Lao People's Democratic Republic
Ministry of Agriculture and Forestry

Sustainable Forest Management and REDD+ Support Project in Lao People's Democratic Republic

Completion Report (Term II)

January 2022

Japan International Cooperation Agency (JICA)

Kokusai Kogyo Co., Ltd.

GE
JR
22-010

Contents

List of Tables and Figures

Annexes and Separate Volume

Abbreviations

略語	英語名
AD	Activity Data
ADB	Asian Development Bank
BSM	Benefit Sharing Mechanism
CIFOR	Center for International Forestry Research
CliPAD	Climate Protection through Avoided Deforestation Project
C/P	Counterpart
DAFO	District Agriculture and Forestry Office
DBH	Diameter at breast height
DCC（former DDMCC）	Department of Climate Change（formerDepartment of Disaster Management and Climate Change
DFRM	Department of Forest Resource Management
DOF	Department of Forestry
EF/RF	Emission Factor/Removal Factor
ERP	Emission Reduction Program
ERPA	Emission Reduction Payment Agreement
ERPD	Emission Reductions Program Document
ER-PIN	Emission Reductions Program Idea Note
FAO	Food and Agriculture Organization of the United Nations
FCA	Forest Cover Assessment
FCPF	Forest Carbon Partnership Facility
FCPF-CF	Forest Carbon Partnership Facility, The Carbon Fund
FCPF RP	FCPF Readiness Preparation Project
FIM	Forest Information Management Program
FIPD	Forest Inventory and Planning Division
FLEGT/VPA	Forest Law Enforcement, Governance and Trade/Voluntary Partnership Agreement
FPF	Forest Protection Fund (formally called "Forest and Forest Resource Development Fund (FFRDF)"
FRDF	Forest and Forest Resource Development Fund
FREL/FRL	Forest Reference Emission Level/Forest Reference Level
FS 2020	Forest Strategy 2020
FSCAP	Forest Sector Capacity Development Project
FSSWG	Forest Sub-Sector Working Group
GCF	Green Climate Fund
GHG	Greenhouse Gasses
GHG-I	Greenhouse Gas Inventory
GT	Ground Truthing
I-GFLL	Implementation of the Lao PDR Emission Reductions Programme through improved governance and sustainable forest landscape management
IPCC	Intergovernmental Panel on Climate Change
JCC	Joint Coordinating Committee
JCM	Joint Crediting Mechanism
JICA	Japan International Cooperation Agency
JNR	Jurisdictional and Nested REDD+
LEAF Coalition	The Lowering Emissions by Accelerating Forest finance (LEAF) Coalition
LENS2	Second Lao Environment and Social Project
LoI	Letter of Intent
LPB	Luang Prabang
MAF	Ministry of Agriculture and Forestry

MONRE	Ministry of Natural Resources and Environment
MRV	Measurement, Reporting and Verification
NC	National Circumstances
NDC	Nationally Determined Contribution
NSEDP	National Socio-Economic Development Plan
NFI	National Forest Inventory
NFIS	National Forest Information System
NFIS project	The Capacity Development Project for Establishing National Forest Information System for Sustainable Forest Management and REDD+
NFMS	National Forest Monitoring System
NRESWG	Natural Resources and Environment Sector Working Group
NRS	National REDD+ Strategy
NRTF	National REDD+ Task Force
OLDM	Operational Logging and Degradation Monitoring
ODA	Official Development Assistance
ODY	Oudomxay
PAFO	Provincial Agriculture and Forest Office
PaMs	Policies and Measures
PAREDD	Participatory Land-use and Management for Reducing Deforestation
PFES	Payment for Forest Environmental Services
PDM	Project Design Matrix
PDMS	Provincial Deforestation Monitoring System
PP-PPT-TKS	Phou Pheung-Phou Pha Thoun-Tat Kuang Si
PO	Plan of Operation
POFI	Provincial Office of Forest Inspection
PONRE	Provincial Office of Natural Resources and Environment
PRO	Provincial REDD+ Office
ProFLEGT	Support to the Lao EU-FLEGT Process
PRTF	Provincial REDD+ Task Force
RBP	Results Based Payment
R/D	Record of Discussion
REL DT	REL Drafting Team
RECOFTC	The Center for People and Forests
REDD+	Reducing Emissions from Deforestation and Forest Degradation and the role of conservation of forests and enhancement of forest carbon stocks
RTM	Round Table Meeting
RV	Regenerating Vegetation
SDGs	Sustainable Development Goals
SESA	Strategic Environmental and Social Assessment
SESU	Social and Environmental Safeguards Unit
SFM	Sustainable Forest Management
SIS	Safeguards Information System
SNV	Netherlands Development Organization
SoI	Summary of Information on Implementation of Cancun REDD+ Safeguards
SUFORD SU	Sustainable Forest and Rural Development Scale Up (Project)
SWG-ARD	Sector Working Group of Agriculture and Rural Development
TABI	The Agrobiodiversity Initiative
TLAS	Timber Legality Assurance System
TOR	Terms of Reference
ToT	Training of Trainers
TWG	Technical Working Group
UAV	Unmanned Aerial Vehicle
UNFCCC	United Nations Framework Convention on Climate Change
UN-REDD	United Nations REDD Programme

Photos of Activities

Common Activities

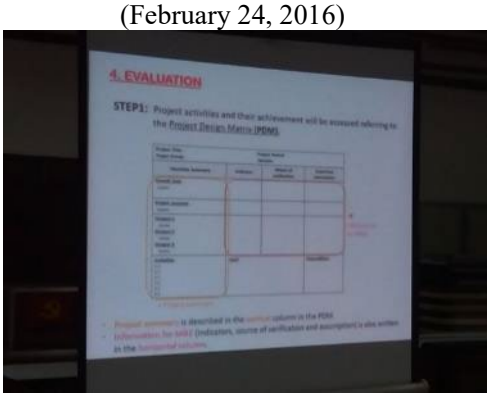
1st JCC meeting
(November 12, 2015)

1st Annual Workshop
(February 24, 2016)

1st JCC meeting
(May 12, 2017)

2nd Annual Workshop
(February 24, 2016)

The 3rd JCC meeting on October 13, 2017 was chaired by Mr Sousath (right), DG of the DOF, and co-chaired by Mr. Yoneyama (left), chief representative of JICA Laos Office



Explanation slide of the Mid-term Review methodology at the kick-off meting
(October, 2017)

4th JCC meeting (February 27, 2018)

4th JCC meeting (February 27, 2018)

The 3rd Annual Workshop (April 11, 2018)

5th JCC meeting (March 28, 2019)

6th JCC meeting (November 6, 2020)

Output 1

1st FSSWG meeting
(February 12, 2016)

REDD+ progress in Lao PDR presented at 1st FSSWG meeting
(February 12, 2016)

Collaborative training for members of three TWGs: Legal Framework, Benefit Sharing Mechanism, and Social & Environmental Safeguards (July 28-29, 2016)

Mrs. Lomkham, Director of FRDF/DOF, made statements at in the "REDD+ Financing" Workshop held in Bangkok
(May 25-27, 2016)

5th FSSWG meeting (June 14, 2018)
(June 14, 2018)

REL/MRV Workshop
(August 28-29, 2018)

Group work on REL calculation
(REL/MRV Workshop)
(August 28-29, 2018)

Training in Japan: Site visit at Mushroom production in Saitama Prefecture
(September 1-12, 2019)

Output 1 (Training in Japan 2016)

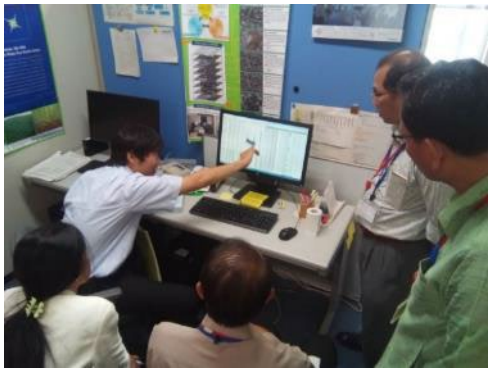
Overview session of the training

Introduction of Kokusai Kogyo Co., Ltd.

Explanation of stratification
in forest clasification

Practice of FREL/FRL development

Visit to Tenryu plantation



Explanation of Forest Management System
at Forestry Agency in Japan

Output 1 (Training in Japan 2017)

In a patchwork forest where NPO Sanson-juku is trying to convert a plantation forest into a wild forest by planting hardwood species

Shiitake mushroom log farming at the sites of NPO Sanson-juku

Logging site of Japanese cedar at a private plantation forest in Morotsuka Village

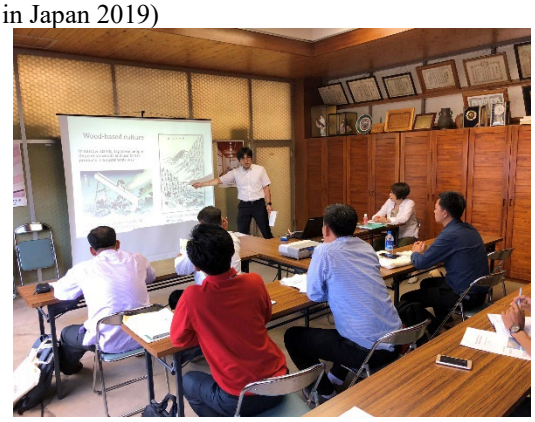
Exchange of views was held in a showroom made of wood products in Morotsuka Village

Inspection on the erosion control facilities in Wanitsuka National Forest
(Miyazaki Forestry Office)

The Miyazaki Southern Forestry Office explained Profit Sharing Forestry, held in the national forest.

Output 1 (Training in Japan 2019)

Lecture on Forest Planning System in Japan
(Forestry Agency)



Lecture on management of plantation forests and timber distribution by forest association
(Miyazaki Prefecture Forestry Association)

Introduction of Aya UNESCO Eco Park
(Aya Town Office, Aya UNESCO Eco Park Promotion Office)

Visit to Morozuka Wood Processing Center
(Morozuka Village)

Introduction of Maitake mushroom production
(Tokigawa Town, Saitama Prefecture)

Ceremony of Certificate of Completion
(JICA Tokyo Center)

Output 2 (NFI)

The NFI kick-off meeting
(February 5, 2016)

Inputting of NFI data
(2015-2016 dry season)

Explanation of how to input data into tablets
(October, 2016)

Biomass sampling (NFI field training)
(October, 2016)

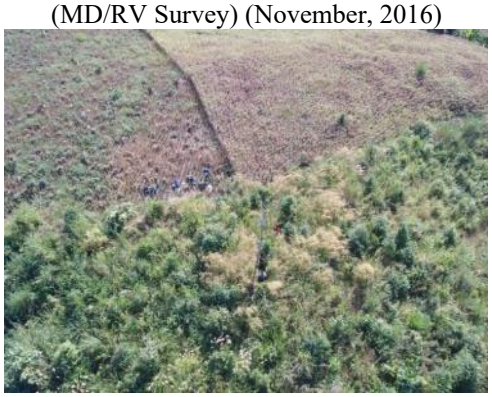
DBH estimation of irregular tree
(NFI field training) (October, 2016)

Measurement of bamboo
(NFI field training) (October, 2016)

Output 2 (NFI)

Preparing the drone for measuring tree cover rate
(MD/RV Survey) (November, 2016)

Training before the survey
(MD/RV Survey) (November, 2016)

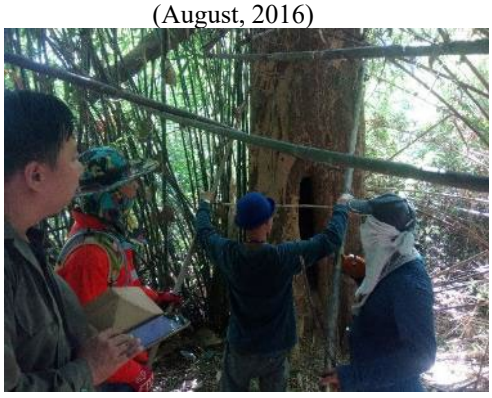


Survey plot (foreground) and converted agricultural land (background) (MD/RV Survey)
(November, 2016)

Collecting biomass (MD/RV Survey)
(November, 2016)

Biomass samples stored in the drying room
(August, 2016)

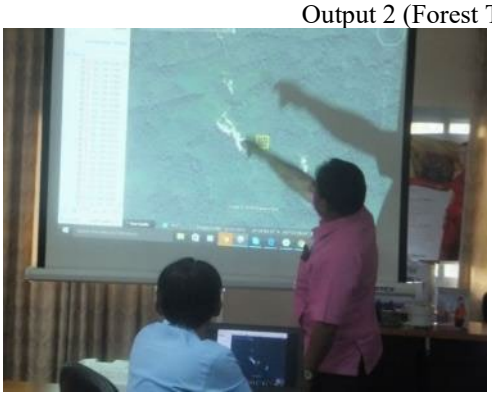
Weighing work on dried samples
(August, 2016)



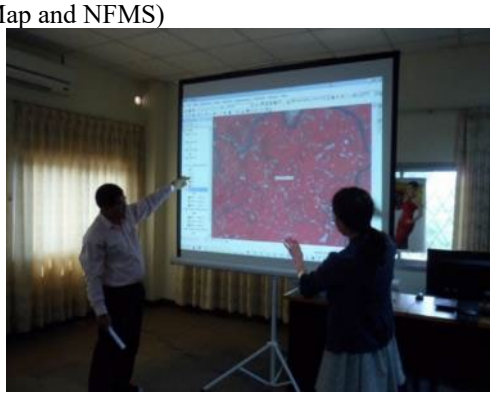
3rd NFI field training
(November 3-5, 2018)

Quality Control survey to confirm the quality of 3rd NFI main survey results (February 21, 2019)

Output 2 (Forest Type Map and NFMS)



Kick-off meeting on change detection in mountainous areas on satellite images between 2010 and 2015 for the Forest Type Map 2015
(January, 2016)



Change detection around farming area (Forest Type Map 2015 development training)
(April, 2016)

Kick-off of the correction of cloud parts
(September, 2016)

Explanation of the NFMS physical system
(July, 2017)

TV conference on FREL with the Technical Asessment Team of the UNFCCC
(March 13-14, 2018)

Discussion of the Achievement of Term I and Plan for Term II to the FIPD (March 28, 2018)

GT survey aiming at capacity development in satellite image interpretation for FIPD staff
(February 24, 2019)

Progress check of FTM 2019 with the mapping team of the FIPD
(April 2019)

A workshop held by the US SilvaCarbon program at Univercity of Maryland
(June 11-14, 2019)

Video conference with experts of Silvacarbon and World Bank on forest degradation and restoration monitoring at the FIPD
(August 6, 21, 2020)

NFMS learning session (connected online with Tokyo) (November 10-11, 2020)

Meeting of the FIPD and FCPF Preparation Support Project on upgarading NFMS Web Portal Database and Lao REDD+ Website
(March 25, 2021)

Training on the Provincial Deforestation Monitoring System in Sayaburi Province
(March 29 - April 6, 2021)

Output 3 (REL/MRV TWG)

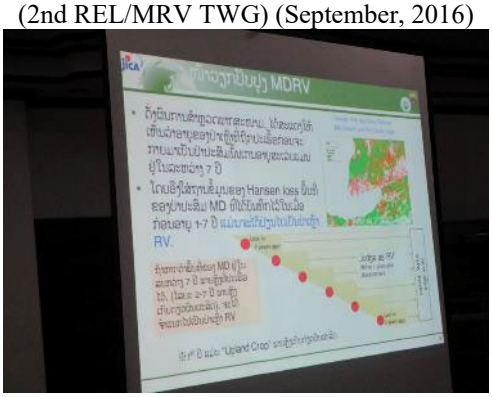
1st REL/MRV TWG opening
(April, 2016)

Chair of REL/MRV TWG, Mr. Linthong,
Director of FIPD (1st REL/MRV TWG)
(April, 2016)

Explanation of REL submission schedule
(2nd REL/MRV TWG) (September, 2016)

Redefinition of Forest Classification
(2nd REL/MRV TWG) (September, 2016)

The joint meeting of 6 TWGs (January, 2017)



Presentation on the survey results for accuracy
improvement and revision work of Forest Type
Maps (4th TWG) (May, 2017)

8th REL/MRV TWG meeting (Vientiane)
(March 18, 2020)

Output 3

NRTF meeting chaired by MAF Vice Minister (September 24, 2019)

Group discussion during Workshop on Safeguards (October 29, 2019)

SoI Consultations Workshop in the central region (Savannakhet Province) (November 19-20, 2019)

SoI Consultations Workshop in the southern region (Champasak Province) (November 21-22, 2019)

SoI Consultations Workshop in the northern region (Luang Prabang Province) (November 27, 2019)

2nd SoI Workshop (Vientiane) (December 20, 2019)

Workshop with the five southern region provinces on the field survey for the project to be financed by GCF Results Based Payment (September 28, 2020)

Output 4

The kick-off meeting of the Project in Luang Prabang Province (November 19, 2015)

The debriefing meeting of the Capacity Development Needs Assessment for the Luang Prabang Forest Sector under the JICA-RECOFTC Partnership Program (January 26, 2016)

Work with maps for identification of drivers of deforestation and forest degradation in Luang Prabang Province (February 2016)

Provincial REDD+ Task Force meeting in Luang Prabang Province (July 28, 2016)

Workshop on the policy and measures for deforestation reduction and forest preservation promotion in Luang Prabang Province (October 12-14, 2016)

A classroom training on the PAREDD Approach
(October 30 – November 3, 2018)

A practical on-the-job training on the PAREDD Approach for District Forestry Officers (Xiengmouak Village)
(November 5-13, 2018)

Support for planning forest management activity in the target village as part of PAREDD Approach training (December 17-22, 2018)

Planting activity in Phonkeo Village in Nan District (May, 2019)

A meeting for reporting of "Ecotourism Potential Survey" (June 26, 2019)

Poultry provided to Xienmouak Village under the livelihood improvement activity (August, 2019)

The signboard of the village land use plan installed in Xienmouak Village (August, 2019)

Delivery of goats to participating households in Phonkeo Village to disseminate the PAREDD Approach (November 1-10, 2019)

Training on the Provincial Deforestation Monitoring System (Oudomxay Province) (December 16-20, 2019)

Inspecting deforestation areas using PDMS (Oudomxay Province) (February, 2020)

Field investigation using PDMS
(Luang Prabang Province) (March 23-24, 2020)

Training on village fund management in Phonkeo Village (Luang Prabang Province)
(March 24-27, 2020)

Training on organic fertilizer making (Luang Prabang Province)
(May 26, 2020 - June 2, 2020)

Training on management of livestock raising
(Luang Prabang Province)
(May 28-29, 2020)

PDMS review meeting
(Oudomxay Province: June 17, 2020; Luang Prabang Province: June 18, 2020)

Wrap-up meeting on field activities
(Oudomxay Province) (October 2020)

Wrap-up meeting on field activities (Luang Prabang Province) (October 2020)

Output 4 (REDD+ Training)

Workshop on measures for addressing deforestation, forest conservation and forest restoration (October, 2016)

REDD+ safeguards training:
Presentation of the group discussion results on gender roles in forest management
(October, 2016)

Group discussion: measures for addressing illegal logging (October, 2016)

Group discussion: management issues on the three forest categories (October, 2016)

Groupwork in Safeguard training
(December, 2016)

Presentation by groups in Safeguard training
(December, 2016)

Output 4 (PRAP)

3rd meeting of the PRTF on the roadmap to develop the PRAP. (February, 2017)

Local consultation at the district level: the Provincial staff presenting an overview of REDD+ and PRAP. (February, 2017)

Group discussion in consultation at the District level: Discussion of the direct and indirect drivers of deforestation. (February, 2017)

Group discussion in consultation at the village cluster level: Discussion of the major drivers of deforestation and the countermeasures (February, 2017)

Group discussion in consultation at the village cluster level: Presentation on the discussion results by groups. (February, 2017)

Group discussion in consultation at the village cluster level: The participants agreeing on the conclusions. (February, 2017)

Output 4 (PP-PPT-TKS Protection Forest Management Planning)

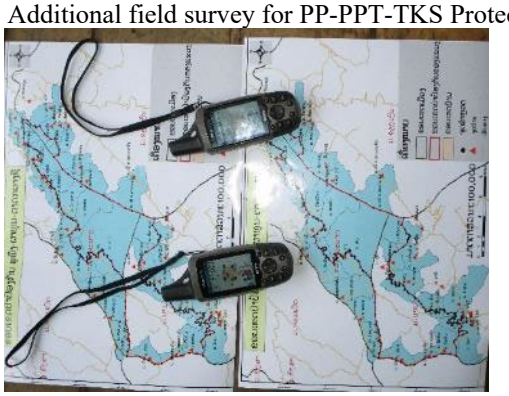
Interview for identifying important water source areas (July, 2017)

Confirmation of the PP-PPT-TKS boundary with villagers (July, 2017)

Information collection for land use plan at village level (July, 2017)

Identification of rare wildlife species (July, 2017)

Additional field survey for PP-PPT-TKS Protection Forest management planning (October, 2017)



GPS and maps for boundary delineation survey (May 10-22, 2018)

Marking a point on the confirmed boundary and getting a GPS coordinates (May 10-22, 2018)

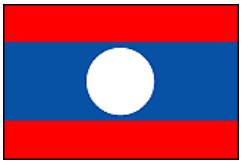
Kick-off meeting for district-level Protection Forest management committee (Nan District) (October 22, 26, 29, 2018)

Kick-off meeting for district-level Protection Forest management committee (Xieng Ngeun District) (October 22, 26, 29, 2018)

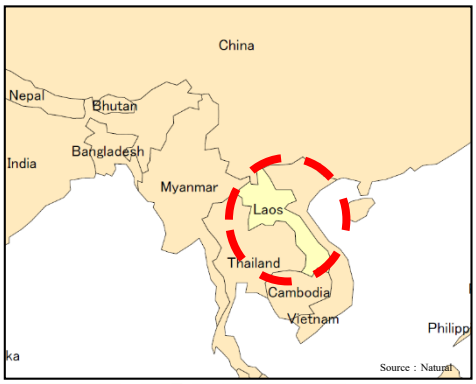
Kick-off meeting for district-level Protection Forest management committee (Luang Prabang District) (October 22, 26, 29, 2018)

Installation of poles and signbords for PP-PPT-PKS Protection Forest (May, 2019)

Project Sites



Lao People's Democratic Republic



Source:: University of Texas Libraries

I Basic Information of the Project

1. Country
   Lao People's Democratic Republic

2. Title of the Project
   Sustainable Forest Management and REDD+ Support Project
3. Duration of the Project
   2015.10 – 2022.3 (six years and four months)
   Term I: 2015.10 – 2018.1 (two years and four months)
   Term II: 2018.2 – 2022.1 (four years)

4. Background

In the 1940s, the forest cover of Lao People's Democratic Republic (Lao PDR) was estimated at more than 70%. The figure had dropped to 40% in 2010, mainly caused by changes in land use, such as the development of hydropower plants, mining operations, and industrial plantations. The Government of Lao PDR (hereinafter referred to as "GoL") has formulated the "Forestry Strategy to the Year 2020" (FS 2020) with the goal of restoring the forest cover rate to 70%. In addition, recognizing Reducing Emissions from Deforestation and Forest Degradation and the role of conservation of forests and enhancement of forest carbon stocks (REDD+) as an opportunity for enhancing forest governance, financial revenue, and the livelihoods of rural communities, the GoL has established the National REDD+ Task Force (NRTF) and is working on REDD+ preparedness.

Institutional reform in 2011 saw the Department of Forest Resource Management (DFRM) of the Ministry of Natural Resources and Environment (MONRE) adopting the administration of Conservation Forests and national biodiversity conservation areas (NBCAs), while the Department of Forestry (DOF) of the Ministry of Agriculture and Forestry (MAF) continues to administer Production Forests. This has resulted in a lack of sufficient capacity and consistency of the GoL in administering forest conservation as a whole. Also, the decentralization policy of recent years requires Provincial Natural Resource and Environment Offices (PONREs) and District Natural Resource and Environment Offices (DONREs), as well as Provincial Agriculture and Forest Offices (PAFOs) and District Agriculture and Forestry Offices (DAFOs), to be responsible for forest conservation at the province and district levels. Therefore, capacity building of local level agencies is in urgently needed.

Furthermore, REDD+ requires accurate information on forest resources, such as satellite image analysis. The GoL's capacity to analyze and administer REDD+ related data is not sufficient, and there is also a shortage of human resources to accumulate and analyze information. These issues prevent the country from fully realizing forest conservation through REDD+.

Based on this background, the GoL made a request for the "Forestry Sector Policy Strategy for Sustainable Forest Management and REDD+ Promotion Project" to the Government of Japan, and both sides agreed to implement the project from December 2014. The initial nine month preparation phase of the "Forestry Sector Policy Strategy for Sustainable Forest Management and REDD+ Promotion Project" (F-PREP) facilitated the formulation of the full implementation phase of the project, and the Detailed Design Survey mission from JICA Headquarters agreed on the project contents in March 2015. Both sides also agreed to change the project name to the "Sustainable Forest Management and REDD+ Support Project" (hereinafter referred to as "the Project") and a revised Record of Discussions (R/D) was signed in July 2015. The Project is scheduled to operate for five years from October 2015 to October 2020. After two extensions were agreed to by both sides, the full-scale phase was carried out for a period of six years and four months, from October 2015 to January 2022.

Based on the revised R/D, the Project aims to strengthen the capacity for Sustainable Forest Management (SFM) of the agencies and human resources handling REDD+ at the central and regional levels through the clarification of REDD+ strategy and improvement of forest resource information.

5. Overall Goal and Project Purpose

Overall Goal:
Sustainable Forest Management is promoted through the full implementation of REDD+.

Project Purpose:
Capacity for Sustainable Forest Management is strengthened through incorporation of REDD+ into the

sector strategy REDD+ and improvement of forest resource information.

6. Implementing Agencies

Ministry of Natural Resources and Environment, Department of Forest Resource Management (MONRE-DFRM): until July 2016

Ministry of Agriculture and Forestry, Department of Forestry (MAF-DOF)

Provincial Office of Natural Resources and Environment (PONRE) in Luang Prabang Province: until July 2016

Provincial Agricultural and Forestry Office (PAFO) in Luang Prabang Province

Provincial Agriculture and Forestry Office (PAFO) in Oudomxay Province

II Results of the Project

1. Inputs of the Project

1-1 Inputs by the Japanese Side

1-1-1 Japanese Experts

A total of nine Japanese experts were dispatched to Laos 118 times (for a total of 1,957 days) as of January 14, 2022..

Table 1: Input of Experts

No.	Areas	Quantity	Times	Days	Work in Laos M/M	Work in Japan M/M	Total M/M
1	Chief Advisor/Forest Policy and Forest Management	1	16	94	614.0	30.70	33.84
2	Deputy Chief Advisor/REDD+ Policy	1	15	74	716.4	35.82	38.28
3	Provincial REDD+ Action Plan & Implementation 1/Gender 1	1	20	486	120.4	6.02	22.22
4	Forest Information System 1/Forest Database 1	2	9	96	35.6	1.78	4.98
5	Forest Information System 2/Forest Database 2	2	5	82	72.0	3.60	6.33
6	Forest Inventory 1/FREL/FRL/MRV	1	15	335	139.2	6.96	18.13
7	Forest Inventory 2/ Provincial REDD+ Action Plan & Implementation 2	1	17	477	63.0	3.15	19.05
8	Remote Sensing 1	2	17	243	219.6	10.98	19.08
9	Remote Sensing 2	1	4	70	63.5	3.18	5.51
10	Remote Sensing 3	1	0	0	138.0	6.90	6.90
11	REDD+ Safeguards	1	0	0	63.0	3.15	3.15
12	Gender 2	1	0	0	34.0	1.70	1.70
13	Deforestation Monitoring Script Advisor	1	0	0	80.0	4.00	4.00
14	Training in Japan	1	0	0	48.0	2.40	2.40
	Total	17	118	1957	2,406.7	120.34	185.57

* Since the Chief Advisor, Deputy Chief Advisor, and Remote Sensing 3 live in Laos, the domestic assignment is in operation in Lao PDR.

1-1-2 Training for Capacity Development

The Project conducted trainings in Lao PDR (in-country training), in Japan, and in a third country, to support strengthening the capacities of the staff members of the counterparts (C/Ps). In-country trainings were carried out 29 times in cooperation with other development partners (Table 2). The Project also carried out three trainings held in Japan (Table 3). In addition, the Project supported the C/Ps in participating in RECOFTC trainings (funded by the JICA-RECOFTC Partnership Program) and UN-REDD/FCPF/REDD+ Partnership workshops (Table 5) in third countries. Furthermore, in Term II, support was also given for participation in the JICA Japan Invitation Program and Forest Carbon Partnership Facility (FCPF) related meetings (Table 5). Apart from these, the Project also facilitated the participation of a total of seven forestry officers in the JICA group trainings (Table 4).

Table 2: In-country Trainings

No.	Trainings	Participants	Duration
1	NFI pre-survey training (2015-2016 dry season)	15	February 17-19, 2016
2	REDD+ Training for Benefit Sharing, Social and Environmental Safeguard and Legal Framework Technical Working Group	25	July 28-29, 2016
3	REDD+ Training to REL/MRV, Land Use & Enforcement and Implementation of Mitigation Technical Working Groups	25	August 16-17, 2016
4	Introduction of safeguards on sustainable forest management and REDD+	39	October 13, 2016
5	NFI pre-survey training (2016-2017 dry season)	20	October 25-27, 2016
6	Mixed Deciduous/Regenerating Vegetation survey training	4	October 4, 2016, November 3, 2016
7	Basic Understanding of REDD+ for Provincial REDD+ Task Force Members	33	December 12-13, 2016
8	Social Safeguard for SFM and REDD+ at the local level	37	December 15-16, 2016
9	REL/MRV training	33	August 28-29, 2017
10	Overview of ArcGIS and ArcMap training for NFMS server management	5	October 30-November 5, 2017
11	3rd NFI training	20	October 31-November 5, 2018
12	Remote Sensing/GIS training	10	November 15-17, 2018
13	Quality Control survey training	2	February 19, 21-25, 2019
14	Regenerating Vegetation survey training	2	March 5-6, 2019
15	Ground Truthing survey training	9	March 13, 2019
16	Carbon amount calculation training	24	June 3-7, 2019
17	Forest classification map 2019 creation training	10	March 14-18, 2019
		14	January 18-22, 2019
		24	December 16-20,
20	Village fund management training	15	March 23-26, 2020
21	Organic fertilizer training for vegetable cultivation	23	May 25, 2020
22	Livestock management training	23	May 26-27, 2020
23	NFMS training	46	November 10-11, 2020
24	Provincial Deforestation Monitoring System (PDMS) Houaphanh Province Training	32	March 1-11, 2021
25	PDMS Sayaburi Province Training	36	March 29-April 6, 2021
26	PDMS Luang Prabang Province Training	25	November 22-28, 2021
27	NFMS Web-Portal Administrator Training	7	December 13, 2021
28	PDMS DOF, DOFI training	13	December 15-17, 2021
29	Forest classification map 2022 preparation training	14	January 11-13, 2022
Total		585	

Table 3: Training in Japan

No.	Trainings	Participants	Duration
1	FREL/FRL/NFMS training	4	June 13-24, 2016
2	Policy and site visits regarding multifaceted use of forests	6	September 4-14, 2017
3	Regional promotion utilizing local resources in mountainous areas	6	September 1-12, 2019
Total		16	

Table 4: JICA Group Training

No.	Trainings	Participants	Duration
1	Training Program on GIS and Remote Sensing utilized for Biodiversity Information System and Participatory Approach towards Biodiversity Conservation Actions	2	May 24-July 30, 2016
2	Training Program on Proceeding Ability of Policy Making for Sustainable Forest Management	2	August 21, October 22, 2016
3	Training Program on Remote Sensing of Forest Resources	2	May 7, 2017-June 24, 2017
4	Training Program on Policy Planning Skills for Implementation of REDD+ (for Government Executives)	1	May 28- June 6, 2017
5	GIS/Remote Sensing, Information Systems and community participation for Biodiversity	1	June 5-August 5, 2018
6	Proceeding Ability of Policy Making for Sustainable Forest Management	1	August 21-September 20, 2018
7	Policy Planning Skills for Implementation of REDD+ (for Government Executives)	1	May 28-June 08, 2019
8	Proceeding Ability of Policy Making for Sustainable Forest Management	1	August 20-September 20, 2019
Total		11	

Table 5: Third-country Trainings and Workshops

No.	**Trainings**	**Place**	**Participants**	**Duration**	**Executing agency**
1	Regional Knowledge Exchange: "REDD+ Financing"	Bangkok, Thailand	1	May 25-26, 2016	UN-REDD/ FCPF/ REDD+ Partnership
2	Empowering forest communities - a practical approach to gender equality and women's empowerment	Bangkok, Thailand	2	August 21-27, 2016	JICA-RECOFTC Partnership Program
3	Free, Prior, Informed Consent (FPIC) in the context of forest and climate change training	Bangkok, Thailand	2	September 26-30, 2016	JICA-RECOFTC Partnership Program
4	FAO-RECOFTC training: Promote gender equality in natural resource management	Bangkok, Thailand	2	January 23-26, 2017	JICA-RECOFTC Partnership Program
5	"REDD+ International Symposium 'Japan's Contribution to REDD+ Implementation' – The Role of Japanese Private Enterprises in Developing Green Economic Development –"	Tokyo	2	July 14-15, 2016	JICA Workshop
6	FCPF 25th Participating Countries Meeting	Washington, D.C., U.S.	2	March 26-30, 2018	FCPF
7	FCPF Carbon Fund (CF) 18th	Paris, France	4	June 20-22, 2018	FCPF

	Meeting				
8	Forest degradation monitoring training	University of Maryland, U.S.	5	July 29-August 9, 2019	University of Maryland, U.S.
Total			20		

1-1-3 Operation Expenses

The table below shows the operation expenses of the Japanese side as of January 17, 2022.

