau District, Central Kalimantan Province

This pilot initiative aimed to support peatland restoration and fire risk mitigation through enhancing productivity, management, and oversight capacity of rubber production. Stakeholders expected that improved incomes (through higher rubber quality, market access) for farmers will incentivize greater protection and responsible management over peatland areas that reduce the risk of fire.

This initiative primarily focused on developing rubber on degraded peatland areas in Pulang Pisau District. Work with rubber farmer groups in Pulang Pisau started during the USAID IFACS project. Under LESTARI, the initiative continued with technical training on rubber plantation development, harvesting, and post-harvesting techniques to produce high-quality products for the market.

Ensuring good agricultural and management practices is particularly important on peatland areas in this province, which is regularly devastated by forest and land fires. Central Kalimantan was one of the worst hit regions during the 2015 forest and land fire crisis, which resulted in more than USD 16 billion in damages nationwide[7]. Impacts were felt across communities and sectors including health, economy, and education in addition to forest and biodiversity loss. The man-made disaster was rooted in the unsustainable draining and clearing of peatlands. Hence this Green Enterprise initiative ultimately aimed to improve productivity and sustainable management of land, ensuring local communities exercise greater stewardship in protecting their land from fire risk.

The rubber agroforestry initiative was developed under a Forestry Partnership (*Kemitraan Kehutanan*) between local communities represented by KTH and FMU XXXI as the official manager of the forest area. KTH in the villages of Garung and Gohong were given legal access to manage a 400-hectare area.

The business model for this partnership was based on an agreement between three stakeholders: KTH, FMU XXXI, and the private sector partner (CV Dinamika Lintasnusa Initiative, DLI). All were involved in the development of the model including agreement on respective roles and responsibilities. As well as rubber, stakeholders identified other potential commodities such as *Calliandra* and pineapple that could be grown in the permitted area.

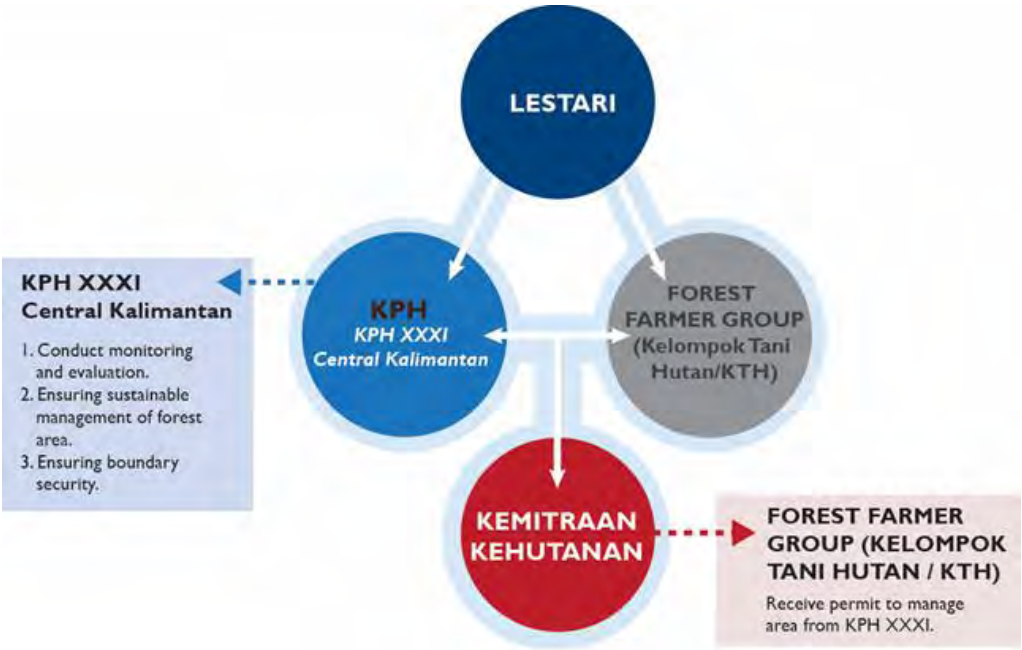


Figure 17. Multi-stakeholder partnership model for rubber agroforestry initiative supported by LESTARI

This was the first time such a partnership was developed in Central Kalimantan. LESTARI provided intensive technical assistance from the early stages in connecting various stakeholders, facilitating necessary permits, developing the business model as well as

[7] https://www.worldbank.org/en/news/feature/2015/12/01/indonesias-fire-and-haze-crisis

conducting surveys for other potential commodities. Through this type of partnership, local communities will have improved incomes from the business partnership itself as well as improved cultivation practices that they can carry forward. Moreover, LESTARI also provided technical assistance in accessing potential funding and up-front investment required for the initiative by engaging with the private sector partner (CV DLI). CV DLI secured required investment for approximately USD 1.7 million (IDR 27 billion) after the MoU between DLI and KTH was signed.

With the implementation of this initiative, a total of 400 hectares of degraded area will be rehabilitated while at the same time enhancing rubber commodity production that benefits local livelihoods. If the area is well maintained in line with agroforestry principles, the risk of forest and land fire will also be reduced.

Figure 18. Signing ceremony for rubber agroforestry partnership; nursery development in preparation of planting activities

Development of local coconut oil-based product in Yepem Village, Papua Province
The socioeconomic and environmental conditions in Papua are quite different compared to Aceh and Central Kalimantan. Local communities still largely depend on neighboring forest for their everyday needs. Traditional communities live on their ancestral lands and derive spiritual and cultural value from these lands. Access to outside markets is often difficult and costly due low population density and lack of infrastructure. The threat of encroachment from local communities is generally very small. Therefore, the LESTARI model for green enterprises was to support local communities to improve local business potential that incorporates principles of conservation and sustainable natural resource management.

In Yepem Village, LESTARI focused support on the establishment of a functioning Village-Owned Enterprise (*Badan Usaha Milik Kampung* – BUMK) as the catalyst and driver for improving local livelihoods. In turn the BUMK attracted regional government support to develop a business based on local products such as coconut cooking oil and sago that can be sold collectively in the district capital. Previously, individual farmers would take their own products to the market, incurring large transportations costs and time. LESTARI provided technical training to improve the quality and quality of produce that is then marketed by the BUMK. The number of members supplying the BUMK are still limited, but expected to grow as BUMK grows in confidence and influence in the village.

This initiative also addressed forest conservation and sustainable forest management. The BUMK has been assigned management of village assets, such as a water resource that supplies the District town of Agats. A BUMK-funded Forest Protection Group patrols the forest area on a weekly basis and has attracted support from both the Asmat Regional Government as well as from the village development funds (*Anggaran Dana Desa*) for their operations. While this is not a sustainable business model *per se*, the operational BUMK with available funding, marketing of commodities from the village, and active forest patrols are all contributing significantly to forest and biodiversity conservation.

Figure 19. Yepem community members making coconut-based products to be sold through the BUMK

Cultivation of Vanilla Agroforestry in the Bufferzone of Cyclops Nature Reserve, Papua Province

This pilot initiative aimed to reduce encroachment and illegal agricultural activities within the protected area through the development of sustainable agricultural opportunities for local communities in areas located strictly outside of the nature reserve.

This initiative was implemented in the Cyclops Nature Reserve region and encouraged relocation of encroachers to the bufferzone area of the nature reserve. The model is based on a collaboration between LESTARI and USAID's Sustainable Cooperative Agreement Alliance (SCAA) project, which is implemented by the National Cooperative Business Association (NCBA), a U.S.-based farming cooperative. Under this collaboration, LESTARI was responsible for identification of suitable locations and farmer groups while SCAA was responsible for providing training to develop sustainable agroforestry systems with vanilla as the main commodity. Local government agencies also contributed equipment, seedlings, and trainings for participating farmers. PT. Agri Spice Indonesia (ASI), the private sector partners of SCAA, will be the permanent off-taker of vanilla beans from farmers. Over 175 farmers received trainings in agroforestry vanilla and sustainable land use management, and LESTARI worked together with the local government to optimize technical assistance and scale up the business model to improve land and forest management in the Cyclops region.

Implementation was significantly disrupted due to flash floods in February 2019 which damaged many agroforestry areas and SCAA's nursery and the plantation. This flood was caused by deforestation in the Cyclops area and is clear evidence of the need to reduce deforestation and degradation within the nature reserve. After the flooding, LESTARI worked with the Center for Natural Resources and Ecosystem Studies (*Pusat Studi Sumber Daya Alam dan Ekosistem* – PUSSDAE) affiliated with Universitas Cendrawasih (and with NCBA) to slowly bring the initiative back on track. Collaboration with PUSSDAE is a strategy to enhance the sustainability of the project beyond LESTARI. PUSSDAE and SCAA have committed to providing guidance and necessary support to farmer groups in the future.

Figure 20. Multi-stakeholder partnership model for vanilla agroforestry initiative supported by LESTARI

The main challenge for this initiative is ensuring that the partner farmers cease illegal agricultural activities within the nature reserve. One key strategy is to collaborate with SCAA and PT. ASI to ensure they will not purchase from farmers that continue illegal cultivation. Economically, the project has started to show initial results. Vanilla requires about three years to mature and produce vanilla beans. However, the price of vanilla is currently high (fresh harvested vanilla beans sell between IDR 500,000-700,000), encouraging farmers to abandon encroachment and join this initiative. A survey conducted to measure impact of the project on livelihoods and encroachment in the nature reserve revealed a high level of awareness about the importance of forest protection on their own livelihoods, realizing the main cause of the floods. 60% of respondents stated they do not practice illegal agriculture and are focusing on vanilla. However, many still have no alternatives due to lack of access to land[8].

Key Challenges, Lessons Learned, and Recommendations

LESTARI's work supporting Green Enterprises revealed various challenges and lessons learned, which could be useful for government agencies, donors, NGOs, and private sector firms involved in the sustainable forest commodity development space in Indonesia. These are summarized below.

- Recognizing the growing market-driven diversification is one of the major contributors for sustainable business model.
- Engaging the 'right' partner is a crucial key to develop a sustainable business model.
- Long-term commitment needs to be continuously fostered.
- Bridging regulatory and oversight gaps for developing sustainable business models is essential.
- It is difficult to assess the impacts and relationship of Green Enterprise development alone on forest cover change in adjacent areas.

[8] Illegal agricultural activities are mostly conducted by immigrant farmers coming from highland areas. They lack access to land and hence encroach within the boundaries of the nature reserve. LESTARI has collaborated with SCAA and local government through this initiative to allow land access for immigrant farmers in limited areas outside of the nature reserve. Some of the local communities have supported this while others are still reluctant due to underlying tensions surrounding migration.

LESTARI 7 – Private Sector Best Management Practices

Effective management of both protected and production forests remains key to successful long-term biodiversity conservation. In particular, conservation of many wide-ranging and low-density species in Borneo and Papua (such as orangutan, sun-bears, and cassowary) require large forested landscapes. Protected area networks in Kalimantan and Papua may be too small or fragmented to ensure the survival of all elements of biodiversity, especially species with large home ranges or migrations. In light of this, biodiversity conservation outside protected areas is becoming increasingly important. The total current area of Indonesia's production forests within the government managed forest estate is 68.8 million hectares or 57% of Indonesia's total forest area (120.6 million ha). Therefore, the land-based private sector provides significant opportunities for demonstrating improved land use governance and forest and biodiversity conservation.

The strategic approach for supporting Best Management Practices (BMP) in the land-based private sector included (1) Reduced Impact Logging (RIL) training and implementation in partner timber concessions, (2) Improving Conservation Management and Monitoring, and (3) land-use rationalization.

RIL is a holistic concept which is intended to assist forest concession companies to optimize their production return while at the same time minimizing environmental and social impacts. The application of RIL can reduce direct impact on the integrity of forests, improve production efficiency, reduce costs, and improve future economic viability for commercial operations. By reducing damage to the forest, minimizing the associated GHG emissions is an additional benefit of RIL. Improved logging through adoption of RIL can increase productivity and reduce emissions by around 30-50% (between 38.5-74.8 tons of carbon per hectare). The term 'RIL-C' was adopted for LESTARI RIL implementation with measurement of climate change mitigation co-benefits of this approach.

Companies aiming for sustainability certification such as the Forest Stewardship Council's (FSC) Forest Management Certification must maintain and enhance HCVs that exist in their concession. During USAID IFACS Conservation Management and Monitoring Plans (CMMP) were produced that identified areas of biological, ecosystem service or socio-cultural importance (collectively known as high conservation values – HCVs) and developed recommendations for their effective management and monitoring. Many companies in Indonesia still struggle with HCV management and few have succeeded in monitoring them. Capacity and commitment to implement BMPs for conservation is required for sustainable forest management.

LESTARI offered BMPs to the oil palm and mining private sector, that normally convert forests, focused on better planning to identify areas for economic development, conservation and social needs. LESTARI developed a multi-stakeholder approach that aimed to balance multiple land uses with concessions thus leading to sustainable development and reduced impact compared to a business as usual scenario. This approach was termed 'land use rationalization.'

Outputs and outcomes from this strategic approach were measured through two indicators.

- Indicator #6: Number of private sector firms that have improved management practices as a result of USG assistance
- Indicator #12: Number of people receiving USG supported training in natural resources management and/or biodiversity conservation

Importantly, where companies demonstrated implementation of BMPs through commitments and budgeting for continuation after the project (validated by field visits after training was complete), concession areas contributed to Indicator #2: Number of hectares under improved management.

The initial assessment of private sector stakeholders operating in LESTARI supported landscapes illustrated the most suitable opportunities to implement this strategic approach. Implementation. The percentage of the landscapes that the private sector influences varies but LESTARI prioritized BMPs with the forestry sector expanding on initiatives started under IFACS. Oil palm concessions can contribute to improved natural forest management where plantations have not been developed. The priority area for engaging oil palm concessions was in Mappi-Bouven Digoel Landscape.

INITIAL ASSESSMENT OF BMP OPPORTUNITIES IN LESTARI SUPPORTED LANDSCAPES				
Landscape	**Value landscape / area with potential for improved management (Ha)**	**Area of forestry private sector concessions (Ha) & percentage of landscape**	**Areas of oil palm private sector concessions (Ha) & percentage of landscape**	**% Total landscape**
Leuser Landscape	1,257,650	0	10,958 (0.87%)	0.87%
Katingan-Kahayan Landscape	2,938,786	1,275,464 (43.4%)	607,079 (20.7%)	64.1%
Lorentz Lowlands Landscape	4,533,299	975,430 (21.5%)	38,329 (0.8%)	22.3%
Mappi-Bouven Digoel Landscape	2,240,882	1,190,877 (53.1%)	313,126 (14.0%)	67.1%
Sarmi Landscape	986,328	717,034 (72.7%)	45,103 (4.6%)	77.3%
TOTAL	**11,993,001**	4,158,805 (34.7%)	1,014,595 (8.5%)	**43.1%**

Of the timber companies, LESTARI succeeded in engaging the Dwima Timber Group, Kayu Lapis Indonesia Group, and Wapoga Group for implementation of BMPs. This engagement focused on better implementation of RIL. While training was carried out during IFACS, LESTARI expanded on this with five new concessions in Katingan-Kahayan Landscape and one additional concession in Sarmi Landscape. Four companies that had previously received training but subsequently had not implemented RIL to the fullest extent required additional capacity building to enhance RIL implementation. LESTARI focused the training on documentation of the impact of RIL in terms of forest stand health as measured through reduced GHG emissions (including documentation of fuel and machinery usage to extract and haul timber which are the largest costs of timber companies and therefore reflect company efficiency).

Three companies were engaged for CMMP implementation in Sarmi and Katingan-Kahayan Landscapes to improve HCV management and monitoring through simple but robust monitoring techniques.

As oil palm companies convert land to plantation crops, increasing the area for forest conservation within concessions can reduce production area available in undeveloped license areas. Where local and international NGOs had applied pressure to companies because of past record of deforestation, one oil palm company, PT. Tunas Sawaerma (Korindo group) was willing to implement land use rationalization in undeveloped oil palm areas that could have served as sustainable development models for other companies in the region.

PRIVATE SECTOR PARTNERS ENGAGED UNDER LESTARI		
Landscape	**LESTARI Partners for BMP Implementation**	**Area of Concession under Improved Forest Management (Ha)**
RIL-C		
Katingan-Kahayan Landscape	PT. Fitamaya Asmapara (FA)	43,880
	PT. Sarana Piranti Utama (SPU)	49,700
	PT. Sikatan Wana Raya (SWA)	49,400
	PT. Hutan Domas Raya (HDR)	99,870
	PT. Graha Sentosa Permai (GSP)	44,970
	PT. Hutan Mulya (HM)	52,100
	PT. Kayu Waja (KW)	38,450
Sarmi Landscape	PT. Wapoga Mutiara Timber II (WMT)	79,130
	PT. Salaki Mandiri Sejahtera (SMS)	169,170
CMMP		
Sarmi Landscape	PT. Bina Belantak Utama (BBU)	298,710
Katingan-Kahayan Landscape	PT. Dwima Jaya Utama (DJU)	Incomplete BMP implementation
Land Use Rationalization		
Mappi-Bouven Digoel	PT. Tunas Sawaerma	Terminated initiative
TOTAL		**925,380**

The Theory of Change described a co-management agreement approach between communities in villages adjacent to concession areas that aims to improve value chains critical to improved livelihoods. The assumption behind this was that companies applying BMPs could enhance benefits for communities and lead to a reduction in unsustainable natural resource use, biodiversity and land-based GHG emissions. Based on GOI priorities, LESTARI facilitated co-management agreements that were focused on social forestry initiatives that naturally fell outside of the private sector concessions. While the land-use rationalization approach attempted in Papua could have resulted in benefits for communities, no other co-management agreement between communities and the private sector engaged in BMPs was pursued.

LESTARI sub-contracted two organizations (Lembaga Wana Aksara – LWA and the Tropical Forest Foundation – TFF) to train company staff in RIL techniques and measure the impact of both conventional and RIL best management practices with regards to production, cost efficiency, and extent of damage to the forest in terms of GHG emissions. Details of the technical implementation of these sub-contracts and the main outcomes can be found in the Lessons Learned Technical Brief on Improving Production Forest Management listed in Appendix 5.5.

Figure 21. Clockwise from top left: Pre-harvest planning of logging roads; reviewing accurate contour maps of area; barcode marking for chain of custody on the log and stump; surveying for skid trails

All companies showed an improvement in performance of RIL operations as compared to baselines. At the pre-training audit or measurement of the conventional, business-as-usual operations, companies in Central Kalimantan and Papua scored a low average of only 40% application of RIL standards that can safeguard production forest. Companies typically scored high in 'administrative aspects[9] but low to very low in harvest planning and harvest operations, monitoring and evaluation or suitable company operational standards[10], something that RIL training was specifically designed to correct.