Table 6: Operation Expenses of the Japanese Side

Unit: Japanese yen

Cost Item	2015	2016	2017	2018	2019	2020	2021	2022	Sub-total
General operation cost									
Project staff - administrative	598,054	3,093,054	2,890,377	2,233,020	3,578,202	2,805,184	1,750,989	0	16,948,880
Project staff – technical	460,136	3,002,714	7,678,345	8,950,474	11,000,489	12,361,856	10,579,560	430,028	54,463,602
Vehicle, etc.	148,233	1,980,950	3,226,763	2,730,111	4,810,024	3,511,306	1,250,719	0	17,658,106
Meeting, workshop	203,287	1,223,959	1,494,148	201,727	245,604	245,285	28,656	0	3,642,666
Facility, equipment maintenance	0	27,391	102,844	16,545	54,663	53,420	544,563	0	799,426
Consumables	39,969	999,631	1,238,344	210,050	1,001,553	476,070	306,025	71,259	4,342,901
Travel, transport	346,544	4,067,703	4,655,095	3,435,475	3,135,023	4,311,845	716,152	0	20,667,837
Communication, shipping	68,500	432,761	489,599	317,810	324,638	314,683	98,677	6,414	2,053,082
Printing	30,413	122,085	546,507	641,190	368,908	137,663	19,797	0	1,866,563
Miscellaneous	2,416,260	11,480,872	9,500,020	7,046,030	21,181,646	3,910,240	6,449,185	102,219	62,086,472
Sub-total	4,311,396	26,431,120	31,822,042	25,782,432	45,700,750	28,127,552	21,744,323	609,920	184,529,535
Local sub-contract	0	23,917,159	20,469,313	12,784,026	26,164,871	2,473,037	0	0	85,808,406
Total	4,311,396	50,348,279	52,291,355	38,566,458	71,865,621	30,600,589	21,744,323	609,920	270,337,941

1-1-4 Equipment

The equipment and goods required for the implementation of Project activities were procured as shown in Table 7 and Table 8. The equipment for the C/Ps was handed over to the Forest Inventory and Planning Division (FIPD) of the DOF on January 17, 2022. The equipment for the Project was handed over to Oudomxay Province on October 29, 2020 and to Luang Prabang Province on October 30, 2020. In addition, the parties agreed on the equipment to be transferred to the DOF on January 17, 2022 and the continued use of the equipment in the next JICA project.

Table 7: Equipment for the Counterparts

No.	Item name	Specification, Serial code	Quantity	Use after the completion of the Project
1	Memory	32 GB at DDR4-2666 MT / S for Huawei 2288H V5	2	FIPD
2	Hard disk	SAS 600 GB 15K rpm, 128 MB 2.5 inch for Huawei 2288H V5	2	FIPD
3	Power supply: Hot-plug	500W for Huawei 2288H V5	2	FIPD
4	Hard disk	SAS 600 GB 15K rpm, 128 MB 2.5 inch for OCEANSTOR	4	FIPD
5	Power supply	For OCENSTOR 2200V3	2	FIPD
6	UPS APC	SMC3000I	1	FIPD
7	Hard disk	10TB for Synology DS1618	2	FIPD
8	PDU	19" AC Power distribution 20 Universal Outlet w/Cable	2	FIPD

Table 8: Equipment for the Project

No.	Item name	Specification, Serial code	Quantity	Present status	Use after the completion of the Project
1	Personal computer	HP Pavilion 500 PC Series	1	Handed over	Handed over to LPB PAFO
2	Color printer	MFC-L2700DW	1	Handed over	Handed over to LRB PAFO
3	Air conditioner	GREE 18000BTU	1	In use	Handed over to FIPD
4	Motorbike	Honda wave 100 cc	1	Handed over	Handed over to LPB PAFO
5	Laptop	Dell Inspiron N7359-W561218TH	1	In use	Handed over to FIPD
6	Interpreter equipment	OKAYO	1	In use	Handed over to DOF
7	Air conditioner	MITSUBISHI ELECTRIC 18,000 BTU	1	In use	Handed over to DOF
8	Color printer	LBP 7200 CDN	1	In use	Handed over to DOF

No.	Item name	Specification, Serial code	Quantity	Present status	Use after the completion of the Project
9	Air conditioner	GREE 24,000 BTU	1	Handed over	Handed over to LPB PAFO
10	Air conditioner	Samsung 22,000 BTU	1	In use	Handed over to FIPD
11	Projector	Epson EB-S04	1	In use	Handed over to DOF
12	Computer	HP All-in-one (20-c407d)	1	Handed over	Handed over to ODY PAFO
13	Copier	Canon IR2004 printer	1	Handed over	Handed over to ODY PAFO
14	Laptop	Acer E5-476	2	Handed over	Handed over to ODY PAFO
15	Projector	EPSON CB-X05	1	Handed over	Handed over to ODY PAFO
16	Printer	Canon PIXMA G2010	1	Handed over	Handed over to ODY PAFO
17	Laptop	Asus Vivobook S S531FL-BQ356T	1	Handed over	Handed over to DOF
18	Laptop	Lifebook P772/G	1	Handed over	Handed over to FIPD
19	Personal computer	Lenovo Idea 5 (90NA003QTA)	1	Handed over	Handed over to DOF
20	Copier	image RUNNER ADVANCE DX C3720i	1	Handed over	Handed over to DOF
21	Laptop	Dell Inspiron 3585	1	Handed over	Handed over to FIPD
22	Personal computer	Gaming-Design Intel Core i7-9700	1	Handed over	Handed over to FIPD
23	Air conditioner	WT Daikin Inverter 18.000 BTU	1	Handed over	Handed over to DOF
24	Teleconference equipment	"Conference Cam; LOGITECH CC3500e TV stand LED TV 65"" SUMSUNG Smart TV; (UA65TU7000) 4K"	1	Handed over	Handed over to DOF

1-2 Input by the Laos Side

1-2-1 Assignment of Counterpart (C/P) Personnel

According to the R/D, a total of eight officers from the C/P agencies, including one project director, two project managers, and one to two team leader(s) for each project output, were officially assigned in February 2016. Thereafter, the reintegration of tasks related to the forest management of the MONRE into the MAF was decided by Prime Minister's Decision No. 57 in July 2016. In addition, Prime Minister's Decree (PMD) No. 99 in March 2017 ordered the reintegration of the DFRM into the DOF. In response to these reintegrations, the assignment of the new C/P was agreed to at the 4th Joint Coordinating Committee (JCC) meeting in February 2018. During the period from the reintegration in 2016 to the 4th JCC meeting in 2018, the DOF staff who were in the posts equivalent to the original C/P posts functioned effectively as C/Ps, and there were no obstacles to the implementation of Project activities.

1-2-2 Project Office Space

According to the R/D(revised version), project offices were provided in the DOF, the Forest Inventory and Planning Division (FIPD), and the Luang Prabang Provincial Office of Natural Resources and Environment (PONRE), respectively. Following the above-mentioned decisions to restructure the forest management organizations, the office in Luang Prabang moved from PONRE to PAFO.

From Term II, a project office was provided by the PAFO in Oudomxay Province in accordance with additional support for Oudomxay Province. The two project offices closed after the final workshops in Luang Prabang and Oudomxay provinces in October 2020.

1-2-3 Operation Expenses of the Counterparts

In Term I, 769,000,000 LAK (about 9,600,000 yen) was invested in addition to the 80,000 USD (about 8,769,000 yen) spent on the National Forest Inventory (NFI). In Term II, 1,350,000,000 LAK (about 14,130,000 yen) was invested. Therefore, the C/P budget, excluding NFI, was 2,119,000,000 LAK (about 23,730,000 yen) in Term I and Term II (converted at the exchange rates of the respective payment dates).

1-3 Activities

The plan for the activities and the actual results are shown in the Plan of Operation (PO), which is attached as Annex 1. The table below summarizes the major historical changes of the PO through the Project implementation.

PDM revision	Changes to the PO	Background and content
PDM (Project Design Matrix) 1st revision (November 23, 2015)	Yes	- Indicators, etc. for which specific target values had not been set at the time of the Detailed Planning Survey, were clarified. PDM Version 0 was approved at the first JCC meeting, becoming PDM Version1.
PDM 2nd revision (May 12, 2017)	Yes	- Additional support for the revision of the Forestry Law was reflected. - In response to the approval of the initial plan of the Emission Reduction Program (ERP), additional support was agreed to for the Forest Carbon Partnership Fund Carbon Fund (FCPF-CF).
PDM 3rd revision (October 13, 2017)	None	- No changes.
PDM 4th revision (February 27, 2018)	Yes	- The activity plan related to the National Forest Information System (NFMS) was revised in consideration of the latest situation. - Additional support regarding the 3rd NFI implementation, which is required for Measurement, Reporting and Verification (MRV) implementation, was added.
PDM 5th revision (March 28, 2019)	Yes	- Additional support for the Safeguards Report (SoI: Summary of Information) was reflected. - Additional support for the preparation of a funding proposal for the Results Based Payment Pilot Program of the Green Climate Fund (GCF) was reflected. - Additional support for coordination of the partnership between GIZ and JICA regarding the REDD+ implementation project of GIZ, funded by the GCF, was reflected.
PDM 6th revision (July 16, 2020)	Yes	- The extension of Project activities in accordance with the extension of the Project period was reflected. - Additional support for the NFMS, such as implementing activities based on the NRMS Roadmap and the extension of the PDMS to other provinces, was reflected.
PDM 7th revision (September 20, 2021)	Yes	- The extension of Project activities in accordance with the extension of the Project period was reflected.

2. Achievements of the Project

2-1 Outputs and Indicators (Target Values and Actual Values Achieved at Completion)

(1) Output 1

Output	Capacity of the central government on policy development, implementation and sector coordination is enhanced.
Activities	1-1 Support development of forestry related regulations and policies
	1-2 Conduct capacity building sessions for targeted technical areas (e.g. PFES, NFMS, REDD+).
	1-3 Support sector coordination.
Objectively Verifiable Indicators	Revised FS 2020 approved.
Means of Verification	Approval document
Level of achievement	Medium Due to the restrictions on meetings caused by the spread of COVID-19, there have been significant delays in the formulation work. Government approval was initially planned for August 2021, but has been postponed to March 2022. However, the MAF's final draft is expected to be ready by the end of the Project period.

Indicator number	Indicator	Level of achievement
Indicator 1-1	Role of REDD+REDD+ incorporated into the revised FS 2020.	Medium In the final draft of FS 2035, one of the seven goals is to reduce emissions from forests. This is also described as a major activity in several sections. The revised Forestry Law also newly stipulates the promotion of REDD+ at various scales as well as in forestland concessions.
Indicator 1-2	At least 120 persons from the counterpart agency are trained through off-the-job-trainings.	High As is clear from the capacity building training records in Section 1-1-2 above, the number of staff who received training greatly exceeds the indicator.
Indicator 1-3	FSSWGs held every quarter.	Slightly low Although there was organizational restructuring and restrictions on meetings due to COVID-19, a total of nine FSSWG meetings were held during the six year and four months of the project period (once every eight months on average).

Activity 1-1 Support development of forestry related regulations and policies.

Activity 1-1-1 Agree on the orientation of FS 2020 revision.

At the end of 2017, the Project prepared an informal roadmap that includes steps for reviewing FS 2020 implementation and for formulating the Forest Strategy 2030 (FS 2030, which will eventually become FS 2035, as described below) in 2019, and proposed and started discussions with the Planning and

Cooperation Division. The Project also supported the revision of the roadmap according to progress status.

Based on the roadmap, the Ministry of Agriculture and Forestry (MAF) established a ministerial committee on FS 2020 implementation review in November 2018, and then a committee for FS 2020 implementation review and FS 2030 formulation chaired by the MAF Vice Minister in September 2019. A secretariat and drafting team was set up accordingly. In the MAF document, it is stated that FS 2030 should be formulated based on the government's development goals, policies, laws and regulations related to the government's 2030 development goals, the results of the FS 2020 review, and in line with various international treaties to which the GoL is a party.

The MAF document does not specify when the FS 2030 shall be formulated, but it was initially set to be in 2020. However, due to delays in work because of additional tasks and also due to restrictions on meetings and work styles as measures against COVID-19, the MAF proposed to the Prime Minister's Office in early 2021 that FS 2030 be submitted to the government meeting in August 2021 for endorsement. Subsequently, the target was changed again to the government meeting in March 2022, due to the further spread of COVID-19 in Vientiane Capital..

Activity 1-1-2 Support the FS 2020 revision following the orientation agreed on, and by incorporating the National REDD+REDD+ Strategy.

The Project submitted the report on the FS 2020 review conducted by the Forest Sector Capacity Development Project (FSCAP) in 2014 and conducted and shared the forest sector indicator survey report for 2018, which consisted of a variety of data/information on forests, forestry, and forest-related economic and social conditions, to the abovementioned secretariat and drafting team. The Project also provided a couple of national consultants for the drafting team to support the review and drafting work.

In addition, in order to ensure the understanding and participation of all concerned stakeholders, the Project proposed and realized the reporting and discussion of the review and formulation status at Forest Sub-Sector Working Group (FSSWG) meetings (see the list of FSSWG meetings below).

The Project consulted with the drafting team, especially with the team leader, both formally and informally. Views were exchanged regarding coordination with other supporting organizations (the European Forestry Institute (EFI) and FCPF Readiness Preparation Project (FCPF RP)) to enable the identification of the support area of the Project and to consider the framework and main content of FS 2030.

The first full draft of FS 2030 was completed in May 2021. Face-to-face and remote (online) consultations with the stakeholders, including development partners, were held with the support of the Project and the EFI. Written comments submitted by FSSWG members were also compiled and provided to the secretariat with assistance from the Project.

The second full draft (changed from FS 2030 to FS 2035 at this point) was completed in early September reflecting the results of the abovementioned consultations and comments on the first draft. The Project translated the draft into English at the request of the drafting team and distributed it to members of the FSSWG for further comment. The Project sorted and combined comments from the development partners, including those from the Project itself. The comments were compiled by section and submitted to the drafting team.

After that, at the request of the drafting team, the Project and the drafting team organized a series of meetings, at which the meaning of each comment of the development partners was analyzed, and whether and how to incorporate them in the draft was discussed and many of them are refrected in the thrid draft, which was finalized in early January. At the time of writing this report, the third draft was being circulated among the leaders of DOF and MAF for their input and finalization. The Project updated the English translation according to the third draft.

Activity 1-1-3 Facilitate coordinated support to the policy needs of the GoL through the FSSWG framework.

With regards to the support for the Forestry Law revision, in close consultation with the Lao EU-FLEGT Process Project (ProFLEGT), the FCPF RP, the Food and Agriculture Organization of the United Nations (FAO), and a World Bank project, the Project played a key role in coordinating support from these development partners. Several meetings were held to discuss and prepare comments on and recommendations for improving the provisions in the draft Forestry Law. The proposals were presented and discussed at the 5th FSSWG meeting. In addition, the Project planned and held two meetings between the development partners and the drafting team on matters of particular concern. Furthermore, the Project

and other development partners exchanged opinions on these matters with the Minister in charge of the National Assembly in the Prime Minister's Office.

After approval of the revised Forestry Law by the National Assembly, the Project discussed with concerned development partners and the DOF the division of support for the revision work of the Prime Minister's Decrees (PMD) on Conservation Forests, Protection Forests and Production Forests. It was agreed that the Project would support the revision of the PMD on Protection Forests.

Activity 1-1-4 Based on 1.1.3 above, support development of other key policies (e.g. Forestry Law revision, bylaws to the Forestry Law) (REDD+ related policies will be dealt with under Output 3).

Regarding the revision of the Forestry Law, upon request from the MAF for support from JICA (MAF Letter No. 0312 dated 2017/03/2), the second contract amendement was agreed in Term 1 (June 2017) to add support to Project activities. The main activities of the support were as follows.

- Based on the forest sector indicator survey conducted in early 2017, the Project prepared a proposal on the direction of the revision of the Forestry Law and provided it as reference material for the revision of the Forestry Law together with the survey report.
- In order to support the drafting work of the drafting team, the Project provided two local consultants, one for background analysis and another for drafting.
- As described in 1.1.3 above, the Project worked together with concerned development partners to compile views on matters of concern such as village or villager rights to forest and forestland. They were presented and discussed at the FSSWG meeting, and also used for discussion with the drafting team and the Minister of the Prime Minister's Office in charge of the National Assembly.
- At the request of the Minister of the Prime Minister's Office, the Project by itself explained various data and information on the Lao forest and forestry sector, which forms the background of the revision of the Forestry Law, and exchanged views on them.
- In consultation with the drafting team, the Project translated the draft revision of the Forestry Law into English, requested comments from FSSWG members, summarized them, and submitted them to the drafting team twice through the FSSWG secretariat.
- In addition to the above, each time a revised version was drafted, opinions were exchanged between the drafting team and the Project.
- After approval by the National Assembly in June 2019, the Project worked with KfW to create an accurate English translation.

Regarding the revision of the PMD on Protection Forests, the Project proposed a direction for the revision and the content of support to the Protection Forest Division, providing a considerable number of comments to the first draft. PMDs on other forest categories were also being revised, but there has been a delay due to the restrictions on meetings and working styles as a measure against COVID-19. MAF plans to submit the final draft of PMD on Protection Forest to the Government meeting in May 2022 for approval.

Activity 1-1-5 Provide feedback on the results of policy piloting in Luang Prabang and Oudomxay to the national policy.

In Output 4, the Phou Pheung-Phou Pha Thoun-Tat Kuang Si Protection Forest Area (PP-PPT-TKS PTA) in Luang Prabang Province was selected as the main area to conduct policy piloting from 1) to 5) below. In Oudomxay Province, 6) and 7) below were implemented in cooperation with the Asian Development Bank's small-scale irrigation facility development project in the five villages located in the watershed of the irrigation facilities, all of which fall within the Pak Ben Protection Forest.

1) Establishment of a management committee chaired by the Provincial Vice Governor regarding Protection Forest management across sectors
2) Formulation of a Protection Forest management plan and approval by the management committee
3) Agreement/decision on Protection Forest boundaries and establishment of boundary markers based on discussions with concerned villages
4) Feasibility study on ecotourism in Protection Forests
5) Feasiblity study on enviromental services provided by Protection Forests
6) Formulation of land and forest use plans in the target villages according to the implementation status of the Asian Development Bank (ADB) project in the lower basin
7) Tree planting in forest areas based on land use plans, and support for the cultivation of cardamom, fruit trees, etc. to improve livelihoods

1) to 3) above were included and emphasized in the comments from the Project on the first draft revision

of the PMD on Protection Forests. The main proposals include, among others, a clarification of the Protection Forest management system and management purpose, a method/process for demarcating Protection Forest boundaries, a method for zoning in a Totally Protected Zone and Controlled Use Zone, a method for formulating management plans and survey items, and management of environmental service payments. The Project provided concrete proposals for improvement based on the findings obtained from the pilot activities.

Regarding 4) and 5), the results were reported and discussed through the JCC and at other meetings. In the revised Forestry Law, ecotourism was newly included as an activity eligible for concessions of forestland together with REDD+. This was also reflected in major policies such as compensation payments for the loss of environmental services due to forest conversions.

Regarding 6) and 7), they were planned to proceed in cooperation with the ADB project, which also supports the watershed area through its "irrigation and watershed management model". However, since the progress of the ADB project was slow, it was agreed that the Project would implement the activities. The ADB was also preparing a successor project, and it has been agreed that the target villages in the six northern provinces, including Luang Prabang and Oudomxay, which is funded by a GCF project with GIZ as the implementing agency, would also cover the upstream areas of the ADB project target areas. The GIZ's first project funded by the GCF (I-GFLL Project 1) is underway in Houaphanh, Luang Prabang and in Sayaburi Province. The second project (in preparation) plans to expand to Oudomxay, Bokeo, and Luang Namtha provinces. Therefore, the five villages in Oudomxay Province supported by the Project are also expected to be targeted by I-GFLL Project 2.

Activity 1-2 Conduct capacity building sessions for targeted technical areas (e.g. PES, NFMS, REDD+).

A total of 632 government officials from the Lao side participated in 1) trainings on REDD+ jointly organized with development partners (FCPF RP, CliPAD, SNV, and SUFORD-SU); 2) project trainings in Japan; 3) JICA group trainings in Japan; and 4) third country trainings in Thailand (see Table 2 to Table 5 above).

Activity 1-2-1 In coordination with other stakeholders, conduct in-country training sessions for the related fields.

Training was held twice for members of the six technical working groups (TWGs) related to REDD+, in cooperation with development partners (FCPF RP, CliPAD, SNV, and SUFORD-SU), in order to strengthen their understanding of REDD+ and the role of each TWG. Although not included in the activity indicator, trainings and workshops were conducted on the basics of REDD+ and Safeguards for the officials of the Luang Prabang PONRE and PAFO who were to be involved in REDD+.

Activity 1-2-2 Conduct training sessions in Japan and third countries.

The training in Japan in the first year focused on REL/MRV, taking into consideration that Lao PDR was preparing a FREL/FRL submission to the UNFCCC and FCPF-CF. The trainees were the heads of the divisions directly involved in this work. In the second year, training on the multiple-use of forests was conducted in order to broaden the concept of SFM as well as to widely disseminate the concept of SFM methods in the province. The third training was conducted on the themes of the multiple-use of forests and and coordination with various stakeholders for public forests. See Table 3 for a summary of the trainings.

Activity 1-2-3 In coordination with other stakeholders, support participation of the counterparts to international conferences and workshops.

Support was given for the participation of concerned officers in the workshop regarding the REDD+ Financing organized by the UN-REDD/FCPF/REDD+ Partnership. Support was also provided for the participation of the C/Ps, mainly from Luang Prabang Province, in third country trainings, with a total of three events. Furthermore, in collaboration with the SilvaCarbon Program, the Project supported the participation of four remote sensing engineers from the FIPD and others at the University of Maryland in the United States.

Other training and workshops, etc.

In addition to the training in Laos, Japan, and the third country, several technical workshops were held as part of the activities for each output, which were held in Vientiane or in Luang Prabang Province. These

were planned and conducted in accordance with the need to improve the capacity of the C/Ps for the implementation of their work. These were extremely beneficial in improving the capacity of the C/Ps (Annex 1), although they do not appear in the tables in terms of an activity indicator. In addition, two officials from the DOF participated in the "International Symposium on REDD-plus, Japan's Contribution - Role of Japan's Private Sector for Implementing the Green Economy in Developing Countries -", which was held in Tokyo in July 2016. In addition, the Project supported representatives of Lao PDR in preparing the presentation and participating in the FCPF's Participants Committee Twenty-Fifth Meeting (PC25) and the Carbon Fund Eighteenth Meeting (CF18).

Table 9: Achievements of Training and Workshops

No.	Types of training	Number	Participants	Executing agency
1	Laos domestic training	29	585	The Project, FCPF RP, CliPAD, Co-sponsored by SNV and SUFORD-SU
2	Project Japanese training	3	16	JICA
3	JICA group training	8	11	JICA
4	Third country training and workshops (Thailand, Japan, USA, France)	8	20	JICA-RECOFTC Partnership Program, JICA Workshop, UN-REDD/FCPF/ REDD+ Partnership, University of Maryland/USA
Total		48	632	

Activity 1-3 Support sector coordination.

Activity 1-3-1 Support the function of the FSSWG secretariat (e.g. information sharing, policy dialogues, stakeholder coordination).

In this activity, the Project provided the following support for the DOF Planning and Cooperation Division, which is the FSSWG secretariat.

- Proposal to the secretariat on the timing and potential agenda items of FSSWG meetings.
- In parallel with the above, an informal exchange of views with major development partners and DOF leaders.
- In revising the Forestry Law and Forest Strategy, the comments from FSSWG members, especially from development partners, were compiled and provided to drafting team through the FSSWG secretariat, which is the contact point.

Activity 1-3-2 Support quarterly organization of the FSSWG meetings.

Just before the restructuring of the forest management agencies, including the transition of the FSSWG from the Natural Resources and Environment Sector Working Group (NRE-SWG) to the Agriculture and Rural Development Sector Working Group (SWG-ARD), the Project supported the drafting of the Terms of Reference (TOR) of the FSSWG, which was proposed at the last FSSWG meeting chaired by the Director General of the DFRM, then agreed upon by the members. The TOR states that the meeting is to be held four times a year.

Since the start of the Project, FSSWG meetings have been held a total of nine times, four times during Term I and five times during Term II (Table 10), which is less frequent than every quarter, as defined in the TOR (the initial plan). After April 2016, it took a long time to reorganize the forest management agencies within the GoL, so there was a one-year gap between the first FSSWG meeting under the DFRM and the second FSSWG meeting under the DOF. In addition, due to the restrictions on meetings as part of COVID-19 countermeasures since March 2020, and because of the busy schedule of the chair (DOF Director General) and co-chair (the Senior Representative of JICA Laos Office), it was difficult to hold the meeting on a quarterly basis.

Table 10: List of FSSWG Meetings

Meeting	Date	Number of participants	Details
1st (DFRM in charge)	March 12, 2016	56	MONRE 2025 Long-term Strategy, Forest Cover rate Assessment (FCA2015), Economic Evaluation Study of Non-Timber Forest Products, progress of related projects, proposal of TORs of the FSSWG and Village Forest Working Group
2nd (DOF in charge, same below)	March 24, 2017	46	Forestry Law Revision, 3 Forest Categories' Boundary Review, REDD+ Progress, other topics.
3rd	August 30, 2017	62	The DOF's new organizational structure, progress of Forestry Law revision, progress of related projects, progress on national REDD+
4th	December 19, 2017	40	Draft National REDD+ Strategy, participation in REDD+, national FREL/FRL for submission to the UNFCCC, Emission Reduction Program Document (Draft) for the FCPF Carbon Fund
5th	June 14, 2018	43	Status of revision of the Forestry Law, policies related to the three categories of forest and forestland, definition and use of degraded forests and on the legal status and use of village forests.
6th	February 18, 2019	45	Orientation of the FS 2020 revision, promotion of tree planting investment, status of Laos discussed at Convention on International Trade in Endangered Species (CITES), REDD+ progress status, GCF REDD+ Results-based Payment (GCF REDD+ RBP)
7th	September 2, 2019	53	Outline of the revised Forestry Law and necessary bylaws, FLEGT/VPA negotiation status, report on illegal wildlife trade, REDD+ progress
8th	June 16, 2020	38	Formulation status of FS 2030, implementation status of CITES recommendations, REDD+ progress, World Bank LLL Project overview
9th	August 3, 2021	32	Forest Strategy 2030 outline, 2019 Forest Cover Rate and FRA2020, FLEGT/VPA progress, REDD+ progress (signing of Emission Reduction Purchase Agreement (ERPA), MRV analysis results and I-GFLL implementation status

Activity 1-3-3 Promote synergizing the FSSWG and the SWG-ARD, and other initiatives (e.g. RTIM).

The Round Table Process has been officially established as the highest forum for policy dialogue between the GoL and development partners in Lao PDR. The Round Table meeting is held at the end of each year, and as part of this process 10 sector working groups (SWGs) have been set up, one of which is the Agriculture and Rural Development SWG (SWG-ARD). Further, there are five sub-sector working groups (SSWGs) under the SWG-ARD, including the FSSWG. The FSSWG is chaired by the Director General of the DOF, the co-chair is the Senior Representative of JICA Laos Office, and the secretariat is set up in the Planning and Cooperation Division, which is supported by the Project.

At SWG-ARD meetings held during the Project period, reports from the FSSWG were compiled by the Project in collaboration with the FSSWG secretariat and proposed to the SWG-ARD secretariat, and either the Project or the secretariat attended with DOF leaders when presentations on forests were made. Stipulations are for SWG-ARD meetings to be held three times a year, but they have been held a total of eight times in the six years since the reorganization in 2016. It can be said that this was due to the difficulty in adjusting the schedule of the Vice-Minister, who is the chair, and the French Ambassador to Lao PDR and the Country Director of the FAO Laos office, who are the co-chairs, and because of restrictions on

holding meetings due to COVID-19 in 2020 and 2021.

Prior to each SWG-ARD meeting, a Core Meeting consisting of the secretariats of each SSWG, including the FSSWG, was held to coordinate the schedule and agenda, and either the Project or the FSSWG secretariat participated in the Core Meetings. When the FSSWG secretariat participated in the Core Meetings, the Project prepared a short report from the FSSWG and provided it with the secretariat. In addition, the SWG-ARD has a strong inclination toward agriculture, such as commercial crop production/processing and support for small-scale farmers, and since there is limited interest in forest management/environmental conservation and ecosystem conservation, the Project emphasized the importance of forest conservation for agricultural development and the possibility of securing payment for REDD+ positive results each time the Project participated in the Core Meetings.

In addition, each SWG was required to submit an annual activity report to the secretariat of the Round Table before the Round Table meeting and a draft report on the forest-related issues raised at the previous Round Table meeting. The Project also assisted the FSSWG secretariat in drafting these reports.

Necessities and lessons for ensuring sustainability

- Work on the Forestry Law revision and FS 2035 formulation was mainly carried out by the team established in the DOF, while work on the FS 2020 formulation from 2002 to 2005 was mainly carried out by development partners such as JICA in their prior studies and initial draft preparation. After that, the draft was translated into Lao and the work was moved to the Lao side. In addition, the revision of the Forestry Law in 2018 and 2019 was done in a more open way than it had been at the time of its previous revision in 2007, such as there being a direct exchange of views with development partners. Therefore, it is certain that the capacity of C/P organizations related to policy and legislation development has improved during this period, and it can be said that JICA has made great achievements in supporting this field.
- The revision/formulation work was done in the Lao language. Although it was possible for the Project to comment on each draft, it was still essential to translate them into English for consultation and meetings with the stakeholders, especially with the development partners. Due to the large volume of content and limited time for distribution, consultation, and comment, the English translation was at times inadequate or not accurate enough for development partners to understand the correct meaning of the original drafts. It is necessary to have thorough discussions and agreements with the Lao side in advance on the timing of consultations, etc. in order to secure sufficient time for English translation and comments by development partners.
- The actual order was that the revision of Forestry Law was done first, followed by the revision of FS 2020. Ideally, the revision of FS 2020, which is the most important policy document, should be done first to indicate policy directions and then the law should be revised as one of the means to implement the revised FS 2020. This was mentioned in the conversation with DOF leaders and at JCC meetings, but work on the revision of the Forestry Law had already begun. The main content of the first draft of FS 2030 was intended to implement the main content of the revised Forestry Law, which was a kind of reversal of the logical order. Many stakeholders, including development partners, commented that the forest strategy should not be a means of implementing the Forestry Law, but rather a fundamental policy document for discussing the future of forest and forest sector management. Subsequently, the structure and content became more like a policy document. It is important to understand that first, there should be policies and goals, and then that there are three means to achieve them: 1) laws and regulations, including restrictions and the granting of rights regarding the use of forests, forestland and forest products; 2) programs and projects to implement the policy (mainly donor funds and the private sector); and 3) institutional set-up that includes the private sector and is appropriate for the implementation of policy/law/program. It is necessary to promote such understanding.
- Starting with the Forestry Law revision of 2007, forest and forestland have been divided and written about in two different large chapters. This reflects the increased recognition of the government and society regarding land as property having value. Among the eight land classifications, including forestland, stipulated in the Land Law in 2003, it has become necessary to specify the classification and use of forestland. However, the rules regarding the distinction and boundaries between the three categories of forest and forestland are unclear, and urgent arrangements through bylaws are needed so as not to cause confusion on the ground. In addition, although regulations of land use planning and land use rights are stipulated in the Land Law, and it has been decided that land use plans and land use rights are to be managed by district level land management departments, much of the village level land use planning is led by the MAF and its associated projects. It is necessary to ensure consistency regarding laws and regulations,

such as the positioning of land use plans at the village level, and how to register the use rights of many forest/forestland categories that span multiple districts.