[9] Such as possession of valid concession license and a valid annual cutting permit, harvesting boundaries established in the field and shown on the maps according to existing regulatory requirements. (TFF RIL C&I)

[10] Such as pre-harvesting; operational inventory identifying all trees to be harvested; operational scale contour and tree position maps of adequate accuracy; roads planned, located, constructed, and maintained so as to minimize the impact on the forest and related values, skid trails and landings located and opened prior to the commencement of felling activities; SOPs in place. (TFF RIL C&I)

IMPROVEMENTS IN RIL COMPLIANCE BY ALL COMPANIES ASSISTED UNDER THE LESTARI RIL C INITIATIVE			
Landscape	**LESTARI Partner**	**Pre training Implementation of RIL Standards (%)**	**Post training Implementation of RIL Standards (%)**
Katingan-Kahayan Landscape, Central Kalimantan	PT. Fitamaya Asmapara (FA)	24	51
	PT. Sarana Piranti Utama (SPU)	21	53
	PT. Sikatan Wana Raya (SWA)	41	58
	PT. Hutan Domas Raya (HDR)	39	56
	PT. Graha Sentosa Permai (GSP)	53	75
	PT. Hutan Mulya (HM)	51	74
	PT. Kayu Waja (KW)	46	76
Sarmi, Papua	PT. Wapoga Mutiara Timber II (WMT)	61	72
	PT. Salaki Mandiri Sejahtera (SMS)	28	64
AVERAGE		**40**	**64**

RIL compliance is achieved with a score of 80-85%. No companies achieved full compliance after training but major improvements were made in forest planning and harvesting operations that do impact improved forest management outcomes. Significant positive impacts included reduced soil damage and erosion, due to better skid trail planning, reduced damage to the residual forest, avoiding felling defective trees, reducing damage to forest streams, maintenance of riparian buffers, and reduced inappropriate road development on steeper slopes. Improved logging productivity (measured in the number of trees and volume felled per hour), skidding productivity (volume skidded per hour), harvesting fuel efficiency, and soil disturbance was improved across most companies, but was variable due to topographical, staffing, and machinery differences between companies.

LESTARI estimated the results of RIL implementation on GHG emissions reduction from operations with a Verified Carbon Standard (VCS) methodology developed by the TNC Science Research team[11] and a 'carbon stock' approach developed by LWA. The VCS measured reduced GHG emissions from four main categories of logging activities under RIL and compared them to conventional logging. Emissions under conventional logging activities ranged from 122-447 tCO_2 per hectare. Under RIL implementation, emissions were reduced to 32-174 tCO2 per hectare or between 23% and 74%. The carbon stock approach measured forest health post-harvesting and the GHG emission 'cost' per unit of timber produced (or GHG production efficiency) between conventional and RIL logging. Total average GHG emissions per hectare were reduced under RIL implementation between 45–80%.

With LESTARI assistance, one company in Sarmi (PT. BBU) fully implemented their CMMP. Conservation plans developed under IFACS and an HCV report developed by independent consultants were used to identify key biodiversity, ecosystem services, and sociocultural aspects that should be monitored. Training focused on (1) participatory monitoring and mapping for HCV 5 and 6 (community needs and cultural identity) and (2) a Forest Integrity Assessment (FIA) technique (developed by the HCV Resource Network for self-monitoring) for HCV 1-4 adapted to the Papuan forest context. Results of the monitoring showed that HCVs in the PT. BBU concession are being maintained. Threats to biodiversity from logging are currently low, and poaching is negligible. Logging road development has thus far minimized impact on HCV forest, and rare habitats are being avoided by logging. Water

[11] VCS (2016), VMD0047 Performance Method for Reduced Impact Logging in East and North Kalimantan, version 1.0, 28 April 2016, VCS

quality and quantity was maintained and not affecting downstream communities. Mapping with communities showed that culturally significant areas are protected and communities were engaged before logging commenced. This also demonstrated the importance of maintaining community engagement and participatory mapping of important community areas to avoid potential future conflicts. The company committed to implement FIA and participatory mapping on a routine basis in the future and are providing budgets to support this objective. Similar CMMP training was initiated in PT. DJU during the final year, but a commitment for its use and budgets to support monitoring activities was not achieved.

Figure 22 below illustrates the locations of the RIL and CMMP initiatives in the Katingan-Kahayan and Sarmi Landscapes.

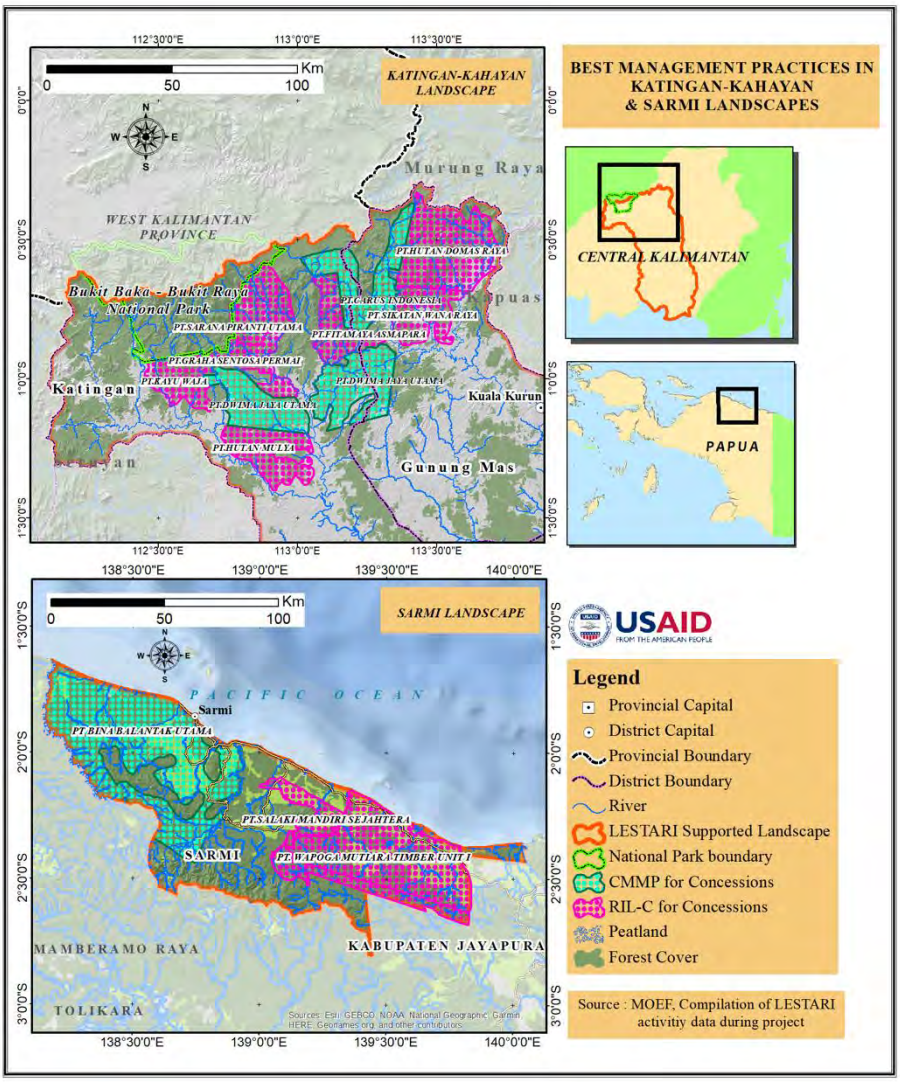


Figure 22. Locations of partner timber concessions trained in RIL-C and CMMP implementation in Katingan-Kahayan and Sarmi Landscapes

The land use rationalization pilot started with Korindo group company PT. Tunas Sawaerma in Block E, a 14,461-hectare area of secondary forest slated for conversion to oil palm. The participatory planning initiative was supported by the Deputy Head of District who emphasized that a precautionary approach should be applied to natural resource use and ensure that important community values are safeguarded and biodiversity and forests are appropriately maintained while allowing for local economic development. Two multi-

stakeholder workshops defined methodologies and prepared stakeholders for participatory field assessments. These workshops embedded openness and transparency according to Free, Prior and Informed Consent principles. While all parties were keen to implement this participatory planning initiative, issues related to communication and transparency between Korindo and local communities quickly emerged. Ultimately, communities stressed that these issues should be resolved before moving forward with any participatory field assessment. As a result, the initiative was postponed indefinitely. More detailed information can be sourced from the LESTARI Year 3 Annual Report.

However, this initiative did encourage the Bouven Digoel District Government to strengthen the process of land acquisition. LESTARI assisted the Vice Head of District in analyzing the investments in the district as many problems related to company-community relations have recently emerged. Private sector analyses also fed into the SEA and spatial plan revision. As a consequence of the land use rationalization initiative uncovering serious company-community issues, as well as international press highlighting the conversion of traditional lands, high conservation value and high carbon stock forests, the District Investment Agency moved to improve licensing in the district. The agency will ensure adat representation (such as Adat Community Council – LMA) are involved in the decision making process regarding permits and environmental impact analyses, formed an Investment Monitoring and Evaluation Team to ensure companies conduct proper FPIC (community consultation and dissemination of information properly before obtaining permissions of development permits), is currently reviewing existing permits, and recommended cancellation of 'location permits' where the companies have not been active. The Investment Agency has also been active in developing a draft Head of District Regulation on community consent (FPIC) and its verification for the protection of traditional land use to prevent future conflict through land acquisition. The FPIC team in Bouven Digoel has been actively providing inputs and context to the Provincial Environmental and Forestry Agency for draft legislation requiring FPIC in all land-based investments and licenses requiring Environmental Impact Assessment (AMDAL).

Key Challenges, Lessons Learned, and Recommendations

- The commitment of improved production practices must come from company owners and top management. A good degree of RIL compliance has been shown to be possible as in the LESTARI case with nine companies in Central Kalimantan and Papua, but this always requires technical and operational pre-conditions to be in place. While all of the LESTARI partner companies were ready to implement RIL, they are unfortunately not representative of the majority of timber companies operating in Indonesia.

- Clear information and data that reflects the advantages of RIL is essential for affecting change to regulations governing the timber industry and production forests.

- Requirements for RIL introduced into regulations must be coupled with improved capacity of auditors and a neutral independently funded certification system.

- The establishment of independently funded certification bodies verifying improved regulations would incentivize improved forest management and greater regulatory compliance.

- Another incentive that needs attention is the potential major role the forestry sector can play in contributing to Indonesia's national commitments to reducing GHG emission from forest degradation through the implementation of RIL

LESTARI 8 – Innovative Financing for Sustainable Land and Forest Management

Strategic approach 8 focused on leveraging innovative financing mechanisms in support for sustainable land and forest management within LESTARI supported landscapes. The approach included leveraging alternative or additional financing for conservation and ecosystem restoration, Payment for Environmental Services (PES), and ecotourism development. SA8 contributed only to one indicator, i.e., Indicator #13 – Amount of investment mobilized for climate change as supported by USG assistance. While implementing this SA over the course of the project proved to be very challenging, some progress was seen as explained below. Overall, achievement of SA8 contributed only about one percent towards the total achievement of USD 33.8 million in investment mobilized. As explained under SA1 and 2, the most significant leveraging amounts were achieved through GOI program and budget advocacy initiatives.

During the first year of the project, LESTARI team members Sustainable Travel International (ecotourism) and PT Hydro South Pole Carbon (PES) produced an assessment report for ecotourism potential within the Leuser and Katingan-Kahayan Landscapes. The process included a series of workshops on Stakeholder Mapping for Ecotourism Development involving 210 stakeholders from national and local governments, communities, private sector, associations, NGOs, community forums, media, and academia. The outcome of this process was a stakeholder map and the preliminary identification of key natural and cultural assets, tourism infrastructure and facilities, tour operators and routes, and destinations for each landscape.

From this foundation, the LESTARI team conducted a comprehensive analysis of current and potential visitor flows within and to Central Kalimantan and Aceh, and their competing destinations, so that local, domestic, and international product positioning opportunities and challenges could be identified. The team then worked with the landscape teams and key provincial, district and local government, national park, community, and private sector tourism stakeholders to undertake a participatory mapping of existing and potential/planned ecotourism opportunities and clusters. These stakeholders identified as highest priority the following areas:

- Katingan-Kahayan Landscape: Sebangau National Park, Bukit Baka Bukit Raya National Park, Pulang Pisau
- Leuser Landscape: Trumon Wildlife Corridor, Singkil Wildlife Reserve, Kedeh, Agusen and Ketambe

The LESTARI team also developed a Product Evaluation Tool (PET), which was used to (1) collect baseline visitation and economic impact data; (2) assess and rank the ecotourism potential of the prioritized opportunities; (3) screen the priority areas for socio-economic and conservation value; assess local, domestic, and international market demand; and evaluate PPP prospects and investment risks. Based on the results of the PET and participatory planning processes, several potential opportunities and partnerships were explored, including a potential PPP in the Katingan-Kahayan Landscape.

All the processes in exploring and assessing ecotourism potential revealed a number of general challenges and obstacles which include:

- Low level of tourism-enabling infrastructure and facilities
- Lack of government resources and market understanding for community-focused ecotourism development centered around the National Parks of Gunung Leuser, Sebangau and Bukit Baka Bukit Raya, and the Trumon Singkil Wildlife Reserve

- Unrealistic community expectations of the revenue that will be generated from ecotourism
- Product-led packages are being developed that are not linked to market demand
- Expensive package pricing (including food and transport) is not commensurate with value and quality of experience
- Weak standard of local guides and lack of engaging information and interpretation about both natural and cultural assets
- Potentially harmful orangutan viewing practices in Sebangau National Park
- The annual haze season in Central Kalimantan
- Negative perceptions of Sharia law in Aceh

Weighing these various challenges and available opportunities, the LESTARI team focused its assistance to Sebangau National Park while facilitating a small-scale ecotourism pilot initiative under co-management schemes in Agusen Village, Gayo Lues District and Tangkahen Village, Pulang Pisau District. In the Punggualas area of Sebangau NP, LESTARI helped to facilitate an agreement between park authorities and local communities for collaborative management of an ecotourism area that benefited over 1,000 villagers. In 2019, the number of visitors reached 300 people with the majority coming from overseas to observe wild Bornean orangutans (see callout box below).

LESTARI also provided technical inputs in developing a Detailed Engineering Design (DED) document for three priority ecotourism sites in the Punggualas area of Sebangau NP – Sebangau Hulu, Mangkok, and Baun Bango. In February 2019, the final technical report was presented to the head of the park and accepted as the final document which will be used by park management as guidance for further development of ecotourism concepts in the area based on principles of ecological sustainability.

Ecotourism in Punggualas: A Model for Community Engagement for Conservation

The Punggualas area located within Sebangau National Park is home to a research center for the Bornean Orangutan that was established by park management in 2008. This research center plays a crucial part in the conservation of the 6,000-9,000 wild orangutans living in Sebangau NP. The establishment of the national park in 2004 and subsequently this research center within it is part of the journey towards collaborative conservation. In this endeavor, the biggest challenge is seeking participation from the local people in adjacent villages – who used to cut down trees – but are now partners in protecting the forest. Sebangau NP applies an empowerment-based conservation approach by conducting regular outreach programs for village leaders and local people aimed at enhancing their understanding of the value of conservation.

Conservation not only protects wildlife, but can also serve a social and economic purpose to enhance people's welfare. This was the platform supported by LESTARI in developing the ecotourism potential in Sebangau NP. Ecotourism in Punggualas involves three villages which offer different tourism experiences. Baun Bango Village provides cultural tourism involving the Dayak Tribe, Lake Jalan Pangen, and traditional rituals. Karuing Village, which is closest to Punggualas, offers packages to see wild orangutans. Jahanjang Village offers the unique Lake Bulat. Karuing Village has been the most popular choice as tourists are keenly interested in seeing orangutans in the wild.

The initiatives to protect orangutans have engaged the local people as partners in conservation. Training was provided for communities in how to manage sustainable ecotourism. The villagers now understand that sustainably managing the area enables them to enhance their livelihoods.

To maintain Punggualas sustainably, the ecotourism site requires the commitment of multi-stakeholders. LESTARI facilitated multi-stakeholders to establish a common understanding on collaborative forest management. The parties involved were local government (Regional Tourism Service Office and other agencies), tourism operators, Sebangau NP, and local communities. LESTARI facilitated these stakeholders to establish a collaborative forum that has been endorsed by the Directorate General of Natural Resources and Ecosystem Conservation (KSDAE) of KLHK. The signing of a memorandum was the first ever between the local people and Sebangau NP. The Central Kalimantan Provincial Government has also endorsed and promoted the designation of Punggualas as an ecotourism destination. Through cooperation with telecommunications services provider, Telkomsel, a photo of Sebangau NP is featured on phone cards issued since January 2018.

Pak Anggodo, the former Head of Sebangau NP, hopes that ecotourism initiatives in Punggualas can engage the local people to be active partners in conserving the environment. "It is hoped that ecotourism based on wild orangutan conservation is sustainable. Therefore, the people would have a sense of belonging and care about conserving Sebangau National Park. The initiatives to protect the peatland forest in the national park and protect key species such as the orangutan can go hand in hand with the programs that aim to empower the local people," he said.

LESTARI initiated a model for sustainable financing for Sebangau National Park in order to supports the long-term restoration of the park. The output was a business plan for the Sebangau Restoration Fund which was presented to KLHK that detailed the restoration activities, costs, and potential funding options from national and international donors to sustain the long-term management of Sebangau National Park. The LESTARI team

engaged the Global Green Growth Institute (GGGI), which showed interest in this initiative. However, collaboration was unable to move forward pending approval from KLHK. Nevertheless, as LESTARI technical support was phased out, GGGI committed to take over sole leadership, as this organization will continue monitoring developments and follow up with KLHK, Sebangau National Park, and other partners accordingly.

In Pulang Pisau District, LESTARI provided technical assistance to the community forest group in Tangkahen Village to acquire a social forestry permit. In 2016, KLHK granted a Hutan Desa permit for Tangkahen Village covering an area of 162 hectares. Exploring the potential of their forest, the community group agreed to initiate ecotourism activities within their village forest. Support was gained from the Village Fund to build a guest house. Over the course of the project, equipped by skills gained from LESTARI capacity building trainings, the community group actively sought collaboration from various parties for enhancing their ecotourism initiative. As a result, an ecotourism working group was formally established by the District Head of Pulang Pisau. This working group aimed at accelerating ecotourism development in Tangkahen Village. As of the end of the project, Tangkahen ecotourism group has received:

Figure 23. Tree house as part of the Tangkahen Village community-based ecotourism initiative

- Support from Social Forestry and Environmental Partnerships Agency (BPSKL) Kalimantan Region to build tree houses and a solar cell installation
- Support from Pulang Pisau Public Works Office for road development to the forest area and bore wells for clean water facility
- Support from Pulang Pisau Environmental Office for cooking wares used at the guest house
- Support from Ministry of Tourism for the development of an Information Center

The story of Hutan Desa Tangkahen, which has undergone a significant transformation from damaged forest to managed forest, was published in prominent national media outlet Kompas in November 2019 (https://kompas.id/baca/utama/2019/11/05/sejahtera-dari-hutan-desa-para-dewa/)

In Leuser Landscape, LESTARI grantee Yayasan Java Learning Center (Javlec) helped local communities to enhance and manage an ecotourism site in Agusen Village, Gayo Lues District. River tubing was introduced as one of the main recreational activities in this village. LESTARI facilitated a series of trainings for the youth ecotourism group in this village to build their capacities in managing the site professionally and sustainably. LESTARI also supported the enhancement of coffee agroforestry. Along with the beauty of the Agusen region, coffee agroforestry was also promoted as ecotourism product. Furthermore, LESTARI facilitated the local community to pursue a social forestry permit to grant them legal access to manage the area. As a result, in November 2018, KLHK granted Hutan Desa license to Agusen Village covering an area of 1,276 hectares. The local community is now working together with FMU V and Gayo Lues Tourism Office to further unlock the ecotourism potential of the area.

> "If we protect the forest, we also maintain the river (which is important for ecotourism). Hence, the future of our youth generation will also be guaranteed. We no longer want to be forest destroyers and cannabis growers."
>
> -Idin, leader of the youth ecotourism group in Agusen Village

4. KEY EVALUATION QUESTIONS

As part of LESTARI's commitment to Collaborating, Learning, and Adapting, a final internal assessment of the project was conducted from January to May 2020. The objective of this assessment was to measure the effectiveness of LESTARI in achieving its main outcomes and the ability of government and non-government partners to sustain and amplify these outcomes. The final assessment provided LESTARI staff and partners the opportunity to reflect honestly and critically on the progress and challenges of the past five years.

The LESTARI Activity Monitoring and Evaluation Plan (AMEP) provided four key evaluation questions to guide the final assessment process. Considering the complex nature of the project, the assessment team used a mixed-method approach to answer the questions. This included ToC tracing, focus group discussions, and interviews with key local government partners, desk review and analysis using qualitative and quantitative data, and case study analysis.

A summary of the answers to these four questions and accompanying analyses are provided below. For further details, please refer to the full LESTARI Final Assessment report.

SUMMARY OF OVERALL ASSESSMENT

LESTARI did not start completely anew, but rather sought to build upon the successes, relationships, and lessons learned from the USAID IFACS project (2010-2015). For example, IFACS focused on incorporating SEA recommendations into the RTRW, while LESTARI shifted priority to SEA-RPJMD. This aimed to ensure that these recommendations are adopted into programs and allocated supporting budgets, as is legally required for RPJMD. Another example is the development and implementation of Landscape Conservation Plans (LCPs) which were developed during IFACS as a tool for guiding conservation actions and influencing district spatial plans. Through LESTARI, these LCPs were then operationalized in the form of social forestry initiatives, Conservation Partnerships, and Kampung Lestari scheme in Papua. Through these processes, LESTARI acted as a catalyst in synergizing the legacy of IFACS with suitable Indonesian government policy and programs.

LESTARI strived to work within the Indonesian central and regional governments' regulatory and priority framework. This strategy helped to build buy-in from partners by filling gaps such as the lack of human resources capacity, tools availability, data analysis and funding limitation. Furthermore, this approach ensured smooth handover, ownership from partners, and continuity of activities and approaches after LESTARI closeout.

Overall national and local government and civil society partners perceived LESTARI as a well-managed and effective project facilitating significant progress in outreach and awareness, building constituencies for conservation, and enhancing forest management capacity. Significant results included 7.46 million hectares of forest and natural resources under improved management, USD 33.8 million in domestic resources mobilized for forest and biodiversity conservation, 41,535 people securing livelihood benefits, and 30 national and sub-national policies introduced.

However, LESTARI did not achieve breakthroughs in leveraging large private sector investment in sustainable forest-based commodities, as this proved more challenging than expected. LESTARI attempted a type of intervention which tried to merge conservation

efforts with private sector engagement within the six project-supported landscapes. In its implementation, LESTARI tried to demonstrate that these two seemingly contradictory interests can be aligned in harmony as long as proper assistance and government support are in place. LESTARI did achieve 25 public-private partnerships, but these were all with locally-based small and medium-sized enterprises which limited the scale and total investment value. As a landscape-focused project, LESTARI was limited to interventions in the six specific landscapes that are remote, have limited infrastructure and market access, insufficient investment incentives for the large-scale private sector, among other obstacles. More broadly, potential opportunities for private sector engagement in the sustainable forest commodity space do exist in Indonesia and are growing with niche markets for high-end chocolate and coffee. This could be a suitable area for a future project with more flexibility in working areas and focal landscapes.

KEY QUESTION 1: TO WHAT EXTENT HAVE LESTARI INTERVENTIONS BEEN EFFECTIVE IN REDUCING BIODIVERSITY THREATS AND POSITIVELY IMPACTED POPULATIONS OF KEY IDENTIFIED SPECIES?

In general, LESTARI adopted existing approaches to support the improvement of PA management. LESTARI decided to work within the existing protected area management framework, such as METT, SMART Patrol, RPJP, mitigation of human-wildlife conflicts, zoning/blocking, and combating illegal wildlife trade and forest crimes. Each relevant UPT has now demonstrated greater commitment and capacity in implementing these tools and approaches. Through adaptive management, LESTARI was flexible to adapt to and align with new government programs and priorities such as Conservation Partnership. However, LESTARI also made a significant contribution to improving the quality and quantity of implementation of those activities by filling gaps through supporting capacity building, facilitating programs, assisting in data management and analysis, and providing funding support. This synergy proved to be a good strategy in order to gain support from partners, especially KSDAE and its units (PA) rather than introducing new approaches. In addition, working within GOI frameworks helped to achieve broader impacts and ensure sustainability.

This assessment's findings were inconclusive to confirm whether LESTARI's interventions for PA management directly led to reductions in biodiversity threats and positively impacted populations of key species. This is largely due to problems of attribution – various factors and actors can influence the reduction of threats to forest areas, such as the implementation of government policies, government programs on conservation/rehabilitation, law enforcement, and other donor projects. Moreover, there was no previous official baseline on wildlife trafficking and poaching (either at landscape or national level) against which to measure the impacts of SMART patrols even where project data was collected. This does not mean that LESTARI's work was ineffective as three signs indicate concrete contributions to positive impact – the decrease in the rate of deforestation in most PAs (with the exception of Cyclops Nature Reserve) during the LESTARI project period, the increase in METT score within PA units supported by the project, and the reduced intensity of poaching of key species in assisted PAs. These facts show positive outcomes for increasing the effectiveness of PA management as targeted in the relevant strategic approach at the beginning of the project.

KEY QUESTION 2: TO WHAT EXTENT HAS IMPROVED COLLABORATION BETWEEN GOVERNMENT, PRIVATE SECTOR AND COMMUNITY CONTRIBUTED (VIA CO-MANAGEMENT AND/OR GREEN ENTERPRISES) TO IMPROVED FOREST MANAGEMENT/INCREASED CONSERVATION STEWARDSHIP?

LESTARI supported building capacity and commitment for co-management among relevant stakeholders in areas adjacent to PAs. This is essential for threat reduction on PAs through more transparent, negotiated agreements where roles and responsibilities between stakeholders (local communities, local government, national park, FMU) are clearly defined. LESTARI invested significantly to support the implementation of collaborative management

activities, strengthening FMUs, and green enterprises. It is not surprising that the results from this assessment indicate that LESTARI's interventions on these initiatives achieved the most significant outcomes and impacts compared to other initiatives. From project indicators, these initiatives also contributed to the majority of achievements. This shows the strength of the LESTARI interventions in working collaboratively with community, government and private sectors. The project initiatives on supporting community livelihoods through improved production and enhanced market access of key local commodities is on the right track to yield benefits for local incomes as well as reducing deforestation and encroachment pressures. However, further research needs to be done with a counterfactual to study other enabling factors that might contribute to these impacts. Various benefits felt by the community through collaborative forest management and green enterprise initiatives have fostered their stewardship of forest areas. In several instances, communities demonstrated awareness and capacity in protecting their forest areas from various external threats.

KEY QUESTION 3: TO WHAT EXTENT HAVE LESTARI INTERVENTIONS BEEN EFFECTIVE IN IMPROVING LAND USE GOVERNANCE?

Improved land use governance is a cornerstone of achieving improved forest management and biodiversity conservation as it provides the foundational policies and institutional frameworks to enable improved practices. Improving land use governance with entry points through incorporating SEA recommendation into development plans (RPJMD) and spatial plans (RTRW) can ensure the new or revised policies, plans or programs are developed based on the principles of sustainability and provide alternative scenarios and recommendations to mitigate impacts. To a certain extent, SEA application in districts and provinces assisted by LESTARI was indeed able to improve the planning and decision-making process in the formulation of RTRW and RPJMD. Nevertheless, none of the SEA-LEDS incorporated into the draft district spatial plans (*Ranperda* RTRW) has officially resulted in changes on the ground because of the time it takes to move through the approval processes of various levels of government until *Ranperda* are endorsed as *Perda* and enforced. However, the potential for delivering impact is enormous. SEA-LEDS recommendations incorporated into the draft district spatial plans in Boven Digoel and Mimika Districts have resulted in proposal for increasing areas under protection from 18% to 44% (511,373 ha) and 70% to 73% (42,399 ha) respectively. Though the draft spatial plans are still under review, the SEA process in Boven Digoel has produced increased awareness and debate about environmental issues that led to the issuance of a formal decree from the District Head of Boven Digoel in 2018 to revoke location permits for three palm oil companies, PT Wahana Agri Karya, PT Duta Visi Global and PT Visi Hijau Nusantara. This result occurred during the stages of SEA development when the SEA working group (Pokja KLHS) carried out evaluation of existing policies.

LESTARI provided significant contributions in successfully promoting Forest Management Units and Social Forestry initiatives to become priorities of the forestry agency at the provincial level. Previously, these programs were considered as top-down 'products' from the national government that were reluctantly accepted by the local government. LESTARI also succeeded in providing valuable lessons learned in overcoming the common issue in the forestry sector regarding insufficient budgets. Through optimizing the use of the GOI's Reforestation Funds beyond landscape rehabilitation, various forestry programs for FMU strengthening and social forestry have a higher chance to succeed. Despite limitations in the sampling of the Final Assessment, LESTARI's local government partners were clear in emphasizing that the project provided concrete contributions and impacts in triggering improved forest management in the landscapes. However, the long-term sustainability of these achievements beyond LESTARI may not materialize as too many factors are dynamic and dependent on political will and local governance. The legacy is expected to stand for at least the next several years given LESTARI's impacts and influence on RPJMD and Renstra plans, which last for five-year periods. Beyond this, it is expected that Champions can continue to play a role in influencing forestry sector planning and budgeting processes.

KEY QUESTION 4: TO WHAT EXTENT HAS THE PRIVATE SECTOR SUSTAINED BEST MANAGEMENT PRACTICES AND REDUCED ITS OWN INTERNAL THREATS TO DEFORESTATION, DEGRADATION AND BIODIVERSITY CONSERVATION?

The objective of best management practices initiative was to engage with private sector companies operating in and/or impacting LESTARI supported landscapes to build their capacity and secure their commitment towards the long-term implementation of BMPs for reducing deforestation and improving biodiversity conservation within concession areas.

This approach proved to be challenging for two main reasons. First, LESTARI spent considerable time and resources convincing timber companies to join the BMP scheme offered (RIL-C training / HCV monitoring), and re-conducting technical training on BMPs for company staff which had already been done during the IFACS project. Aside from conducting trainings, LESTARI should have focused more on intensive facilitation on the ground in order to ensure the full adoption of RIL-C and/or HCV monitoring practices. More efforts could have gone to advocacy efforts aimed at influencing company practices rather than awareness raising and capacity building. Second, advocacy efforts with KLHK were insufficient and did not result in the issuance of a regulation mandating RIL-C as intended. This lack of policy means that the long-term sustainability of RIL-C implementation after LESTARI is uncertain.

However, the BMP initiative was able to demonstrate a reduction in threats to forest areas from uncontrolled deforestation and degradation and encouraged biodiversity conservation efforts at the same time in production forests. For the moment, this impact can only be seen at a small scale in some harvesting plots of the partner concession companies.

5. APPENDICES

5.1 FINAL INDICATOR MATRIX DISAGGREGATED BY INDICATOR, YEAR AND LANDSCAPE

Indicator	Landscape	Y1 Achievement	Y2 Achievement	Y3 Achievement	Y4 Achievement	Final Year Achievement	Y1 Y5 Total Achievement
#1 – Percentage reduction in GHG emissions as a result of USG assistance measured using actual emissions compared to REL (**Outcome** – *contributes to FACTS 4.8-7*)	Leuser	N/A	48.96%	70.00%	54.74%	55.02%	(Avg) 57.18%
	Katingan-Kahayan	N/A	14.65%	14.84%	45.62%	22.80%	(Avg) 24.48%
	Lorentz Lowlands	N/A	76.42%	85.81%	-31.51%	78.32%	(Avg) 52.26%
	Mappi-Boven Digoel	N/A	80.34%	75.85%	54.69%	75.01%	(Avg) 71.47%
	Sarmi	N/A	91.00%	51.19%	30.40%	52.86%	(Avg) 56.36%
	Cyclops	N/A	100.00%	-256.78%	-494.79%	-52.61%	(Avg) -176%
#2 – Number of hectares of biological significance and/or natural resources under improved natural resource management as a result of USG assistance (**Outcome** –*FACTS 4.8.1-26*)	Leuser	N/A	745,399	1,183	460,335	3,908	1,210,825
	Katingan-Kahayan	N/A	570,471	319,976	1,610,581	531,977	3,033,005
	Lorentz Lowlands	N/A	1,056,852	204,440	318,901	509,612	2,089,805
	Mappi-Boven Digoel	N/A	0	0	511,373	53,389	564,762
	Sarmi	N/A	0	547,010	0	0	547,010
	Cyclops	N/A	31,480	0	0	0	31,480
#3 – Percentage reduction in poaching (**Outcome**)	Leuser	N/A	20%	75%	90%	93%	70%
	Katingan-Kahayan	N/A	N/A	N/A	N/A	N/A	N/A
	Lorentz Lowlands	N/A	N/A	7%	84%	0	46%
	Mappi-Boven Digoel	N/A	N/A	N/A	N/A	N/A	N/A
	Sarmi	N/A	N/A	N/A	N/A	N/A	N/A
	Cyclops	N/A	51%	68%	95%	0	71%
#4 – Number of public policies introduced, adopted, repealed, changed or implemented consistent with citizen input (**Outcome -** *FACTS 2.4.1-12*)	Leuser	1	2	3	9	1	16
	Katingan-Kahayan	1	3	1	0	0	5
	Lorentz Lowlands	0	0	0	2	1	3
	Mappi-Boven Digoel	0	0	0	1	0	1
	Sarmi	0	0	0	0	0	0
	Cyclops	1	3	0	0	1	5

Indicator	Landscape	Y1 Achievement	Y2 Achievement	Y3 Achievement	Y4 Achievement	Final Year Achievement	Y1 Y5 Total Achievement
#5 – Number of sub-national government with improved licensing and permitting mechanism (**Outcome**)	Leuser	0	0	0	0	1	1
	Katingan-Kahayan	0	0	0	0	0	0
	Lorentz Lowlands	0	0	0	0	0	0
	Mappi-Boven Digoel	0	0	0	0	0	0
	Sarmi	0	0	0	0	0	0
	Cyclops	0	1	0	0	0	1
#6 – Number of SEAs/LCPs recommendations related with land use, spatial plan, forest management, and biodiversity conservation incorporated into sub-national government policy, planning and program (**Outcome**)	Leuser	0	0	2	5	0	7
	Katingan-Kahayan	0	0	3	0	0	3
	Lorentz Lowlands	0	0	0	0	0	0
	Mappi-Boven Digoel	0	0	0	0	0	0
	Sarmi	0	0	0	0	0	0
	Cyclops	0	0	0	3	0	3
#7 – Number of Multi Stakeholder Initiatives (MSIs) or civil society advocacy initiatives which formulate and deliver policy-relevant inputs on sustainable forest and land management to decision makers (**Outcome**)	Leuser	0	1	7	8	3	19
	Katingan-Kahayan	0	1	6	2	0	9
	Lorentz Lowlands	0	1	3	1	2	7
	Mappi-Boven Digoel	0	1	1	0	0	2
	Sarmi	0	0	0	0	0	0
	Cyclops	0	0	0	0	1	1
#8 – Number of champions engaged in advocacy interventions (**Output**)	Leuser	15	66	142	70	12	305
	Katingan-Kahayan	9	33	34	42	6	124
	Lorentz Lowlands	1	12	14	47	18	92
	Mappi-Boven Digoel	0	3	2	23	0	28
	Sarmi	0	0	0	2	0	2
	Cyclops	0	7	28	10	7	52
#9 – Number of people reached by LESTARI communication programs to improve awareness and understanding of LEDS and biodiversity conservation (**Output**)	Leuser	1,842	10,210	21,375	3,931	1,715	39,073
	Katingan-Kahayan	6,423	10,631	108,419	1,431	407	127,311
	Lorentz Lowlands	108,502	1,932	8,086	4,026	172	122,718
	Mappi-Boven Digoel	3,605	13,822	128	0	0	17,555
	Sarmi	0	0	0	0	0	0
	Cyclops	179	184,380	20,888	12,434	0	217,881