- It is necessary to continuously plan and implement training programs that meet the needs of Lao C/Ps in response to domestic and international trends regarding forest policy and REDD+, with the aim of further improving their capacities regarding the formulation of forest policy and the planning and implementation of REDD+. In particular, in addition to the REDD+ framework under the UNFCCC and GCF, new REDD+ certification and payment schemes have been launched in recent years, and there is a growing interest in trading emission reductions from forests through the market mechanism for emission reductions under Article 6 of the Paris Agreement. It is necessary to make efforts to quickly grasp the diversifying and emerging institutions and rules on REDD+ and to promote appropriate understanding and response on the Lao side through appropriate capacity building.
- In order for Lao PDR to promote REDD+, which includes various cross-sectoral elements, it is necessary to have efficient coordination with relevant organizations and other donors to formulate effective capacity building programs.
- The current TOR for the FSSWG, which includes FSSWG meetings to be held four times a year, was agreed to and signed by the chair and co-chair in May 2017. It has some provisions that are not realistic, including the frequency of meetings. Thus it needs to be revised and the frequency of meetings held per year should be reduced in line with the SWG-ARD.
- Within the limited number of meetings FSSWG and time for them, many important topics need to be discussed. There is a limitation in terms of the depth of discussion at the meetings. For important matters, it is necessary to encourage the holding of separate meetings.

(2) Output 2

Component Objective	Emission reductions and removals resulting from the implementation of the REDD+ activities are quantified at the national scale by using the NFMS.
Outputs	2-1 Support development of the NFMS 2-2 Support the 1st national MRV for REDD+ by using the NFMS 2-3 Support development of the national FREL/FRL and the ERP of the FCPF-CF 2-4 Support the next National Forest Inventory (NFI) scheduled in 2016-2017
Objectively Verifiable Indicators	The NFMS operational in compliance with the UNFCCC requirements
Means of Verification	Approval document of the NFMS Operational Plan
Level of achievement	High The indicators have already been achieved since the operational plan (NFMS Roadmap) was approved in November 2020.The NFMS that was developed with the support of the Project can be judged as in compliance with UNFCCC requirements. It can be also assessed as "operational". In addition, the national FREL/FRL calculated by the NFMS and the MRV results (included in the REDD+ Technical Annex) are both submitted to the UNFCCC through the MONRE, which is the UNFCCC's national focal point, and have been finalized after technical reviews. Such achievements exceed the initial target.

Indicator number	Indicator	Level of achievement
Indicator 2-1	The NFMS developed.	High An NFMS that meets the UNFCCC requirements has been constructed and operationalized. The NFMS Roadmap (NFMS Operation Plan) has also been approved by the DOF.
Indicator 2-2	The 1st national MRV results reported to the national entity or focal point by using the NFMS.	High Preparation of the 1st National REDD+ Results Report and the technical analysis by the UNFCCC were supported. The Technical Analysis Report was published, and the 1st National REDD+ results of Lao PDR under the UNFCCC was confirmed.
Indicator 2-3	The national FREL/FRL developed and submitted to the national entity or focal point.	High Construction of FREL/FRL, preparation of the FREL/FRL Report, and the technical assessment by the UNFCCC were supported. The Technical Assessment Report was published, and the 1st national FREL/FRL of Lao PDR under the UNFCCC was finalized.
Indicator 2-4	Results of the NFI summarized.	Medium The 2nd NFI (2015-2017) was implemented and the results were summarized.

Activity 2-1 Support the development of the NFMS.

Activity 2-1-1 Decide the scope of the NFMS and its development plan.

The Project held discussions with the DOF, REL/MRV TWG, and other stakeholders regarding the NFMS development plan, and agreed to proceed with the plan highlighted by the red dash line in the diagram below.

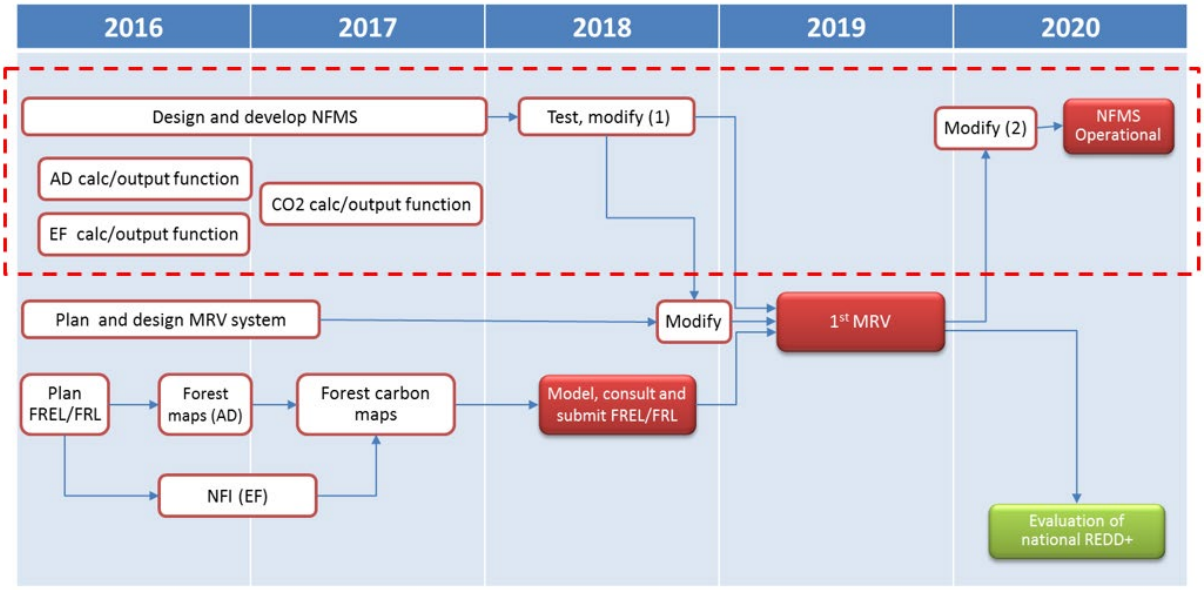


Figure 1: NFMS Development Plan

Activity 2-1-2 Decide the institutional arrangement and operational process.

From the initial stages of the construction of the NFMS, the Project had repeated discussions regarding its scope and work plan with the DOF, REL/MRV TWG, and other stakeholders. It was agreed that the Project would develop the M (Measurement) function of MRV and install the data into the system. The following figure show the agreed-upon scope of the NFMS to be developed by the Project, followed by the list of functions to be developed and list of data to be installed.

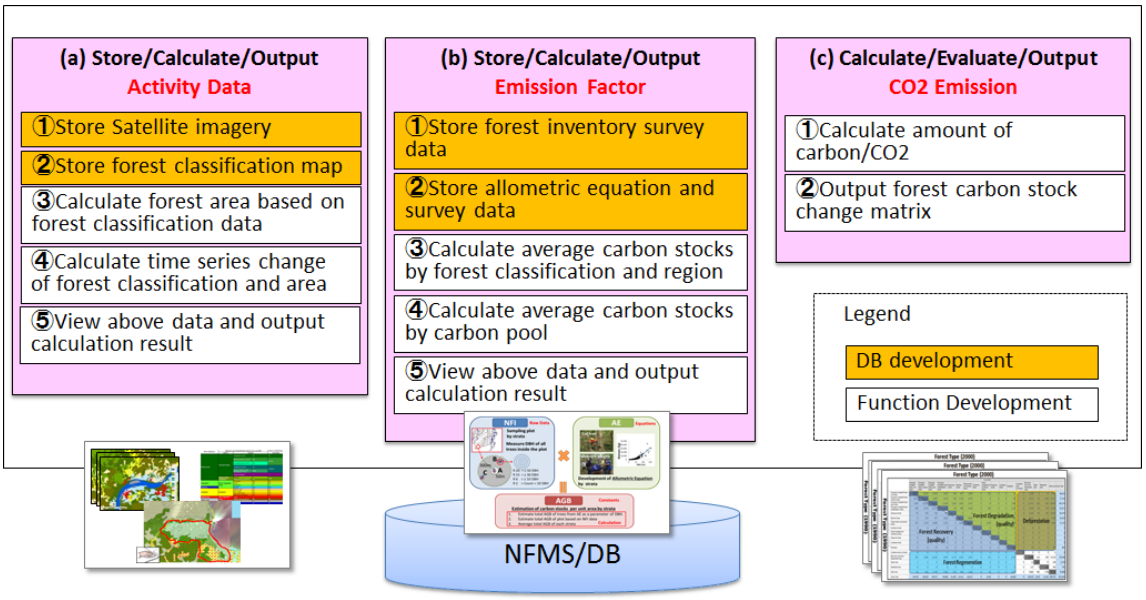


Figure 2: Scope of the NFMS

Functions of the systems to be developed

- Store/calculate/output the Activity Data
- Store/calculate/output the Emission/Removal Factors
- Calculate/evaluate/output CO2 emissions
- CO2 emission calculation, evaluation, and output function

Data to be installed: as shown below.

Table 11: Data to Be Installed

Category	Data Item
Forest Type Map	Forest Type Map 2000 / 2005 / 2010 / 2015
Forest-area Change Map	Forest-area Change Map 2000–2005 / 2005-2010 / 2010-2015
Satellite imagery used for developing the Forest Type Map	Satellite Imagery 2000 (LANDSAT) / 2005 (SPOT) / 2010 (Rapid Eye) / 2015 (Rapid Eye)
NFI data	1st NFI data and 2nd NFI data
Forest category	Production Forest / Protection Forest / Conservation Forest
Administrative area	Province / District
Allometric equations	IPCC default equations LAOS specific allometric equations
Average carbon stock by forest classification (national level)	Based on 1st NFI and Based on 2nd NFI

As there are no consultants/companies with sufficient capacity on developing geospatial databases, after discussion with the DOF, it was agreed that the system programming would be undertaken in Japan. On the other hand, it was agreed that localization of the NFMS, such as conversion of the user interface into the Lao language, would be undertaken under the lead of the local staff of the Project, in order to enable easier maintenance of the NFMS in the future. Regarding the institutional arrangement, it was decided that the Database Team of the FIDP would be the system administrator.

Activity 2-1-3 Build the physical system based on the NFIS prototype.

The Project completed the construction of the NFMS physical system (database system) in accordance with the agreed-upon plan and scope for Term I. The user interface originally developed in English has been converted into the Lao language, and system bugs, etc., have been modified through the test operation. The developed NFMS physical system has been mounted on the existing FIPD server, which enables DOF staff to browse through their intranet system and further test-operate.

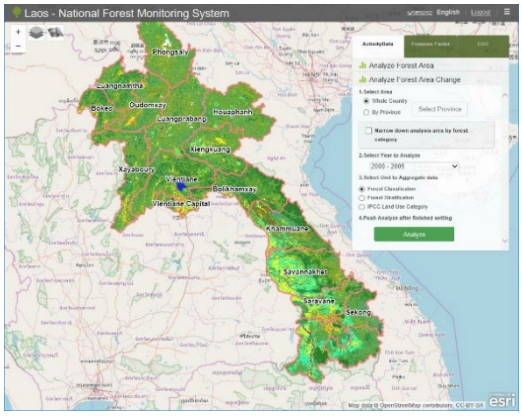


Figure 3: Forest Type Map displayed on the NFMS

Figure 4: Results of calculation of forest areas and changes in CO2 emissions displayed on the NFMS

As part of improving the maintenance capacity of NFMS, "ArcGIS and ArcMap Training for NFMS Server Maintenance" was conducted for the FIPD Database Team responsible for NFMS system management as follows.

Table 12: Overview of ArcGIS and ArcMap Training for NFMS Server Maintenance

Item	Contents
Implementation period	October 30, 2017-November 15, 2017 breakdown ・ ArcGIS Training: October 30, 2017-November 10, 2017

	・ NFMS Training November 13, 2017-November 16, 2017 AM ・ NFMS OJT Training November 16, 2017 PM-November 23, 2017
Students	FIPD staff (four people in total) The Project local staff (one person)
Teacher	ESRI Thai (in charge of ArcGIS training) The Project (in charge of NFMS training)
Training outline	・ ArcGIS training ✓ ArcGIS 1: Introduction to GIS Format: Desktop ✓ ArcGIS 2: Essential Workflows Format: Desktop ✓ ArcGIS 3: GIS Workflows and Analysis: Desktop ✓ ArcGIS for Server: Sharing Content on the Web Format: Server ・ NFMS Training ✓ Introduction of NFMS ✓ Managing data (Lecture & Exercise) ・ NFM SOJT Training ✓ Installing real data

Activity 2-1-4 In a step-wise manner, test-run and modify the scope, institutional arrangement, process, and the physical system (before and after the 1st MRV).

1) Improvement of the transparency of the NFMS.

As one way to ensure the transparency of the NFMS, the Lao NFMS Web-Portal was developed to publish the data used for the FREL/FRL and MRV on the internet so that the general public could access the data through a web interface. In addition, since the existing server had been in use for a long time, and issues of performance and scalability had arisen, the Project has migrated and improved the data so that they could be published and operated on a newly procured server and network equipment with the support of the FCPF RP. At the same time, the Project also improved the security of the web service so that communication can be performed in an encrypted state. With these improvements, the Project consulted with the DOF to officially release the NFMS Web-Portal (https://nfms.maf.gov.la/). The link to the Lao NFMS Web-Portal was also posted on the DOF website (http://dof.maf.gov.la/en/home/) to improve the accessibility.

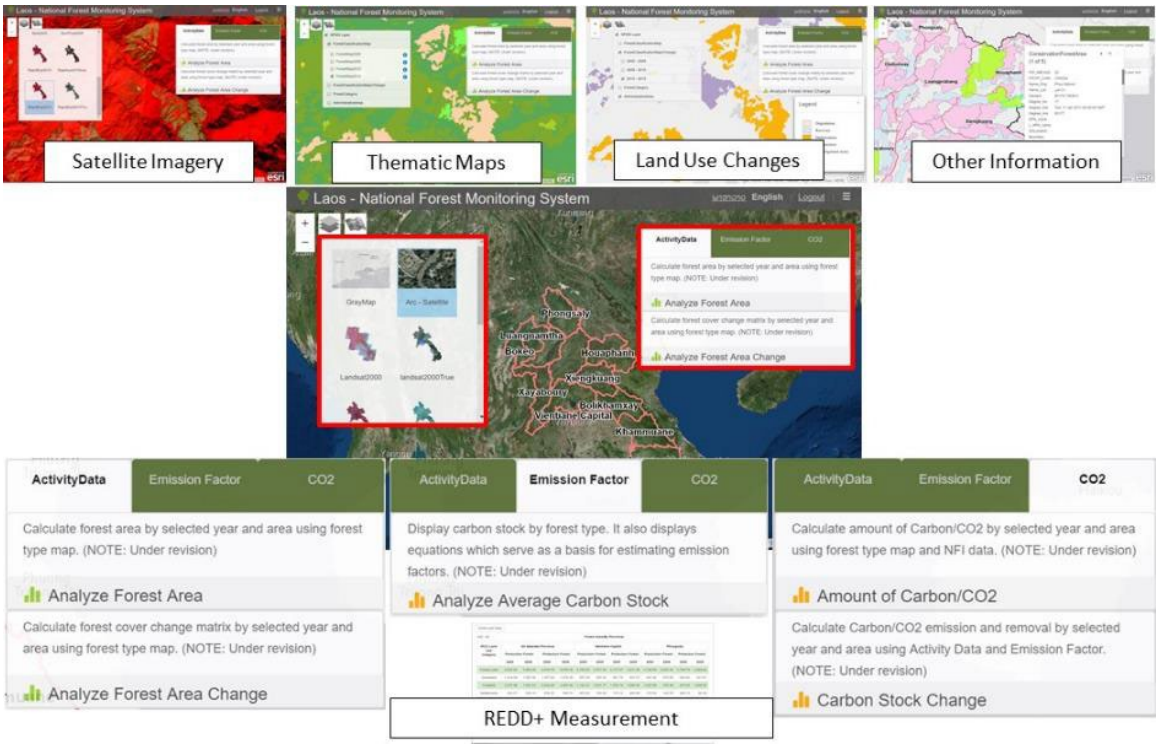


Figure 5: Overview of the Lao NFMS Web-Portal (Installed Data, Functions, Etc.)

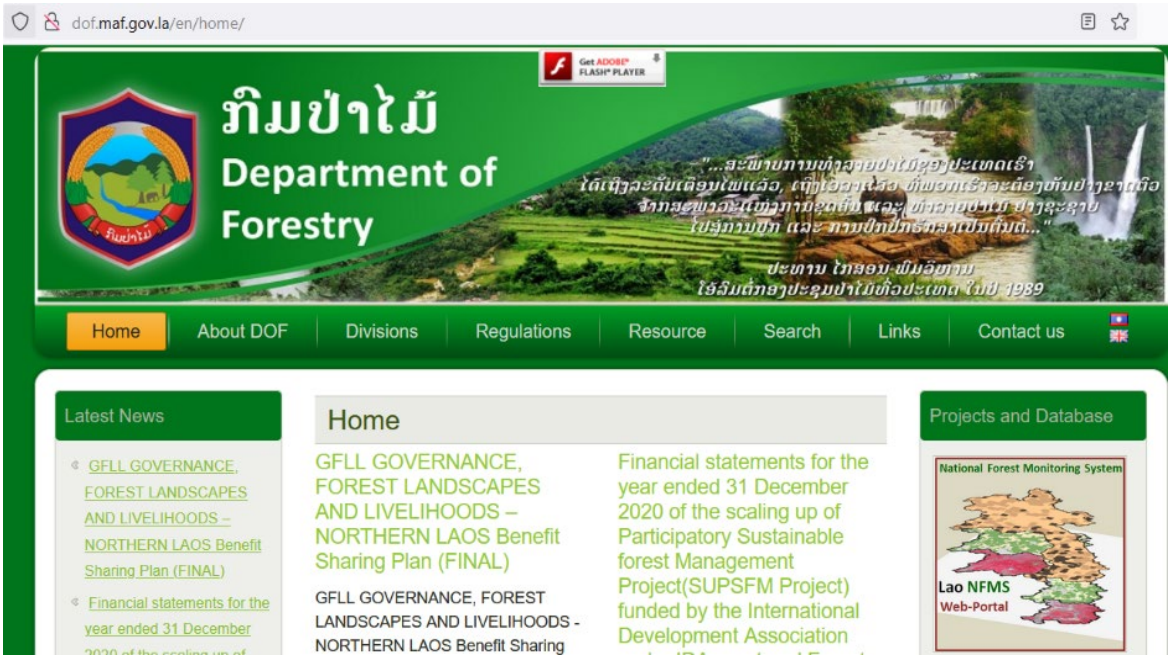


Figure 6: Link of Lao NFMS Web-Portal Added to the DOF Website

2) Extension of NFMS functions

As a result of analysis and discussion through Activities 2-1-1 to 2-1-3 in Term I, the following functions were identified as NFMS functions expected to be further developed: (1) a function to support the monitoring of drivers of deforestation and forest degradation, policies, and measures; and (2) a carbon registry to manage emissions trading. There was also a request for the provision of safeguard information using a web interface.

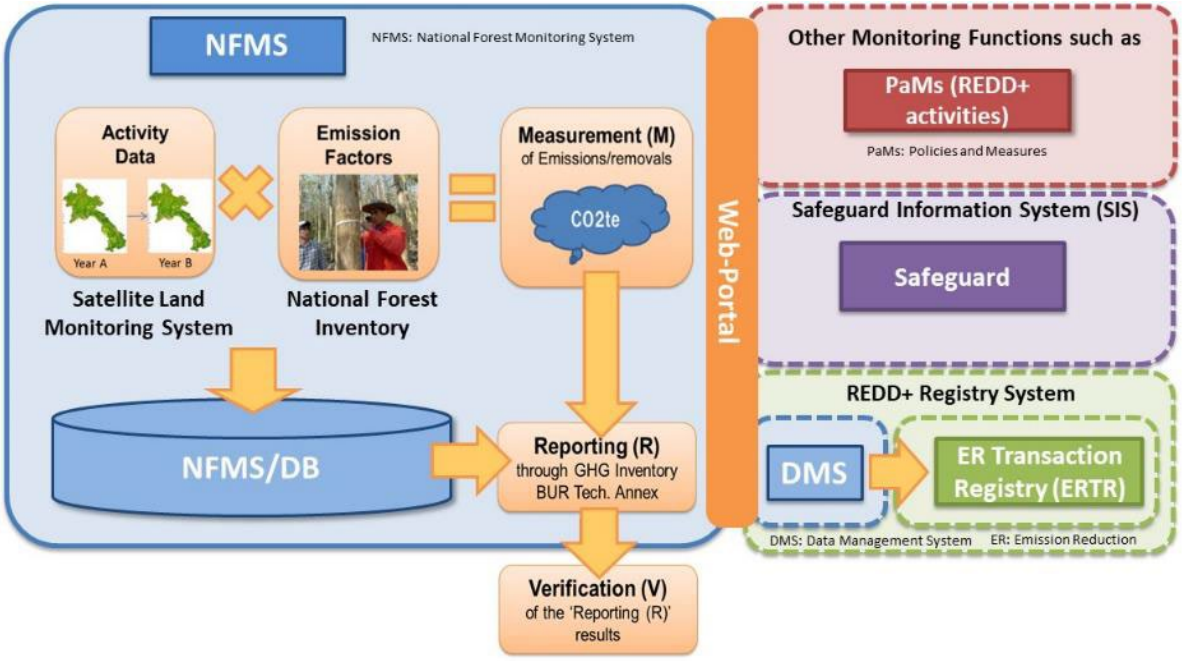


Figure 7: Lao NFMS and Related Extended Functions and Systems

At the start of Term II activities, the Project discussed how to respond to requests for the expansion of NFMS functions. As a result, it was decided that focus would be placed on the areas that generate synergy with Output 3 and Output 4. As some of these are also described later under Output 3 and Output 4, this section describes the outline of the support undertaken in terms of the functional extension of the NFMS

in Output 2.

(a) Monitoring of drivers of deforestation and forest degradation, and policies and measures

Through the activities described in Output 4, while developing the Provincial Deforestation Monitoring System (PDMS) using near-real-time satellite imagery to strengthen the capacity and system of forest monitoring at the provincial level, the NFMS server and network have been expanded to host and operate the web application service of the PDMS on the NFMS infrastructure. In this expansion, the existing physical servers were virtualized using equipment procured with the support of the FCPF RP to improve the scalability for future hardware additions and to increase flexibility so that new services can be launched by simply adding a Virtual Machine (VM).

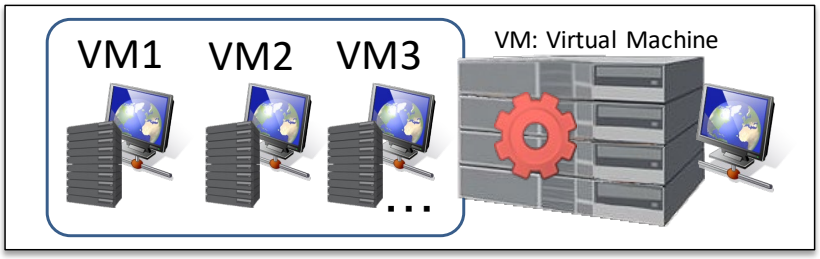


Figure 8: Virtualization of the NFMS Physical Server and Improved Scalability (Image Diagram)

(b) Consideration of carbon transaction registry

As a result of discussions and deliberations among relevant parties through the activities of Output 3, it was decided that the Carbon Assets Trading System (CATS) developed by the World Bank would be used for the transaction registry of the FCPF Carbon Fund's ERP. As for the national carbon transaction registry (including the management of emission reductions to be provided for the GCF results-based payments), it is necessary to set a national policy, including the possibility of using the improved version of CATS. On the other hand, because the national system is required to manage REDD+ programs and projects implemented in Lao PDR, information on REDD+ programs and projects were added to the Lao NFMS Web-Portal. In addition, a system was established to enable checking and verification when new programs are proposed and considered for approval, and to add and publish information when they are approved.

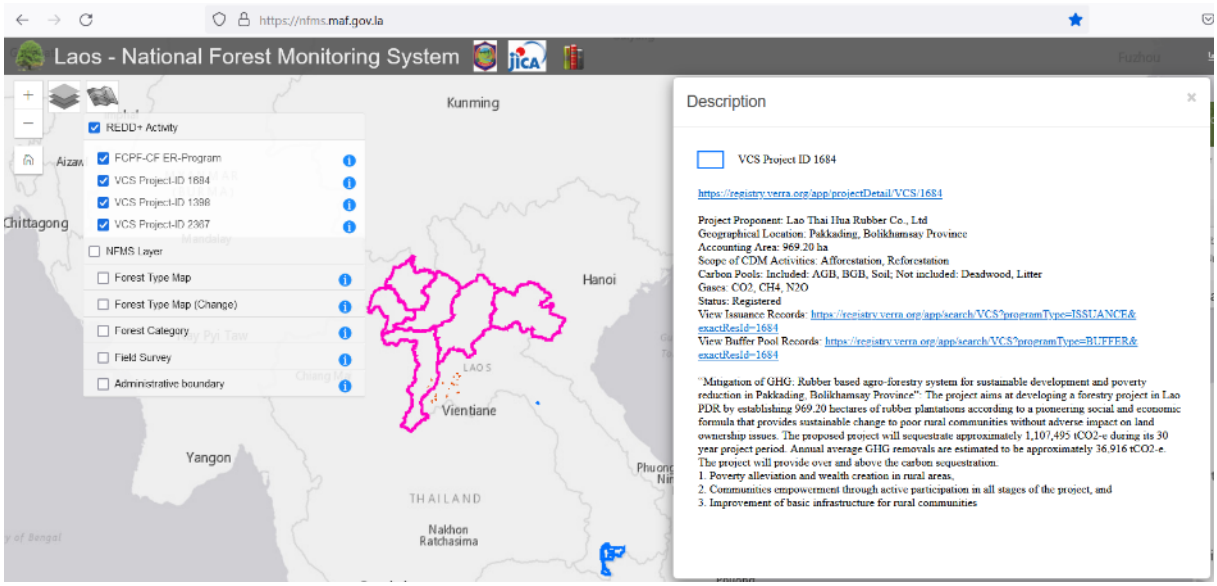


Figure 9: REDD+ Project Information on the Lao NFMS

(c) Provision of information on safeguards (information disclosure through the web)

As a result of discussions and deliberations among stakeholders through the activities described in Output 3, it was decided that a Safeguard Information System (SIS) would be prepared by the DOF with financial and technical support from the FCPF RP, and the provision of safeguards information through a web interface would be supported by the Project. Accordingly, the REDD+ Lao PDR website has been

improved and a web page providing information on safeguards has been launched (https://project.dof.maf.gov.la/redd/sis/).

3) Improvement of NFMS data management functions based on the trial operation

As a result of the trial operation of the NFMS and consultations with concerned parties such as the C/P, NFMS data management functions were expanded in their scope and improved in their quality. This included (a) a review and improvement of on-board data (e.g., three forest category boundaries); (b) loading and web publication of ground survey and inventory data; (c) an NFMS Web-Portal management tool (NFMS MANAGER); (d) Web-Portal display map storage and sharing (legend and scale); and (e) the deletion of the user login function. The following is an overview of each function and item.

(a) Review and improvement of on-board data (e.g., three forest category boundaries)

As a result of confirming and reviewing the on-board data for the official release of the Lao NFMS Web-Portal, it was found that there were overlaps between Production Forests, Protection Forests, and Conservation Forest in the boundary data newly shared by the DOF/FIPD. Although there is no problem in displaying the data on the Web-Portal, this will cause issues in the future when analyzing and aggregating areas for each forest category. Therefore, the Project discussed priorities for correcting the data, made corrections, and installed them on the Web-Portal. In addition, to prevent similar issues from occurring in the future, these issues and how to deal with them were explained and discussed in the NFMS TWG, and capacity building and system development were carried out so that the FIPD can appropriately manage the quality of data hereafter.

(b) Loading and web publication of ground survey and inventory data

The accuracy verification data of the Forest Type Maps (FTMs) and ground survey data, such as the RV Survey and NFI Survey, which were prepared in Term I, were standardized and organized so that they can be managed in a unified format. In addition, the Project developed a browser-based system for checking and sharing the unified data and implemented a data browsing function so that the data can be referenced efficiently when generating future FTMs and conducting accuracy checks.

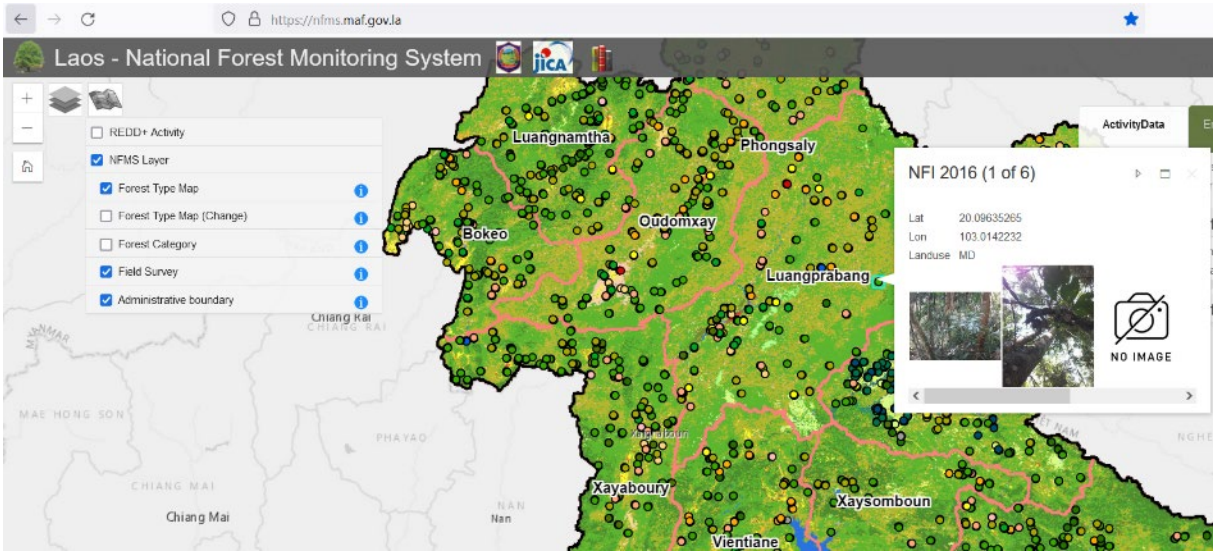


Figure 10: Ground Survey Data Loaded on Lao NFMS Web-Portal

(c) NFMS Web-Portal Management Tool (NFMS MANAGER)

Although the core system of the Lao NFMS Web-Portal was developed in Japan by the Japanese experts, it is important to enhance the capacity of the C/P to be able to add, register, edit settings, and publish and update simple data for the future maintenance and management of the NFMS Web-Portal. Since it is still a challenge for the C/P, which does not have the knowledge needed to understand and master the entire Web GIS service, a management tool was developed (NFMS MANAGER) (the manual for which is explained in Activity 2-1-5).

Table 13: List of Functions of the NFMS Web-Portal Management Tool

• Addition of base map	• Issuance of registration data (publication)
• Registration of FTM data and area calculation	• Update of NFI data
• Registration of ground survey data and photographs	• Editing of the banner
• Registration of other data	• Editing of the NFMS Web-Portal configuration file
• Editing of the layer tree	• Configuring of ArcGIS JavaScript API settings
• Editing of labels and other characters	• Backup

(d) Web-Portal Display Map saving and sharing (legend and scale)

A "Share Map" function was created to allow users browsing the Lao NFMS Web-Portal to share the displayed map (maintaining the legend, scale, and other settings) with other users, and to set hyperlinks to documents and websites (a function to issue a bookmark URL for spatial information). By utilizing this function, hyperlinks with location information, for example, can be set and linked to the REDD+ Lao website and the safeguards information web page.

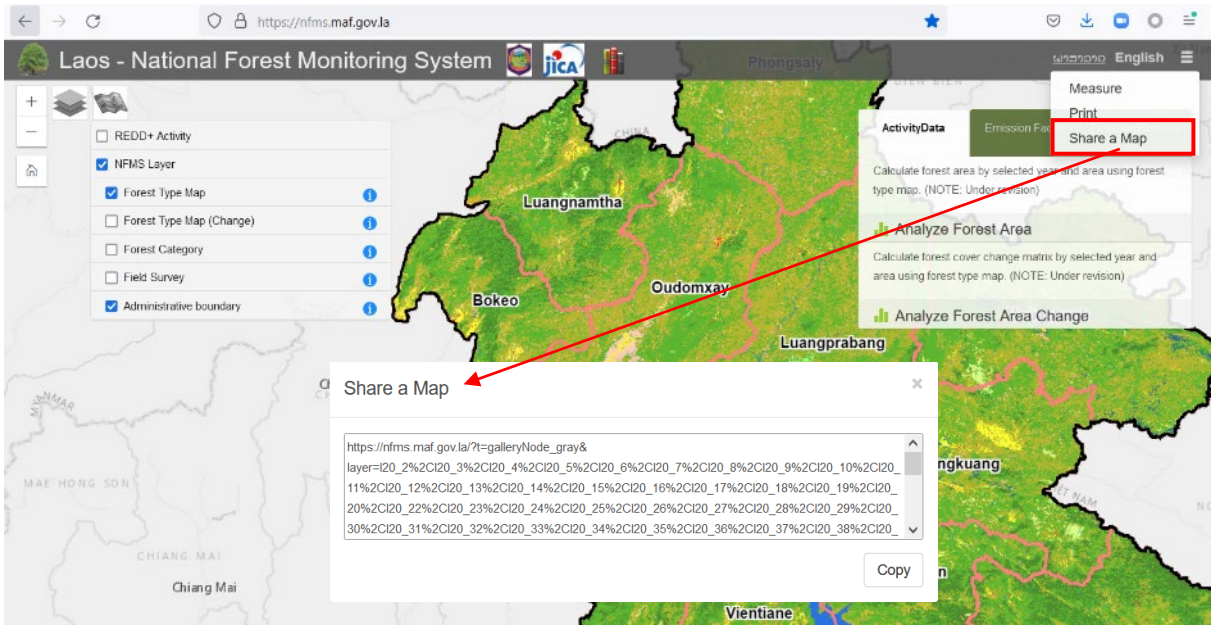


Figure 11: Share Map Function on Lao NFMS Web-Portal

(e) Removal of registered user and login function (full disclosure)

Since approval was obtained from the DOF for the content and publication of the Lao NFMS Web-Portal, provisional restrictions on access to the login function and analysis function by registered users were removed and all of the data and functions were modified to be fully open to all users. This was done as an improvement to the transparency of the NFMS after the issue of restrictions on access to the Web-Portal was pointed out during the UNFCCC's first review of the national MRV (see Activity 2.2.5), which was conducted from November to June 2020.

4) Analysis of issues and modification of existing the NFMS infrastructure environment

With a view towards completion of the Project, an analysis of the physical environment (infrastructure and equipment) for the maintenance and operation of the existing NFMS environment was conducted in cooperation with a local consultant to consider plans for future maintenance and renewal. As a result of the analysis, (a) the procurement of spare parts for NFMS materials and equipment, (b) renovation of the NFMS server room, and (c) repair of the backup power generation system were suggested. As a result of discussions and consultations with the DOF, the FCPF project, and JICA headquarters, it was agreed that the Project would provide support on the suggested issues.

(a) Procurement of spare parts for NFMS infrastructure materials and equipment

The constructed NFMS has been operating without any major problems, but additional memory to improve server performance, power supply equipment, storage capacity increase, and spare uninterruptible power supply (UPS) were proposed as effective for the stable operation of the NFMS infrastructure in the future. Accordingly, the spare parts were procured.

(b) Renovation of the NFMS server room

The server room where the NFMS server is installed has windows which do not provide sufficient shielding from heat, resulting in high temperatures. This necessitated the air conditioner installed to constantly be running at full operation, causing frequent breakdowns. Therefore, renovation to close the windows of the server room was proposed. The Project decided to support this due to the importance of improving the room to avoid damage to the equipment.

(c) Repair support for backup power generators

Since power outages are unavoidable in developing countries, backup power generation equipment is important for the stable operation of IT service. It was found that the power generation equipment was not operating properly during power outages. The Project decided to repair the equipment since it is important for the server equipment to be more resistant and stable in operation against such incidents.

Activity 2-1-5 Develop the NFMS Operational Manual after the 2nd modification.

The *NFMS Web-Portal MANAGER: User's Guide* (Separate volume 2-5) and *NFMS Server and Network Standard Operating Procedure: SOP* (Annex 2-4) have been prepared as operation manuals for the Lao NFMS infrastructure.

1) NFMS Web-Portal MANAGER: User's Guide

The *User's Guide* was prepared for NFMS Web-Portal administrators for reference when adding and registering data, performing simple editing, and for publishing and updates. In addition, capacity building training was conducted in December 2021.

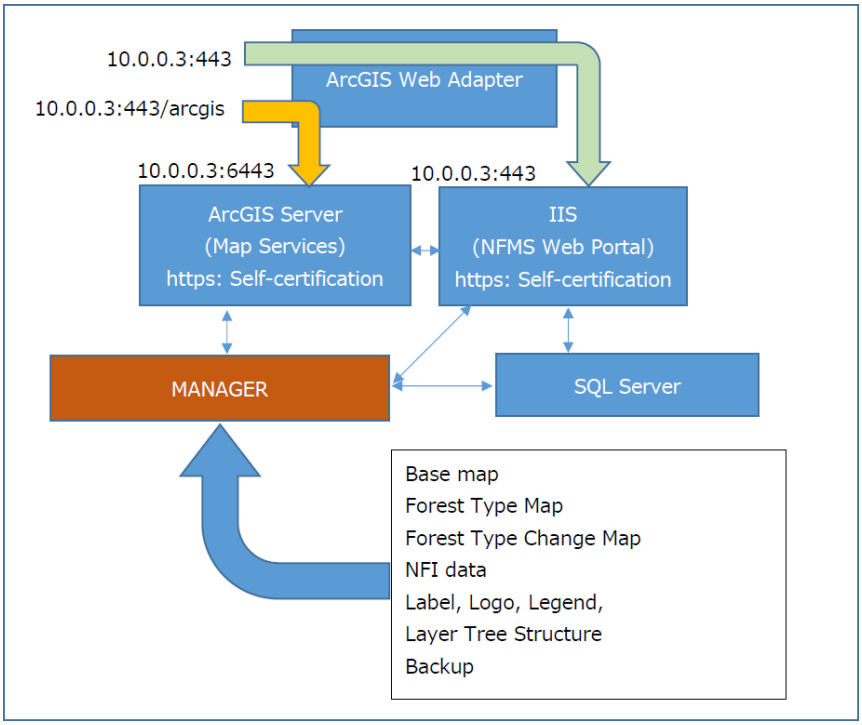


Figure 12: Overview of the NFMS Web-Portal Configuration and MANAGER (Administration Tool)

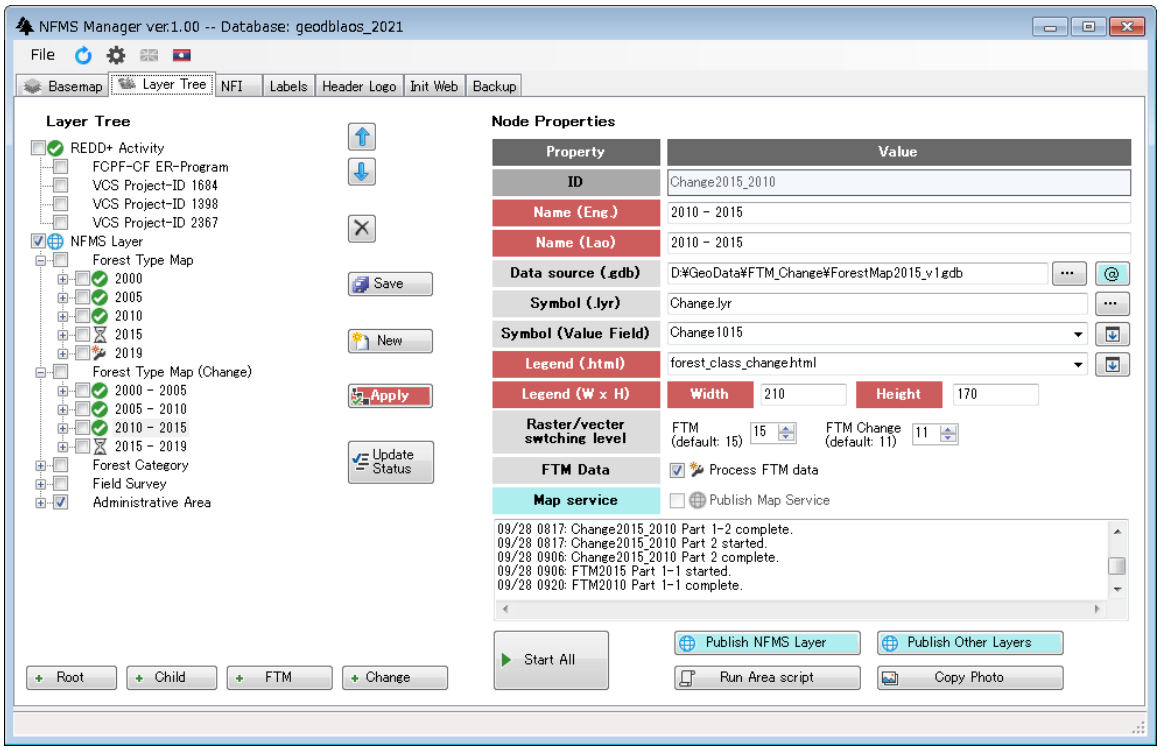


Figure 13: Example of the Configuration Window of the NFMS Web-Portal Manager (Layer Tree)

2) *NFMS Server and Network: SOP*

A Standard Operating Procedure (SOP) was developed for NFMS infrastructure administrators (or maintenance service providers) for reference when updating server and network settings and when troubleshooting problems that may occur. In addition, capacity building training was conducted in cooperation with the local consultants. This SOP will be updated whenever there is a change in the configuration in the future.

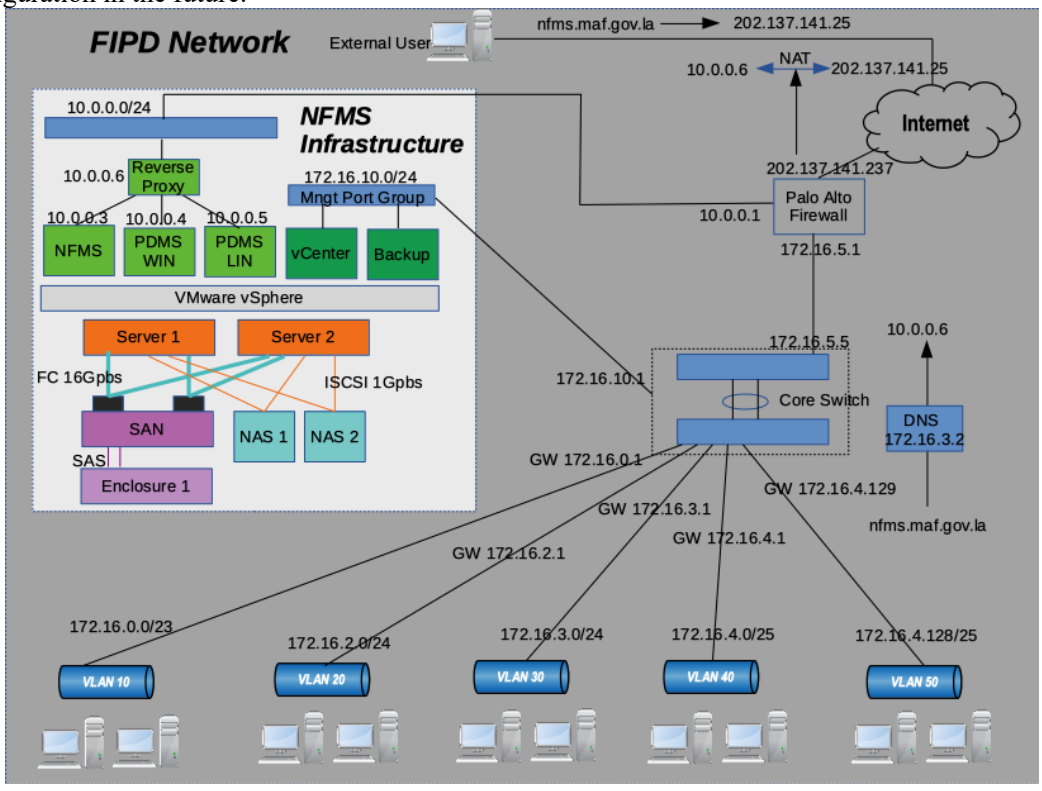


Figure 14: Lao NFMS Server & Network Configuration Diagram (Excerpt from SOP)

Activity 2-1-6 Implement the NFMS Operational Plan.

The NFMS needs to be adapted to circumstances in Lao PDR, built stepwise on existing capacities, and operated transparently, based on the common understanding of stakeholders. In Lao PDR, the FIPD is the main division in charge of developing the NFMS, working with the REDD+ Division and others. As a lead supporter, the Project supported each technical element, promoted coordination with other government agencies and projects, and facilitated the sharing of information and technical discussions among concerned parties through the REL/MRV TWG (later reorganized into the NFMS TWG). As part of this, the development of the NFMS operation plan (hereinafter referred to as the "NFMS Roadmap"), which is a medium- to long-term plan for the NFMS from 2020 to 2030, started in March 2020. This was actually a good time to discuss the future of the Lao NFMS, since such activities as the FREL/FRL and MRV were almost completed. It was also an appropriate time to review the carbon accounting methods based on those experiences and to consider future improvements.

At the same time, the FIPD server equipment was replaced — the procurement of equipment was financially supported with FCPF RP funds, and a review of specifications and installation were technically supported by the Project — the NFMS Web-Portal and database were being improved, and the piloting of semi-real-time forest monitoring tools such as the PDMS and OLDM were in progress. It was thus necessary to discuss the maintenance and development plan. It was also an important time to adapt to the updated requirements of the MRV (called MMR in FCPF-CF terminology) for the FCPF-CF ERP. In addition, there was also the purpose of increasing the transparency of the NFMS when applying for GCF REDD+ RBP. Given this background, it can be said that it was an opportune time to create a stepwise development plan for the NFMS with a view to the future.

By consulting the FAO's *Voluntary Guidelines on National Forest Monitoring* and other good practices, the structure and content of the NFMS Roadmap were made suitable for Lao PDR (Table 14). A task team led by the Deputy Director of the FIPD was formed to lead the work, and technical information and support plans from other government departments and projects related to the NFMS were incorporated. Feedback from the capacity needs assessment of the Global Forest Obseration Intiative (GFOI) REDD+ Compass, supported by the Project through 2018-2019, and feedback from the capacity needs assessment of the FAO Capacity-building Initiative for Transparency (CBIT) conducted in 2020, were both utilized. The draft was finalized by two iterations of consultations and comment through the REL/MRV TWG and was approved by the DOF in November 2020. It was then prepared in the Lao and English languages and published on the UNFCCC REDD+ Web Platform.

Table 14: Structure of the NFMS Roadmap

Chapter 1 Background and Purpose	Background and purpose of the NFMS Roadmap, development process.
Chapter 2 Objectives of the NFMS	Objectives of the NFMS.
Chapter 3 Communication processes and action calendar	Information reported at the sub-national, national and international levels using the NFMS and a calendar of the reporting schedule.
Chapter 4 Forest in Laos	Overview of Lao forests, particularly in relationship with the NFMS (forest definition, land/forest classification, forest areas and changes over time, forest-related emissions and removals, etc.).
Chapter 5 Summary of the technical scope of the NFMS	Functions related to MRV, forest monitoring, and data management as the overall scope of the NFMS.
Chapter 6 Technical implementation of NFMS functions	The technical details of the scope of the NFMS described in Chapter 5.
Chapter 7 Future improvement	Future improvements based on the issues related to the current NFMS and needs analysis.
Chapter 8 Institutional arrangement	NFMS stakeholders and institutional arrangement. * Includes a plan for restructuring from the REL/MRV TWG to the NFMS TWG and three subgroups.
Chapter 9 Budget and timeframe	Budget requirements and activity timeframe to implement the NFMS by 2030.
Attachment 1 Comparison matrix OLDM – PDMS	Comparison of the functions of the two types of forest monitoring piloting underway.

Activity 2-1-7 Implement the NFMS Operational Plan.

With the approval of the NFMS Roadmap mentioned above, the Project supported the implementation of the high-priority activities (including those that had been implemented before the approval of the NFMS Roadmap). These were:

1) Reorganization of the REL/MRV TWG into the NFMS TWG and the establishment of three subgroups (see Activity 3-2-3); and

2) Support for improving emissions and removals estimates by improving monitoring techniques related to forest degradation and restoration.

As the estimation of emissions and removals related to forest degradation and restoration is technically challenging, many countries have not yet added them in their estimations, therefore drawing high international interest. In Lao PDR, such estimations are included in both the national FREL/FRL and the FCPF-CF FREL/FRL, but the accuracy of the estimations were relatively low due to limitations to the technology and national data available at the time of their preparation. For forest degradation in particular, improvement was strongly encouraged when the Emission Reduction Program Document (ERPD) was approved in June 2018. In addition, the FCPF Carbon Fund issued new guidelines on the application of the Methodological Framework (MF) in November 2020, along with which it made a request to Lao PDR for further technical improvements.

In response to this, the need arose for the steady implementation of the MRV of the FCPF-CF scheduled for 2022 and 2025, and for the improvement of the capacity of Lao PDR to pass a strict assessment by a third party certification body (a Validation and Verification Body (VVB)). Therefore, a framework for collaborative support with other technical partners (the World Bank, the SilvaCarbon Program, Boston University, and the EU Joint Research Center) was established to implement the following.

- Promote the understanding of Lao C/Ps and consider countermeasures to meet the requirements of the FCPF-CF. (Summary of plan and progress submitted to the FCPF-CF as of September 2020.)
- Consideration and testing of a more accurate method to generate Activity Data (AD) for the two MRVs in 2022 and 2025, respectively, for the ERP (e.g. forest stratification method, area estimation using additional satellite information). In particular, to improve the estimation of AD for forest degradation, which has a large impact on emissions and removals estimates, review and testing have been conducted to supplement the detection of forest cover change areas. This was technically challenging at the time of development of the FTMs. Google Earth Engine, which has shown remarkable advancement in recent years, was tested in conjunction with the technologies developed by the technical partners (see Figure 15 below). Other issues, such as consideration of the necessity of technical correction of the FREL/FRL of the ERP, promotion of the understanding of C/Ps of the uncertainty assessment method and reporting templates, were also supported. Decision-making within the DOF regarding the above and negotiations between the DOF and FCPF-CF were facilitated.
- Agreement on and preparation of a work plan for the MRV for the FCPF-CF and a simplified national MRV to be implemented by the DOF with future JICA support in 2022.

3) Other improvements

- Through a desk review, the evaluation of the feasibility of estimating items not considered in the current FREL/FRL due to a lack of appropriate methods or data and the preparation of a simple paper on the potential of future calculation of: a) carbon gain and loss within each forest class (excluding selective logging); b) carbon gain and loss through conversion from forestland to other land categories; and c) carbon loss and gain in soil organic carbon. (Separate Volume 2-8.)
- Technical collaboration with forest inventory experts at the University of Goettingen in Germany and the US Forest Service (USFS) for future improvements in the NFI.
- Improvement of R Script (an automatic calculation program) used for the NFI database and enhancement of DOF capacity in collaboration with the FAO.

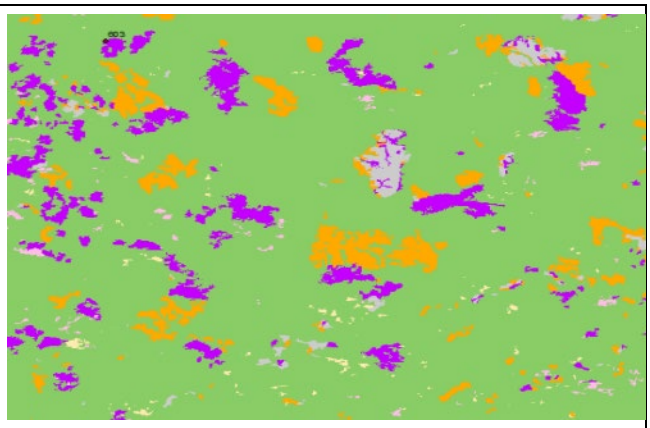
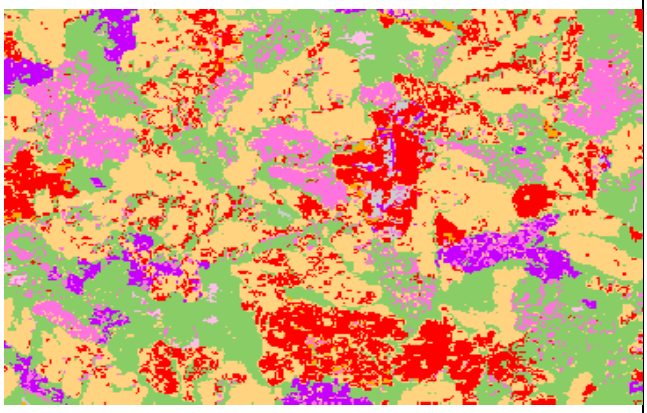
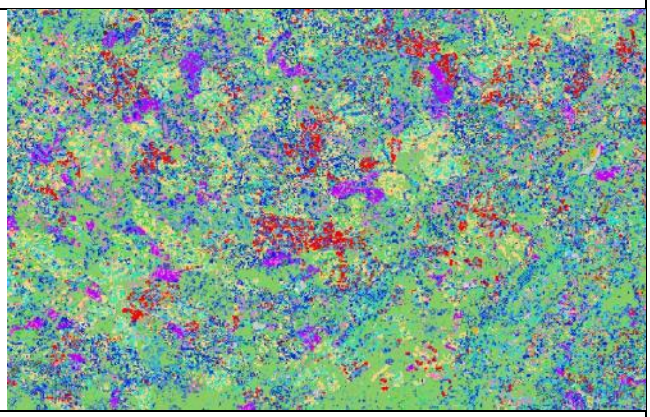
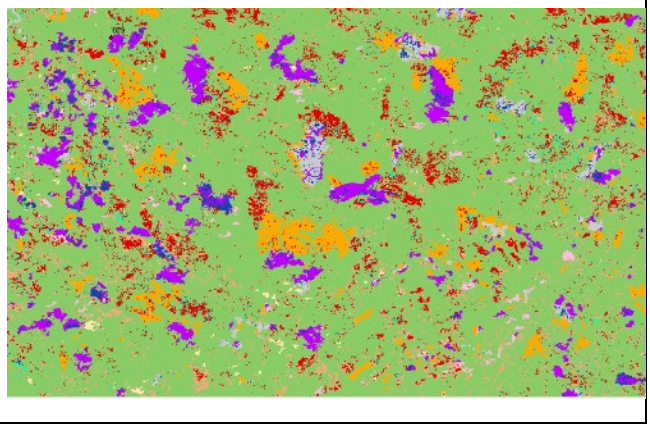
Activity Data from the FTMs 2005-2010. SF DG DF RS RF SNF	
CCDC-SMA (additional analysis using a GEE script developed by Boston University, USA https://sites.bu.edu/measures/project-methods/change-detection-and-classification-algorithm/) Degradation Deforestation Reforestation	
FCDM (additional analysis using a GEE script developed by the EU Joint Research Center https://forobs.jrc.ec.europa.eu/iforce/dNBR.php) Disturbance year 2,005 2,006 2,007 2,008 2,009 2,010 2,011 2,012 2,013 2,014	
CODED (additonal analysis using a GEE script developed by Boston University https://coded.readthedocs.io/en/latest/index.html) Degradation Deforestation	

Figure 15: Examples of ADs Analyzed with Different Satellite Information and Tools

Activity 2-1-8 Extend the Provincial Forest Monitoring System (PDMS) developed through Activity 4.3 to the FCPF-CF ERP provinces in collaboration with the GIZ-GCF and other projects.

Based on the results of forest monitoring in the target province in Activity 4-3, the Project worked on improving the user-friendliness of the PDMS and the system set-up, and strengthening the capacity for expansion to other provinces.

First, in order to take into consideration the nationwide expansion of the PDMS, the Project worked on improving the Google Earth Engine (GEE) script to extract deforested areas with a certain degree of accuracy not only in northern Lao PDR but also in central and southern Lao PDR. The PDMS uses Sentinel 2 satellite images provided by GEE to compare images at any given time period and identify differences in changes as deforestation areas. Data on actual deforestation areas collected by the ground-truth (GT) survey was used as training data, and accuracy was improved by using this GT data through machine learning. The Project first worked on developing the GEE script for the northern Lao PDR. Then, by collecting the GT data of the deforestation area from central and southern Lao PDR and training it through machine learning, the GEE scripts for detecting the deforestation area in central and southern Lao PDR were additionally developed. In addition, these technologies have been improved as a Global Data Downloader, and a user-friendly interface was developed so that scripts for each region can be automatically selected when the province to be monitored is selected on the user interface.

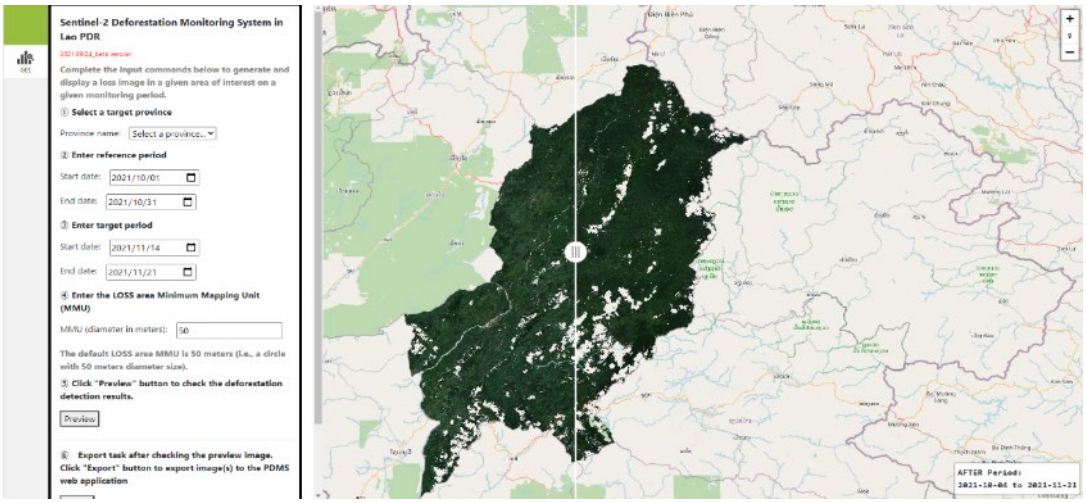


Figure 16: User Interface of Global Data Downloader

In addition, the login function, user interface, and survey items set up for forest monitoring in Luang Prabang and Oudomxay provinces were extended for application in other provinces in order to carry out forest monitoring nationwide.

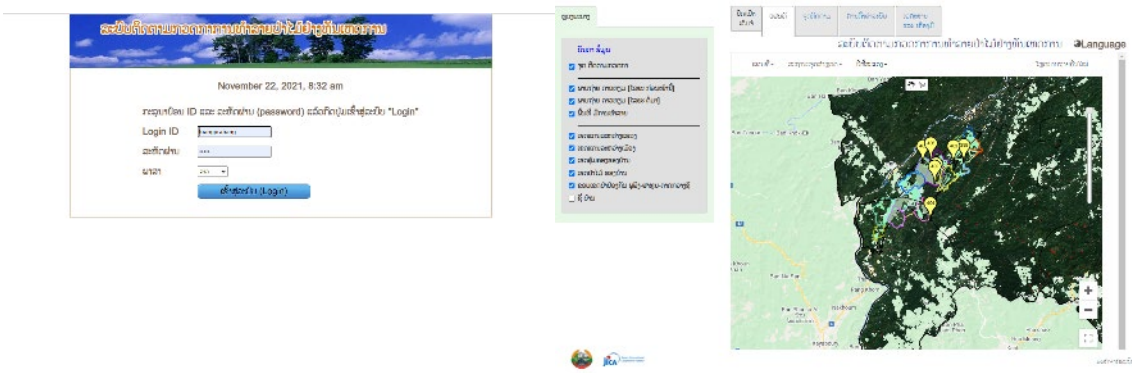


Figure 17: PDMS Login Interface and Initial Interface Developed for Each Province

In addition, based on the results and requests from users in Luang Prabang and Oudomxay provinces in Activity 4-3, a user-friendly interface (with a display date for images, a slider function to compare satellite images before and after the time point of monitoring, etc.) and tools for field surveys (the automatic

processing of area calculation after field investigation of deforestation area) were newly added and upgraded.

In parallel with the system improvement for nationwide expansion, the Project has provided technical support together with GIZ to expand the PDMS to the six provinces in northern Lao PDR, which are the target provinces of the ERP under the FCPF-CF. In the target provinces, the GCF implementation project (I-GFLL Project 1) is being implemented by GIZ, and the strengthening of deforestation monitoring is defined as its Activity 1.4: Law Enforcement and Monitoring. GIZ and JICA have agreed to work together on this activity, with I-GFLL Project 1 providing the cost of deforestation monitoring and F-REDD providing the application and database of the PDMS, together with technical assistance for implementation. Such collaboration to strengthen forest monitoring in the target northern provinces is currently underway.

In coordination with GIZ, the Project supported institutional set up for the implementation of forest monitoring in Houaphanh, Sayaburi, and Luang Prabang provinces, which are the targets of I-GFLL Project 1, including the identification of target areas for monitoring, and the collection and setting up of GIS data in the PDMS. In addition, technical training on PDMS implementation was held for forestry officers in the three provinces for seven days (five days for general training and two days for provincial administrators). Furthermore, PDMS administrator training was conducted at the central level. However, the progress of I-GFLL Project 1 has been delayed due to the COVID-19 pandemic, and the actual forest monitoring activities are expected to start around January 2022.

In September 2021, the Department of Forest Inspection (DOFI) organized an experience exchange workshop with the participation of four provinces that had implemented the PDMS by 2021 to deepen understanding of the PDMS among the concerned government agencies. In introducing the progress in each province, it was reported that the PAFO in Oudomxay Province has been independently implementing the PDMS by utilizing the budget for watershed management of hydropower dams since the completion of JICA's technical support. This is a good practice suggesting the possibility of the sustainability of the PDMS. DOFI officials also showed high interest and expectations for the PDMS, which is a highly user-friendly monitoring tool and has already been showing positive results in its sustainability. The PDMS has already been introduced as a forest monitoring tool in the NFMS Roadmap, but it was further suggested that it should be expanded nationwide through its institutionalization as a forest monitoring tool.

In the future, technical training in the remaining three northern provinces (Bokeo, Oudomxay, and Luang Namtha) of the I-GFLL target provinces and follow-up trainings will be required to ensure the extension of the PDMS. In addition, the system is expected to be extended into the five southern provinces targeted for GCF REDD+ RBP, and that it will be implemented using external funds such as from other donors' forestry projects. This will require further donor coordination together with the DOFI.

Activity 2-2 Support the 1st national MRV for REDD+ by using the NFMS.
Activity 2-2-1 Decide the MRV procedure (e.g. technical methods, work process, institutional arrangement).
Activity 2-2-2 Modify the MRV procedure after the 1st test-run of the NFMS.

The Project supported the establishment of the MRV process based on the period covered by the REDD+ results-based payment pilot program of the GCF (December 31, 2013 – December 31, 2018), time required for measurement and reporting, and the expected timing of submission of the first Biennial Update Report (BUR) and the 3rd National Communication Report. The MRVs for the FCPF-CF were not implemented during this project period, but they are scheduled for 2022 and 2025 in the ERPA signed between the GoL and the World Bank and in the NFMS Roadmap mentioned in Activity 2-1-5. An improved process from the first national MRV has been considered.

Activity 2-2-3 "Measuring": Estimate emissions by sources and removals by sinks from the latest available Activity Data (AD) and Emission Factor (EF) (for 2018-2019, tbd) and support NFI implementation.

1) Measurement of Activity Data (AD)

AD were measured from 2015 to 2018 using a method consistent with the FREL/FRL method performed in Activity 2-3. The following two processes were executed:

- Creation of a FTM (FTM 2019) as of January 1, 2019; and
- Stratification into five layers by Emission/Removal Factors (E/RF) for forest and land classes, extraction of changes in distribution status of each strata as of 2015 and 2019, correction of amounts of changes by

reference sampling, and analysis of uncertainty.

(a) Development of Forest Type Map 2019

The satellite images used to develop the FTM 2019 were cloud-free mosaics created from free Sentinel-2 images (with a spatial resolution of 10 m) and Planet images (with a spatial resolution of 5 m). Although optical satellite images such as RapidEye images (with a spatial resolution 5 m) were used when creating the FTMs until 2015, there were problems in that cloud-covered areas could not be observed and the images were expensive. However, these were eliminated as much as possible in the development of the FTM 2019. Table 15 shows a comparison of satellite images that have been used to develop the FTMs.