Indicator	Landscape	Y1 Achievement	Y2 Achievement	Y3 Achievement	Y4 Achievement	Final Year Achievement	Y1 Y5 Total Achievement
#10 – Number of Conservation Areas (CAs) with at least 70 point in METT scores across LESTARI supported landscapes (**Outcome**)	Leuser	0	1	0	1	0	2
	Katingan-Kahayan	0	1	1	0	0	2
	Lorentz Lowlands	0	0	0	0	1	1
	Mappi-Boven Digoel	N/A	N/A	N/A	N/A	N/A	N/A
	Sarmi	N/A	N/A	N/A	N/A	N/A	N/A
	Cyclops	0	0	0	1	0	1
#11 – Number of Forest Management Unit (FMU) strengthened as a result of USG assistance (**Output**)	Leuser	0	0	0	2	0	2
	Katingan-Kahayan	0	0	1	5	9	15
	Lorentz Lowlands	0	0	0	0	1	1
	Mappi-Boven Digoel	0	0	0	0	1	1
	Sarmi	N/A	N/A	N/A	N/A	N/A	N/A
	Cyclops	N/A	N/A	N/A	N/A	N/A	N/A
#12 – Number of people receiving USG supported training in natural resources management and/or biodiversity conservation (**Output** – *FACTS 4.8.1-27*)	Leuser	453	2,154	1,346	2,670	972	7,595
	Katingan-Kahayan	311	700	1,197	694	176	3,078
	Lorentz Lowlands	60	127	511	955	169	1,822
	Mappi-Boven Digoel	85	57	35	30	0	207
	Sarmi	0	0	79	0	0	79
	Cyclops	72	102	233	28	162	597
#13 – Amount of investment mobilized (in USD) for climate change as supported by USG assistance (**Output** – *FACTS 4.8.2-10*)	Leuser	18,664	152,175	610,425	7,340,787	2,654,257	10,776,308
	Katingan-Kahayan	3,382,503	118,038	895,088	5,376,345	8,745,195	18,517,168
	Lorentz Lowlands	76,754	104,671	263,449	536,328	163,059	1,144,261
	Mappi-Boven Digoel	0	71,162	20,915	0	0	92,077
	Sarmi	0	0	0	183,871	0	183,871
	Cyclops	0	0	1,561	3,160,578	0	3,162,139
#14 – Number of people receiving livelihood co-benefits (monetary or non-monetary) (**Outcome**)	Leuser	0	101	4,689	5,670	1,997	12,457
	Katingan-Kahayan	0	6,292	15,370	2,052	360	24,074
	Lorentz Lowlands	0	0	5	3,686	987	4,678
	Mappi-Boven Digoel	N/A	N/A	N/A	N/A	N/A	N/A
	Sarmi	N/A	N/A	N/A	N/A	N/A	N/A
	Cyclops	0	0	95	79	152	326

Indicator	Landscape	Y1 Achievement	Y2 Achievement	Y3 Achievement	Y4 Achievement	Final Year Achievement	Y1 Y5 Total Achievement
#15 – Number of private sector firms that have improved management practices as a result of USG assistance (**Outcome** –*FACTS 4.6.2-9*)	Leuser	N/A	N/A	N/A	N/A	N/A	N/A
	Katingan-Kahayan	0	0	0	7	0	7
	Lorentz Lowlands	N/A	N/A	N/A	N/A	N/A	N/A
	Mappi-Boven Digoel	N/A	N/A	N/A	N/A	N/A	N/A
	Sarmi	0	0	3	0	0	3
	Cyclops	N/A	N/A	N/A	N/A	N/A	N/A
#16 - Number of new USG-supported public-private partnerships (PPPs) formed (**Output** – *FACTS* PPP 5)	Leuser	1	3	0	5	3	12
	Katingan-Kahayan	2	4	2	5	0	13
	Lorentz Lowlands	N/A	N/A	N/A	N/A	N/A	N/A
	Mappi-Boven Digoel	N/A	N/A	N/A	N/A	N/A	N/A
	Sarmi	N/A	N/A	N/A	N/A	N/A	N/A
	Cyclops	N/A	N/A	N/A	N/A	N/A	N/A

Note: please refer to the Activity Monitoring and Evaluation Plan (AMEP) for details on how each indicator is defined and assessed.

5.2 FINAL PROGRESS ON REDUCED GHG EMISSIONS FROM LESTARI SUPPORTED LANDSCAPES

Indicator #1 Title: Percentage reduction in GHG emissions as a result of USG assistance measured using actual emissions compared to REL

Target: At least 41% of total CO_2-equivalent emissions reduced from land use, land use change and deforestation averaged across all landscapes within the project scope

Definition: The top level indicator for USAID LESTARI reports the percentage of GHG emissions reduced and/or avoided, as a result of USG activities, as compared to a baseline level of GHG emissions. The baseline is the 'business-as-usual' reference for GHG emissions that would have occurred during the reporting period if there had been no USG intervention. At least 41% of total CO_2-equivalent emissions should be reduced from land use, land use change and deforestation averaged across all landscapes within the project scope, based on the use of the IPCC Good Practice Guidance for Land Use, Land-Use Change and Forestry, and taking into consideration appropriate relevant national or subnational methods. Reduced emissions were achieved through LESTARI direct assistance, originating from reducing forest encroachment and improving peat land management with communities and protected area authorities, developing effective community conservation agreements and better agricultural practices, engaging the private sector to implement best management practices in their concessions, and governance advocacy in changing licensing and embracing sustainable development visions that will stop deforestation.

Data Collection Method: The data collection methodology for calculating reduced emissions is described in the Landscape Baseline Analysis (LBA) report version 3 (October 2018). The LESTARI project chose the methodology based on the National Forest Reference Emissions Level (FREL). This was chosen through an evaluation of current methodologies and approaches used in Indonesia. The FREL methodology is the most acknowledged and recognized by international, national and local institutions in the forestry sector; and it has been showing steady progress on proportioning targets to the provincial level. Additionally, the methodology used in FREL is consistent with its associated development of Measurement, Reporting and Verification (MRV) System developed by KLHK. The FREL was not published in 2015 when the first LBA was developed. The current methodology uses land cover data from KLHK from the years 1990 through to 2012 as the baseline. The annual data sets from KLHK are suitable to annual calendar year reporting for GHG emission reductions. Therefore, as per Year 3 and 4 Annual Reports, LESTARI reported on GHG emissions reductions for calendar years 2016, 2017, 2018 and 2019 (rather than project implementation years, or part thereof). Measurement of reduced emissions use the same sourced data and applied to LESTARI supported landscapes for:

1. Living biomass (above ground) GHG emissions from gross deforestation, and
2. Below ground GHG emissions from the decomposition of organic soils (peat)

For the calculation of GHG emissions from Above Ground Biomass (AGB) carbon pools, LESTARI used emission factors from the National Forest Inventory Database developed by the Directorate of Forest Resources Inventory and Monitoring (IPSDH). To calculate GHG emissions from peat decomposition similar LULUC maps from IPSDH were overlaid on the National Peat Land Map from the Indonesian Center for Agricultural Land Resources Research and Development (BBSDLP, 2011). Peat decomposition was only counted from peatland areas that were forested in 1990. When peatland is converted to non-primary forest type through degradation and deforestation, below ground emissions factors are included. Emissions from fires are not calculated in the FREL due the highly variable emission factors involved that are largely unmeasurable at the landscape scale.

Results: LESTARI officially obtained land cover data from regional governments for the years 2015, 2016, 2017 and 2018. Official 2019 data for Leuser landscape was available from the Aceh Forest Gazettement Agency (BPKH Aceh) as LESTARI partnered with this forestry mapping institution in Banda Aceh to correct and verify the large anomalies of deforestation and degradation that were discovered in official ministerial data (details in Year 4 Annual Report). 2019 forest cover was also calculated at that time. LESTARI commissioned in-house land cover analyses in Central Kalimantan and Papua Provinces only covering LESTARI supported landscapes to provide non-official estimates of deforestation, degradation and associated GHG emissions. Therefore to date, reduced greenhouse gas emissions have been calculated for all full calendar years of the project – 2016, 2017, 2018 and 2019 (final year).

Deforestation

Deforestation declined in all landscapes, except Cyclops in years 2017 and 2019, and Cyclops, Lorentz and Sarmi in 2018 (Table 1). However, across landscapes, deforestation declined year-on-year (51%, 56%, 65% and 57% respectively) with an average of 57% reduction across all years measured.

Table 1. Measured Deforestation in LESTARI supported landscapes compared to annual baseline rate

	Baseline Deforestation 1990-2012 (ha yr^{-1})	Deforestation 2016		Deforestation 2017		Deforestation 2018		Deforestation 2019	
		(ha yr-1)	% Change	(ha yr-1)	% Change	(ha yr-1)	% Change	(ha yr-1)	% Change
Leuser	**3,763**	1,410	**-63%**	603	**-84%**	1,149	**-69%**	971	**-74%**
Katingan-Kahayan	**45,506**	32,011	**-30%**	28,201	**-38%**	8,990	**-80%**	27,658	**-39%**
Lorentz Lowlands	**6,107**	552	**-91%**	88	**-99%**	8,971	**47%**	360	**-94%**
Mappi-Bouven Digoel Landscape	**18,433**	2,362	**-87%**	3,157	**-83%**	5,768	**-69%**	3,308	**-82%**
Sarmi Landscape	**636**	-	**-100%**	-	**-100%**	860	**35%**	0	**-100%**
Cyclops Landscape	**64**	-	**-100%**	206	**221%**	389	**507%**	80	**25%**
ALL LANDSCAPES	**73,949**	36,335	**-51%**	32,254	**-56%**	26,127	**-65%**	32,378	**-57%**

Degradation

Degradation showed more variable trends (Table 2). Leuser, Mappi-Bouven Digoel and Sarmi were significantly lower compared to the baseline through all years. Cyclops showed an initial decline but then a dramatic increase in 2017 and 2018, but these areas are still relatively small as the baseline value was very low and hence even small changes cause large increases in degradation rates. Lorentz degradation was slightly up in 2018 compared to the baseline rate but dropped in 2019. Katingan-Kahayan was above the baseline rate due to extending logging in the northern of the landscape but was significantly lower in the final year of the project. Across landscapes there was consistent net reduction in degradation (81%, 60%, 26% and 80% respectively). There was a 62% overall reduction in the rate of degradation across all landscapes for the four years measured.

Table 2. Measured Degradation in LESTARI supported landscapes compared to annual baseline rate

	Baseline Degradation 1990-2012 (ha yr^{-1})	Degradation 2016		Degradation 2017		Degradation 2018		Degradation	
		(ha yr-1)	% Change	(ha yr-1)	% Change	(ha yr-1)	% Change	(ha yr-1)	% Change
Leuser	**1,192**	298	**-75%**	9	**-100%**	75	**-94%**	154	**-87%**
Katingan-Kahayan	**3,176**	4,452	**40%**	11,668	**267%**	10,401	**228%**	989	**-69%**
Lorentz Lowlands	**16,752**	3,250	**-81%**	432	**-97%**	18,814	**12%**	2,725	**-84%**
Mappi-Bouven Digoel Landscape	**16,668**	1,050	**-94%**	1,660	**-90%**	193	**-99%**	400	**-98%**
Sarmi Landscape	**9,640**	24	**-100%**	5,259	**-45%**	5,366	**-44%**	5,086	**-47%**
Cyclops Landscape	**18**	-	**-100%**	109	**502%**	74	**306%**	79	**335%**
ALL LANDSCAPES	**47,466**	9,111	**-81%**	19,128	**-60%**	34,923	**-26%**	9,433	**-80%**

Above Ground GHG Emissions from Deforestation and Degradation

Areas of deforestation and degradation were converted to GHG emissions for Above Ground Biomass (AGB) emissions using the emission factors as per the FREL. The annual level of emissions associated with these changes in land cover (deforestation and degradation) when compared to the baseline emissions showed a reduction across all landscapes at 57%, 55%, 54% and 60% reduction in AGB emissions respectively (Table 3). The only instances of increased AGB emissions occurred in the Lorentz landscape in 2018 and Cyclops landscape in 2017 and 2018. There was a 57% average above ground GHG emissions reduction across all landscapes for the four years measured.

Table 3. Above Ground GHG Emissions calculated in LESTARI supported landscapes compared to annual baseline rate

	Annual ABG GHG emissions Deforestation& Degradation 1990-2012 (t.CO2-eq)	ABG Emissions Deforestation and Degradation 2016		ABG Emissions Deforestation and Degradation 2017		ABG Emissions Deforestation and Degradation 2018		ABG Emissions Deforestation and Degradation 2019	
		(t.CO2-eq)	% Change	(t.CO2-eq)	% Change	(t.CO2-eq)	% Change	(t.CO2-eq)	% Change
Leuser	**1,346,444**	459,729	**-66%**	80,089	**-94%**	353,518	**-74%**	346,150	**-74%**
Katingan-Kahayan	**14,901,964**	10,476,621	**-30%**	10,683,759	**-28%**	4,036,909	**-73%**	8,946,608	**-40%**
Lorentz Lowlands	**3,366,345**	439,160	**-87%**	70,994	**-98%**	4,725,794	**40%**	355,665	**-89%**
Mappi-Bouven Digoel	**7,885,666**	899,861	**-89%**	1,302,915	**-83%**	3,187,738	**-60%**	1,382,215	**-82%**
Sarmi	**1,181,148**	2,442	**-100%**	532,041	**-55%**	811,943	**-31%**	514,500	**-56%**
Cyclops	**21,857**	-	**-100%**	77,983	**257%**	130,006	**495%**	33,356	**53%**
ALL LANDSCAPES	**28,703,425**	12,277,813	**-57%**	12,747,780	**-56%**	13,245,909	**-54%**	11,578,494	**-60%**

Below Ground Emissions from peat decomposition

Peat decomposition represented a significant proportion of baseline GHG emissions from the landscapes (approximately 23%). However, most of these emissions were 'inherited' and persistent year after year when peat becomes disturbed. The baseline emissions from peat also increased year-on-year. The results of peat decomposition emissions (Table 4) showed variable net increases in emissions from peat decomposition. While positive gains were made in all Papua landscapes with peat (there is no peat in the Cyclops landscape), Katingan-Kahayan landscape showed significant additional emissions year-on-year, with a very slight increase in the Leuser landscape. There was a 9.6% increase in average below ground GHG emissions from peat decomposition compared to the baseline across all landscapes for the four years measured. However, successful interventions such as peat rewetting that have visibly reduced the incidence of fire in the Katingan-Kahayan landscape during 2016-2019 were not considered in these calculations.

Table 4. Below Ground GHG Emissions calculated in LESTARI supported landscapes compared to annual baseline rate

	Baseline Annual Peat Decomp. Emissions 2016	Annual Emission from Peat Decomposition 2016		Baseline Annual Peat Decomp. Emissions 2017	Actual Emission from Peat Decomposition 2017		Baseline Annual Peat Decomp. Emissions 2018	Actual Emission from Peat Decomposition 2018		Baseline Annual Peat Decomp. Emissions 2018	Actual Emission from Peat Decomposition 2018	
	(t.CO2-eq)	(t.CO2-eq)	% Change	(t.CO2-eq)	(t.CO2-eq)	% Change	(t.CO2-eq)	(t.CO2-eq)	% Change	(t.CO2-eq)	(t.CO2-eq)	% Change
Leuser	**459,461**	462,015	**0.6%**	**461,229**	462,195	**0.2%**	**462,997**	465,364	**0.5%**	**464,765**	468,536	**0.8%**
Katingan-Kahayan	**6,478,785**	7,771,539	**20%**	**6,489,428**	7,532,748	**16%**	**6,500,070**	7,602,049	**17%**	**6,510,712**	7,584,076	**16.5%**
Lorentz Lowlands	**570,171**	489,239	**-14%**	**587,718**	489,923	**-17%**	**605,266**	497,451	**-18%**	**622,814**	509,187	**-18.2%**
Mappi-Bouven Digoel	**965,517**	840,433	**-13%**	**988,849**	840,646	**-15%**	**1,012,181**	844,118	**-17%**	**1,035,514**	846,781	**-18.2%**
Sarmi	**142,734**	116,745	**-18%**	**148,490**	116,965	**-21%**	**154,247**	117,445	**-24%**	**160,003**	117,695	**-26.4%**
Cyclops	**-**	-		**-**	-		**-**	-	**0%**	**-**	-	**0.0%**
ALL LANDSCAPES	**8,616,668**	9,679,971	**12%**	**8,675,714**	9,442,478	**9%**	**8,734,761**	9,526,427	**9%**	**8,793,807**	9,526,275	**8.3%**

Final GHG emission reduction for the LESTARI project across landscapes

The target across all landscapes and all years was a 41% reduction of emissions from the baseline. This target was 100% achieved in 2016 and fell slightly short in 2017 and 2018 (equivalent to a 98% and 96% achievement of the yearly target, respectively). In 2019, total emissions reductions surpassed the 41% target with a 44% reduction (107% of the yearly target). On average across all years and all landscapes, the project measured a 41.2% reduction in GHG gases (100.4% achievement of the LOP target). This equates to a total of 61.61 million tons of CO_2 equivalent emissions that have been avoided from historical baseline levels during project implementation (Table 5).

LESTARI does not 'claim' GHG emission reductions are as a result of direct intervention by the project. Assigning attribution to the actual causes of these reductions in deforestation and degradation outcome would be a futile exercise. Data about individual actors that impact forests and the decisions they take about forest use under influence (or not) by the LESTARI project is just not available and never will be. However, there is clear corroborative evidence that suggests that the project, working at a landscape scale with multiple partners and implementers, as positively impacted deforestation and degradation, and therefore reduced GHG emissions. The project always involves large numbers of actors and stakeholders with varying levels of jurisdictional power, interest and motivation for conservation and improving forest management. LESTARI works directly with forest managers responsible for protecting and sustainably utilizing the forest, including, (1) national park and protected area staff (BKSDA) with concrete and effective field activities like SMART patrols; (2) FMU authorities at the landscape level with training and forest planning, (3) managers of production forests in Sarmi and Central Kalimantan through RIL training and HCV

management and monitoring; and (4) with many communities that have received social forestry permits and technical assistance for forest management, implementing green enterprises that safeguard forests, or co-management agreements with local government to protect traditional forests from deforestation. These very encouraging results are testament to the hard work of all stakeholders in LESTARI supported landscapes and the positive effect on forests in their landscapes.

Table 5. Total GHG Emissions calculated in LESTARI supported landscapes compared to annual baseline rate

	Baseline Annual Total Emissions 2016	Total Emission in 2016		Baseline Annual Total Emissions 2017	Total Emission in 2017		Baseline Annual Total Emissions 2018	Total Emission in 2018		Baseline Annual Total Emissions 2019	Total Emission in 2019	
	(t.CO2-eq)	(t.CO2-eq)	% Change	(t.CO2-eq)	(t.CO2-eq)	% Change	(t.CO2-eq)	(t.CO2-eq)	% Change	(t.CO2-eq)	(t.CO2-eq)	% Change
Leuser	**1,805,905**	938,122	**-48%**	**1,807,673**	648,720	**-64%**	**1,809,441**	824,475	**-54%**	**1,811,208**	814,686	**-55%**
Katingan-Kahayan	**21,380,749**	18,248,160	**-15%**	**21,391,392**	18,216,507	**-15%**	**21,402,034**	11,638,95	**-46%**	**21,412,676**	16,530,685	**-23%**
Lorentz Lowlands	**3,936,516**	928,398	**-76%**	**3,954,063**	560,917	**-86%**	**3,971,611**	5,223,245	**32%**	**3,989,159**	864,852	**-78%**
Mappi-Bouven Digoel Landscape	**8,851,183**	1,740,294	**-80%**	**8,874,515**	2,143,561	**-76%**	**8,897,847**	4,031,85	**-55%**	**8,921,179**	2,228,996	**-75%**
Sarmi Landscape	**1,323,882**	119,187	**-91%**	**1,329,638**	649,006	**-51%**	**1,335,395**	929,388	**-30%**	**1,341,152**	632,195	**-53%**
Cyclops Landscape	**21,857**	-	**-100%**	**21,857**	77,983	**257%**	**21,857**	130,006	**495%**	**21,858**	33,356	**53%**
ALL LANDSCAPES	**37,320,092**	21,974,162	**-41%**	**37,379,138**	22,296,695	**-40%**	**37,438,185**	22,777,928	**-39%**	**37,497,232**	21,104,769	**-44%**

5.3 LIST OF LESTARI SUPPORTED TRAININGS EVENTS PER YEAR

Activities	Y1		Y2		Y3		Y4		Y5	
	Total Activities	Total Participants	Total Activities	Total Participants	Total Activities	Total Participants	Total Activities	Total Participants	Total Activities	Total Participants
Training	31	981	49	3,140	68	3,401	93	4,377	22	1,479
Workshop	1	33	14	1,033	29	2,156	47	1,880	20	919
Technical Assistance	2	47	9	253	32	1,634	42	2,496	48	1,375
FGD	2	126	3	328	0	0	19	490	11	411
Meeting	2	297	16	758	17	501	32	1,359	1	23
Field Visit	1	23	0	0	1	6	10	205	1	30
Partner/Public Consultation	3	1,135	3	2,864	37	1,036	46	955	21	538
Socialization	6	321	12	884	0	0	13	1,337	20	974
TOTAL	**48**	**2,963**	**106**	**9,260**	**184**	**8,734**	**302**	**13,099**	**144**	**5,749**

5.4 LESTARI GRANTS UNDER CONTRACT

Grant No	Grantee Organization	Title	Landscape	Grant Value (USD)	Start Date	End Date	Target	Achievement	Key Challenges / Lessons Learned
G-001	Save Our Borneo (SOB)	Awareness Raising for the Community on the Impact and Risks of Forest and Land Fires Through Videos (Case of Forest and Land Fires in Central Kalimantan)	Katingan-Kahayan	17,940	14-Dec-15	13-Feb-16	Produce 5 videos with duration of 5-7 minutes	5 videos produced and disseminated as part of awareness raising campaigns	Making high quality animations and infographics is time-consuming and complex. Software applications are expensive and were not accommodated in the budget. More time should be allotted to discussing story ideas and obtaining agreement from all stakeholders.
G-002	Yayasan Orangutan Sumatera Lestari-Orangutan Information Center (YOSL-OIC)	Community-led Conservation of Orangutan Habitat in the Kluet Protected Area, South Aceh	Leuser	145,968	11-Mar-16	10-Dec-17	61,000 ha under improved management 4 public policies 10 Champions 1,500 people reached 4 co-management agreements signed 300 people trained 300 people received livelihood benefits	61,000 ha under improved management 1 public policy 10 Champions 1,500 people reached 2 co-management agreements signed 300 people trained 300 people received livelihood benefits	YOSL-OIC had established strong working relationships with the district government in South Aceh. Due to roll out of Law 23/2014, YOSL-OIC to build new relationships and coordination with provincial government and FMU VI.
G-003	Borneo Orangutan Survival Foundation (BOSF)	Borneo Orangutan (pongo pygmaeus) Conservation in Bukit Baka Bukit Raya National Park	Katingan-Kahayan	220,519	01-Aug-16	31-Dec-18	56,649 ha under improved management 12 Champions 275 people reached 125 people trained USD 36,500 USD leveraged 1 BMP 1 PPP	25,381 ha under improved management 12 Champions 842 people reached 365 people trained No achievement No achievement No achievement	SOP for transporting rehabilitated orangutans from Nyaru Menteng to Blocks C and D (release areas) in BBBR National Park helped to ensure good cooperation between stakeholders and safe and smooth releases. The SOP can serve as reference for the release of orangutans in other sections of the national park.

Grant No	Grantee Organization	Title	Landscape	Grant Value (USD)	Start Date	End Date	Target	Achievement	Key Challenges / Lessons Learned
G-004	Forum Pala Aceh (FORPALA)	Nutmeg Ecosystem Protection through Innovation of Pala Sambutan and Organic Nutmeg, and Improved Market Access for Nutmeg and its Derivative Products	Leuser	148,690	22-Nov-16	21-Dec-18	1,050 ha under improved management 7 Champions 1 co-management agreement 600 people trained 600 people received livelihood benefits 2 PPPs	920 ha under improved management 5 Champions No achievement 731 people trained 939 people received livelihood benefits 2 PPPs	Farmers still require follow up technical assistance to conduct nutmeg grafting and monitoring to produce high quality seeds and meet the target for seed production. The large target for village engagement (15 villages) was challenging due to a lack of field staff to monitor program implementation.
G-005	Institute for Promotion of Sustainable Livelihood (INPROSULA)	Developing a Collaborative Forest Partnership for the Improvement of Community Sustainable Livelihoods	Leuser	386,354	27-Mar-16	31-Mar-20	2,812 ha under improved management 1 public policy 18 Champions 800 people reached 1,180 people trained 800 people received livelihood benefits 1 PPP	1.331 ha under improved management 1 public policy 19 Champions 2,104 people reached 1,158 people trained 1,189 people received livelihood benefits 1 PPP 1 co-management agreement	Many communities have conducted agricultural livelihood activities in protected forest areas for generations. Changing these behaviors is a slow and challenging process. Gayo Arabica Coffee is a leading commodity with potential to contribute to sustainable economic development in the region, but its cultivation has not been supported by the wide application of quality environmental standards that can be controlled by farmers.
G-006	Yayasan Tambuhak Sinta (YTS)	Collaborative Management and Sustainable Livelihood Initiatives in Gunung Mas District	Katingan-Kahayan	146,942	01-Feb-17	31-Jan-19	3,500 ha under improved management 8 Champions 3,300 people reached 3 co-management agreements 500 people trained 500 people received livelihood benefits 1 PPP	1,625 ha under improved management 8 Champions 783 people reached 3 co-management agreements 430 people trained 724 people received livelihood benefits 1 PPP	The Provincial Forestry Agency has been very supportive of social forestry. They encouraged NGOs (including YTS) to facilitate communities to submit social forestry proposals. The mapping and proposal submission were conducted in parallel. Three months after verification, KLHK issued the forest co-management permit for Tumbang Marikoi and Tumbang Posu.

Grant No	Grantee Organization	Title	Landscape	Grant Value (USD)	Start Date	End Date	Target	Achievement	Key Challenges / Lessons Learned
G-007	Yayasan Javlec Indonesia	Realizing Collaborative Forest Management Based on Local Potentials	Leuser	148,975	11-Jan-17	10-May-18	2,500 ha under improved management 5 Champions 1 co-management agreement 500 people trained 600 people received livelihood benefits	No achievement 4 Champions No achievement 473 people trained 391 people received livelihood benefits	Inadequate communication between forest area managers and the community around the forest hampered the process of collaborative forest management. Agreement on the boundaries of the forest area could not be reached, which affected the ability of the community to secure legal access to manage the area.
G-008	Atjeh International Development (AID)	Strengthening the Community to Acquire Rights and Benefits of Sustainable Forest Management	Leuser	148,048	07-Feb-17	06-Feb-19	2,700 ha under improved management 6 Champions 2,000 people reached 2 co-management agreements 350 people trained 350 people received livelihood benefits	1,628 ha under improved management 9 Champions 2,408 people reached 1 co-management agreement 333 people trained 278 people received livelihood benefits	Preparation of work plans and documents for proposing social forestry need to have accompanying activities such as land research, mapping of land parcels / census, preparation of business plans, NTFP potential, and analysis of facilities and infrastructure.
G-009	Lingkar Pembaruan Desa dan Agraria (KARSA)	Upaya Kolaborasi Pengelolaan Hutan Desa Melalui Implementasi UU Desa (UU No.6/2014)	Katingan-Kahayan	145,643	05-Jun-17	04-Jun-19	5,894 ha under improved management 5 Champions 2 co-management agreements 505 people trained 1,200 people received livelihood benefits 2 PPPs	No achievement 7 Champions No achievement 574 people trained 1,296 people received livelihood benefits 2 PPPs	Although there was a women's business group for fish processing in Tampelas Village, it was mostly inactive due to a lack of confidence in conducting new or unfamiliar livelihood strategies. It is often the case that village communities will wait to see the success of others before taking part in new endeavors.

Grant No	Grantee Organization	Title	Landscape	Grant Value (USD)	Start Date	End Date	Target	Achievement	Key Challenges / Lessons Learned
G-010	Aceh Green Community (AGC)	Sustainable Low Emission Development through Watershed Management and Palm Sugar Development	Leuser	147,662	22-May-17	21-Jan-19	1,000 ha under improved management 5 Champions 4 co-management agreements 500 people trained 500 people received livelihood benefits	No achievement 2 Champions No achievement 320 people trained 63 people received livelihood benefits	Until the end of the project, FMU III did not reach a decision related to the forest management collaboration scheme that can be implemented in the region. Productivity in palm sugar production was significantly limited by the lack of access to equipment, which was not accommodated in the grant budget.
G-011	Yayasan Ekosistem Leuser & Pemberdaayaan Ekonomi Daerah (YELPED)	Building an Agreement for Forest Collaborative and Protection of Water Resources	Leuser	148,383	19-Feb-18	18-Aug-19	1,500 ha under improved management 5 Champions 5 co-management agreements 500 people trained 500 people received livelihood benefits	1,405 ha under improved management 7 Champions 5 co-management agreements 370 people trained 1,968 people received livelihood benefits	In proposing a forest management cooperation scheme with FMU VI, it is necessary to complete all the required documents including maps to speed up the verification process at the FMU and DLHK level.
G-012	Veterinary Society for Sumatran Wildlife Conservation (VESSWIC)	Enhancing the Role of CRU-Trumon in the Management of Elephant Conservation and its Habitat in the Leuser Ecosystem and the Trumon Corridor Area	Leuser	182,919	03-Apr-18	02-Nov-19	39,197 ha under improved management 7 Champions 100 people trained	No achievement No achievement 70 people trained	There is no formal direction for the use of tame elephants for education and tourism activities. This should be formulated within a cooperation agreement with BKSDA Aceh. Poor internal management and collaboration with stakeholders were the biggest challenges and reasons that results were not optimal.

Grant No	Grantee Organization	Title	Landscape	Grant Value (USD)	Start Date	End Date	Target	Achievement	Key Challenges / Lessons Learned
G-013	Forum Konservasi Leuser (FKL)	Sustainable Management and Collaboration of Encroached Land in Gunung Leuser National Park Area 2 - Kutacane through Restoration and Sustainable Utilization	Leuser	145,247	31-May-18	30-May-20	300 ha under improved management 7 Champions 1 conservation partnership 500 people trained 500 people received livelihood benefits	284 ha under improved management 5 Champions 3 conservation partnerships 520 people trained 520 people received livelihood benefits	Ensuring good relations between village communities and BBTNGL was the most crucial factor for this grant implementation. Open dialogue and trust enabled smooth implementation of activities so that the Conservation Partnership in Alur Baning region can run successfully.
G-014	Forum Komunikasi Kehutanan Masyarakat (FKKM)	Improvement and Management of Orangutan Conservation in Singkil Wildlife Reserve as an Important Part of Orangutan Habitat	Leuser	177,829	08-Feb-19	07-Apr-20	140 ha under improved management 2 public policies 2 MSIs 150 people trained 200 people received livelihood benefits	140 ha under improved management No achievement 6 MSIs 165 people trained 282 people received livelihood benefits	Boundary conflicts were an obstacle in conducting orangutan population surveys in Singkil Wildlife Reserve. Some survey locations that had been planned were changed because they were not supported by the community.
G-015	Pusat Studi Sumberdaya Alam dan Energi (PUSSDAE)	Community Group Development Program in the Cyclops Mountains Nature Reserve Buffer Area	Cyclops	386,354	01-Mar-19	30-Apr-20	832 ha under improved management 5 Champions 160 people reached 1 conservation partnership 160 people trained 500 people received livelihood benefits	No achievement 7 Champions 160 people reached 1 conservation partnership 162 people trained 152 people received livelihood benefits	Demonstrating an understanding and respect for traditional Papuan culture was crucial to securing community buy-in and support for the grant activities.

Grant No	Grantee Organization	Title	Landscape	Grant Value (USD)	Start Date	End Date	Target	Achievement	Key Challenges / Lessons Learned
G-016	Lembaga Ekolabel Indonesia (LEI)	Developing a Sustainable Village Development Model in the Utilization and Protection of Mangrove Ecosystems in the Lorentz Lowlands Landscape	Lorentz Lowlands	142,220	01-Mar-19	30-Apr-20	100,000 ha under improved management 10 Champions 150 people trained 150 people received livelihood benefits	100000 hectares under improved management 10 Champions 181 people trained 277 people received livelihood benefits	Control of project management from Bogor made it difficult to make strategic decisions at the field level in Papua. Although perhaps not feasible from a budget perspective, it would have been beneficial for the grantee to establish a field office in Papua.
G-017	Yayasan Orangutan Sumatera Lestari – Orangutan Information Center (YOSL-OIC); Follow-on Grant	Strengthening Collaborative Management for OU Population and its Habitat Protection in West Coast Aceh	Leuser	161,065	01-Mar-19	30-Apr-20	61,000 hectares under improved management 10 Champions 1,500 people reached 300 people trained 300 people received livelihood benefits 2 PPPs	61,000 hectares under improved management 11 Champions 2,625 people reached 337 people trained 345 people received livelihood benefits 2 PPPs	Community leaders expressed greater interest and support for protecting forests after they observed the economic benefits secured by the community through this grant activity. In order to increase women's willingness and interest to participate in activities, it was useful to create a special session dedicated to women's voices. Without this session, discussions tend to be dominated by men.
G-018	Borneo Orangutan Survival Foundation (BOSF); Follow-on Grant	Reintroduction of Orangutan from Rehabilitation to Bukit Baka Bukit Raya National Park in Central Kalimantan	Katingan-Kahayan	245,535	01-Apr-19	31-May-20	56,649 ha under improved management 6 Champions 75 people reached 150 people trained	39,343 ha under improved management 18 Champions 160 people reached 337 people trained	Good communication and coordination in the implementation of activities between BBBR National Park, BKSDA, and LESTARI was helpful in achieving project results. Post-release monitoring of the 165 released orangutans showed that release protocols and site selection are proving safe and effective. 92% of orangutans were able to adapt well to their new environments.

5.5 KEY COMMUNICATIONS AND KNOWLEDGE MANAGEMENT PRODUCTS GENERATED AND DISSEMINATED OVER LOP

Type	Number Produced	Title / Description	Thematic Focus	Link / Posting Location
Lessons Learned Technical Brief (LLTB)	12	Village-based Forest Management	Governance	https://pdf.usaid.gov/pdf_docs/PA00TPHN.pdf
		Land Use Licensing Reform in Indonesia	Governance	https://pdf.usaid.gov/pdf_docs/PA00TPHQ.pdf
		Domestic Resource Mobilization for Sustainable Forest Management In Indonesia	Budget Mobilization	https://pdf.usaid.gov/pdf_docs/PA00WJF2.pdf
		Optimization of Reforestation Fund in Central Kalimantan	Governance	https://pdf.usaid.gov/pdf_docs/PA00WJ24.pdf
		SMART Patrols and PA Management	Conservation Co-management	https://pdf.usaid.gov/pdf_docs/PA00WH7X.pdf
		Multi-layered Conservation Management	Conservation Co-management	https://pdf.usaid.gov/pdf_docs/PA00WH7Z.pdf
		Collaborative Forest Management with Traditional Papuan Communities	Conservation Co-management	https://pdf.usaid.gov/pdf_docs/PA00WPC1.pdf
		Public-Private Partnerships for Green Enterprise Development	Private Sector Engagement	https://pdf.usaid.gov/pdf_docs/PA00WPBX.pdf
		Improving Production Forest Management to Reduce GHG Emissions	Private Sector Engagement	https://pdf.usaid.gov/pdf_docs/PA00WKRQ.pdf
		Five Milestones Towards FMU Strengthening	FMU Strengthening	Only available in Bahasa Indonesia
		Operationalizing SEA for Improved Land Use Governance	Governance	Not yet available
		FPIC for Collaborative Land Use Governance	Governance	Not yet available
Book	2 (ENG and IND versions)	Champions of the Forest – stories, perspectives, and photos of 40 LESTARI Champions	Advocacy and Awareness	https://pdf.usaid.gov/pdf_docs/PA00WKRR.pdf

Research Reports and Assessments	1	Political Economy Assessment (PEA)	Governance	https://pdf.usaid.gov/pdf_docs/PA00T9HD.pdf
	1	Understanding the Drivers of Deforestation and the Policies Incentivizing Forest Conversion in the Leuser Landscape	Conservation Co-management	https://pdf.usaid.gov/pdf_docs/PA00TPHM.pdf
	1	Improving Protected Area Financing in the Leuser Landscape	Conservation Co-management	https://pdf.usaid.gov/pdf_docs/PA00TPHP.pdf
	1	Forest and Land Fires Impact Study in Katingan-Kahayan Landscape	Forest and Land Fire	https://pdf.usaid.gov/pdf_docs/PA00MNJ5.pdf
	1	PES/REDD+ Finance Assessment and Development of Strategies to Incentivize Landscape Scale LEDS	Innovative Financing	https://pdf.usaid.gov/pdf_docs/PA00MKGH.pdf
	1	Singkil Concept Note	Conservation Co-management	https://pdf.usaid.gov/pdf_docs/PA00N221.pdf
	5	Block C, Central Kalimantan Peatland Restoration Assessments and Reports	Forest and Land Fire / Peatland Restoration	https://pdf.usaid.gov/pdf_docs/PA00N22C.pdf
	1	Landscape Baseline Analysis (3rd Edition)	GHG Emissions	https://pdf.usaid.gov/pdf_docs/PA00TKNP.pdf
	1	Gender Assessment and Strategy	Gender	https://pdf.usaid.gov/pdf_docs/PA00N227.pdf
Making a Difference	12	Short success stories highlighting particular milestones, progress, or achievements facilitated by LESTARI	Various	https://www.climatelinks.org https://rmportal.net/biodiversityconservation-gateway
Story From the Field	44	Stories covering the successes, challenges, and perspectives of LESTARI partners at the landscape level	Various	https://www.climatelinks.org https://rmportal.net/biodiversityconservation-gateway
Journal	2	2 volumes containing a series of articles and research on technical topics addressed by LESTARI	Forest and Land Fire; Spatial Planning	https://www.climatelinks.org https://rmportal.net/biodiversityconservation-gateway
Brief (separate from LLTB)	9	Short articles providing analysis of specific technical topics addressed by LESTARI along with recommendations	Various	https://www.climatelinks.org https://rmportal.net/biodiversityconservation-gateway
Paper	3	Longer analyses of technical topics, LESTARI interventions, and recommendations (similar to briefs)	Various	https://www.climatelinks.org https://rmportal.net/biodiversityconservation-gateway

Fact sheets	12	Description of project, landscapes, and major interventions used during to introduce the project to new stakeholders	Various	https://www.climatelinks.org https://rmportal.net/biodiversityconservation-gateway
Short Videos	59	Videos produced to raise awareness on key forest and land use issues, challenges, and successes in all landscapes (including through a partnership with INFIS-Mongabay)	Advocacy and Awareness	https://www.climatelinks.org https://rmportal.net/biodiversityconservation-gateway
Technical Manuals / Guidelines Produced for Partner GOI Agency Use	3 modules	Kampung Lestari Modules – a model for collaborative forest management with local traditional communities in Papua	Co-management and Governance in Papua	Distributed to relevant GOI partner agencies
	6 modules	RPJMDes Modules – a series of 6 books used to guide local stakeholders in developing their village mid-term development plans incorporating principles of forest conservation and sustainable management	Village-level Governance	
	6 modules	Village Development Modules for KKN – a series of 6 books on village development planning and sustainable development specifically for university students conducting community service. This was adapted from the above RPJMDes Modules through partnership with the Ministry of Villages	Village-level Governance	
	5 modules	Manual for Social Forestry Assistance (Post-Permit) – a series of 5 modules used to provide technical assistance to social forestry groups in designing and launching sustainable forest-based enterprises	Co-management	
	2 books	Aceh FMU Performance Indicator Manual	FMU Strengthening	
	1 manual	ODK Collect Manual – guidance on how to use this Android-based application to collect and analyze forest patrol data	Conservation Co-management	
TOTAL	**173**			

Note: LLTBs, Champions of the Forest Book, Briefs, Papers, Research Reports and Assessments, select technical manuals, and all LESTARI Annual Reports have been uploaded to USAID's Development Experience Clearinghouse (DEC). Where specific titles are mentioned, links are provided above. Knowledge products from this list will also be available on the Climatelinks portal.