Table 15: Comparison of Satellite Images Used to Develop the Forest Type Maps

Name of satellite	SPOT4/5 MS	RapidEye	RapidEye	Sentinel-2/Planet
Year of Forest Type Map	2005	2010	2015	2019
Spatial resolution	10 m	5 m	5 m	10 m/5 m

As with the FTMs developed in the past, the FTM 2019 has adopted a 1: 100,000 mapping scale and a minimum plotting unit of 0.5 ha.

When developing the FTM 2019, the changes in the Normalized Difference Vegetation Index (NDVI) calculated from the satellite images of 2015 and 2019 were overlaid with the FTM 2015, which was the latest map used in FREL/FRL. This method was used to facilitate manual interpretation while ensuring time-series consistency between the maps and to consider cost and map quality. This is the same as the method of superimposing the extracted and detected changes from 2010 to 2015 on the FTM 2010 used when the FTM 2015 was developed.

The following three control processes have been introduced for quality control of manual interpretation work.

- Initial interpretation by FIPD technicians;
- Revision by skilled FIPD engineers (who have experiences in creating FTM 2015); and
- Random quality check by a local consultant hired by the Project

In order to avoid the overestimation of changes due to manual interpretation, cases of slight or suspicious changes were not considered changes.

In addition to the above, available data on the increase and decrease of forests in the area around Lao PDR were employed to detect small changes that are difficult to detect by manual interpretation.[1] This data refined the FTM through automatic interpretation. The entire flow of work is summarized as SOP (Separate Volume 2-12).

(b) Stratification into five layers by E/RF for forest and land classes, extraction of changes in distribution status of each strata as of 2015 and 2019, correction of the amounts of changes by reference sampling, and analysis of uncertainty.

The completed FTM 2019 has five strata based on E/RF, as in the case of FREL/FRL calculation (Table 30). The changes were extracted by comparing the stratified FTM 2015. Since the accuracy of each map is not 100%, the amount of changes extracted in this way is not always correct. Therefore, the change area was adjusted through a statistical method by performing reference sampling according to the method suggested by Olofsson et al. (2014).[2] To determine the number of samples, the method suggested by Cochran (1977)[3] was used.

(c) AD measurement flow

On January 23, 2019, the flow of AD measurement, starting from the creation of the Forest Type map, was discussed and agreed to with FIPD engineers. The DOF was then consulted on March 19 for its endorsement. In March 2019, satellite images were procured for the development of the FTM and NDVIs

[1] Hansen, M. C. et al. (2013). "High-Resolution Global Maps of 21st-Century Forest Cover Change." *Science* 342 (15 November): 850–53. Data available online from: http://earthenginepartners.appspot.com/science-2013-global-forest.

[2] Olofsson et al. (2014). "Good Practices for Estimating Area and Assessing Accuracy of Land Change". *Remote Sensing of Environment*. 148: 42-57.

[3] Cochran, WG. (1977). *Sampling Techniques*. John Wiley & Sons.

were calculated from the images to assist in interpretation. Subsequently, from March to June 2019, manual interpretation of the images was conducted mainly by FIPD engineers, and the local consultant hired by the Project verified the interpretation results. The results of the manual interpretation of images were integrated with the results of the automatic interpretation to complete the FTM 2019. The accuracy assessment of the completed FTM and reference sampling of the changes (also called "design based area estimation") between 2015 and 2019 were carried out from July to September 2019, and then the AD was finally calculated. In addition to the trainings on image interpretation before the start of work by the FIPD, a field survey was conducted to improve the interpretation accuracy of each engineer. In addition, a field survey was conducted after the interpretation work to check the accuracy of the FTM created by each engineer. A series of steps related to AD measurement is shown in Figure 18. Further, the final calculated AD from 2015 to 2019 are shown in Table 16.

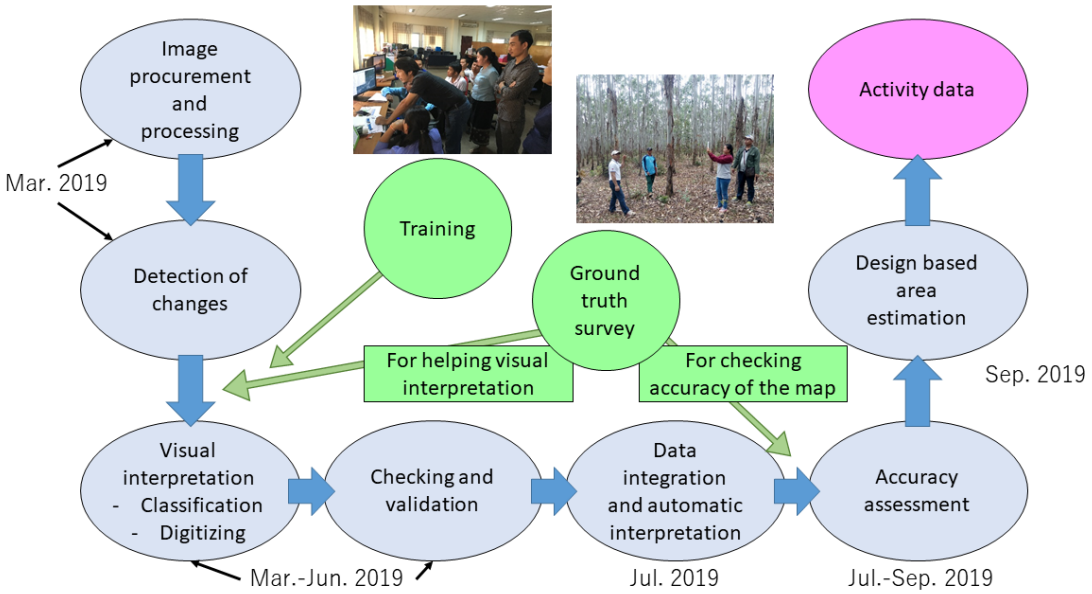


Figure 18: Flow of Activity Data Measurement

Table 16: Activity Data from 2015 to 2019

		2019				
	ha	Stratum 1	Stratum 2	Stratum 3	Stratum 4	Stratum 5
2015	Stratum 1	2,594,412	891	Four	2,593	7,658
	Stratum 2	388	9,173,675	2,125	174,504	86,996
	Stratum 3	0	1,149	1,169,435	4,663	12,951
	Stratum 4	160	91,910	308	6,047,925	160,141
	Stratum 5	0	0	0	155,603	3,366,767
					Total	23,054,258

Deforestation
Degradation
Restoration
Reforestation
No Change

2) Development of E/RF reflecting the results of the 3rd NFI and 2nd RV surveys

(a) Support for preparation of the 3rd NFI

In the 3rd NFI, it was agreed that the cost of the field survey would be supported equally by the Project and the FCPF RP. The Project supported coordination with the FCPF RP, including the process related to the disbursement of funds.

The subcontract (NFI (management)) was signed with Equator Group PTE LTD, which took charge of a variety of work, such as data preparation, training, and progress management, so that the survey would be based on a web-based data management system consistent with the 2nd NFI. The subcontract (NFI (implementation)), which includes the arrangement of vehicles and equipment for the survey and

disbursement of daily allowances for the government staff involved, was signed with LSM Sole Co., Ltd., which has proven experience in the 2nd NFI through bidding and contract negotiation.

In order to maintain consistency with FREL/FRL, the implementing structure and survey methodology basically followed those of the 2nd NFI. However, minor modifications and improvements, including the following, were applied to improve efficiency.

- Some of the carbon pools (sapling, non-timber vegetation, and bamboo included in each forest type), which were found to have small carbon amounts in the 2nd NFI, were not surveyed in the 3rd NFI. The results of the 2nd NFI were used instead; and
- The efficiency of the survey was improved by making minor modifications (e.g. solving the problem of having different forest types in one survey plot and improving the efficiency of the survey procedure in survey plots) and by improving the implementation (e.g. a careful pre-check of accessibility to the survey plots in advance, using satellite images).

Moreover, in terms of sustainability, the Project tried to improve the capacity of FIPD staff in the 3rd NFI by providing more extensive training that included not only the survey methods but also planning and data compilation (Table 17).

Table 17: Training Conducted for the 3rd NFI

No.	Training name	Content
1	3rd NFI training	Conducted trainings on survey methods of the 3rd NFI and also safety management for the survey teams of the FIPD.
2	RS/GIS training	Conducted trainings including lectures and exercises on how to distribute survey plots for the RS teams of the FIPD.
3	Carbon stock calculation training	Conducted trainings including lectures and exercises on how to calculate carbon stocks for each forest type from the survey results for the data management team of the FIPD. The staff of the REDD+ Division also attended.

(b) Support for the implementation of the 3rd NFI

Although the survey started in January 2019 due to a delay in the disbursement of co-financing funds from the FCPF RP, the survey was completed in May 2019. As with the 2nd NFI, the Project provided logistical and technical support while communicating with the leaders of the survey teams through the subcontractor.

(c) Support for compiling the results of the 3rd NFI

The preliminary results were first confirmed within the FIPD in May when the survey was completed. Since then, the Project has supported the FIPD in compiling the results of the 3rd NFI. The official results were presented to the DOF and other relevant authorities as a part of the MRV results at the eighth FREL/FRL TWG meeting. The carbon stocks and their amount in tCO2e, and the uncertainty of each forest type calculated from the survey results are shown in the Table below.

Table 18: Results of the 3rd NFI Survey

Forest Type	Number of plots	Carbon stock*	S.D.	CI	Uncertainty	tCO_2e
		(tC/ha)	(tC/ha)	(95%)	(95%)	(tCO2e / ha)
EG	34	205.78	62.61	21.05	10.23	754.54
MD	185	87.91	29.51	4.25	4.84	322.33
DD	62	50.80	16.73	4.16	8.20	186.26
CF	40	77.10	27.58	8.55	11.08	282.70
MCB	38	87.59	38.76	12.32	14.07	321.16

* Carbon stock is the total of AGB and BGB. Details of the survey method, implementation structure, survey results, etc. are described in Separate Volume 2-9.

(d) Support for 2nd Regenerating Vegetation (RV) Survey

In response to the result of the 1st RV Survey (Table 19), the Lao side pointed out that there should be regional differences in the number of years that have elapsed for land on which there has been slash-and-burn agriculture to regenerate into forests (hereinafter referred to as the "threshold year between RV and forest"). Moreover, the carbon stock of RV from the 2nd NFI cannot be compared with the data from the 1st RV Survey, since deadwood was not measured in the latter. Although deadwood will not be included in the MRV results to maintain consistency with FREL/FRL, it was measured for technical improvements in the future. Based on the above, the purposes of the 2nd RV Survey were determined as summarized in Table 19 below.

Table 19: Purposes of the 2nd RV Survey Based on the 1st RV Survey Results

Results of the 1st RV Survey	Purposes of the 2nd RV Survey
- The threshold year between RV and forests is seven years after abandoning slash-and-burn agriculture. - The average carbon stock per unit area of RV without deadwood is 13.6 tC/ha.	- Determine the threshold year between RV and forest for each of the northern, central, and southern regions. - Measure the carbon stock per unit area of RV for MRV. - Measure the carbon stock per unit area including deadwood for future technical improvement.

The survey covered a total of seven provinces: Oudomxay, Luang Namtha, and Houaphanh in the northern region; Khammouane and Savannakhet in the central region; and Salavan and Attapeu in the southern region. The Project supported planning, implementation, and compilation. The survey method basically followed that of the first RV Survey to maintain consistency. However, the shape of the survey plots were changed from square to circular in order to conduct the survey more efficiently. In addition, plots were added for the ninth year after abandonment.

Due to the implementation structure of the C/P, it was considered difficult to prepare and conduct the 3rd NFI and the 2nd RV Survey in parallel, so the start of the 2nd RV Survey was adjusted from February 2019 and completed in March 2019. A contract amendment was signed with LSM SOLE Co., Ltd., which had previously been subcontracted for the "NFI (implementation)", by adding the 2nd RV Survey. They were tasked with arranging vehicles and equipment, distributing daily allowances for government staff, and other matters in the same manner as with the NFI survey.

As in the 1st RV Survey, the Project tried to confirm the threshold year between RV and forests by estimating the number of years that had passed from the abandonment of slash-and-burn agriculture to regeneration into forests, through the analysis of whether the crown cover of each survey site had reached 20% and satisfied the forest definition. In the northern part of the country, the results showed that 20% crown cover was met in the eighth year, but in the southern and central regions and in data for the entire country, the crown cover did not reach 20% even in the ninth year after abandonment. The data collected seems to be insufficient to produce regional level results, so it is necessary to increase the amount of data from future surveys and other studies.

Although the average carbon per unit area of RV in the 2nd RV Survey was 8.13 Ct/ha, which is smaller than that of the 1st RV Survey, this data was used for the calculation of E/RF for the MRV because of the improvement to uncertainty. As discussed in the 1st RV Survey, it is desirable to accumulate and study data to improve accuracy so that the aboveground biomass estimation equation, which uses the number of years after the abandonment of slash-and-burn agriculture as an independent variable, can be utilized in the future. On the other hand, the amount of deadwood in the average carbon stock per unit area of RV was extremely small (Table 20). The details of the survey method, implementation system, and survey results are summarized in the report (Separate Volume 2-11).

Table 20: Comparison of Carbon Stock per Unit Area Including Deadwood

1st RV Survey	Including Deadwood	Without Deadwood
Ct/ha (AGB)	—	13.58
StD	—	10.90
CI (95%)	—	3.61
Uncertainty	—	26.59%
2nd RV Survey	Including Deadwood	Without Deadwood
Ct/ha (AGB)	8.14	8.13
StD	6.46	6.45
CI (95%)	1.81	1.81
Uncertainty	22.22%	22.22%

(e) Emission/Removal Factor

Based on the results of the 3rd NFI and 2nd RV surveys, the E/RF for the 2015-2018 period was updated for the MRV. For consistency with the FREL/FRL Report, the E/RF was prepared by stratifying land and forest cover change into five strata and taking the difference in average carbon per unit area for each stratum (Table 21).

As with the FREL/FRL, some data have been taken from neighboring Vietnam or from the default values of the Intergovernmental Panel on Climate Change (IPCC).

Table 21: Emission/Removal Factors for the Period of 2015-2018

(tCO2e/ha)

	Stratum 1 (EG)	Stratum 2 (MD, CF, MCB)	Stratum 3 (DD)	Stratum 4 (P, B, RV)	Stratum 5 (NF)
Stratum 1 (EG)	0.0 0.0	-432.8	-568.3	-712.4	-737.4
Stratum 2 (MD, CF, MCB)	432.8	0.0 0.0	-135.5	-279.6	-304.7
Stratum 3 (DD)	568.3	135.5	0.0 0.0	-144.1	-169.1
Stratum 4 (Plantation, Bamboo, RV)	712.4	279.6	144.1	0.0 0.0	-25.0
Stratum 5 (Non-Forest)	737.4	304.7	169.1	25.0	0.0 0.0

The amount of emissions and removals during the MRV period of 2015-2018 were calculated applying the above-mentioned AD and E/RF. The results were compiled into the 1st National REDD+ Results Report as described in the next section. Since the UNCFCC requires the data, target gases and pools, calculation methodologies, etc. used in the MRV to be as consistent as possible with the FREL/FRL, Lao PDR has followed this policy.

Activity 2-2-4 "Reporting": Facilitate inputs from the forestry sector to the national GHG Inventory (assuming that the 3rd National Communications will be submitted in 2017, and the BUR in 2019).

The results measured in Activity 2-2-3 were summarized in the 1st National REDD+ Results Report, to which the AD Report and EF Report were attached. In addition, the 3rd NFI Report and the 2nd RV Report were prepared as background reports, and the Standard Operation Procedures (SOPs) that stipulate various data creation methods were prepared. These technical products are transparently published on http://dof.maf.gov.la/redd/en/about/.

The above report was submitted to the UNFFCC in July 2020 as an attachment to the first BUR.

Decision 13/CP.19 requires consistency in the data used and estimation methods described in the

FREL/FRL, MRV, National Communication Report, and BUR. The dataset used for the FREL/FRL Report and the 1st National REDD+ Results Report were provided to the Department of Climate Change (DCC), which is in charge of the GHG Inventory (GHG-I), after consensus was reached at the REL/MRV TWG meeting. The dataset was used for land use, land use change, and forestry sectors in the GHG-I for the 3rd National Communication Report, with 2010 as the base year, and in the first BUR with 2014 as the base year.

In addition, by checking the GHG-I estimation data, the differences in calculation methods were clarified. Although complete consistency has not been achieved, differences in data and methods were described in the 1st National REDD+ Results Report, and the reasons for the differences are explained at the UNFCCC technical analysis. This discrepancy was understood by the UNFCCC technical reviewers.

Activity 2-2-5 "Verifying": Facilitate necessary arrangements required under the UNFCCC.

The table below shows the planned schedule and the actual schedule for the assessment of the first BUR (including the REDD+ Results Report) submitted in July 2020. The budget for the GCF REDD+ RBP Pilot Program was limited, and as a result of supporting the assessment as quickly as possible for the early submission of proposals, the assessment was completed about two months ahead of the original schedule.

Table 22: Assessment Schedule and Actual Schedule of the 1st Biennial Update Report

Scheduled to be assessed	Schedule (deadline)	Actual schedule
UNFCCC experts send prior questions to Contracting Parties (GoL)	November 16, 2020	November 16, 2020
Parties answer pre-questions	November 27, 2020	November 27, 2020
TA (Technical Review) Week	November 30, 2020 - December 4, 2020	November 30, 2020 - December 4, 2020
Preparation and sharing of draft technical review report by UNFCCC experts with Contracting Parties	March 5, 2021	April 16, 2021
Providing review and comments on draft technical review reports by Contracting Parties	June 7, 2021 (within three months after submitting the draft technical review report)	April 30, 2021
Finalization of technical review report and publication on UNFCCC REDD+ Web Platform	September 3, 2021	June 21, 2021

In addition, as a result of the assessment, it was found that the data and information provided in the report generally follow the contents stipulated in Decision 14/CP.19 and are transparent and consistent with the assessed FREL/FRL. The review report showed that the following seven points continue to be the major points for future improvement from the assessed FREL/FRL.

Table 23: Major Points for Future Improvement from FREL/FRL Assessment

No.	Details of improvement
1	Implementing land representation based on the six land-use categories and their conversions, and applying the methods specific to land-use categories provided in the 2006 IPCC Guidelines
2	Using the existing information on the areas of post-deforestation land use and the associated carbon stocks to estimate the emissions from forest land conversions to those specific land uses
3	Including all the emissions and removals from forest land remaining forest land by applying the default method provided in the 2006 IPCC Guidelines together with above-ground biomass increment factors appropriate to the national circumstances derived from local or regional scientific research
4	Including emissions from natural disturbances on managed land
5	Including sites that have been abandoned for more than nine years in order to more accurately reflect the dynamics of conversion of abandoned upland crops to mixed deciduous forests for

	determining the years required for the regenerating vegetation areas to meet the national forest definition
6	Explaining that the FREL/FRL values are separated by type of activity rather than by emissions and removals
7	Revisiting the methodology for projecting the FREL/FRL when more information is available in order to better reflect the future evolution of emissions and removals

In addition, in the assessment report, the following five points were indicated as points to be considered.

Table 24: Points to be Considered

No.	Content for consideration
1	Including the information contained in the first National REDD+ Results Report as part of the technical annex in order to enhance transparency and provide a technical annex that enables the reconstruction of the results as a stand-alone submission of REDD+
2	Avoiding overlap of the AD collection period between the FREL/FRL reference period and the results period
3	Continuing to improve the transparency of all data and information via the NFMS Web-Portal as part of the stepwise approach
4	Increasing the use of national biomass data and avoiding reliance on IPCC defaults and data from Vietnam in order to decrease the uncertainties associated with the estimates
5	Including information on the national REDD+ registry system for avoiding potential double counting with existing REDD+ projects registered under the Voluntary Carbon Standard.

The table below shows the amount of results finalized (with no change in value) based on the assessment by the UNFCCC.

Table 25: Amount of Achievements Finalized Based on Assessment by the UNFCCC (No Change in Value)

Emissions / Removals		tCO2e / year	Total (4 years)
Average Emission Reduction	2015-2016	2,680,944	12,805,253
	2017-2018	3,721,683	
Average Removal enhancement	2015-2016	468,325	1,873,301
	2017-2018	468,325	

Activity 2-3 Support the development of the national FREL/FRL, and the FREL/FRL for the ERP to the FCPF-CF.

The FREL/FRL for the UNFCC and the RL for the FCPF-CF (the FCPF-CF uses the term "RL" for expressing FREL/FRL) have been developed using the data and results from Activity 2-3-1 to 2-3-8 shown below. In January 2018 the FREL/FRL Report was submitted to the UNFCCC and, in May 2018, the updated version of the report was submitted and published based on the technical review and the revisions carried out by Laos itself. In March 2018, the ERPD, including the results of the FCPF-CF, was submitted, and in May 2018 the updated version of the report was submitted and published based on the technical review.

Activity 2-3-1 Decide the plan and procedure for developing the national FREL/FRL, and the FREL/FRL for the ERP to the FCPF-CF.

The plan and procedures for the development of the FREL/FRL were mainly reported, discussed, and approved at the REL/MRV TWG. With the support of the Project, the FIPD established the REL Drafting Team (DT) (November 10, 2016, FIPD decision No. 271/FIPD) consisting of six members, including the the Director of the FIPD as the team leader. As a result, the process of collecting, analyzing, and examining the technical methods of FREL/FRL, and presenting these by the REL DT for discussion in the REL/MRV TWG for technical approval, was established.

Activity 2-3-2 Conduct driver analysis and specify Policies and Measures (PaMs).

Analysis of deforestation and forest degradation drivers was mainly carried out through the following three processes: 1) analysis of the land and forest cover changes and the causes of changes for different

periods, based on the forest cover change matrices produced from the FTMs 2000, 2005, 2010, and 2015 developed under Activity 2-3-6; 2) evaluation of forest degradation by logging based on the results of the logging survey carried out in the 2nd NFI under Activity 2-4; and 3) identification of deforestation hotspots and drivers using the existing satellite dataset and the Global Forest Change 2000-2015[4] data, in collaboration with the FCPF RP.

The identification of drivers based on the forest change matrix was carried out for the entire country and for the three regions (north, central, and south). The state of forest cover change was also analyzed for the three forest categories. The following table summarizes the forest cover change for the entire country during the 2005–2015 period.

Table 26: Forest Cover Change of the Entire Country (2005–2015 Period)

	2015	Change from	Current Forest		Regenerating	Crop Land		Water	Other	Other	Total
2005	ha	2005 to 2015	1) Natural Forest	2) Forest Plantation	Vegetation	1) Upland Crop	2) Permanent Agriculture land		Vegetated area	land	
Current Forest	1) Natural Forest	− 620,101	13,135,621	57,555	397,010	54,198	163,530	34,871	263	8,496	13,851,544
	2) Forest Plantation	+ 114,085	0	22,721	417	15	718	1	0	8	23,880
Regenerating Vegetation		+ 2,991	95,058	42,912	5,508,968	80,236	397,345	26,771	128	8,070	6,159,489
Crop Land	1) Upland Crop	− 57,745	742	29	197,121	5,557	3,546	241	873	155	208,264
	2) Permanent Agriculture land	+ 485,118	21	9,632	56,835	9,669	1,761,524	3,762	28	9,189	1,850,659
Water		+ 71,412	0	0	0	0	372	278,372	0	148	278,892
Other Vegetated area		− 20,726	0	5,099	1,500	695	8,110	5,966	391,387	655	413,411
Other land		+ 24,967	0	17	630	148	632	320	6	266,363	268,117
Total		+ 0	13,231,443	137,965	6,162,480	150,519	2,335,778	350,304	392,685	293,084	23,054,258

The drivers of deforestation at the national level were mainly conversion to agricultural lands, and hydropower reservoirs. The drivers of forest degradation were mainly conversion to regenerating vegetation (RV) land after slash-and-burn cultivation, and the development of forest plantations. The analyzed results were used as a reference for the related chapters of the National REDD+ Strategy (NRS) (Separate Volume 2-21), and were also shared with the team of the REDD+ Division and the FCPF RP, who are leading the NRS development.

As described in Activity 2-3-8, tree stumps were measured during the 2nd NFI and used to estimate the emissions from forest degradation by selective logging, which resulted in accounting for nearly 30% of the total of forest-related emissions. Although this estimation is based on proxy data (i.e. not through direct measurement of biomass) with relatively high uncertainty, it indicates widespread logging events across the forests of Lao PDR, and is considered one of the main drivers of forest degradation in the NRS.

The analysis of deforestation hotspots and their causes through the existing satellite dataset and the Global Forest Change 2000-2015 was initially planned to include ground truthing. However, in order to cover large areas and numbers of sample points to the greatest extent possible, one provincial forest officer per province knowledgeable about the state of forests in their own province was instead invited to Vientiane, carrying out visual interpretations of the satellite images by following the analysis designed in collaboration by the Project and the FCPF RP, and under their guidance. The exercise was also supported by the remote sensing experts of the DOF-FIPD, who are experienced in satellite image interpretation. The analysis of the results were done jointly by the experts of the Project and the FCPF RP.

This survey selected its targets using the data of Global Forest Change, which are the areas where tree loss area of 20 ha or more were observed, and the areas where tree loss was less than 5 ha each but occurred in high density. As a result, 1,594 locations for the latter and 1,829 locations for the former were selected. Using Collect Earth, developed by the FAO, the Lao team carried out visual interpretations of the satellite images and identified the drivers from 21 categories under eight causes, such as logging, plantations, and agricultural development (Table 11). These categories were decided in coordination with Output 4 of the

[4] A dataset which identifies the location of tree loss by comparing Landsat 7 and 8 images on the Google Earth Engine. Annual data from 2001-2016 is available. The dataset is developed by a team at the University of Maryland. http: //www.globalforestwatch.org/country/LAO.

Project and reports and other information related to Collect Earth training carried out by the FAO.

Table 27: The Deforestation and Forest Degradation Drivers Analysis Survey

Causes	Categories
1. Logging	Logging (clear-cut), Logging (selective)
2. Plantation	Plantation (agriculture): Oil Palm; and Plantation (forest/tree): Acacia
3. Development of farmland	Shifting Cultivation, Agriculture Expansion, Grazing
4. Mining	Mining
5. Infrastructure development	Road, Hydropower, Electric Line, Irrigation, Airport, Others
6. Tourism development	Park, Resort, Golf Course
7. Natural disasters	Fire (natural), Landslide, Flood
8. Other	none

The results were organized and analyzed according to drivers of deforestation and forest degradation and the size of forest loss, both at the national and regional levels (Table 28).

Table 28: Drivers of Deforestation and Forest Degradation and the Number of Locations per Region

Drivers of deforestation and forest degradation	Large-scale areas (> 20 ha)				Small-scale areas (< 5 ha)			
	Entire country	North	Central	South	Entire country	North	Central	South
Development of crop land	24.7 %	23.3 %	28.4 %	21.9 %	19.3 %	19.3 %	19.4 %	19.4 %
Plantation (farmland)	9.0 %	2.1 %	10.4 %	15.3 %	14.3 %	12.1 %	12.5 %	19.2 %
Slash and burn	30.1 %	60.3 %	19.6 %	8.7 %	16.3 %	23.5 %	13.2 %	9.4 %
Plantation (planted woodland)	20.3 %	5.6 %	19.3 %	38.3 %	7.0 %	6.2 %	6.1 %	8.9 %
Others (infrastructure)	7.4 %	4.3 %	8.9 %	9.0 %	15.4 %	14.5 %	20.0 %	11.9 %
Roads (infrastructure)	4.5 %	1.4 %	8.3 %	3.3 %	14.7 %	13.0 %	15.5 %	16.2 %
Logging (felling)	1.3 %	1.1 %	1.1 %	1.7 %	11.3 %	10.5 %	12.3 %	11.4 %

The information on the main drivers of deforestation and forest degradation for the entire country and for each region derived from this survey were provided as reference for the development of the National REDD+ Strategy (NRS), the ERPD for the FCPF Carbon Fund, and the Provincial REDD+ Action Plans (PRAPs), and for the further consideration of the PaMs. The Project also participated in these meetings. Furthermore, they were used in several consultations at the central and local levels, organized primarily by FCPF RP and for the consideration and identification of PaMs. The Project participated in these meetings.

Activity 2-3-3 Develop the 2015 forest type map and calculate the Activity Data (AD).

The following classification system were used as the land and forest classes for developing the FTMs (Table 29). Finalization of the land and forest classes is currently underway in the DOF, but substantial change is not foreseen. The classification system was designed by considering consistency with IPCC land use definitions, and further clarification of RV and Upland Crop (UC), which are the transitional regeneration stages after slash-and-burn agriculture.

Table 29: Land and Forest Classification System of Lao PDR

IPCC Definition	National level classification system		
	Level 1	Level 2	
Forest Land	Current Forest	Evergreen Forest	EG
		Mixed Deciduous Forest	MD
		Dry Dipterocarp Forest	DD
		Coniferous Forest	CF
		Mixed Coniferous and Broadleaved Forest	MCB

		Forest Plantation	P
	Potential Forest	Bamboo	B
		Regenerating Vegetation	RV
Grassland	Other Vegetated Areas	Savannah	SA
		Scrub	SR
		Grassland	G
Cropland	Cropland	Upland Crop	UC
		Rice Paddy	RP
		Other Agriculture	OA
		Agriculture Plantation	AP
Settlement	Settlement	Urban Areas	U
Other land	Other Land	Barren Land and Rock	BR
		Other Land	O
Wetland	Above-ground Water Source	River (Water)	W
		Wetland (Swamp)	SW

The FTM 2005 and FTM 2010 produced by the NFIS Project were revised as follows: reclassification of cloud cover areas; re-classification of four classes under Cropland; re-classification of Coniferous Forest (CF) and Mixed Coniferous and Broadleaved Forest (MCB); and re-classification of Mixed Deciduous Forest (MD) in slash-and-burn landscapes in the northern region. For the cloud cover areas, the re-classification was done by referring to such other data as the satellite images of the previous/following years and Google Maps, in order to judge the land cover. For the four classes under Cropland, CF, and MCB, re-classification was done to the areas identified by the Lao senior remote sensing engineers and Japanese experts. For the distinguishing of MD and Regenerating Vegetation (RV), the textures on satellite images look very similar, especially for lands going under regeneration, which posed a challenge. As the results of an additional survey in RV lands showed that it takes in average of seven years for slash-and-burn cultivation land to regenerate to MD, the aforementioned data of Global Forest Change were used for the revision. As this dataset makes publicly available only data from 2001 onward, only FTMs from the FTM 2005 onward were revised.

Development of the FTM 2015 was carried out by applying the same method (i.e. the change detection method) used for the development of FTM 2000 and FTM 2005 by the NFIS Project. In this method, the FTM 2010 serves as the benchmark map for the time-series maps, and changed areas were extracted by overlaying the RapidEye imagery taken in 2014 and 2015 and the RapidEye imagery taken in 2010 and 2011. The land/forest classes of the changed areas were then interpreted in order to develop the FTM 2015.

In order to further strengthen the satellite image interpretation capacity, which was an issue in the NFIS Project, continuous technical support was offered through on-the-job trainings (OJTs). Meanwhile, it was still difficult for the color enhancement of the 2015 satellite imagery, a final quality check, and compilation of the FTMs to be carried out by the C/P. Due to restricted time for developing the FREL/FRL, opportunities for developing such capacities were limited, and this work was carried out in Japan by the Japanese experts.

According to the FTMs produced, during the period from 2000 to 2015, approximately 680,000 ha of forests in Lao PDR was converted to other lands.

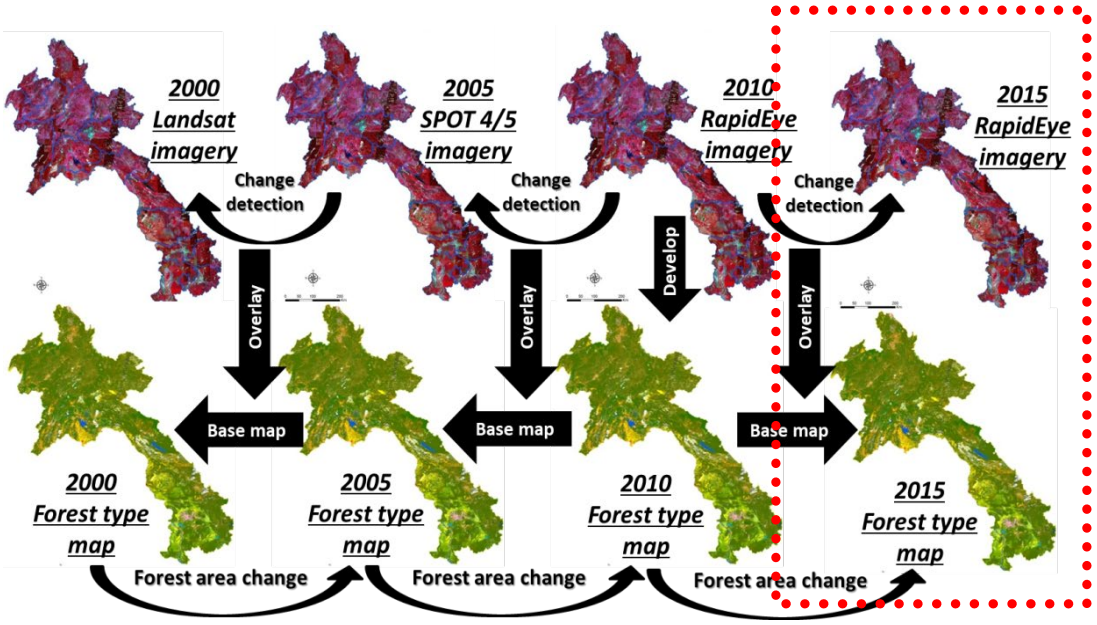


Figure 19: Procedure for Preparation of the FTM 2015

FTM 2015 (area outlined in red) was developed by the Project.
FTM 2000, 2005, and 2010 were completed by the NFIS Project in 2016.