5.6 MEDIA COVERAGE OF LESTARI AND LESTARI-SUPPORTED EVENTS AND INITIATIVES

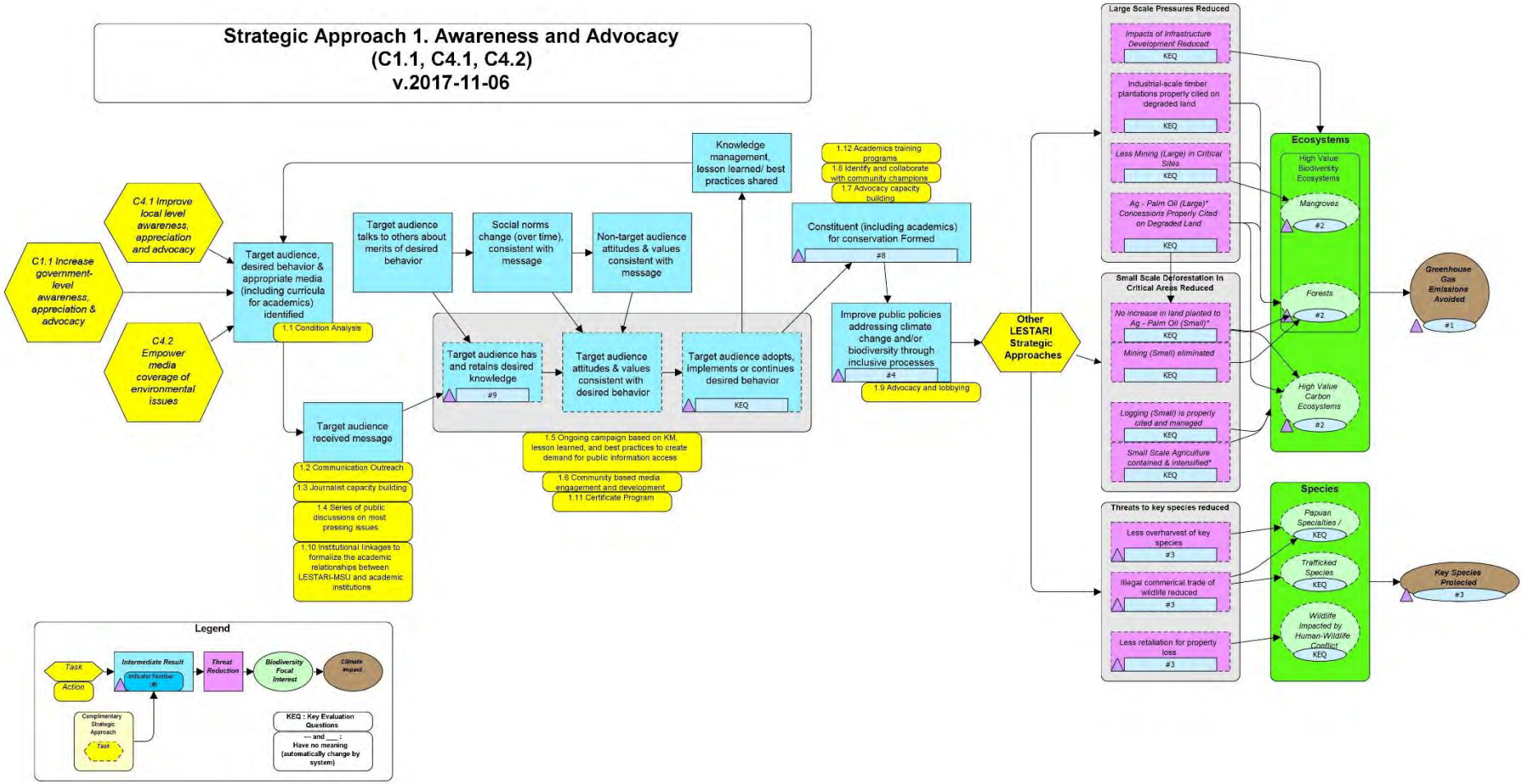
Period	Landscape	Number of Articles	Types of Articles	Total Articles Per Year
Year 1 (Oct 2015 – Sept 2016)	National	4	Articles highlighting LESTARI supported initiatives (without direct mention of LESTARI); articles written by LESTARI staff members	111
	Aceh	34	Articles covering events supported by LESTARI (direct mention)	
	Central Kalimantan	10	Articles highlighting LESTARI supported initiatives (no direct mention); articles covering events supported by LESTARI.	
	Papua	63	Articles highlighting LESTARI supported initiatives (with and without direct mention)	
Year 2 (Oct 2016 – Sept 2017)	National	4	Articles highlighting LESTARI supported initiatives (without direct mention); articles written by LESTARI staff members	114
	Aceh	38	Articles highlighting LESTARI supported initiatives (without direct mention) and coverage of LESTARI event	
	Central Kalimantan	29	Articles highlighting LESTARI supported initiatives (without direct mention) and coverage of LESTARI event	
	Papua	43	Articles highlighting LESTARI supported initiatives (without direct mention) and coverage of LESTARI event	
Year 3 (Oct 2017 – Sept 2018)	National	111	Articles published on cases of illegal poaching/wildlife trafficking for which the LESTARI team assisted in investigation (Oct 2017-Sept 2018)	271
	Aceh	113	Articles produced through partnership with INFIS/Mongabay (42 articles)	
			Articles published on cases of illegal poaching/wildlife trafficking for which the LESTARI team assisted in investigation (Oct 2017-Sept 2018)	
	Central Kalimantan	25	Articles produced through partnership with INFIS/Mongabay (Oct 2017-Sept 2018)	
	Papua	22	Articles produced through partnership with INFIS/Mongabay (Oct 2017-Sept 2018)	

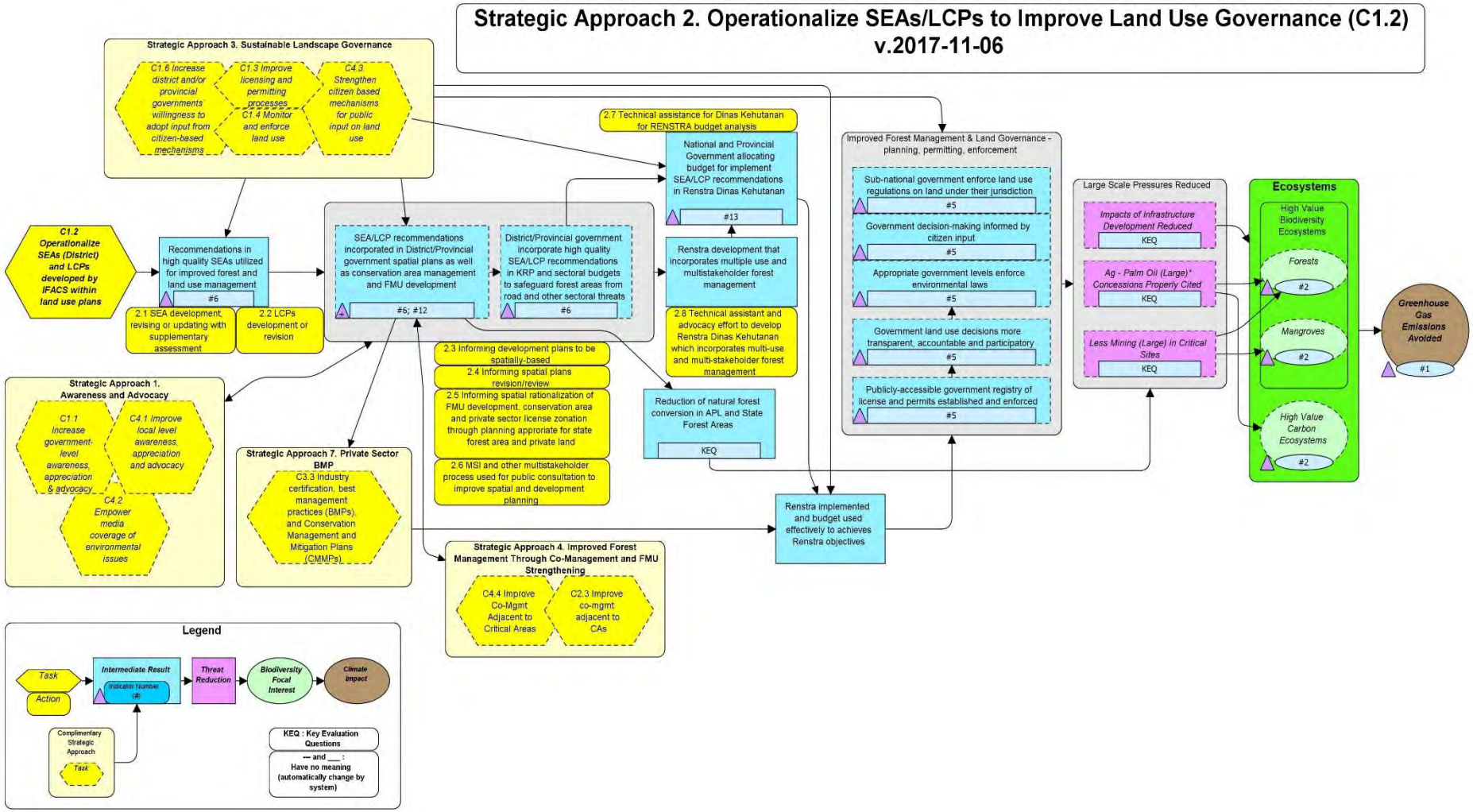
Year 4 (Oct 2018 – Sept 2019)	National	118	Articles published on cases of illegal poaching/wildlife trafficking for which the LESTARI team assisted in investigation (Oct 2018-Sept 2019)	206
	Aceh	76	Articles published on cases of illegal poaching/wildlife trafficking for which the LESTARI team assisted in investigation (Oct 2018-Sept 2019)	
	Central Kalimantan	3	Articles covering event supported by LESTARI (direct mention)	
	Papua	9	Articles covering event supported by LESTARI (direct mention)	
Year 5 (Oct 2019 – June 2020)	National	10	Articles highlighting LESTARI supported initiatives (without direct mention) and covering event supported by LESTARI	59
	Aceh	9	Articles highlighting LESTARI supported initiatives (without direct mention) and covering event supported by LESTARI	
	Central Kalimantan	21	Articles highlighting LESTARI supported initiatives (without direct mention) and covering event supported by LESTARI	
	Papua	19	Articles highlighting LESTARI supported initiatives (without direct mention) and covering event supported by LESTARI	
TOTAL				**761**

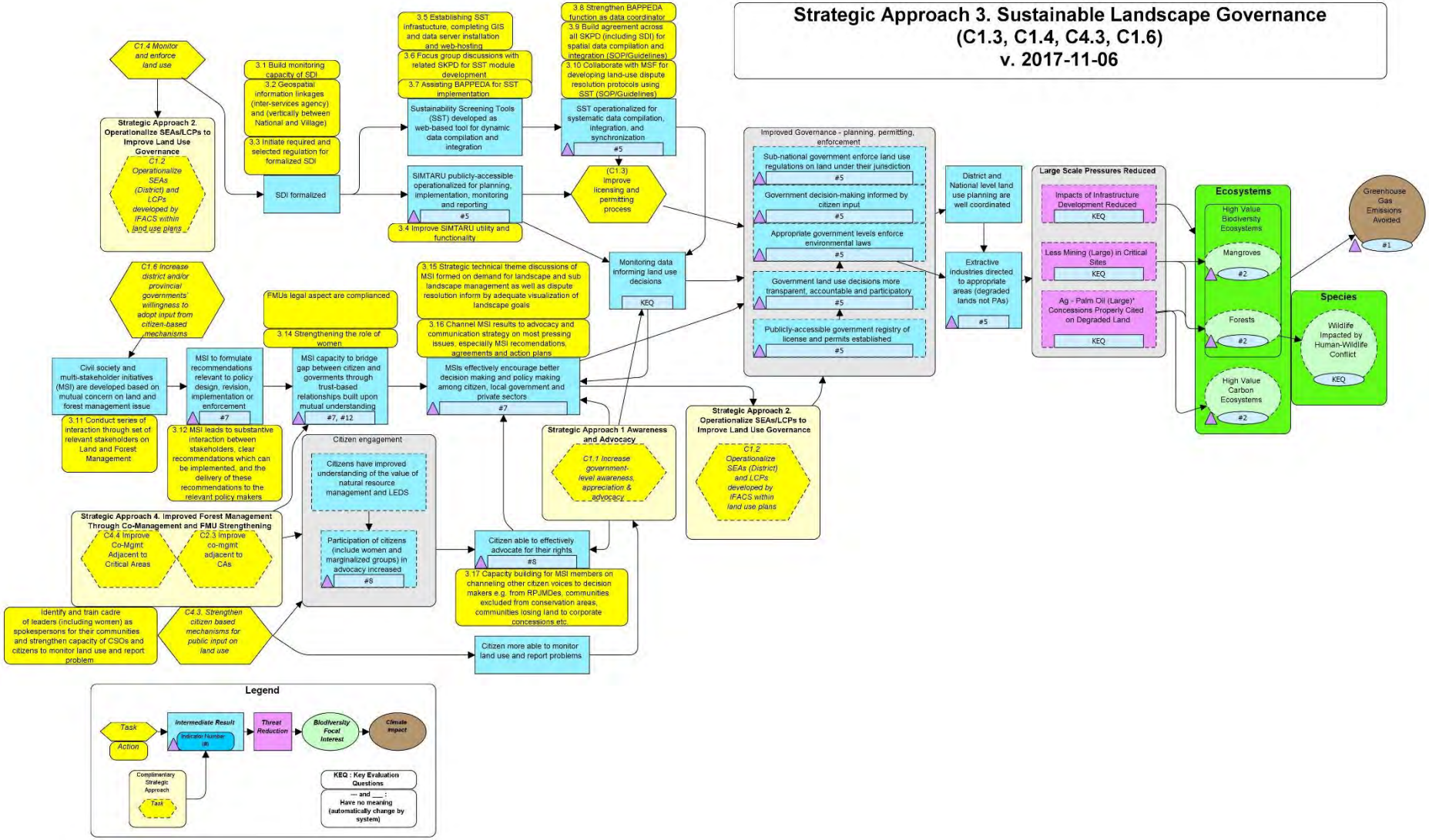
5.7 LESTARI CONSORTIUM PARTNERS

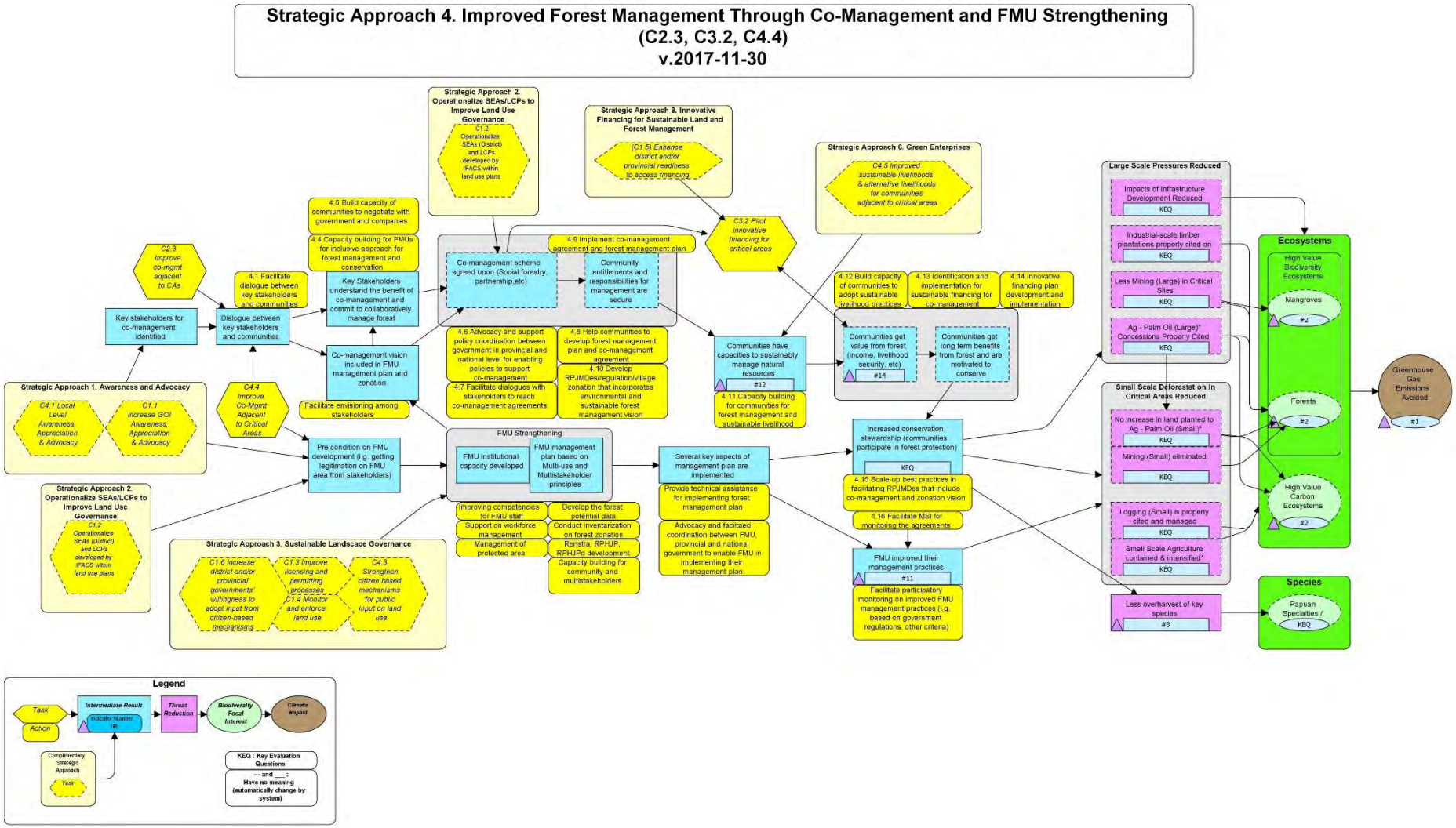
Partner	Role
Tetra Tech ARD	• Overall technical and administrative project management • Lead donor and government coordination, communication, and local capacity development activities • Monitoring, evaluation, and learning
Winrock International	• Gather data, engaged stakeholders, build, and support implementation of the Sustainability Screening Tool for improved provincial and district-level natural resource licensing and permitting • Provide Private Sector Engagement Coordinator
Michigan State University	• Establish university linkages with UNPAR, MU, and IPB to build capacity, develop curricula, create distance-learning toolkits, and implement a university-based service learning program
WWF Indonesia	• Manage Lorentz Lowlands, Mappi-Bouven Digoel, Cyclops, and Sarmi Landscape activities • Improve management effectiveness of national parks, support multi-stakeholder engagement in human-wildlife conflict mitigation, improve biodiversity conservation through SMART Patrols; innovative financing for conservation
Wildlife Conservation Society	• Improve management effectiveness of Leuser National Park and Singkil Wildlife Reserve • Improve biodiversity conservation through SMART patrols, Wildlife Response Unit, and Wildlife Crime Unit • Leverage financial resources to improve PA management
FIELD	• Facilitate communities in developing and implementing co-management agreements in Aceh and Central Kalimantan
Yayasan Sahabat Cipta (Swiss Contact-Indonesia)	• Support livelihood expansion and co-management in Aceh • Develop and implement PPPs for improved sustainable livelihoods
PT. South Pole Indonesia	• Identify and secure innovative financing opportunities for landscape-level conservation • Support implementation of PES schemes in the landscapes
Blue Forests	• Support mangrove co-management activities in Lorentz Lowlands • Leverage financial resources to improve PA management
INFIS-Mongabay Indonesia	• Produce and disseminate awareness-raising communications products on forestry and biodiversity conservation issues • Design and implement media advocacy and media capacity building initiatives • Support the building of long-term constituencies for conservation
Lembaga Wali Amanat (LWA) & Tropical Forest Foundation (TFF)	• Conduct Reduced Impact Logging training for timber concession partners in Katingan-Kahayan and Sarmi Landscapes

5.8 LESTARI RESULTS CHAIN (TOC) DIAGRAMS PER STRATEGIC APPROACH




Strategic Approach 2. Operationalize SEAs/LCPs to Improve Land Use Governance (C1.2)
v.2017-11-06
Strategic Approach 3. Sustainable Landscape Governance
C1.6 Increase district and/or provincial governments' willingness to adopt input from citizen-based mechanisms
C1.3 Improve licensing and permitting processes
C1.4 Monitor and enforce land use
C4.3 Strengthen citizen based mechanisms for public input on land use
C1.2 Operationalize SEAs (District) and LCPs developed by IFACS within land use plans
Recommendations in high quality SEAs utilized for improved forest and land use management
#6
2.1 SEA development, revising or updating with supplementary assessment
2.2 LCPs development or revision
SEA/LCP recommendations incorporated in District/Provincial government spatial plans as well as conservation area management and FMU development
#6; #12
District/Provincial government incorporate high quality SEA/LCP recommendations in KRP and sectoral budgets to safeguard forest areas from road and other sectoral threats
#6
2.7 Technical assistance for Dinas Kehutanan for RENSTRA budget analysis
National and Provincial Government allocating budget for implement SEA/LCP recommendations in Renstra Dinas Kehutanan
#13
Renstra development that incorporates multiple use and multistakeholder forest management
2.8 Technical assistant and advocacy effort to develop Renstra Dinas Kehutanan which incorporates multi-use and multi-stakeholder forest management
2.3 Informing development plans to be spatially-based
2.4 Informing spatial plans revision/review
2.5 Informing spatial rationalization of FMU development, conservation area and private sector license zonation through planning approriate for state forest area and private land
2.6 MSI and other multistakeholder process used for public consultation to improve spatial and development planning
Reduction of natural forest conversion in APL and State Forest Areas
KEQ
Improved Forest Management & Land Governance - planning, permitting, enforcement
Sub-national government enforce land use regulations on land under their jurisdiction
#5
Government decision-making informed by citizen input
#5
Appropriate government levels enforce environmental laws
#5
Government land use decisions more transparent, accountable and participatory
#5
Publicly-accessible government registry of license and permits established and enforced
#5
Large Scale Pressures Reduced
Impacts of Infrastructure Development Reduced
KEQ
Ag - Palm Oil (Large)* Concessions Properly Cited
KEQ
Less Mining (Large) in Critical Sites
KEQ
Ecosystems
High Value Biodiversity Ecosystems
Forests
#2
Mangroves
#2
High Value Carbon Ecosystems
#2
Greenhouse Gas Emissions Avoided
#1
Strategic Approach 1. Awareness and Advocacy
C1.1 Increase government-level awareness, appreciation & advocacy
C4.1 Improve local level awareness, appreciation and advocacy
C4.2 Empower media coverage of environmental issues
Strategic Approach 7. Private Sector BMP
C3.3 Industry certification, best management practices (BMPs), and Conservation Management and Mitigation Plans (CMMPs)
Renstra implemented and budget used effectively to achieves Renstra objectives
Strategic Approach 4. Improved Forest Management Through Co-Management and FMU Strengthening
C4.4 Improve Co-Mgmt Adjacent to Critical Areas
C2.3 Improve co-mgmt adjacent to CAs
Legend
Task
Action
Intermediate Result
Indicator Number (#)
Threat Reduction
Biodiversity Focal Interest
Climate Impact
Complimentary Strategic Approach
Task
KEQ : Key Evaluation Questions
— and ___ : Have no meaning (automatically change by system)


Strategic Approach 3. Sustainable Landscape Governance
(C1.3, C1.4, C4.3, C1.6)
v. 2017-11-06
C1.4 Monitor and enforce land use
Strategic Approach 2. Operationalize SEAs/LCPs to Improve Land Use Governance
C1.2 Operationalize SEAs (District) and LCPs developed by IFACS within land use plans
3.1 Build monitoring capacity of SDI
3.2 Geospatial information linkages (inter-services agency) and (vertically between National and Village)
3.3 Initiate required and selected regulation for formalized SDI
SDI formalized
3.5 Establishing SST infrastucture, completing GIS and data server installation and web-hosting
3.6 Focus group discussions with related SKPD for SST module development
3.7 Assisting BAPPEDA for SST implementation
Sustainability Screening Tools (SST) developed as web-based tool for dynamic data compilation and integration
3.8 Strengthen BAPPEDA function as data coordinator
3.9 Build agreement across all SKPD (including SDI) for spatial data compilation and integration (SOP/Guidelines)
3.10 Collaborate with MSF for developing land-use dispute resolution protocols using SST (SOP/Guidelines)
SST operationalized for systematic data compilation, integration, and synchronization
#5
SIMTARU publicly-accessible operationalized for planning, implementation, monitoring and reporting
#5
3.4 Improve SIMTARU utility and functionality
(C1.3) Improve licensing and permitting process
Monitoring data informing land use decisions
KEQ
Improved Governance - planning, permitting, enforcement
Sub-national government enforce land use regulations on land under their jurisdiction
#5
Government decision-making informed by citizen input
#5
Appropriate government levels enforce environmental laws
#5
Government land use decisions more transparent, accountable and participatory
#5
Publicly-accessible government registry of license and permits established
#5
District and National level land use planning are well coordinated
Extractive industries directed to appropriate areas (degraded lands not FAs)
#5
Large Scale Pressures Reduced
Impacts of Infrastructure Development Reduced
KEQ
Less Mining (Large) in Critical Sites
KEQ
Ag - Palm Oil (Large)* Concessions Properly Cited on Degraded Land
KEQ
Ecosystems
High Value Biodiversity Ecosystems
Mangroves
#2
Forests
#2
High Value Carbon Ecosystems
#2
Species
Wildlife Impacted by Human-Wildlife Conflict
KEQ
Greenhouse Gas Emissions Avoided
#1
C1.6 Increase district and/or provincial governments' willingness to adopt input from citizen-based mechanisms
Civil society and multi-stakeholder initiatives (MSI) are developed based on mutual concern on land and forest management issue
3.11 Conduct series of interaction through set of relevant stakeholders on Land and Forest Management
MSI to formulate recommendations relevant to policy design, revision, implementation or enforcement
#7
3.12 MSI leads to substantive interaction between stakeholders, clear recommendations which can be implemented, and the delivery of these recommendations to the relevant policy makers
FMUs legal aspect are complianced
3.14 Strengthening the role of women
MSI capacity to bridge gap between citizen and governments through trust-based relationships built upon mutual understanding
#7, #12
3.15 Strategic technical theme discussions of MSI formed on demand for landscape and sub landscape management as well as dispute resolution inform by adequate visualization of landscape goals
3.16 Channel MSI results to advocacy and communication strategy on most pressing issues, especially MSI recomendations, agreements and action plans
MSIs effectively encourage better decision making and policy making among citizen, local government and private sectors
#7
Strategic Approach 1 Awareness and Advocacy
C1.1 Increase government-level awareness, appreciation & advocacy
Strategic Approach 2. Operationalize SEAs/LCPs to Improve Land Use Governance
C1.2 Operationalize SEAs (District) and LCPs developed by IFACS within land use plans
Citizen engagement
Citizens have improved understanding of the value of natural resource management and LEDS
Participation of citizens (include women and marginalized groups) in advocacy increased
#8
Citizen able to effectively advocate for their rights
#8
3.17 Capacity building for MSI members on channeling other citizen voices to decision makers e.g. from RP,MDes, communities excluded from conservation areas, communities losing land to corporate concessions etc.
Strategic Approach 4. Improved Forest Management Through Co-Management and FMU Strengthening
C4.4 Improve Co-Mgmt Adjacent to Critical Areas
C2.3 Improve co-mgmt adjacent to CAs
identify and train cadre of leaders (including women) as spokespersons for their communities and strengthen capacity of CSOs and citizens to monitor land use and report problem
C4.3. Strengthen citizen based mechanisms for public input on land use
Citizen more able to monitor land use and report problems
Legend
Task
Action
Intermediate Result
Indicator Number (#)
Threat Reduction
Biodiversity Focal Interest
Climate Impact
Complimentary Strategic Approach
Task
KEQ : Key Evaluation Questions
— and ___ :
Have no meaning (automatically change by system)


Strategic Approach 4. Improved Forest Management Through Co-Management and FMU Strengthening
(C2.3, C3.2, C4.4)
v.2017-11-30
Strategic Approach 2. Operationalize SEAs/LCPs to Improve Land Use Governance
C1.2 Operationalize SEAs (District) and LCPs developed by IFACS within land use plans
Strategic Approach 8. Innovative Financing for Sustainable Land and Forest Management
(C1.5) Enhance district and/or provincial readiness to access financing
Strategic Approach 6. Green Enterprises
C4.5 Improved sustainable livelihoods & alternative livelihoods for communities adjacent to critical areas
C3.2 Pilot innovative financing for critical areas
4.5 Build capacity of communities to negotiate with government and companies
4.4 Capacity building for FMUs for inclusive approach for forest management and conservation
4.9 Implement co-management agreement and forest management plan
C2.3 Improve co-mgmt adjacent to CAs
4.1 Facilitate dialogue between key stakeholders and communities
Key Stakeholders understand the benefit of co-management and commit to collaboratively manage forest
Co-management scheme agreed upon (Social forestry, partnership,etc)
Community entitlements and responsibilities for management are secure
4.12 Build capacity of communities to adopt sustainable livelihood practices
4.13 Identification and implementation for sustainable financing for co-management
4.14 Innovative financing plan development and implementation
Key stakeholders for co-management identified
Dialogue between key stakeholders and communities
Co-management vision included in FMU management plan and zonation
4.6 Advocacy and support policy coordination between government in provincial and national level for enabling policies to support co-management
4.8 Help communities to develop forest management plan and co-management agreement
4.7 Facilitate dialogues with stakeholders to reach co-management agreements
4.10 Develop RPJMDes/regulation/village zonation that incorporates environmental and sustainable forest management vision
Communities have capacities to sustainably manage natural resources
#12
4.11 Capacity building for communities for forest management and sustainable livelihood
Communities get value from forest (income, livelihood security, etc)
#14
Communities get long term benefits from forest and are motivated to conserve
Large Scale Pressures Reduced
Impacts of Infrastructure Development Reduced
KEQ
Industrial-scale timber plantations properly cited on
KEQ
Less Mining (Large) in Critical Sites
KEQ
Ag - Palm Oil (Large)* Concessions Property Cited
KEQ
Ecosystems
High Value Biodiversity Ecosystems
Mangroves
#2
Forests
#2
High Value Carbon Ecosystems
#2
Greenhouse Gas Emissions Avoided
#1
Strategic Approach 1. Awareness and Advocacy
C4.1 Local Level Awareness, Appreciation & Advocacy
C1.1 Increase GOI Awareness, Appreciation & Advocacy
C4.4 Improve Co-Mgmt Adjacent to Critical Areas
Facilitate envisioning among stakeholders
Pre condition on FMU development (i.g. getting legitimation on FMU area from stakeholders)
FMU Strengthening
FMU institutional capacity developed
FMU management plan based on Multi-use and Multistakeholder principles
Improving competencies for FMU staff
Support on workforce management
Management of protected area
Develop the forest potential data
Conduct inventarization on forest zonation
Renstra, RPHJP, RPHJPd development
Capacity building for community and multistakeholders
Several key aspects of management plan are implemented
Provide technical assistance for implementing forest management plan
Advocacy and facilitated coordination between FMU, provincial and national government to enable FMU in implementing their management plan
Increased conservation stewardship (communities participate in forest protection)
KEQ
4.15 Scale-up best practices in facilitating RPJMDes that include co-management and zonation vision
4.16 Facilitate MSI for monitoring the agreements
FMU improved their management practices
#11
Facilitate participatory monitoring on improved FMU management practices (i.g. based on government regulations, other criteria)
Small Scale Deforestation in Critical Areas Reduced
No increase in land planted to Ag - Palm Oil (Small)*
KEQ
Mining (Small) eliminated
KEQ
Logging (Small) is properly cited and managed
KEQ
Small Scale Agriculture contained & intensified*
KEQ
Less overharvest of key species
#3
Species
Papuan Specialties /
KEQ
Strategic Approach 2. Operationalize SEAs/LCPs to Improve Land Use Governance
C1.2 Operationalize SEAs (District) and LCPs developed by IFACS within land use plans
Strategic Approach 3. Sustainable Landscape Governance
C1.6 Increase district and/or provincial governments' willingness to adopt input from citizen-based mechanisms
C1.3 Improve licensing and permitting processes
C1.4 Monitor and enforce land use
C4.3 Strengthen citizen based mechanisms for public input on land use
Legend
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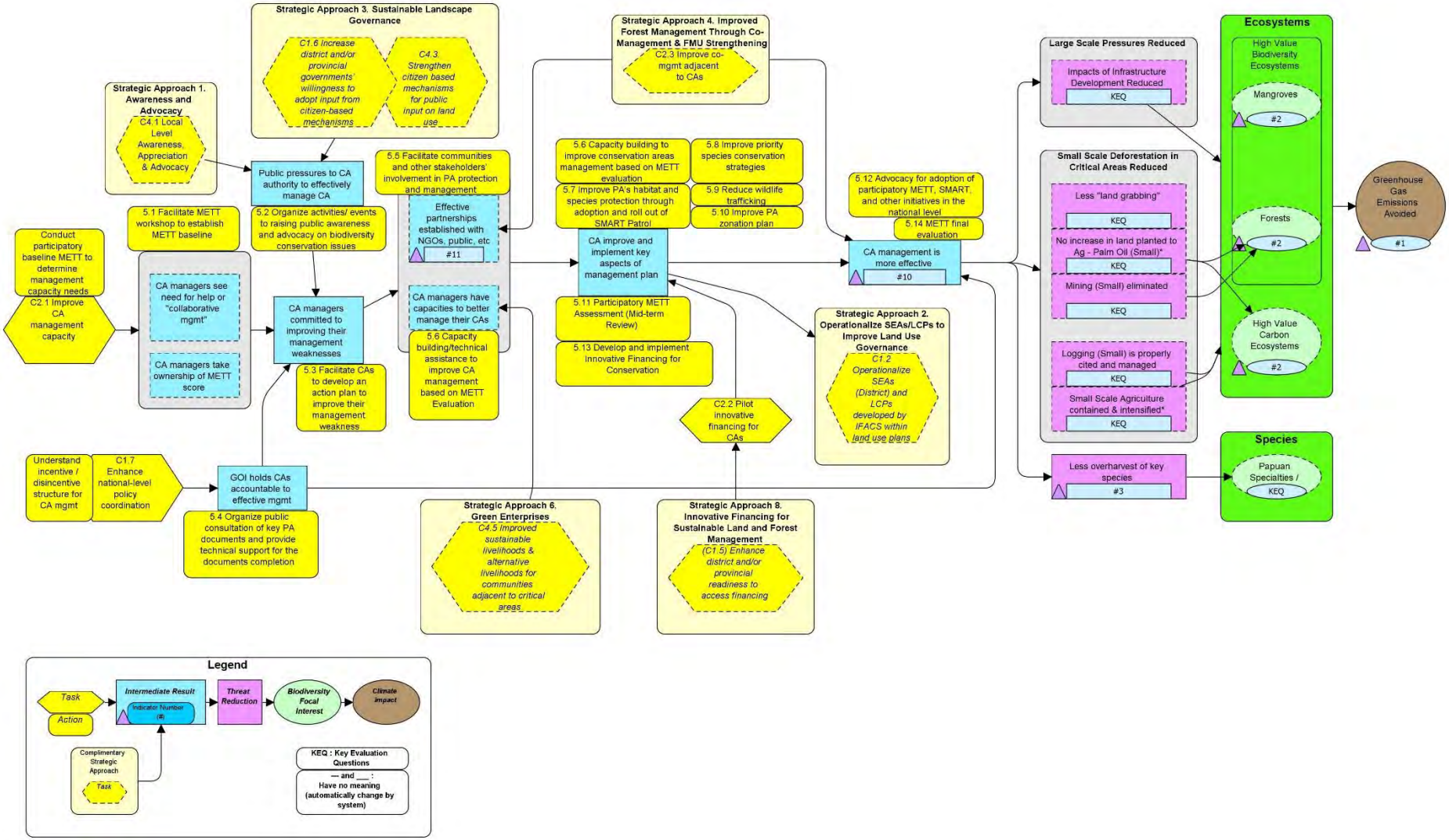
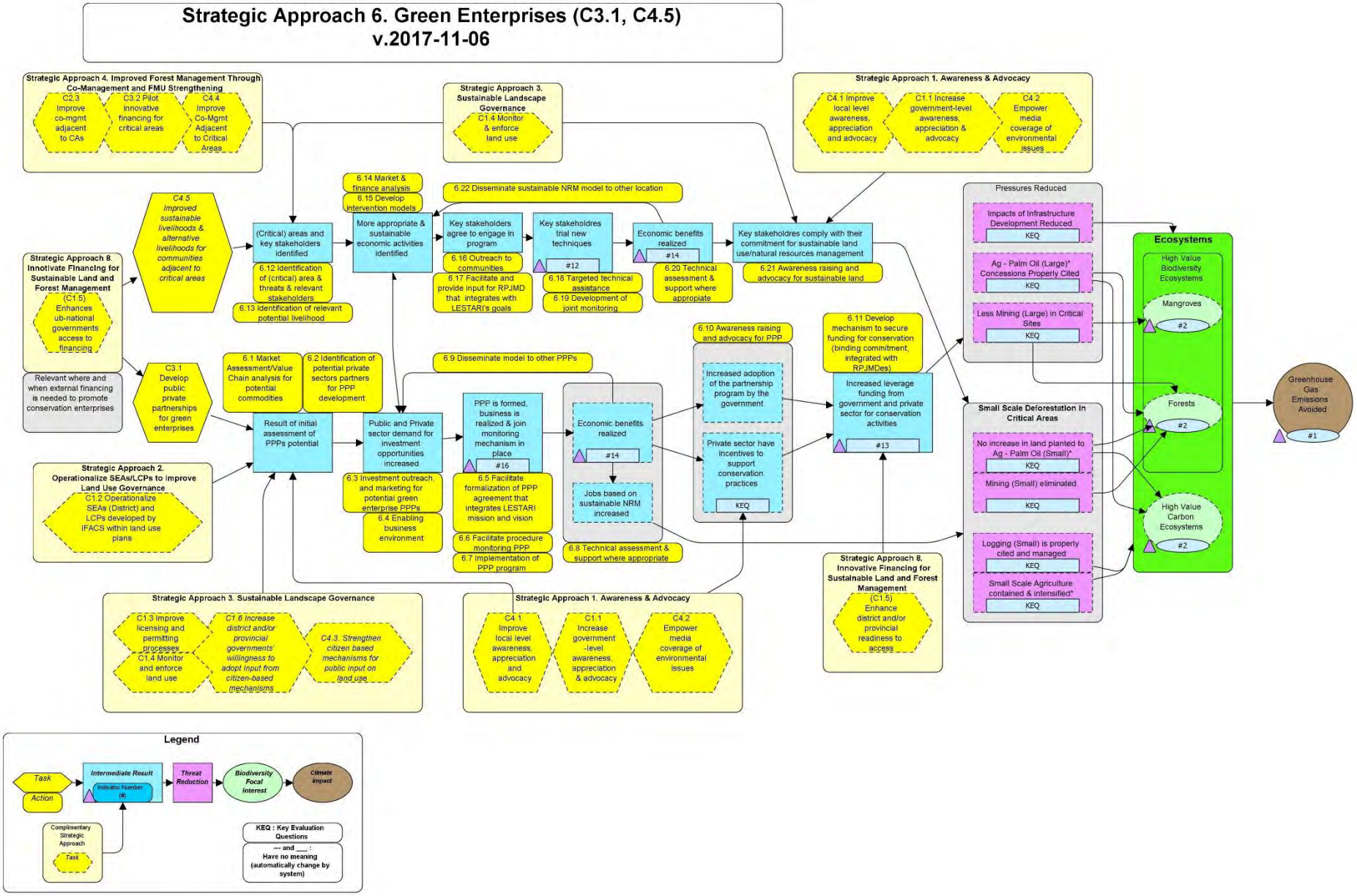
Strategic Approach 5. Protected Area Management (C2.1, C2.2, C1.7) Implemented in Leuser, Katingan Kahayan, Lorentz Lowlands, Cyclops Mt. v.2017-11-06