Activity 2-3-4 Organize available Emission Factor (EF) from the NFI (2016-2017) results and other sources.

The carbon stock/ha was calculated for each of the land/forest classes of EG, MD, DD, CF, MCB, and RV using field measurements such as the 2nd NFI, as described in Activity 2-4. For Bamboo (B), the values of neighboring Vietnam were used. For other land/forest classes, values given in the IPCC Guidelines were used. Emission/Removal Factors (E/RF) were calculated by using these values as shown in the table below, and the same E/RF were used for the FREL/FRL for the FCPF-CF ER Program. The uncertainties of the E/RF were calculated to assess the uncertainty of emission reduction and removal of the ER Program as required by the FCPF-CF Methodological Framework. The E/RF were stratified into five strata, as described Activity 2-3-7. The above processes and results were compiled into the FREL/FRL Report, to be submitted to the UNFCCC, and as an attachment (E/RF Report) of the ERPD, to be submitted to the FCPF-CF (in a Separate Volume of this report).

Table 30: Emission/Removal Factors (tCO2/ha)

	EG	MD/CF/MCB	DD	P/B/RV	Non-Forest
EG	0.0	-410.5	-575.1	-667.6	-715.4
MD/CF/MCB	410.5	0.0	-92.6	-257.1	-304.9
DD	575.1	164.6	0.0	-92.6	-140.3
P/B/RV	667.6	257.1	92.6	0.0	-47.8
Non-Forest	715.4	304.9	140.3	47.8	0.0

Note that the Non-Forest CO2 quantity is 18.0 tCO2/ha. This is the quantity of carbon for this land category included in this layer cited from the IPCC and other sources, and it has been averaged in accordance with the respective areas.

Activity 2-3-5 Develop the 2015 forest carbon map.

As the changes in carbon stock per different regions and over different periods can be analyzed from the FTMs and forest change maps, instead of developing a forest carbon map, the Project agreed with the C/P to analyze the distribution of changes and changes over different periods based on the stratified land/forest classes discussed under Activity 2-3-4.

Activity 2-3-6 Analyze historical trend based on multi-year forest carbon maps.

The historical changes of forest carbon stock over 15 years were analyzed for the national level and for the three regions, based on the FTMs 2000, 2005, 2010, and 2015, forest change maps, and the E/RF developed in Activity 2-3-4.

For the FREL/FRL for the FCPF-CF ER Program, the Project further proceeded to estimate the changed areas for 2005-2010 and 2010-2015 period through the sampling method (design based area estimation), and assessed the overall uncertainty of the emissions and removals. The sampling design, method for accuracy assessment, and method for changed area estimation followed the good practices recommended by Olofsson et al. (2014)[5] and FAO (2016).[6] The results were summarized in the AD Report as an attachment of the ERPD to be submitted to the FCPF-CF (in a Separate Volume of this report).

Note that the above method was adopted following the recommendation of the World Bank's mission, which reviewed the preliminary draft of the FCPF-CF ERPD in October 2017. Since 2014, this method continues to improve today as one of the good practices for area estimation and uncertainty calculation. Therefore, there is great merit for Laos to have adopted this method at this point. Since it is also important to maintain the consistency of carbon estimation at the national and subnational levels (FCPF-CF ERP), this method was also adopted in the submission for the national FREL/FRL and also in the MRV.

Activity 2-3-7 Define the national circumstances (NC) and reference scenario.

The factors to be studied as possible national circumstances were discussed and information was collected and analyzed by the REL DT, as summarized in Table 31 below. The results were reported and discussed at the 5th REL/MRV TWG meeting, and the conclusion was not to apply any adjustments to the FREL/FRL based on the national circumstances. Other key elements agreed to at the meeting were, for example: use the AD and E/RF to estimate the historical emissions and removals; select 2005-2015 as the reference period; and select the historical average of the emissions and removals as the model since there was no clear trend of emissions and removals at the national level. In addition, in order to reduce the uncertainty in estimation as well as to reduce the sampling cost, it was agreed that the 20 land/forest classes would be stratified into the five land/forest strata (EG, MD/CF/MCB, DD, P/B/RV, and Non-Forest).

Table 31: Overview of the Results of the National Circumstances Survey

Factor	Information source	Overview of analyzed results
Population	- Lao Statistics Bureau - Report of the Deforestation and Forest Degradation Drivers Analysis Survey[7]	・ It is assumed that population increase in the future will be small. ・ Population increase is not regarded as a main driver of deforestation.
Hydropower Dam	- Ministry of Energy and Mines	・ According to the government plan, the number of hydropower dams and the areas of reservoirs to be constructed in the future will be reduced compared to the past. ・ It is assumed that the impact of future hydropower dam development (cause of deforestation) on CO_2 emissions is limited.
Mines	- Concession data - Deforestation and Forest Degradation Drivers Analysis Survey	・ The impact of mining on CO_2 emissions is limited. ・ Mining is not regarded as a main driver of deforestation.
Railways	- Laos-China Railway Project Management Committee	・ The estimated quantity of emissions from deforestation caused by the railway construction is assumed to be 0.07 Mt CO_2e per year at maximum, which is not a significant portion of the total emissions.

[5] Olofsson et al. (2014). "Good practices for estimating area and assessing accuracy of land change. Remote Sensing of Environment. 148: 42–57. http: //reddcr.go.cr/sites/default/files/centro-de-documentacion/olofsson_et_al._2014_-_good_practices_for_estimating_area_and_assessing_accuracy_of_land_change.pdf). This method has recently been recommended by the FCPF-CF, and it is also being applied in Laos based on the advice of the World Bank.

[6] FAO (2016). "Map Accuracy Assessment and Area Estimation". http: //www.fao.org/3/a-i5601e.pdf.

[7] REDD+ Readiness Project (2017). "Satellite-based Identification of the Major Deforestation and Degradation Drivers in Lao PDR Final Report".

Activity 2-3-8 Hold consultation workshop(s) to decide the national FREL/FRL, and the FREL/FRL for the ERP to the FCPF-CF.

Five REL/MRV TWG meetings were held since the first meeting in April 2016. The following table summarizes the dates, number of participants, and the main content of each meeting (Table 32).

Table 32: Overview of REL/MRV TWG Meetings

	Date held	No. of participants	Main content
1st	April 2016	30	Confirmation of the TOR and work plan, overview of REDD+ (basic knowledge, FREL/FRL, MRV, NFMS), and the land and forest category system.
2nd	September 2016	31	REL drafting team, NFMS construction plan, roles and functions, examples from other countries.
3rd	January 2017	33	NFI progress, interim presentation on the RV Survey.
4th	May 2017	30	Emission and removal factors, activity data (AD), RV Survey results, allometric equations in the REL.
5th	August 2017	25	Finalize the REL methodologies, demonstration of the NFMS database, forest definitions, and land and forest categories.

The following Table 33 summarizes the key elements of FREL/FRL agreed to at the 5th TWG.

Table 33: Key FREL/FRL Elements

Key elements	Conclusion
Forest Definition	DBH: ≧10cm, Crown cover: ≧20%, Minimum area: ≧0.5 ha
Land and forest classes	Eight forest classes including five natural forests, and 12 non-forest classes
Emission/Removal Factor	Calculate the carbon stock per area from the field measurement data, such as the 2nd NFI for the classes of EG, MD, DD, CF, MCB, and RV. Apply the values from neighboring Vietnam for Bamboo (B). Apply values given in the IPCC Guidelines for other land/forest classes. Estimate the E/RF from the above.
Activity Data	Stratify level 2 land/forest classes of the FTMs (2005, 2010, and 2015) into five strata, and estimate the areas based on the change matrix for the national FREL/FRL, and based on the sampling method for the FCPF-CF.
Scale	National for the UNFCCC, six northern provinces for the FCPF-CF
Carbon Pools	AGB: included; BGB: included; deadwood: not included; litter: not included; soil: not included
Gases	CO_2: included; other gases: not included
Sources/sinks)	Emissions from deforestation and forest degradation Emissions from logging (forest degradation) Enhancement of forest carbon stock by restoration and reforestation
Reference period	2005-2015 (UNFCCC and FCPF-CF)
Selection of method	Annual average of emissions and removals for the reference period (UNFCC and FCPF-CF)
Adjustment	No adjustment applied due to national circumstances
Stratification	Five strata (EF, MD/CF/MCB, DD, P/B/RV, Non-Forest)

Activity 2-3-9 Facilitate submission of the national FREL/FRL, and the FREL/FRL for the ERP to the FCPF-CF.

The Project provided technical support to the REL DT on developing the national FREL/FRL to be submitted to the UNFCCC. The Project also provided support on drafting the chapters related to Output 2, such as Chapter 7, 8, 9, and 12 of the ERPD to be submitted to the FCPF-CF. The national FREL/FRL Report is scheduled to be submitted to the UNFCCC for their technical assessment in January 2018. A country which intends to submit its FREL/FRL is required to send an early announcement to the UNFCCC

Secretariat, and such an announcement has been already made by the MONRE for Lao PDR (October 20, 2017).

The ERPD was submitted to the FCPF-CF in March 2018.

Activity 2-3-10 Support the improvement of the national FREL/FRL and REL for ER program by reflecting the technical assessment results of the FREL/FRL of the UNFCCC and the FCPF-CF.

The technical assessment by the UNFCCC is not only a requirement for results-based payment, but also a process for assessing whether the report submitted by Lao PDR complies with UNFCCC guidelines (including compliance with COP decisions and the IPCC). It is also an important process that leads to ensuring the transparency of the report through discussions with the reviewers.

According to Decision 13/CP.19, the following content will be the main points of assessment:

- Data, methodologies, and procedures used;
- Consistency with Greenhouse Gas Inventory (GHG-I);
- Use of historical data;
- Transparency, completeness (to allow reconstruction of the estimates), consistency and accuracy;
- Related policies and plans;
- Definition of forest; and
- Adjustment due to national policy for future changes.

The table below shows the process taken from the submission of the FREL/FRL Report by Lao PDR through the publication of the technical assessment report by the UNFCCC.

Table 34: From Submission of FREL/FRL Report to Publication of Technical Assessment Report

Time	Process
January 5, 2018	Submission to the UNFCCC
March–May 2018	Q&A with the UNFCCC (two LULUCF experts)
May 28, 2018	Modified submission
July–August 2018	Q&A with the UNFCCC, drafting of the assessment report
October 15, 2018	Lao PDR to respond to draft report
Nov. 12, 2018	UNFCCC to prepare final report
Nov. 30, 2018	Final report published (technical assessment completed)

Questions and answers on a total of 23 items were exchanged between the reviewers and the Lao side. The main points of discussion and the revised points of the report are shown in the table below.

Table 35: Major Points of Discussion and Revisions to the Report

Major items		
Sub-item	Contents of discussion	Conclusion
Land representation		
Forest definition (Q2)	Ambiguity of definition Why DBH? How about the approach of remote sensing?	· Explained the difference between Current Forest and Potential Forest · Explained that in Lao PDR, using DBH can provide a more accurate definition of forest than tree height.
Land use classification (Q3)	Differences in land and forest classifications used for REDD+ and IPCC land use classification used for the GHG-I.	Judged that the classification used reasonably reflects the activity of REDD+. · Confirmed the difference between REDD+ and GHG-I
Nature of the data used (Q5)	FTMs: Evaluation of time series consistency and map accuracy.	· Provided additional explanation of consistency and accuracy · Created SOP after FTM2018
Merging MD & RV (Q20)	Options for solving forest definition and uncertainty issues.	Explained that they cannot be merged as it will not reflect the forest conditions in Lao PDR.
Emission factors and carbon stock change parameters		
Biomass change in no-change classes (Q7), natural disturbances (Q19)	Consider carbon gains and losses per different activities (e.g. fuelwood, natural disturbance, natural regrowth), per land use and land use changes	Difficult at the moment due to lack of robust data. However, will be considered as areas for improvement.

	(forestland remaining forestland) using IPCC default, country-specific data, etc.	
	Accounting of CO2e emissions/removals from 'managed land'	Iteration of the NFI will provide chances for improvement.
Biomass increase in forest growth (Q8)	Consideration of forest growth rates in removals	Removals adjusted considering the forest growth rates.
Adherence to IPCC methods and guidance		
IPCC formula (Q12)	Need of correct application of IPCC methods (Gain Loss Method vs Stock-Difference Method).	Land remaining in same land category => Stock-Difference. Land converted to other land category => Gain Loss. For Gain Loss, data on loss (e.g. fuel wood) and gain (e.g. regrowth) is an area to improve.
Information for the reconstruction of the FREL/FRL		
Annualizing the REL values (Q15)	The IPCC requires annual land use and land use change areas to inform the estimation of annual emissions and removals.	An annualized version of land use and land use change areas was included in the revised report. Emissions and removals per year were estimated and included in the report.
Scope of the FREL/FRL, omissions and justifications		
Deadwood (Q16)	Deadwood can be included using country-specific data (Tier 2).	Did not include for the following reasons, but they are areas for future improvement ・Incomplete data set (insufficient RV and DW) ・Concerns about increased uncertainty ・Not included for the purpose of maintaining consistency with the ERPD
Non-CO2gas (Q17)	Non-CO2 gases can be included using country specific data + IPCC defaults.	Was not included for the following reasons, but these are areas for future improvement ・ Incomplete dataset ・ There is no country-specific combustion factor for shifting cultivation
Scope of the FREL/FRL, omissions and justifications		
REL Period, national situation (adjustment) (Q18)	Consider the actual duration of the satellite image used (YY/MM)	Reference period is 2005/01/01 – 2015/01/01, divided into 2005-2011 (6Y) and 11-15 (4Y).
	REL validity period	10 years
	National circumstances	National circumstances (e.g. infrastructure) not considered due to lack of robust dataset.
Consistency with GHG-I		
GHG-I Consistency	It cannot be compared, because GHG-I is for 2010	Mechanism to harmonize REL and GHG-I is in place and inconsistencies can be explained.

The assessment of the EPPD was carried out by the Technical Advisory Panel (TAP), which is composed of FCPF-CF experts. Each item of the submitted ERPD was assessed against the Methodological Framework (MF) defined by the FCPF-CF, with pass/fail specified in the assessment report.

The assessment process is shown in the table below.

Table 36: Assessment Process

Date and time	Process
July, October, December 2017, January 2018	Several missions from the World Bank were dispatched to Lao PDR for prior consultation.
February 28–March 9, 2018	TAP country visit and Initial Review
April 6, 2018	1st TAP Assessment Report
May 25, 2018	2nd (Final) TAP Assessment Report
July 20, 2018–July 22, 2018	CF18 Meeting (Paris) unconditionally accepts Lao PDR's ERPD

For preparation of the ERPD and the technical assessment, the Project mainly supported Chapter 7, 8, 9, and 12, which are related to carbon accounting.

The main points of discussion and amendments to the report are shown in the table below.

Table 37: Major Points of Discussion and Revisions to the Report

Major items		
Sub-item	Contents of discussion	Conclusion
Scope and method (Criteria 3-6)		
Dead trees, litter, soil, non-CO2 gas, (C.4)	Is the exclusion of these pools and gases reasonable?	These pools and gases are excluded for the following reasons: - Lack of a complete and reliable dataset - 10% or less of total emission/removal - Excluding is a conservative estimate
RV as a proxy (C.5)	The current AD approach to RV cannot track the carbon dynamics of RV. Therefore, RVs should be considered as "proxy" data.	Agreed to accept the RV as a "proxy". This is an improvement for the future.
Reference level (Criteria 10-13)		
Forest definition (C12)	・There is some confusion in the interpretation (similar to national REL Q2) ・It is very rare to use DBH, and Height is a more common parameter. ・Inconsistency between AD and EF regarding the application of DBH -By using time series data, it may be possible to solve the issues related to DBH (in the case of removals).	The national forest definition goes far beyond REDD+ -The use of general definitions ignores national conditions -The same definition is used consistently in REDD+ and GHG-I -The method proposed by the TAP cannot be executed due to lack of a data set. Eventually accepted the Lao forest definition
Reference values and MMR (Criteria 14-16)		
Comparison of Approach 2 and Approach 3 (C14)	It is impossible to track land use changes in chronological order and with spatial extent for the following reasons: -Land use matrix for two independent periods (2005-10 and 2010-15) -Application of design-based area estimation (DBAE). Therefore, there are concerns regarding overestimation and underestimation of REL.	・Solved by combining design-based area estimation (DBAE) and time series analysis ・Apply the same method for MMR for consistency
MMR consistency (C14)	MMR shall repeat stump surveys at least twice to obtain AD proxy data Expected to maintain consistency while improving	・Stump data is collected twice ・Maintain consistency while improving.

The table below shows the FREL/FRL (nationwide and for the six provinces) included in the final report based on the technical examination.

Table 38: National FREL/FRL (Quoted from Updated FREL/FRL Report Submitted in May 2018)

Source / Sink	Emission (+) / Removal (-)		
	2005-2010 (tCO2e)	2010-2015 (tCO2e)	Annual average 2005-2015 (tCO2e/year)
Deforestation	57,616,664	62,351,723	11,996,839
Forest Degradation	153,432,727	136,732,050	29,016,478
Changes among land/forest strata	98,311,948	99,984,864	19,829,681
Selective logging	55,120,779	36,747,186	9,186,797
Reforestation	-17,532,039	-14,956,818	-3,248,886
Restoration	-18,236,927	-24,609,792	-4,284,672
Total Emissions	211,049,391	199,083,773	41,013,316
Total Removals	-35,768,966	-39,566,610	-7,533,558

Table 39: FREL/FRL for the Six Northern Provinces (Quoted from Updated ERPD Submitted in May 2018)

Source/Sink	Emission (+) / Removals (-)		
	2005-2010 (tCO2e)	2005-2010 (tCO2e)	Annual average for 2005-2015 (tCO2e/year)
Deforestation	19,561,481	17,924,974	3,748,645
Forest Degradation	38,286,544	29,201,727	6,748,827

Changes among land/forest strata	33,466,780	25,988,551	5,945,533
Selective logging	4,819,764	3,213,176	803,294
Reforestation	-8,731,889	-5,453,126	-1,418,501
Restoration	-2,537,961	-2,921,082	-545,904
Total Emissions	57,848,024	47,126,701	10,497,473
Total Removals	-11,269,849	-8,374,208	-1,964,406

Activity 2-4 Support the next National Forest Inventory (NFI) scheduled in 2016-2017.

Activity 2-4-1 Support developing the plan for the next NFI (e.g. scope, institutional arrangement, work procedure).

As Lao PDR planned to submit its FREL/FRL to the UNFCCC in 2018, implementation of the 2nd NFI was originally planned for the 2016-2017 dry season. However, after examining the number of sample plots and distributions, it was decided that the 2nd NFI needed to be implemented by dividing it into the 2015-2016 dry season and 2016-2017 dry season, in order to meet the submission schedule of the FREL/FRL.

The NFI Manual prepared in the prior NFIS Project was finalized after minor modifications and the addition of survey locations. The arrangement of the field survey was discussed with the DOF/FIPD, and it was concluded that the survey would be carried out by four teams for the 2015-2016 dry season and six teams for the 2016-2017 dry season. One team is composed of three staff members from FIPD, one staff member from the PAFO, one staff member from the DAFO, one driver, and several villagers.

Based on the above, the kick-off meeting was held on February 5, 2016 under the chairmanship of Mr. Thongphath, Deputy Minister of the MAF, and attended by approximately 20 staff members from the DOF/FIPD and DFRM. The NFI plan and the survey methods, etc., were explained and agreed upon at the meeting. It was also agreed that the survey would be co-financed by JICA, the FCPF RP, and the Forest and Forest Resource Development Fund (FRDF) of the DOF.

The local sub-contract, “National Forest Inventory (Supervision)”, which tasks data preparation, staff training, and progress management of the survey, was contracted to Forest Carbon. Another local sub-contract, “National Forest Inventory (Implementation)”, which tasks survey arrangements such as vehicles, equipment, and the handling of daily allowance for the survey staff, was contracted to LSM SOLE CO., LTD.

Training (indoor and on-site) was carried out prior to the commencement of the survey in March 2016, with the survey staff practicing the survey methods. Another training was carried out prior to the commencement of the survey in October 2016.

Activity 2-4-2 Provide technical support to the field survey.

The 2nd NFI was implemented during March-May 2016 and October 2016-March 2017. The Project supported the implementation of the survey in cooperation with the above-mentioned local sub-contractors. The survey data was recorded on-site using tablet PCs, accumulated in a cloud-based web system called “ONA” developed for the NFI, and statistically analyzed by running tailor-made scripts using the free statistical software “R”. This allowed the survey team to confirm the quantity of biomass and standard deviation within seconds. By checking the results day by day on the “Lao NFI Dash” portal, the survey team was able to confirm whether sufficient results had been obtained. This also enabled the efficient implementation of the survey by facilitating timely communication with the field survey team leaders to provide technical support as well as logistics (Figure 20).

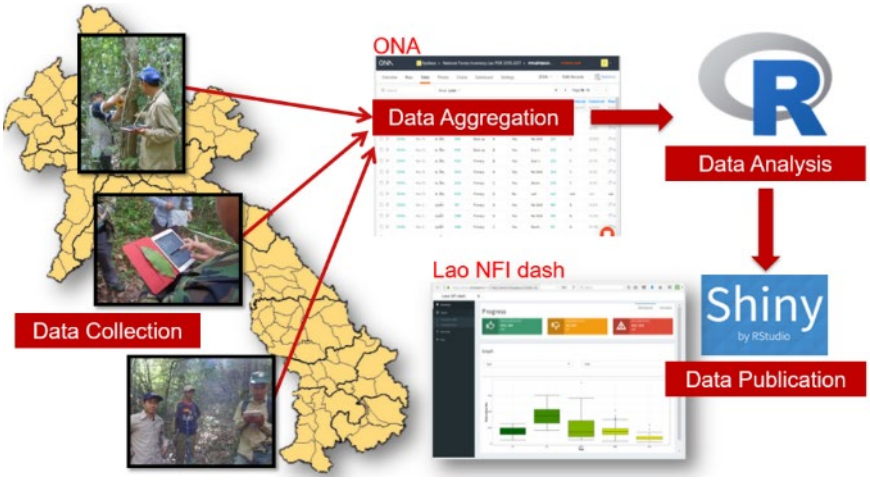


Figure 20: NFI Progress Monitoring Flow

Activity 2-4-3 Support compilation of the NFI survey results, including QA/QC (data will be stored into the NFMS).

A progress review meeting was held on April 18, 2016 after the completion of the dry season 2015-2016 survey. The meeting discussed problems related to the survey arrangement, equipment, etc., and interim results were also compiled for the meeting.

After completion of the field survey in the two dry seasons in April 2017, the Project supported the compilation of the survey results. The progress and the results of the survey were shared whenever necessary with the GoL and other stakeholders through the REL/MRV TWG (see Table 16). Table 19 shows the carbon stock, the tCO2e, and uncertainty calculated from the measured biomass for each forest class. For EG, MD, and CF, the biomass was calculated using country-specific allometric equations of Lao PDR. For CF and MCB, country-specific allometric equations of Vietnam were used.

Table 40: Results of the Second NFI Survey

Forest Type	Number of plot	Carbon stock*	S.D.	CI	Uncertainty	CO_2
		(tC/ha)	(tC/ha)	(95%)	(95%)	(tCO_2/ha)
EG	23	200.03	68.40	27.95	13.98	733.43
MD	227	87.69	33.92	4.41	5.03	321.51
DD	101	43.18	19.22	3.75	8.68	158.33
CF	24	92.60	30.50	12.20	13.18	339.55
MCB	45	114.74	87.46	25.55	22.27	420.71

*The carbon stock is the sum of AGB and BGB

For details of the survey method, survey implementation system, survey results, etc., refer to the "2nd National Forest Inventory Survey in Lao People's Democratic Republic" in the Separate Volume (2-19) of this report.

(Additional Activity) Support for the Regenerating Vegetation Survey.

Five forest classes were surveyed in the 2nd NFI. However, RV class, which mainly consists of fallow land after slash-and-burn agriculture and which occupies nearly 25% of the total land area in 2015, was not included in the survey. As RV does not satisfy the forest definition, it was decided to carry out a separate survey using a different method. The Project provided support for the planning, implementation, and compilation of the results of the survey. The surveyed areas included five provinces: Bokeo, Xayabouly, and Xiengkhouang in the northern region; Bolikhamxay in the central region; and Attapeu in the southern region. The survey was implemented from November 2016 to January 2017.

The purposes of this survey were to determine the quantity of biomass per unit area of RV, to develop an above-ground biomass estimation model with the number of fallow years after slash-and-burn agriculture as an independent variable, and to analyze the number of years for a fallow (RV) to regenerate to forest after slash-and-burn agriculture. When preparing the FTMs, it was difficult to distinguish between

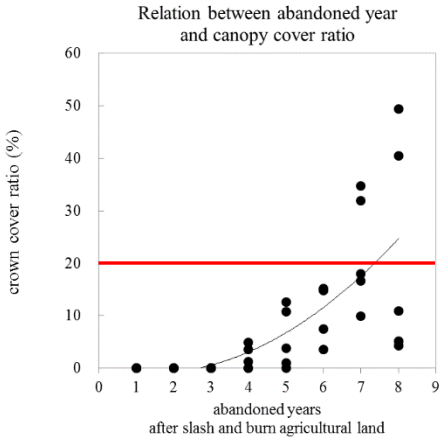
RV and forest even by using high resolution satellite imagery (with a resolution of 5 m). This has been an issue for a long time. Thus, developing a consistent criteria for distinguishing forest and RV was expected to help the improvement of the FTMs.

The survey was carried out on slash-and-burn fallow land from one to eight years after slash-and-burn agriculture (determined by a combination of Global Forest Change data and from interviews with villagers). Slash-and-burn lands are found more in northern Laos, and thus a total of five clusters (one cluster consisting of three plots (10 m × 10 m)) were distributed to three provinces in the northern region, one in the central region, and one in the southern region, were provided for eight years (a total of 120 plots). At each plot, the DBH and position of trees with DBH 5 cm or more were recorded, and in four sub-plots (2 m × 2 m) established within the plots, all of the trees with DBH less than 5 cm and other vegetation were weighed and samples were taken. Also, the crown cover of the forest was photographed using an unmanned aerial vehicle (UAV) from 20 to 30 m above the ground of the plot. The images taken were compared with the positions of the DBH recorded on site, and the crown cover of trees satisfying DBH > 10 cm (the forest definition of Laos is (1) DBH > 10 cm, (2) minimum area > 0.5 ha, and (3) crown cover > 20%) were traced, and finally the crown cover of the surveyed plot was calculated. From the average crown cover of each year, the number of years for fallow to reach 20% crown cover after slash-and-burn agriculture was estimated, in order to assume the threshold year between forest and slash-and-burn fallow (RV). The biomass for trees with DBH 5 cm or more was estimated from an existing allometric equation, and the biomass of trees with DBH less than 5 cm and other vegetation was estimated from the wet weight/dry weight ratio. From these result, the above-ground biomass per unit area in each cluster was calculated.

From the survey results, it was concluded that the threshold year between RV and forest is seven years after slash-and-burn agriculture (see the figure on the right). This result was used to improve the accuracy of the FTMs.

Also, an above-ground biomass growth model was developed for slash-and-burn fallow land with the number of years after slash-and-burn agriculture as an independent variable ((AGB = 1.7573e0.4107Y). A considerable amount of effort was required to confirm the number of years that have passed for all slash-and-burn fallow land, so the average carbon stock in this survey (13.6 tC/ha) was adopted as the carbon stock for the calculation of emissions and removals. In the future it could be necessary to improve the accuracy of the number of years that has passed.

Refer to 2-20 in the Separate Volume for the details of the survey.



Necessities and lessons for ensuring sustainability

- The NFMS database and web portal will be managed and operated by the FIPD database team, which consists of a total of six people. Although they have GIS skills, their IT skills are limited. Training was conducted in the first phase to improve IT and GIS skills. For the sustainable operation of the NFMS, it is necessary to further improve their IT and GIS skills.
- The NFMS currently uses commercial software for GIS and database applications. Although this commercial software is user-friendly, it needs to be upgraded from time to time for a fee. Considering such cost requirements, the DOF should aim to secure a sufficient budget to maintain the system as well as the user environment.
- In general, the FIPD staff are able to understand and implement the tasks required for the NFI and forest type mapping. However, there has been significant progress in modern technology, such as big-data processing with crowd computing, in the areas of satellite image processing which can contribute to detecting forest logging and deforestation. It will be necessary for the Japanese experts to continuously follow the trends and provide technical support to the FIPD to examine the feasibility of applying such technologies to Lao PDR. On the other hand, planning, management, and analysis work have been mainly carried out by the Japanese experts and sub-contractors. Thus, further capacity building will be necessary.
- Regarding the classifications of MD and RV, the 1st RV Survey concluded seven years as the threshold. However, several people have argued that the number of surveyed samples was small, and suggested the need of having a more statistically sound threshold. In response to this an additional survey, the 2nd RV

Survey, was conducted, but the results were that RV plots did not meet the forest definition even nine years after the abandonment of slash-and-burn agriculture, except in the northern area. In the future, other additional surveys are necessary to carry out further analysis.

- Also, the burning in slash-and-burn cultivation generates greenhouse gases other than CO2, (non-CO2 gasses) and their impact could be significant. However, a quantitative survey or research into this aspect has not been carried out yet, and there is no suitable guidance given by the IPCC. Therefore it is necessary to estimate the emissions from non-CO2 gases associated with slash-and-burn agriculture and forest fire through some kind of survey or other methods.
- At the 1st National Level MRV, free Sentinel-2 satellite images and inexpensive Planet satellite images were combined to efficiently remove clouds, which was a problem when using optical satellites, and to reduce financial costs. It is expected that the options for satellite images that can be used will continue to increase in the future, and it is necessary to seek the most efficient use of images that are consistent with the FREL/FRL in order to ensure sustainability.
- It is expected that future technological developments will enable classifications that are difficult with current remote sensing technology, such as the classification between MD and RV and between UC and OA. As the transparency of MRV is becoming more and more demanding year by year, it is necessary to constantly adopt the latest technology and continue to make efforts to solve remaining problems.
- It is important to implement the NFI in the future, including stump surveys, because of the large amount of emissions from selective logging in the forest, and because the effectiveness of Prime Minister's Decree (PMD) No. 15, issued in May 2016 to suppress illegal logging, seems to be reflected in the international timber trading data. However, as the NFI continues to be a feasible method, because of the high cost it is necessary for the Laos side and other development partners to cooperate as they did in the 2nd and 3rd NFIs. In the future, it will be necessary to consider estimating the amount of selective logging through the direct analysis of satellite data.
- With the cooperation of a wide range of stakeholders, the NFMS Roadmap was able to summarize the plan and content of related activities. Through the process, a common understanding of the current situation and direction of the Laos NFMS was fostered, which led to the reorganization into the NFMS TWG and the three subgroups. By using the NFMS Roadmap as a common foundation, the coordination of different players, support, and budgeting have started to become more efficient. The NFMS Roadmap also has important value in improving the transparency of the NFMS and helps to improve the accountability of Laos REDD+. In the future, support will be sought from development partners, including JICA, for the steady implementation of the roadmap.
- Various training sessions were offered to the C/Ps to enable them to understand the basics of the FREL/FRL and MRV, such as construction methods, emission/removals calculation, and uncertainty calculation. Although their understanding is gradually progressing, these issues continue to be technically complicated and also dynamic in their development. Thus, capacity building efforts are still necessary.
- REDD+ in Lao PDR is implemented at several scales, such as the national level, subnational level (the FCPF-CF ERP target area), and in the REDD+ project targeting specific areas. In order to prevent double counting of emissions reduction, it is necessary to develop a carbon transaction registry that records and manages spatial information of such REDD+ activities, generation and transfer of credit, and emission reductions. For the FCPF CF, funded by the World Bank, the development of a prototype is planned for the six northern provinces, so it is necessary to consider whether to expand the scope of its coverage to the nation level.
- Through the Project, various methodologies such as SOPs for FTMs, the NFI, RV Survey, and emissions and removals calculation were prepared and documented. All of these documents were first prepared in English and then translated into Lao. Since many surveys, analyses, and reports are conducted every few years, maintaining them in writing is expected to ensure an effective handover.