Strategic Approach 6. Green Enterprises (C3.1, C4.5)
v.2017-11-06
Strategic Approach 4. Improved Forest Management Through Co-Management and FMU Strengthening
C2.3 Improve co-mgmt adjacent to CAs
C3.2 Pilot innovative financing for critical areas
C4.4 Improve Co-Mgmt Adjacent to Critical Areas
Strategic Approach 3. Sustainable Landscape Governance
C1.4 Monitor & enforce land use
Strategic Approach 1. Awareness & Advocacy
C4.1 Improve local level awareness, appreciation and advocacy
C1.1 Increase government-level awareness, appreciation & advocacy
C4.2 Empower media coverage of environmental issues
Strategic Approach 8. Innovative Financing for Sustainable Land and Forest Management
(C1.5) Enhances ub-national governments access to financing
Relevant where and when external financing is needed to promote conservation enterprises
C4.5 Improved sustainable livelihoods & alternative livelihoods for communities adjacent to critical areas
C3.1 Develop public private partnerships for green enterprises
Strategic Approach 2. Operationalize SEAs/LCPs to Improve Land Use Governance
C1.2 Operationalize SEAs (District) and LCPs developed by IFACS within land use plans
(Critical) areas and key stakeholders identified
6.12 Identification of (critical) area & threats & relevant stakeholders
6.13 Identification of relevant potential livelihood
6.14 Market & finance analysis
6.15 Develop intervention models
More appropriate & sustainable economic activities identified
6.22 Disseminate sustainable NRM model to other location
Key stakeholders agree to engage in program
6.16 Outreach to communities
6.17 Facilitate and provide input for RPJMD that integrates with LESTARI's goals
Key stakeholdres trial new techniques
#12
6.18 Targeted technical assistance
6.19 Development of joint monitoring
Economic benefits realized
#14
6.20 Technical assessment & support where appropiate
Key stakeholdres comply with their commitment for sustainable land use/natural resources management
6.21 Awareness raising and advocacy for sustainable land
6.1 Market Assessment/Value Chain analysis for potential commodities
6.2 Identification of potential private sectors partners for PPP development
6.9 Disseminate model to other PPPs
Result of initial assessment of PPPs potential
Public and Private sector demand for investment opportunities increased
6.3 Investment outreach, and marketing for potential green enterprise PPPs
6.4 Enabling business environment
PPP is formed, business is realized & join monitoring mechanism in place
#16
6.5 Facilitate formalization of PPP agreement that integrates LESTARI mission and vision
6.6 Facilitate procedure monitoring PPP
6.7 Implementation of PPP program
Economic benefits realized
#14
Jobs based on sustainable NRM increased
6.8 Technical assessment & support where appropriate
6.10 Awareness raising and advocacy for PPP
Increased adoption of the partnership program by the government
Private sector have incentives to support conservation practices
KEQ
6.11 Develop mechanism to secure funding for conservation (binding commitment, integrated with RPJMDes)
Increased leverage funding from government and private sector for conservation activities
#13
Pressures Reduced
Impacts of Infrastructure Development Reduced
KEQ
Ag - Palm Oil (Large)* Concessions Properly Cited
KEQ
Less Mining (Large) in Critical Sites
KEQ
Small Scale Deforestation in Critical Areas
No increase in land planted to Ag - Palm Oil (Small)*
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Strategic Approach 8. Innovative Financing for Sustainable Land and Forest Management
(C1.5) Enhance district and/or provincial readiness to access
Strategic Approach 3. Sustainable Landscape Governance
C1.3 Improve licensing and permitting processes
C1.4 Monitor and enforce land use
C1.6 Increase district and/or provincial governments' willingness to adopt input from citizen-based mechanisms
C4.3. Strengthen citizen based mechanisms for public input on land use
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C4.1 Improve local level awareness, appreciation and advocacy
C1.1 Increase government -level awareness, appreciation & advocacy
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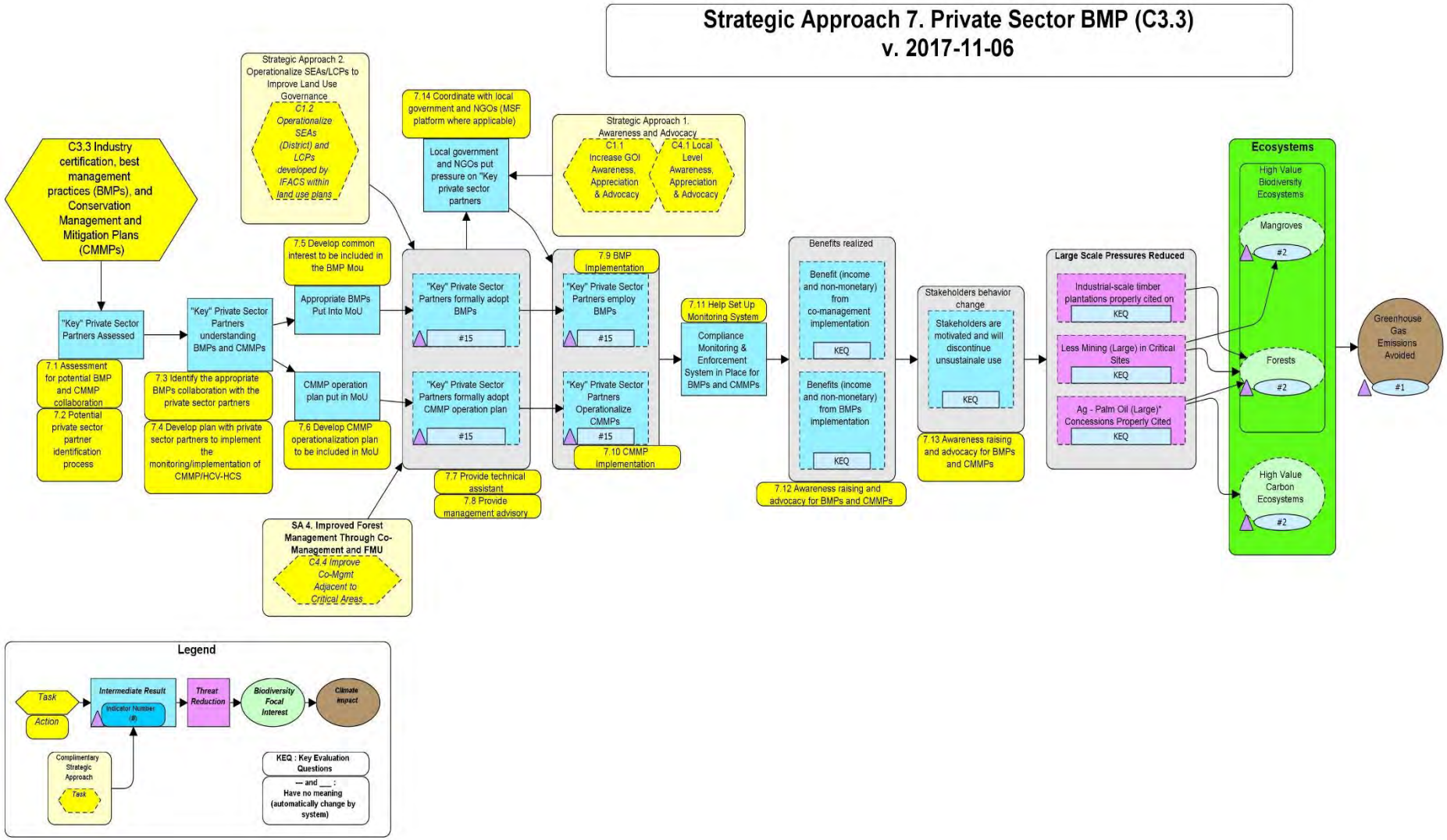
Strategic Approach 7. Private Sector BMP (C3.3)
v. 2017-11-06
C3.3 Industry certification, best management practices (BMPs), and Conservation Management and Mitigation Plans (CMMPs)
"Key" Private Sector Partners Assessed
7.1 Assessment for potential BMP and CMMP collaboration
7.2 Potential private sector partner identification process
"Key" Private Sector Partners understanding BMPs and CMMPs
7.3 Identify the appropriate BMPs collaboration with the private sector partners
7.4 Develop plan with private sector partners to implement the monitoring/implementation of CMMP/HCV-HCS
Strategic Approach 2. Operationalize SEAs/LCPs to Improve Land Use Governance
C1.2 Operationalize SEAs (District) and LCPs developed by IFACS within land use plans
7.5 Develop common interest to be included in the BMP Mou
Appropriate BMPs Put Into MoU
CMMP operation plan put in MoU
7.6 Develop CMMP operationalization plan to be included in MoU
SA 4. Improved Forest Management Through Co-Management and FMU
C4.4 Improve Co-Mgmt Adjacent to Critical Areas
7.14 Coordinate with local government and NGOs (MSF platform where applicable)
Local government and NGOs put pressure on "Key private sector partners
"Key" Private Sector Partners formally adopt BMPs
#15
"Key" Private Sector Partners formally adopt CMMP operation plan
#15
7.7 Provide technical assistant
7.8 Provide management advisory
Strategic Approach 1. Awareness and Advocacy
C1.1 Increase GOI Awareness, Appreciation & Advocacy
C4.1 Local Level Awareness, Appreciation & Advocacy
7.9 BMP Implementation
"Key" Private Sector Partners employ BMPs
#15
"Key" Private Sector Partners Operationalize CMMPs
#15
7.10 CMMP Implementation
7.11 Help Set Up Monitoring System
Compliance Monitoring & Enforcement System in Place for BMPs and CMMPs
Benefits realized
Benefit (income and non-monetary) from co-management implementation
KEQ
Benefits (income and non-monetary) from BMPs implementation
KEQ
7.12 Awareness raising and advocacy for BMPs and CMMPs
Stakeholders behavior change
Stakeholders are motivated and will discontinue unsustainale use
KEQ
7.13 Awareness raising and advocacy for BMPs and CMMPs
Large Scale Pressures Reduced
Industrial-scale timber plantations properly cited on
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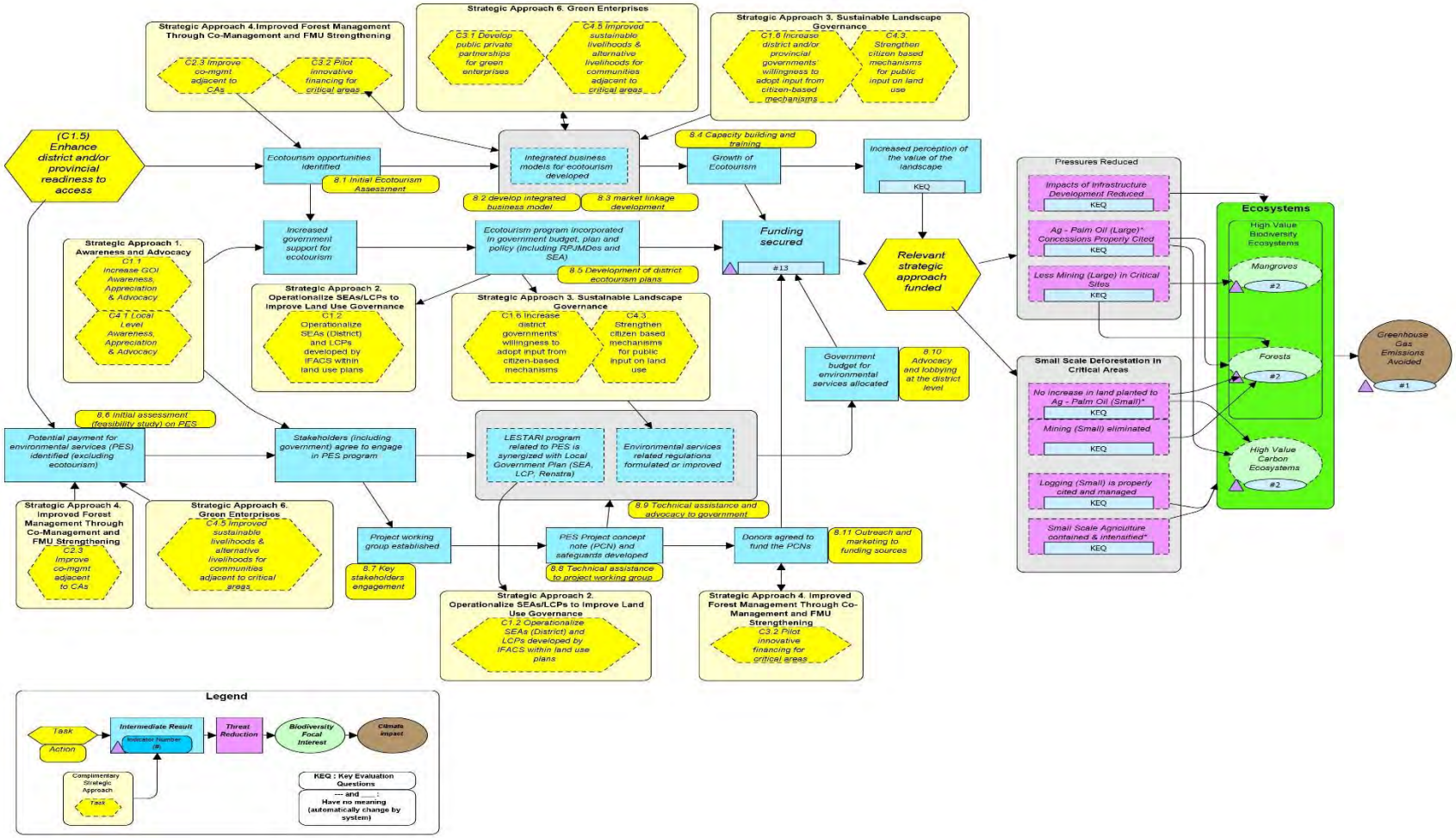
Strategic Approach 8. Innovative Financing for Sustainable Land and Forest Management (C1.5)
v. 2017-11-06



USAID LESTARI

Wisma GKBI, 12th Floor, #1210
Jl. Jend. Sudirman No. 28, Jakarta 10210, Indonesia

Phone: +62 21 574 0565 Fax: +62 21 574 0566
Email: Info@Lestari-Indonesia.org
Website: www.Lestari-Indonesia.org