(3) Output 3

Component Objectives	Institutional development, management, and coordination of national REDD+ is enhanced.
Activities	3-1 Provide technical inputs to the national REDD+ policies and institutions. 3-2 Support the coordination role of DOF in national REDD+. 3-3 Provide indirect support to JCM-REDD+ in line with its progress.
Objectively Verifiable Indicators	Based on the information generated by the NFMS, effectiveness of REDD+ activities is evaluated among the stakeholders (e.g. MONRE, MAF, Local Government and Development Partners) through a consultative process.
Means of Verification	Evaluation summary submitted to the National REDD+ Task Force (NRTF).
Level of achievement	Medium Lao PDR reported to the UNFCCC, in July 2020, the amount of REDD+ results (reduced emissions and increased removals) for the results period from 2015 to 2018 through its REDD+ Technical Annex. A Safeguards Report covering the results period indicated above was approved by the MAF in November 2020 and published through the UNFCCC. In the process of preparing this Safeguards Report, the implementation of the PaMs and related safeguards during the REDD+ results period were analyzed. The REDD+ Technical Annex was prepared mainly by the FREL/MRV-TWG. The Safeguards Report was prepared mainly by the Safeguard Technical Working Group (SG-TWG) and was submitted to the UNFCCC after being reported to the NRTF Chairman, who is the Deputy Minister of the MAF, and approved by the DOF.

Indicator number	Indicator	Level of achievement
3-1	National REDD+ Strategy (NRS) approved.	Moderate NRS approved as of April 2021.
3-2	FREL/FRL & MRV TWG operational following the developed TOR.	High The TWG operated as the FREL/FRL and MRV TWG from April 2016 to September 2020, and then was restructured as the NFMS TWG and three sub-groups from July 2021 to January 2022. The TWG met on average every six months for a total of 11 meetings.
3-3	Recommendations made to the JCM-REDD+ Joint Committee along with the bilateral negotiation.	Moderate Although there have been some delays in the progress of the Joint Crediting Mechanism (JCM-REDD+), both Lao and Japanese stakeholders have been advised accordingly. At the end of the Project, a methodology for JCM-REDD+ has been disclosed for public comments. .

The progress of Laos REDD+ during the Project period is summarized in Figure 21. In addition to the four elements to be completed at REDD+ readiness phase under the UNFCCC's REDD+ agreement (Warsaw Framework for REDD+), namely the NRS, FREL/FRL, NFMS and SIS, Lao PDR has also completed the submission of the SoI.

- Establishment of the NRTF and TWGs: REDD+ was under the management authority of the MONRE at the beginning of the Project, but followed the transfer of authority to the MAF in 2017.
- NRS: Approved in April 2021.
- Completion of the National FREL/FRL: submitted to the UNFCCC in January 2018 and the technical

assessment completed in January 2019.

- Development of the NFMS and Lao NFMS Roadmap: the NFMS is being developed stepwise. The Lao NFMS Roadmap was approved in November 2020.
- SIS: Decided to establish a Social and Environmental Safeguards Unit (SESU) as the institutional system in October 2020, and approved the Lao SIS Technical Document in September 2021.
- Safeguards Report (SoI): Approved in November 2020.
- REDD+ Technical Annex (REDD+ results MRV for 2015-2018 period): Submitted to the UNFCCC in July 2020, UNFCCC technical analysis was completed in June 2021.
- FCPF Carbon Fund: the ERPD was adopted in June 2018, Emission Reduction Payment Agreement signed in December 2020, and its effectiveness was declared in November 2021.
- GIZ/GCF Project: I-GFLL Project 1, which supports three of the six provinces targeted for the ERP, was approved in October 2019 by the GCF and launched in May 2020. I-GFLLProject 2 is being prepared for all six provinces (a concept note was submitted in July 2021)

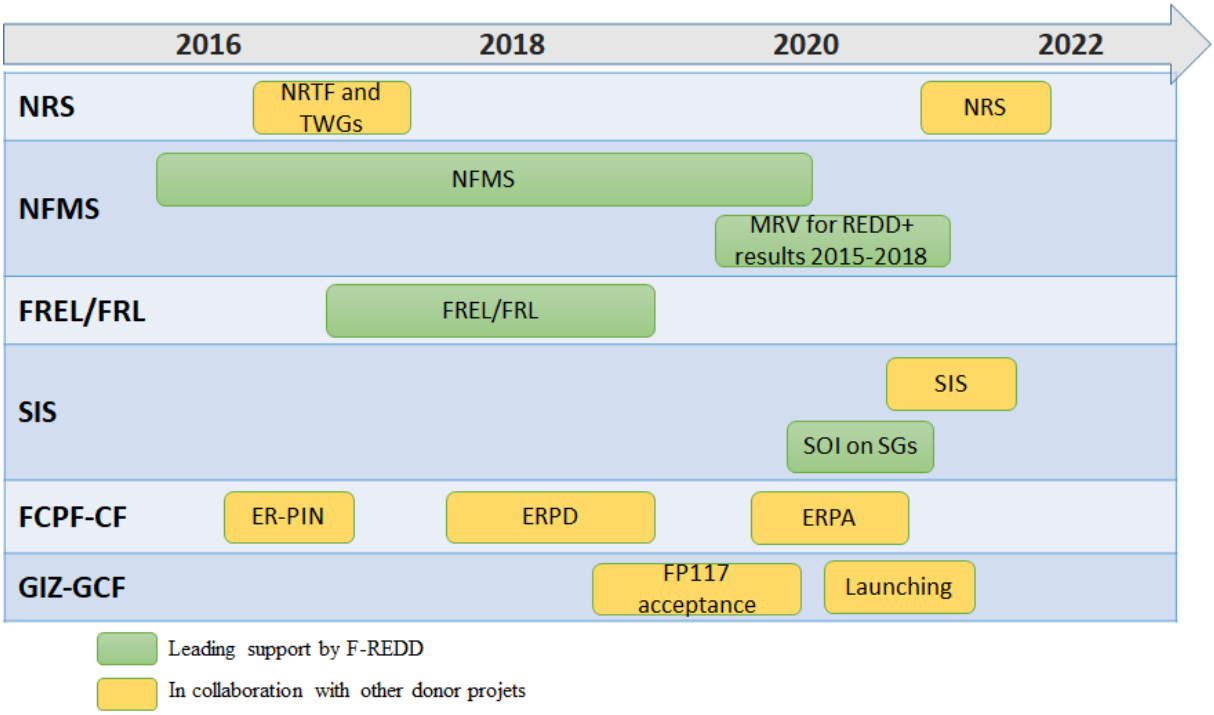


Figure 21: Progress of Laos REDD+

The Project provided support for all of these, although to varying degrees. In particular, the Project provided leading support for the NFMS, FREL/FRL, and the SoI. The formulation, approval, and preparation for implementation of the ERP for the FCPF-CF have been consistently supported since the Project's beginning. The Project also facilitated an arrangement for JICA to become one of the implementing partners for the I-GFLL Project supporting the Emission Reduction Program Area (ERP Area), and has carried out responsible activities since its launching. The following sections summarize the results of the support given.

Activity 3-1 Provide technical inputs to the national REDD+ policies and institutions.

Activity 3-1-1 In coordination with other stakeholders, facilitate the development of National REDD+ Strategy (NRS).

Under the lead of the FCPF RP, development of the NRS was supported through collaboration of development partners, including the Project. The full formulation process began in August 2016, when the FCPF RP consultant team began operations. During the process, the Project cooperated as one of the major projects supporting Laos REDD+. In particular, this included:

- Advice on the formulation process and methods for the entire NRS.
- Analysis of drivers of deforestation and forest degeradation nationwide from December 2016 to January

2017, in collaboration with the FCPF RP.
- Participation in consultations and draft reviews. In particular, descriptions related to the FREL/FRL and the NFMS, which the Project mainly supports, were provided.
- Support for Lao and English translations.

The initial draft of the NRS was completed in early 2018. However, the contract of the FCPF RP consultant team was terminated as the review within the DOF and MAF progressed. Since then, international and national consultants individually hired by the FCPF RP have taken over the support. During that time, the DOF had to take time to prepare various other documents for the launching of the FCPF ERP following its approval, for negotiation with the World Bank (see Activity 3.1.7 for details), review of the FS 2020 and formulation of FS 2030, and restrictions to consultations due to the COVID-19 pandemic in Lao PDR. Accordingly, it took more time to revise the NRS draft. Finally, the MAF approved the NRS in April 2021 (Separate Volumes 3-1 and 3-2), and it was published on the UNFCCC REDD+ Web Platform.

Activity 3-1-2 Provide technical inputs to implementation of the NRS.

At the time of designing the Project, the creation of a "REDD+ Action Plan" was envisioned, which would stipulate a concrete implementation plan in response to the formulation of the National REDD+ Strategy (NRS). In fact, the FCPF-CF ERP was approved as a results-based payment project for the six northern provinces in 2018, and GIZ's GCF project (the I-GFLL Project) was also approved to support the implementation of REDD+ activities in the same region. Accordingly, the securing of funds for implementation and results-based payment have progressed. Further, considering the capacity of Lao PDR, it is rational to implement REDD+ in stages, implementing with the initial focus in the six northern provinces as the priority regions.

On the other hand, as an action-oriented document for each technical element, documents such as the Laos NFMS Roadmap (see Activities 2.1.6, 2.1.7) and the Lao National SIS Technical Document for the Lao National Safeguard Information System have been completed. Therefore, it is expected that Lao REDD+ will gradually advance to the national level while building the required know-how and mechanisms through the prioritized implementation REDD+ in the six northern provinces.

There are growing interests in REDD+ projects and forest carbon trade by private investors.The Forestry Law 2019 adds provisions to promote related investments, such as for forest concessions. However, there are no specific regulations that definethe eligibililty of the investor and specific rules to be applied for registering their projects. Therefore, the Project first advocated the need of a Ministerial Decree. Then, the Project supported analyzing similar rules and domestic legislations in other countries, studied the decisions from the UNFCCC COP26 in 2021 related to the Article 6 of the Paris Agreement, discussed the structure and contents of the Ministerial Decree with related staekholders, and clarified the steps toward the development of the Ministerial Decree.

Activity 3-1-3 Provide technical inputs to other national REDD+ policies (e.g. Safeguard, Benefit Sharing Mechanism).

As stated in Activity 1-2 of Output 1, C/P trainings related to REDD+ were carried out in the first half of the Project period, jointly with other development partners as a part of the NRS formulation (Table 41).

Table 41: Record of Workshops for TWGs

Title	Result	No. participants	Date
Workshop on social and environmental safeguards and benefit sharing for REDD; (funded by SNV)	The knowledge of the participants regarding the topic were enhanced, and preparation of the TOR for the Social and Environment Safeguard TWG was facilitated	36	November 15, 2016
Benefit Sharing Mechanism TWG meeting (funded by the FCPF)	The Benefit Sharing Mechanism TWG and the other five TWGs shared a common understanding on the background and key points regarding the Benefit Sharing Mechanism (BSM) in Lao PDR. The	20	December 1, 2016

	need for further discussion over a wider range of subjects in the future was acknowledged.		
Workshop on social and environmental impacts of REDD+ strategy options (funded by the FCPF)	The basic framework for analyzing the drivers of deforestation and forest degradation and the corresponding PaMs for the NRS were agreed on.	27	December 20, 2016
Workshop on analysis of the drivers of deforestation and forest degradation (funded by the REL/MRV TWG)	Following the above-mentioned workshop, interim results of the analysis of the drivers of deforestation and forest degradation were presented. From the Project, analysis based on the FTM was presented.	40	January 12, 2017
Workshop on REDD+ benefit sharing and safeguards (co-funded by GIZ/FCPF/CIFOR)	The knowledge of the participants regarding the topic was enhanced, and the diversity of viewpoints and stakeholders in REDD+ were understood.	35	February 1-3, 2017

For safeguards, the FCPF RP was in charge of building the national SIS. It is essential in the REDD+ implementation stage in Lao PDR, and it is also a necessary condition for Lao PDR to aim for REDD+ results-based payment for the GCF, which is a fund under the UNFCCC. Accordingly, the Project provided advice for the preparation of government decisions and a plan for a safeguards implementation system (the aforementioned SESU), and also on the preparation of a document (the Lao National SIS Technical Document). To enhance transparency related to safeguards, the Project created a temporary web page that provides safeguard information (https://project.dof.maf.gov.la/redd/sis/). The construction of an SIS in Lao PDR needs to be further strengthened by the GoL in the future.

Although a nationally unified benefit sharing system has not been created yet, the Benefit Sharing Plan (BSP) for the FCPF ERP is a condition for enabling ERPA effectiveness. The FCPF RP was also in charge of it. In response to this, provisional calculation of baseline emission values for each province and advice on benefit sharing methods were provided (see Activity 3-1-7).

Regarding REDD+ information disclosure for Lao PDR, to increase transparency and facilitate one-stop information access, the Lao REDD+ Web Portal (http://dof.maf.gov.la/redd/en/home/) was created by the FCPF RP around 2017, but the updating of it has stagnated since 2018. Further, it has been difficult to follow the structure because the relationship with the DOF website has not been well-organized. Documents required to be disclosed under the UNFCCC decision were already published on the UNFCCC REDD+ Web Platform (https://redd.unfccc.int/submissions.html?country=lao). However, there was also a request from the DOF to be able to publish them on its own website. Therefore, although the minimum level of support was provided by the Project, it is necessary for the DOF to continue to update it in the future.

Activity 3-1-4 Facilitate collaboration between DOF (REDD+ focal point) and MONRE-DCC (UNFCCC focal point) on FREL/FRL, MRV and other related issues.

The national focal point for the UNFCCC in Lao PDR is the MONRE-DCC. Therefore, submission of the FREL/FRL and the MRV results (to be submitted through the BUR to the UNFCCC) will be reported through them. The GHG Inventory Division of the MONRE-DCC is responsible for the preparation of the GHG-I, and it is important to ensure consistency between the estimation of emissions and removals in REDD+ and the GHG-I.

For this reason, when the REL/MRV TWG (later reorganized into the NFMS TWG) was established, the DCC was incorporated as a member department, and it participated in the FREL/FRL and NFMS technical training. Technical cooperation and capacity enhancement were carried out. At the same time, the Project worked in coordination with the progress of the projects for the 3rd National Communication Report and the 1st BUR, which the MONRE-DCC has been implementing with the support of UNEP/GEF.

In addition, with the support of the Global Green Growth Institute (GGGI), and with the MONRE as the

responsible ministry, the DCC and GGGI were preparing for the update of the "Nationally Determined Contribution (NDC)", an official version of which was submitted to the UNFCCC in March 2021. The Project provided explanation and advised the concerned experts on how the emissions and removals from forests have been calculated, and how future scenarios could be set.

Activity 3-1-5 Based on the information obtained through the NFMS, evaluate the effectiveness of REDD+ activities among the stakeholders through a consultative process.

As stated in Ouput 2.2, Lao PDR submitted the 1st BUR to the UNFCCC in July 2020.

The REDD+ Technical Annex was submitted to the UNFCCC as an attachment to the BUR, and the amount of REDD+ results (reduced emissions and increased removals) from 2015 to 2018 as a result of REDD+ activities was reported. In addition, as described later in Activity 3-1-8, the Project analyzed the implementation of PaMs and the implementaiton status of safeguards during the REDD+ results period in the process of creating the SoI. The following summarizes the overview, and the details can be found in each report.

- Compared to the FREL/FRL period from 2005 to 2014, the decrease in natural forests continued during the results period from 2015 to 2018, but the rate of decrease was declining (Table 42). However, in the southern part, the decrease of natural forests in recent years was remarkable (Table 43). The main cause of deforestation was the conversion of land use through slash-and-burn agriculture, agricultural land, forest plantations, and the development of hydropower dams.
- Countermeasures against these include crackdowns on illegal logging (PMO No. 15, 2016), a moratorium on concessions such as rubber (PMO No. 13, 2013), and the promotion of participatory land use planning and management. These have shown some effectiveness, but on the other hand, it has not been easy to compromise with infrastructure and agricultural development policies in national socio-economic development.
- By region, the northern and central regions are showing REDD+ results, but results in the southern region show an increase in emissions (Table 44). In the northern and central regions, there are a relatively large number of projects supported by donors, while the declining economic profitability of commercial crops such as maize in mountainous areas was considered an underlying factor. While donor support is relatively limited in the south, the expansion of commercial crops such as cassava and coffee in low lands, and the construction of large and small hydropower dams could be considered underlying factors,
- Of the three forest types, Conservation Forests and Production Forests have a relatively clear record of boundary setting and management measures being enforced, and there is a large amount of donor support. On the other hand, Protection Forests have been facing the most serious deforestation pressures due to their weak management status.
- The SoI concluded that during the REDD+ results period in Lao PDR, the forest sector and related projects generally implemented safeguards appropriately. These can be judged from the applied safeguard frameworks, stakeholder participation, and the status of greviences received.
- On the other hand, to further promote REDD+ in the country, a grand design for building and operating a more systematic and comprehensive SIS, concrete monitoring indicators, an implementation system and capacity, and funds for operation are necessay. This still requires substantial effort.

Table 42: Rate of Natural Forests against the National Land Area

Year 2005	2010	2015	2019
60.1%	58.8% -1.3%	57.4% -1.4%	56.5% -0.9%

Table 43: Changes in Natural Forest Areas and Carbon Stocks by Region

		North	Central	South	Remarks
Natural forest area (1000 ha) Ratio of natural area (ratio to land area in %)	Year 2005	5,216 (53.91%)	4,208 (61.01%)	4,428 (68.30%)	In the southern region, the amount and rate of decrease of natural forests are largest the for 2015 - 2019 period.
	2015	4,990 (51.58%)	3,987 (57.81%)	4,254 (65.62%)	
	2019	4,934 (51.01%)	3,936 (57.07%)	4,164 (64.23%)	

Forest carbon stock (tCO2e/ha, 2019)		347	439	359 359	Evergreen forests with the highest average carbon stocks are the most abundant in the central region. In the south, there are many dry dipterocarp forests with lower average carbon stocks.

* The results period is from January 1, 2015 to December 31, 2018, but the FTM used for the analysis of land and forest cover change is defined as the land use status on January 1, 2019. Therefore, 2019 is referenced as the year in the table above.

Table 44: Regional REDD+ Achievements 2015-2018

		REDD+ Achievement 2015-2018 (tCO2e /Year)		
Region	Total area (ha)	Emission reduction	Increased removal	total (tCO2e /year)
Northern	9,674,338	3,528,827	-622,504	2,906,323
Central	6,896,816	2,687,633	120,776	2,808,409
South	6,483,103	-2,807,096	86,421	-2,720,675
National total	23,054,258	3,409,364	-415,307	2,994,057

Activity 3-1-6 Enhance synergy between REDD+ in Luang Prabang and Oudomxay, and the national level (including NFMS).

Laos REDD+ is developing the Provincial REDD+ Action Plan (PRAP) for the six provinces targeted under the FCPF-CF ERP in order to consolidate them into the ERPD to be submitted to the FCPF-CF.

As it is important that the PRAPs of the six provinces are developed with a certain level of consistency, the ERPD team (with financial support from CliPAD) developed a Guidance Document which contains the PRAP formulation process and the content to be described. The Project shared its experiences of formulation of the PRAP in Luang Prabang Province and provided inputs to the Guidance Document. Also, in conjunction with Output 4, support has been provided for the Luang Prabang Province PRAP in accordance with the Guidance Document.

Activity 3-1-7 In coordination with other stakeholders, support Laos on accessing the FCPF-CF and implementation of the ERP.

In October 2015, Lao PDR was selected as a FCPF-CF pipeline country. The ERPD is scheduled to be submitted within 18 months of the Letter of Intent (LoI) signed by the GoL and the World Bank in September 2016. After that, the ERPD was submitted to the 18th FCPF Carbon Fund Meeting in June 2018 and approved. Thereafter, it took approximately one and a half years to prepare related documents, such as for safeguards and the BSP, and after negotiations with the World Bank, the ERPA was signed in December 2020. The signed ERPA finally became effective in November 2021.

As a part of this process, a workshop was held in Luang Prabang City in February 2016, attended by 63 personnel engaged in forest management from three of the six provinces targeted under the FCPF-CF ERP (Luang Prabang, Xayabouly, and Houaphan). This workshop was jointly organized with the DOF and other partners. On the following day, a field visit to the Participatory Land-use and Management for Reducing Deforestation (PAREDD) site in Xiengngeun District was organized, where the outputs from the Project were introduced.

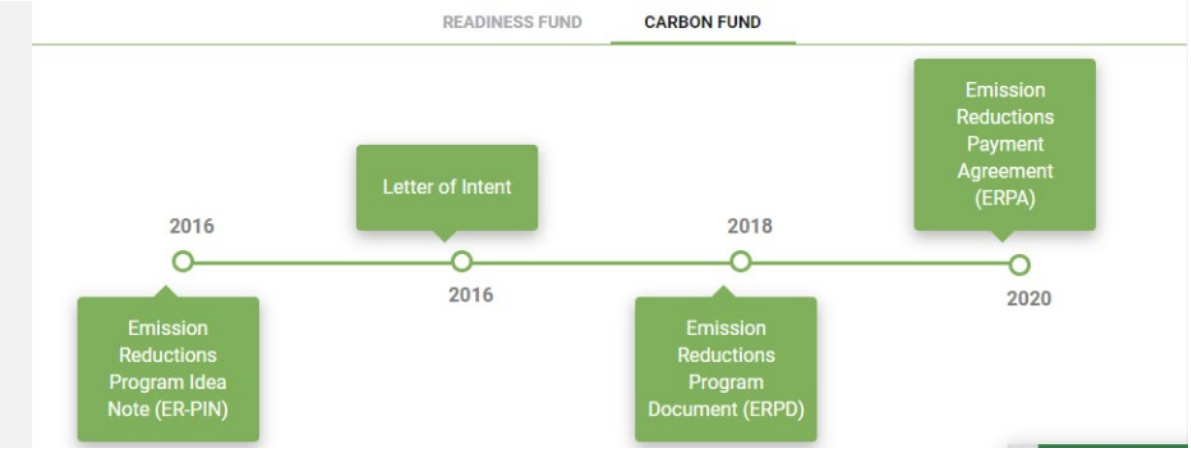


Figure 22: Progress in Access to the FCPF-CF in Lao PDR
(Source: FCPF-CF website for Lao PDR)

The preparatory phase of the Project (December 2014-September 2015) provided support up to the development of the Emission Reductions Program Idea Note (ER-PIN), and the Project supported the subsequent processes. The creation of the ERPD was carried out with the cooperation of the concerned Lao departments and the joint team of development partners (i.e. the Project, FCPF RP, CliPAD, and FAO), continuing from the development of the ER-PIN. The same arrangement was made for the ERPD. In addition to supporting the entire process, the Project took the responsibility to draft the sections related to carbon accounting (REL, MRV, uncertainty assessment, etc.), analysis of drivers of deforestation and forest degradation, PaMs for forest conservation, and activities to be implemented in Luang Prabang Province. In parallel with the preparation of the ERPD, the Project supported Lao PDR on various technical meetings with the World Bank headquarters, including a total of three technical advisory panel missions from late 2017 to May 2018. Furthermore, at the 18th Carbon Fund Meeting, where the Lao ERPD was appraised and accepted, the Project supported preparation for the Laos mission represented by the Deputy Minister of the MAF, and remotely supported the dialogues on the day of the appraisal. As a result, the Lao ERPD was unconditionally accepted at the meeting (Separate Volume 3-3). Meanwhile, improvements in forest and degradation and restoration monitoring (see Activity 2.1.7) and preparation of the BSP and safeguard documents were recommended in the chair's summary.

Following the approval of the ERPD, Lao PDR has worked on the above recommendations and has initiated negotiations with the World Bank to conclude the ERPA. The Project collaborated with the FCPF RP, which was in charge of BSP documents, such as by supporting conceptualization and system designing of the BSP, providing provisional baselines for each province based on the emission and removal values, and providing a series of reviews and comments on the drafts. As the FCPF RP was also in charge of safeguard documents, the Project also provided reviews and comments such as on the Strategic Environmental and Social Assessment (SESA). Furthermore, as the ownership and rights to transfer forest carbon credits related to REDD+ were not clearly defined at that time in Lao PDR, and confirmation based on various laws and regulations such as the Lao Constitution was required, the Project cooperated with the FCPF RP to clarify these issues. In the end, it was confirmed that forest carbon and rights to transfer REDD+ results (reduced emissions and increased removals) belong to the Lao people, and that the MAF, which has the basic responsibility for forest management, has the authority to manage and transfer carbon credits (partly excluding forest plantations developed on private land).

Afterwards, the ERPA was signed between the World Bank and the GoL on December 30, 2020, under which Lao PDR agreed to sell to the FCPF-CF up to 8.4 million tCO2e of emissions reduction results to be generated for the six years from 2019 to 2024. It was also agreed that the selling price will be assured at USD 5/t for an amount up to 8.4 million tCO2e, and that further negotiations would be possible at USD 6/t if there is a surplus of emissions reduction results. After the finalization of the BSP and safeguard due diligence for retroactive emissions reduction (two years from 2019 to 2020), which were both the conditions for enabling the ERPA, the ERPA finally became effective in November 2021.

In this way, the Project played an important role for Lao PDR in accessing the FCPF-CF. In particular, while the experts involved and the degree of involvement of the FCPF RP, CliPAD, and FAO have changed, the Project was consistently involved in the process and was able to contribute based on understanding and

experience from the past, which was important. For more information, see the FCPF-CF Laos website.

Activity 3-1-8 Support the submission of Summary of Information (SoI) on safeguards, and development of Safeguard Information System (SIS).

The UNFCCC requires compliance with the Cancun Safeguards when implementing REDD+ and recommends the regular preparation and publication of the SoI on safeguards (Decision 17/CP.21, Article 4). In particular, when making a request for results-based payments from the GCF, it is essential to report the implementation status of safeguards during the results period. Since JICA and the GoL agreed to aim for access to the results-based payment (see Activity 3-1-9), it was decided that the Project supports the preparation of the SoI for the results period from 2015 to 2018.

The SoI was prepared under the SG-TWG after consultations at various levels in the country. Since it is important that the stakeholders have fully understood the process and the contents in accordance with the safeguards principle, preparation was carried out simultaneously in Lao and English. In addition, the analysis related to safeguards had already been done in the preparation process of the NRS and ERPD. Other projects such as SUFORD (World Bank, etc.), CliPAD (KfW, GIZ), TABI (Swiss Development Agency) have also been implementing safeguards which have commonalities with the Cancun Safeguards. Therefore, the work aimed to build on those experiences.

The report included (1) an overview of REDD+ in Lao PDR; (2) the background and actual conditions related to safeguards; (3) an evaluation of the implementation of REDD+ activities and safeguards for the REDD+ results period (how safeguards were "addressed" and "respected"); and (4) items for future improvement. In particular, (3) required consultations at the local level and with community groups in addition to the central level, and sufficient objectivity and transparency were required. Therefore, as professionals with a high level of skill in conducting fair facilitation as a third party (e.g. a non-government, non-profit position), good understanding of REDD+ and safeguards, and proficency in languages (Lao, English), RECOFTC, which has abundant work experience with international donors including JICA, was sub-contracted to carry out the consultations.

As shown below in the summary of consultations (Table 45), in the end, more than 300 stakeholders were consulted. At the central level, SG-TWG and other government departments, project experts, NGOs, and the private sector participated. At the local level, the PAFO, POFI, PONRE, DAFO, Provincial Committee for the Advancement of Women, association for persons with disabilities, and representatives from community groups participated to cover the diversity of stakeholders as much as possible.

Table 45: Consulting Record for Preparing Safeguard Report (SoI)

Meeting	date	Content
SG-TWG	July 3, 2019	The REDD+ division presented the status of Laos REDD+ and safeguards, F-REDD presented plans and key items for the SoI, the FCPF RP project presented the plan to build SIS, and the way forward was confirmed.
1st SoI consultation (Vientiane)	October 29, 2019	The interpretation and application of the safeguard items described in SoI in Lao PDR were discussed and used for subsequent consultations.
SoI Central region consultation (province, district)	November 19, 2019	As a representative of the central region, discussions were held with the PAFO and DAFOs in Savannakhet Province regarding the items described in the SoI.
SoI Central region consultation (district, village)	November 20, 2019	Discussions were held with the DAFOs of the sample districts in Savannakhet Province and the representatives of the villages regarding the items listed in the SoI.
SoI Southern region consultation (province, district)	November 21, 2019	As a representative of the southern region, discussions were held with the PAFO and DAFOs in Champasack Province regarding the items described in the SoI.
SoI Southern region consultation (district, village)	November 22, 2019	Discussions were held with the DAFOs of the sample districts in Champasack Province and the representatives of the villages regarding the items listed in the SoI.
SoI Northern region consultation (province, district)	November 27, 2019	As a representative of the northern region, discussions were held with the PAFO and DAFOs in Luang Prabang Province regarding the items described in the SoI.
SoI Northern region	November 27, 2019	Discussions were held with the DAFOs of the sample

consultation (district, village)		districts in Luang Prabang Province and the representatives of the villages regarding the items listed in the SoI.
2nd SoI consultation (Vientiane)	December 20, 2019	The results of the consultations in the three regions last month were shared, and the next steps were confirmed.
3rd SoI Consultation (Vientiane)	February 26, 2020	The schedule for the GCF REDD+ RBP application was shared, the main points of SoI were discussed, and the processes for finalization of the draft and internal approval were confirmed.
4th SoI Consultation (Vientiane)	May 18, 2020	The commenting period, the finalization schedule and disclosure after DOF/MAF approval were confirmed.

Through these processes, the Safeguard Report was finally approved by the MAF in November 2020 (Separate Volume 3-4), and published on the UNFCCC REDD+ Web Platform.

Activity 3-1-9 Support Laos on accessing the GCF REDD+ Results-based Payment.

As a REDD+ results-based payment fund under UNFCCC, the GCF REDD+ Results-based Payment (GCF REDD+ RBP) Pilot Program was launched at the 18th GCF Board Meeting in October 2017 with a fund of USD 500 million. Since the approval of Brazil's poposal at the 22nd Board Meeting, proposals from Latin American countries with UN organizations as Accredited Entities (AEs) followed. By the 27th Board Meeting, a total of eight country proposals (Brazil, Ecuador, Chile, Paraguay, Indonesia, Colombia, Argentina, and Costa Rica) were approved with a total payment of USD 497 million. The funding closed in November 2020, two years earlier than originally planned.

Since Lao PDR was planning to carry out national REDD+ MRV in 2019 with the support of the Project (Activity 2.2), the DOF and JICA agreed to aim to apply for GCF REDD+ RBP after the amount of REDD+ results were confirmed. As a result, the results of approximately 14.7 million tCOe were expected for the 2015 to 2018 period, and the two parties agreed to proceed with the preparation of a proposal with JICA as an AE at the JICA mission in February 2020.

Initially, the goal was to submit a concept note by the fourth quarter of 2019. However preparation of the 1st BUR by the MONRE, to which the REDD+ Technical Annex (Report for the REDD+ results) needs to be attached, was delayed to July 2020. The concept note was finally submitted through JICA in September 2020 (Separate Volume 3-5). The Project supported a series of processes such as the drafting of the concept note, discussions with the Lao side, and promotion of approval procedures for submission.

After that, preparation of the funding proposal started. In preparing the funding proposal, a task team was formed by members of concerned departments from the DOF, such as the Conservation Forest Division, Protection Forests Division, and the FIPD, with the DOF Deputy Director General as head and the Planning and Cooperation Division as the coordinator. Discussions centered on the plan to reinvest the results-based payment, which was broadly divided into three components: (1) national level REDD+ support, (2) field support for the southern region, and (3) project management. Especially for (2), two consultation meetings for the five southern provinces were held and two field surveys were conducted (a survey to analyze the deforestation and forest degradation drivers, and prospective PaMs, and a second survey to consult about issues related to the project safeguards). The table below summarizes the structure, responsibility, and progress of the funding proposal.

Table 46: Summary of the Progress of GCF REDD+ RBP Funding Proposal Preparation

Funding Proposal			
Item	Contents	Responsible person	Progress
A. REDD+ results B. Carbon elements C. Non-carbon elements D. Investment framework E. Compliance with GCF policies F. Legal arrangements G. Accredited entity fee and project management costs	A. Amount of results proposed B. FREL/FRL and MRV results C. Safeguards, reinvestment plan of the results-based payments (called Use of Proceeds) D. Conformity with GCF support criteria. E. Conformity with GCF policy. F. Legal arrangements to receive and	F-REDD	Approximately 90% completed on the premise of the expected amount of payment (USD 50 million). However, it may be necessary to revise

	use the results-based payments. G. AE fee and project management cost		items C and G in line with the next TOR of the GCF REDD+ RBP.
Attachment			
Lao government Non-objection Letter		GoL	Not yet completed
Environmental and Social Assessment (ESA)		F-REDD	JICA review completed
Environmental and Social Management Framework (ESMF)		F-REDD	JICA review completed
Gender Assessment (GA)		F-REDD	JICA review completed
Gender Action Plan (GAP)		F-REDD	JICA review completed
Term sheet		JICA	Not yet completed
Evidence of JICA's internal approval		JICA	Not yet completed
Legal Due Diligence (confirmed not required by the GCF Secretariat and JICA).		F-REDD	Not yet completed
AE fee request		JICA	Not yet completed

As mentioned at the beginning, the initial phase of the GCF REDD+ RBP has already been completed. Future funding proposals need to be revised depending on the TOR of the next phase (including the extension of the initial phase), JICA's involvement as the AE, and the possibility of becoming an implementer (an Executing Entity: EE).

Activity 3-1-10 Facilitate JICA's co-financing arrangement and co-implementation of the GIZ GCF Program.

The FCPF-CF ERP is a program that has agreed to pay for future results, but it is necessary for the applicant (the GoL) to carry out forest conservation activities that will lead to reducing emissions and increasing removals. Therefore, the GoL and GIZ decided to apply for GCF implementation funds for the purpose of securing funds to implement the ERP (the I-GFLL Project). Initially, the project was planned with a total GCF funding of EURO 64 million for eight years from 2020 to 2017, targeting the six northern provinces targeted by the ERP. However, due to the GCF funding situation, it was divided into two phases, with the first phase covering only the four years from 2020 to 2024 with a GCF funding amount of EURO 15 million, and targeting only the three provinces of Luang Prabang, Houaphanh, and Sayaburi. The first phase proposal was approved at the 24th Board Meeting in November 2019. After that, the second phase concept note was submitted in July 2021 with a GCF funding amount of EURO 30 million, including the three provinces above and also Oudomxay, Bokeo, and Luang Namtha, for four years, from 2023 to 2026.

JICA has agreed to become an implementing partner in the form of an Executing Entity of the I-GFLL. To faciliate the conclusion of such an agreeement, the Project communicated with GIZ/CliPAD regarding the project schedule, implementation system and methods, and other matters, and provided necessary information and advice to JICA in order to support consideration of the form and scale of collaboration. Initially, JICA's partnership support targeted forest monitoring (see Activity 2.1.8), the two MRVs for the ERP to be implemented in 2022 and 2025, and forest conservation and livelihood development activities in Luang Prabang Province. However, after the review of JICA's support, it was agreed that GIZ would take over the support for Luang Prabang Province by removing it from the scope of JICA's support.

The first phase of the I-GFLL started in May 2020. The Project and GIZ have been coordinating their activity plans. The Project provided technical support necessary for expansion and improvement of the PDMS, staff training, site monitoring, etc., and the costs required for these were borne by the I-GFLL (see Activity 2-1-8). On the other hand, it was agreed that the 4th NFI, which was planned from 2021 to 2022, was no longer necessary, because the FCPF-CF requires a single emission factor (ER/RF) to be used in the MRV, and the cost-effectiveness of conducting an NFI only for the stump survey to measure selective logging emissions was very low. This decision was made in consultation with the DOF and the I-GFLL .

Activity 3-2 Support the coordination role of the DOF in national REDD+.

Activity 3-2-1 Provide technical inputs to the NRTF.

After the establishment of the NRTF in 2008, it was reorganized three times. At the time of

commencement of the Project, a Vice Minister of the MONRE was the chairperson (MONRE Minister's Decision No. 176/MONRE, 2013/10/30). Thereafter, the forestry sector was reorganized to the present structure and a Vice Minister of the MAF is the current chairperson (MAF Minister's Decision No. 2750/MAF, 2017/05/23). In this process, the regular holding of the NRTF meeting was delayed.

The Project provided advice on the role and membership of the NRTF following the above process. The Project also provided advice on the agenda and support for preparing presentation materials at each session. A REDD+ workshop was held in July 2016 by the NRTF, attended by forest officials from Vietnam, and the Project presented the overview of its support.

Table 47: NRTF Meeting Record

Meeting	Agenda
1st meeting January 25, 2016	The latest status of REDD+ (COP21, the FCPF CF and FCPF RP project, etc.), the TOR of the TF, and introduction of four donor projects including F-REDD.
2nd meeting August 17, 2017	Reporting of Lao REDD+ progress and challenges, preparation of NRS and main items to be included, review of TF membership.
3rd meeting December 28, 2017	Reporting of Lao REDD+ progress, assessment based on Readiness Package (R-package), presentation of NRS draft, the national FREL/FRL, the draft ERPD, and discussion on future priority activities.
4th meeting June 12, 2018	Reporting of Lao REDD+ progress and challenges, key activities for 2018, necessity of reviewing members of each TWG, NRS finalization process.
5th meeting September 24, 2019	Reporting of Lao REDD+ progress (the NRS, FREL/FRL, NFMS, SIS), process for concluding the ERPA for the FCPF-CF (safeguards, benefit distribution plan, legal arrangement for transfer of carbon rights, ERPA negotiation), financial plan for REDD+ implementation (presentation and discussion related to the GCF/GIZ project, GCF REDD+ RBP, etc.).
6th meeting December 22, 2021	Reporting of Lao REDD+ progress, reporting of FCPF ERP including its key tasks and activities for 2022, updating of TF membership, and updates of related donor projects.

The frequency of NRTF meetings is not clearly stated in the TOR. In fact, no NRTF meetings have been held in a manner open to the donor partners for nearly two years since the fifth meeting in September 2019 until the sixth meeting in December 2021. This is partly due to the significant restrictions on large face-to-face meetings because of COVID-19. In addition, it can be said that the role and authority within the government agencies regarding REDD+ has been clarified and the decision-making process has been facilitated to some extent (decision-making has been made through meetings within the MAF as necessary). Thus, opportunities for non-government actors such as development partners to participate as observers have been reduced. However, such functions have been complemented through FSSWG meetings and through other meetings (such as FCPF-CF ERP-related meetings). Therefore, in reality, it is thought that REDD+ in Lao PDR is progressing even with needs-based organization of the NRTF meetings.

Activity 3-2-2 Provide technical inputs to the TWGs.

Laos REDD+ is supported by several development partners which provide support for the six TWGs based on their areas of interests and expertise. The Project took the role of supporting the establishment and operation of the REL/MRV TWG as its leading partner (as described later), and also supported the establishment and operation of the other five TWGs. Since the Deputy Minister of the MAF became the chairman of the NRTF in May 2017, these TWGs have been reviewed again, and the members and TORs were finalized in September 2018 (MAF decision No. 2124/MAF, 2018) (see Table 48 immediately below).

Table 48: The Six TWGs

1. Legal Framework	4. Social & Environmental Safeguards (SES)
2. Land Tenure & Land Use	5. Benefit Sharing Mechanism (BSM)
3. REL/MRV	6. Enforcement and implementation of mitigation actions (EIMA)

Several capacity building sessions were carried out for specific TWGs and for the six TWGs (see

Activity 3-1-3). The Project has cooperated in this capacity building by presenting and facilitating the discussions on technical issues such as REL/MRV, provided interpretation/translation support, and logistics.

As will be described later in Activity 3-2-3, the NFMS TWG supported by the Project has been operated with the widest range of stakeholders among the six TWGs through a common platform. Both the SES and BSM TWGs focus mainly on the development of safeguard-related documents and the implementation system required for the FCPF-CF ERP, and on BSP-related documents and implementation system, respectively. Basically they work among the FCPF RP and TWG members in order to respond to immediate needs (see Activity 3-1-3 on how the Project has cooperated to this processes). The Legal Framework TWG, Land Tenure & Land Use TWG, and EIMA TWG are almost dormant, but in reality they are not completely stationary like the NRTF. For example, for topics related to Land Tenure & Land Use, existing groups such as the Land Information Working Group (a network on land use issues established in 2007 by NGOs; https://laolandinfo.org/en/) are active. In addition, regarding the Legal Framework and EIMA TWGs, it can be said that related projects and experts (including the Project) are involved in related activities from their respective standpoints.

Activity 3-2-3 Provide technical and operational support to the selected TWGs.

The Project supported the establishment and operation of the REL/MRV TWG as its leading partner. Immediately after the NRTF meeting in January 2016 agreed on the necessity to promptly operationalize the six TWGs, the Project collaborated with the Team Leader of the REL/MRV TWG (Head of FIPD, DOF) to prepare the TOR and the work plan, finalizing them through consultation with the REDD+ Division and other development partners/international advisers.

The main role of the TWG is to support technical reviews and decisions regarding the FREL/FRL and MRV, the scope of the NFMS, consistency with the GHG inventory, carbon registries, etc., as well as to enhance coordination with other relevant government agencies, donors, and projects. Since 2017, the development of the FCPF-CF ERP as a sub-national REDD+ project has started, so it was added to the subject covered by the TWG.

In the NFMS Roadmap approved in November 2020, it was suggested that the REL/MRV TWG be reorganized into the NFMS TWG in order to promote the stepwise development of the NFMS by involving a wider range of related departments and projects. The NFMS Roadmap also recommended the establishment of three subgroups (MRV, forest monitoring,and data management) (Figure 23). This idea for restructuring was approved by the DOF and the first meeting as the NFMS TWG was held on July 29, 2021.

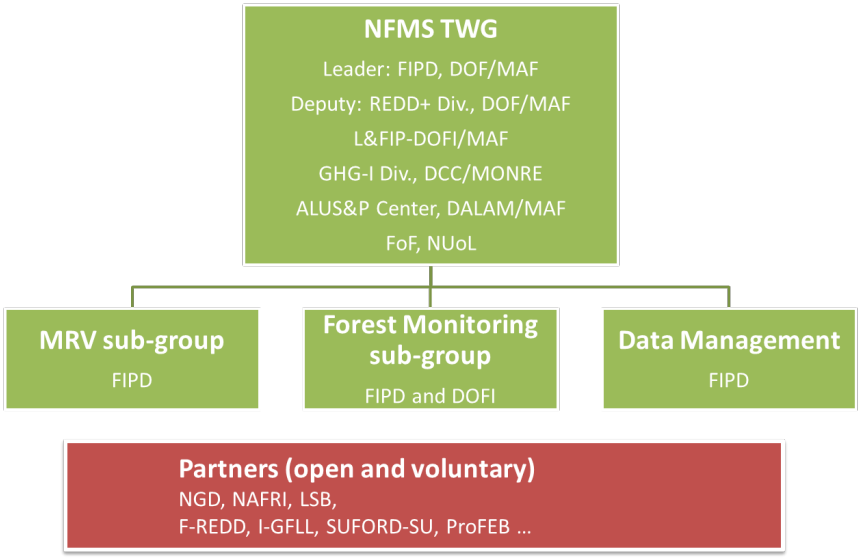


Figure 23: NFMS TWG and the Three Subgroups

The REL/MRV TWG held its first meeting in April 2016. Since then, a total of 11 meetings have been held through January 2022, each time to discuss important agenda items and make necessary decisions (see Table 49).

Table 49: Overview of REL/MRV TWG Meetings

Meeting	Number of participants	Content
Preparation for start-up February 8, 2016	12	Discussion of TOR and work plan
Preparation for start-up February 23, 2016	9	Confirmation of TOR and work plan.
1st REL/MRV TWG meeting April 27, 2016	30	Approval of TOR and work plan, REDD+ overview (basic information, FREL/FRL, MRV and NFMS), land/forest classification system.
2nd September 2, 2016	31	REL drafting team, plan for development of the NFMS including its function and case studies from other countries.
3rd January 12, 2017	33	Presentation of the progress of the NFI and RV Survey.
4th May 24, 2017	30	E/RF, activity data, RV Survey results, allometric equation.
ad hoc August 15, 2017	25	Small-scale technical meeting focused on finalizing the REL methodologies.
5th August 25, 2017	25	Finalization of key parts and methodologies for the REL, demonstration of the NFMS database, forest definition and land/forest classification system.
6th December 6, 2018	22	Report and discussion on REL, schedule for the 1st national MRV, forest monitoring, NFMS Country Needs Assessment.
7th March 19, 2019	15	Progress of FTM 2019 and 3rd NFI, forest change monitoring and benefit sharing.
8th March 18, 2020	24	Plan for the preparation of the NFMS Roadmap, the 1st national MRV results and the GCF REDD+ RBP.
9th September 3, 2020	20	Report on submission of BUR and REDD+ Technical Annex and publication of MRV report. Consultation of the NFMS Roadmap draft.
NFMS TWG installation preparation June 8, 2021	10	Preparation for the launching of the NFMS TWG and future plans.
Preparation for MRV sub-group installation June 30, 2021	8	Preparation for setting up the sub-group, work plan, etc.
Forest monitoring sub-group preparation June 30, 2021	8	Preparation for setting up the sub-group, work plan, etc.
Preparing to set up a data management subgroup June 30, 2021	6	Preparation for setting up the sub-group, work plan, etc.
1st NFMS TWG meeting July 29, 2021	29	Completion of the technical analysis of REDD+ Technical Annex and 1st BUR, restructuring of the NFMS TWG and subgroups, progress of other related matters.
2nd NFMS TWG meeting January 14, 2021	25	Updates from the sub-groups, discussion on immediate issues, progress of other related matters.

Activity 3-3 Provide indirect support to JCM-REDD+ in line with its progress.
Activity 3-3-1 Provide technical inputs to the institutional and technical aspects of JCM-REDD+.
Activity 3-3-2 Assist the counterparts to foster their understanding on JCM-REDD+.

(Activity 3-3-1 and Activity 3-3-2 are summarized below.)

Indirect support was provided to promote bilateral dialogue between the Government of Japan and the GoL. At the same time, the Project provided inputs based on the state of REDD+ in Lao PDR, as well as in Luang Prabang Province, and also offered briefings to the DOF on its scheme and current status and shared examples from other countries. These activities aimed to promote the realization of the JCM-REDD+ project between the two countries in line with the JCM-REDD+ Guidelines being prepared by the JCM Joint Committee. In particular, the JCM-REDD+ Guidelines focus on the content related to carbon accounting, and since a lot of knowledge has been accumulated through support, the Project provided advice including commenting to the proposed methodologies so that the content would be appropriate in light of the situation in Lao PDR.

During the implementation period of the Project, the 2nd (October 14, 2016, Vientiane), 3rd (July 31, 2017, Vientiane), and 4th (August 10, 2018, Vientiane) JCM Joint Committees were held, with the Project participating as an observer upon the request of the Japanese embassy. The “JCM REDD+ Rules and

Guidelines" have been electronically approved as of October 17, 2019. These records are disclosed on the JCM Laos website. The Project also participated in the Joint Steering Committee meeting of the JCM-REDD+ demonstration project (organized by Waseda University) and in a JCM-REDD+ workshop (co-organized by the DOF and the Forest Agency of Japan), which were both held on December 26, 2016.

The target area of the above-mentioned JCM-REDD+ demonstration is Phonsay District in Luang Prabang Province, which is already agreed to as the target area of the ERP of the FCPF-CF, involving the six northern provinces, including Luang Prabang Province. The GCF REDD+ RBP also cover the entire country. As it is necessary to avoid double counting and payment of emissions and removals which could possibly occur, advice was given to both the Japanese side and the Lao side, and the following conclusions have been basically confirmed.

- The period covered by the FCPF-CF's ERP results-based payment (six years from 2019 to 2024) will not be the subject of the the JCM-REDD+ demonstration project. This avoids double counting and payment.
- Since the targeted results-based payment period for the GCF REDD+ RBP (four years from 2015 to 2018) and the JCM-REDD+ demonstration project overlap, deduction of the amount of reduced emissions and increased removals of the latter from the former is being considered. The latter is expected to total about 40,000 tCO2e in the provisional calculation according to the JCM-REDD+ guidelines using national data, but this will be formalized based on the JCM-REDD+ demonstration project's plan and MRV results that will be prepared in the future.

Necessary issues and lessons for ensuring sustainability

- REDD+ in Lao PDR is managed by the REDD+ Division and under the leadership of the Deputy Director General in charge, but the work is concentrated on a group with limited capacity, with only around 15 staff members. A capacity gap among the staff exists. As REDD+ moves from REDD+ readiness stage to implementation and results-based payment, it is essential to improve the capacity of the REDD+ Division as a whole. In particular, it is still difficult for Lao PDR to follow international REDD+ schemes that Lao PDR has not experienced, such as the FCPF and GCF REDD+ RBP, and continued support by development partners still seems necessary.
- The six TWGs under the leadership of the NRTF will continue to play a central role in leading REDD+. The structure and its members of the NRTF has experienced several changes in the past, and in particular, the dissemination of REDD+ into non-forestry sectors is still limited. Therefore, further improvement of their capacity is required. Furthermore, there are differences in the operational status of each TWG. On the other hand, discussions and necessary decisions are made among concerened parties through meetings within the government and with others such as the FSSWG. In addition, the implementation of policies as well as countermeasures at the field level is progressing in collaboration with large-scale projects such as the FCPF-CF ERP, I-GFLL, and projects such as the World Bank project targeting the central region (although this is not a project focusing on REDD+). Therefore, unless there is a particular problem, it can be said that it is realistic to proceed in this way to some extent.
- Throughout the period of the Project in Lao PDR, REDD+ has made remarkable progress from the readiness stage to the implementation and results-based payment stages. However, the SIS and NFMS need to continue to be built stepwise. In order to convert the strategic level policy set by the NRS into the implementation of concrete actions, continued vigorous effort and coordinated support between development partners are required.
- Regarding results-based payment, it is important to steadily respond to the FCPF-CF ERPA (or the ERPD) for the next four years (until 2025). Carbon accounting is the most important item to be addressed, together with safeguards and the BSP. These technical requirements may continue to change along with the progress of international REDD+. Therefore, it is necessary to constantly increase the capacity to become fully prepared.
- The possibility of Lao PDR accessing GCF REDD+ RBP depends on the modality of the next phase, and the outlook is that it is expected to become available by the end of 2022. Therefore, if Lao PDR continues to attempt to access GCF REDD+ RBP through cooperation with JICA, close attention will need to be paid to its development and it will be necessary to be ready to promptly finalize the preparation of the project design, implementation system, and other documents necessary for the funding proposal.
- Although JCM-REDD+ is outside the control of the Project, it is apparent that its progress is slower than originally planned. For Lao PDR, it is especially important to sort out the relationship with the above-mentioned two results-based payment schemes.

- Especially since the beginning of 2021, interest in forest carbon trading has increased for Lao PDR. Approaches have been made to the government from REDD+ project implementers and intermediaries who have interests in carbon trading. It is necessary to establish appropriate policies for Lao PDR in accordance with the international frameworks and rules of forest carbon trading, which may become evern more complicated institutionally and technically in the coming future.

(4) Output 4

Component objective	REDD+ readiness in Luang Prabang Province and Oudomxay Province is enhanced
Outputs	4-1 Establish an institutional framework for implementing REDD+ in the province 4-2 Pilot priority forestry policy(s) to address the drivers of emissions and removals 4-3 Pilot forest monitoring as a part of REDD+ monitoring 4-4 Promote cooperation between the central level and provincial level on REDD+ 4-5 Strengthen the foundation to expand the PAREDD Approach
Objectively Verifiable Indicators	Results of the activities in Luang Prabang and Oudomxay provinces are utilized for the formulation of national forestry/REDD+ policies
Means of Verification	Feedback workshop report
Level of achievement	High Each of the planned activities has been carried out without major changes and has produced the prescribed results. First, as a preparation for provincial REDD+, the construction of the provincial REDD+ implementation system, capacity building, and the formulation of the provincial REDD+ action plan were completed. In addition, as a pilot activity to address deforestation, emphasis was placed on strengthening Protection Forest management, and feedback was given for the national policies based on the results and lessons learned. From the perspective of strengthening deforestation monitoring, a Provincial Deforestation Monitoring System (PDMS) using near-real-time satellite images was developed, and as a result of trials in pilot areas of two provinces, expansion to other provinces together with other donors was realized.

Indicator number	Indicator	Level of achievement
Indicator 4-1	Provincial REDD+ Action Plan (PRAP) approved	Medium The PRAP was formulated and approved by the provincial governor on January 12, 2018.
Indicator 4-2	Policy(s) effective to address drivers identified	Medium Seven activities were selected and tried as pilot activities to address deforestation.
Indicator 4-3	Provincial forest monitoring conducted	High The PDMS was developed and carried out in Luang Prabang, Oudomxay, Houaphanh, and Sayaburi Provinces (as of November 2021).
Indicator 4-4	JCM-REDD+ under proposal by a private entity integrated into the PRAP	Medium In the PRAP, the JCM-REDD+ project was described as a REDD+ demonstration activity.
Indicator 4-5	PAREDD approach is applied at least one district not supported by PAREDD	High In addition to the two districts in Luang Prabang Province supported by PAREDD, land use plans and forest management/livelihood improvement activities using the PAREDD approach were carried out in Luang Prabang and Nan Districts using the budget of LENS2.

Activity 4-1 Establish an institutional framework for implementing REDD+ in the province.
Activity 4-1-1 In line with the progress of the national policies, develop an institution for REDD+ in the province (e.g. provincial REDD+ Task Force).

In order to arrange the institutional structure of REDD+ in Luang Prabang Province, the Project facilitated discussion with responsible departments and divisions in the province to agree on the concerned organization, members, and its TORs. As a result, the provincial governor approved the establishment of

the Provincial REDD+ Task Force (PRTF) and the Provincial REDD+ Office (PRO) on May 20, 2016. After the establishment of the PRTF, several meetings were held with the support of the Project (see the following table).

Table 50: List of PRTF Meetings

Meeting	Date	Location	Content
1st meeting	July 28, 2016	PONRE	・ Introduction to REDD+ and its status in Lao PDR ・ Roles of the PRTF ・ Overview of the PRAP to be developed
2nd meeting	December 12-13,2016	PAFO	・ REDD+ basic training
3rd meeting	February 3, 2017	PAFO	・ Overview and the key contents of the PRAP, development and approval processes
4th meeting[8]	September 21, 2017	PAFO	・ Final consultation of the draft PRAP and commenting

Activity 4-1-2 Identify the drivers of emissions and removals.

The area where deforestation is concentrated in Luang Prabang Province (the hotspot) was identified based on the Global Forest Change data. Also based on this data, consultations were held in each district and village cluster, and the direct and indirect drivers of deforestation in the various hotspots were identified.

Activity 4-1-3 In line with the progress of the national policies, develop the provincial REDD+ Action Plan (PRAP).

In order to formulate the PRAP, forest cover changes in Luang Prabang Province as a whole and for the three forest categories within the province were analyzed based on the FTMs for each of the years 2000, 2005, 2010, and 2015, prepared in Output 2 of the Project.

Afterwards, the following consultation meetings were held at the provincial, district, and village levels (including matters relating to Activity 4-1-3).

Table 51: Consultation Meetings for PRAP Luang Prabang

Consultation	Date held	Details
First district consultation meeting	February 2016	• Identification of deforestation hotspots and deforestation drivers, and collection of information related to the countermeasures
First provincial consultation meeting	August 2016	• Sharing of the results of the above consultation • Discussion of countermeasures for deforestation
Second provincial consultation meeting	October 2016	• Review of provincial five-year plans and projects related to land and forest • Discussion of specific measures to promote the countermeasures for deforestation and sustainable forest management
Second district consultation meeting	May 2017	• Identification of main drivers of deforestation in each district • Discussion of specific measures to promote the identified countermeasures for deforestation and sustainable forest management
First village cluster consultation meeting	March 2017	• Identification of main drivers of deforestation in each of the village clusters in the deforestation hotspots

[8] Held at the same time as the final consultation meeting for the provincial PRAP.

		• Discussion of specific measures to promote the identified countermeasures for deforestation and sustainable forest management
Final provincial consultation meeting	September 2017	• Sharing of the results of the district/village cluster consultations, and collection of comments on the draft PRAP

In the provincial consultation meetings, countermeasures that should be taken against the drivers of deforestation and forest degradation and risks were identified.

The active participation of female was encouraged in the consultations in the districts and village clusters, in order that the PRAP could reflect the opinions of females, but the percentage of female's participation was only about 10%. The percentage of female participants was low because the participants were mainly the heads of the various departments and divisions and other relevant organizations.

After summarizing the results of the consultation meeting, the PRAP in both English and Lao was drafted and announced at the provincial final consultation meeting on September 21, 2017. Comments from relevant organizations were compiled and revised, and the PRAP was finally approved by the provincial governor on January 12, 2018. The PRAP has contributed to accessing external funds in terms of supporting the application for the I-GFLL's GCF implementation funds for the six northern provinces.

Activity 4-1-4 Build technical capacity of the stakeholders to implement the PRAP.

The following trainings were carried out to ensure the understanding of provincial and district officers of REDD+ and safeguards in cooperation with RECOFTC through the JICA-RECOFTC Partnership Program.

In particular, when designing the content of the safeguards training, the Project focused on promoting gender equality and the empowerment of women. In addition, for provincial and district-level trainings, the active participation of female extension workers was encouraged, and approximately 15-20% of the training participants were female.

Table 52: List of REDD+ Related Training for the Staff in Luang Prabang Province

Training title	Dates	Location	Training content	Target trainees	No. persons
Empowering forest communities - a practical approach to gender equality and women's empowerment	August 21-27, 2016	REFOCTC Bangkok	Promotion of understanding of gender equality and women's empowerment	PAFO staff	2
Training on free prior informed consent (FPIC)	September 26-30, 2016	REFOCTC Bangkok	Promotion of understanding of free prior informed consent	PAFO staff	2
Introduction of safeguards on sustainable forest management and REDD+	October 13, 2016	PAFO Luang Prabang Province	Promotion of understanding of safeguards among staff at provincial and district level	Extension workers in the PAFO and DAFO, DONRE in 12 districts	39
Basic Understanding of REDD+ for Provincial REDD+ Task Force Members	December 12-13, 2016	PAFO Luang Prabang Province	Promotion of understanding of REDD+ among the PRTF	Provincial REDD+ Task Force members	33
Social Safeguards for SFM and REDD+ at local level	December 15-16, 2016	PAFO Luang Prabang Province	Promotion of understanding to practice safeguards among staff at provincial and district levels	Extension workers in the PAFO and the DAFO. DONRE	37

				offices in 12 districts	
FAO-RECOFTC training: Promoting gender equality in natural resource management	January 23-26, 2017	REFOCTC Bangkok	Promotion of understanding of gender equality in natural resource management	PAFO staff	2

Activity 4-1-5 Support the province to comply with the requirements as a FCPF-CF target province.

Overview explanations of the FCPF and ERPD were given in cooperation with the DOF at PRTF meetings and at local consultation meetings.

The necessary support was provided, such as the assessment of social and environmental impacts of PaMs, at the consultation meetings of the PRAP in line with ERPD requirements and in coordination with Activity 3-1.

Activity 4-2 Pilot priority forestry policy(s) to address the drivers of emissions and removals.

Activity 4-2-1 Identify priority forestry policy(s) to address the drivers identified in 4.1.

The Project identified the priority forestry policy and activity for mitigating deforestation through the formulation of the PRAP. Protection forests in Luang Prabang cover a vast area that occupies about 60% of the provincal area, and areas with forests that relatively remain were designated Protection Forests. In addition, agricultural lands and activities in other sectors such as mining and hydropower dams are planned and implemented in the Protection Forest area, and these activities were causing deforestation. For this reason, there is an urgent need to take measures to reduce deforesation through collaboration with other sectors for managing Protection Forest.

Therefore, the strengthening of Protection Forest management is an important measure identified in the PRAP, as it contributes to addressing deforestation and degradation and promoting sustainable forest management and socio-economic development. For the promotion of pilot activities of Protection Forest management planning, the Guidelines for Protection Forest Management Planning (approved by the DOF on December 30, 2019) supported by Japan's Grant Aid "Forest Preservation Programme" in 2014-15 were utilized. The Project selected Phou Pheung-Phou Pha Thoun - Tat Kuang Si Provincial Protection Forest Area (PPT-PPTA) as the pilot area in collaboration with the LENS2 Project of the World Bank (LENS2/WB) after holding a series of discussions. The two parties agreed that the Project shall lead the formulation of the Protection Forest Management Plan, a feasibility study on payment for forest environmental services (PFES) and ecotourism, and training for the implementation of forest management and livelihood improvement activities at the village level, while LENS2 will provide financial support for the implementation of the village-level activities.

Table 53: List of Pilot Activities (Luang Prabang Province)

No.	Activities	Overview
1	Support for establishing and strengthening the PPT-PPTA Protection Forest Management Committee	In Protection Forests at each of the national, provincial, and district levels, the common problem seen was the difficulty of promoting Protection Forest management, because the management entities are unclear. For PPT-PPTA, the Project supported the establishment of a cross-sectoral management committee and supported the establishment of an implementation structure for effective Protection Forest management.
2	Support for formulating Protection Forest management plans for PPT-PPTA	In Luang Prabang Province, there are eight national, one provincial, and twelve district Protection Forests, but no Protection Forest management plan has been formulated so far. In collaboration with the World Bank LENS2 project, the Project supported the formulation of a Protection Forest management plan for PPT-PPTA as the project target. The specific activities undertaken were as follows. ・ Collection of basic village information ・ Collection of forest cover information ・ Identification of High Conservation Value Forest (HCVF) through a biodiversity survey. ・ Identification of important water sources and watershed areas. ・ Forest protection, regeneration, identification of potential plantations

		・ Identification of Totally Protected Zone (TPZ) and Control Use Zone (CUZ) ・ Formulation and approval of a PP-PPT Protection Forest management plan based on the above information and consultation workshops
3	Consensus building and approval of the Protection Forest boundaries, and installation of boundary posts	In the three districts in Luang Prabang Province where PPT-PPTA is located, the boundaries of Protection Forests were established with the participation of neighboring villagers, and official approval and installation of boundary posts and signboards were supported.
4	Feasibility study on the payment for forest environmental services	It is essential to secure a steady budget to promote sustainable forest management. PMD No. 333 on Protection Forests requires forest service users, such as hydroelectric power companies and ecotourism companies, to allocate part of their profits to forest management, but it has not yet been put into operation. PPT-PPTA is located in the watershed forests that source water to Luang Prabang City, and Kuang Si Waterfall there is a famous tourist destination. The Project investigated the possibility of applying payment for forest environment services, and from 2018 onward, through the support of LENS2, the Project supported good practice study in which forest service providers bear the management costs of PPT-PPTA.
5	Feasibility study on eco-tourism for forest protection and livelihoods improvement	The provincial socio-economic development plan calls for the promotion of ecotourism. It has started to attract villagers as an incentive to manage forests and as an alternative livelihoods option. The Project conducted a survey on the possibility of ecotourism development support in PPT-PPTA.

In Oudomxay Province as well, as a result of discussions with the PAFO, the promotion of Protection Forest management was selected as a pilot activity. The province has designated the watershed of Nam Beng River, which is the main river of the province, as the Nam Beng National Protection Forest Area (approximately 215,000 ha), with an aim of strengthening watershed management. However deforestation and forest degradation was ongoing due to shifting cultivation and cash crop expansion. There was an urgent need for watershed management entities to address the indirect drivers such as increasing demand for commercial crops, lack of alternative livelihood options, poverty, weak law enforcement, and the lack of governance. The Project decided to support piloting an "irrigation and watershed management model" that combines sustainable agricultural promotion including irrigation, and which is described as effective PAMs for mitigation measures for deforestation in the PRAP, as well as forest conservation in the upstream area of irrigation water to regulate water flow. This model could be applicable to similar watersheds not only in the province but also in the six provinces covered by the FCPF-CF.

As Japan's Grant Aid "Forest Preservation Programme" supported the formulation of a Protection Forest management plan in Nam Beng National Protection Forest Area, the Project did not support planning at the landscape level but supported activities at the village level. As a result of discussion with the PAFO, four villages in Beng District and one village in Muang Xai District (five villages in total) located in the upper streams of the Beng River, which have 1.062 households and 4,578 people (2,056 women), were selected as target sites for implementing the pilot activities below.

Table 54: List of Pilot Activities (Oudomxay Province)

No.	Activities	Overview
6	Creating a village-level land and forest use plan in collaboration with the Asian Development Bank irrigation project	A total of five villages in or adjacent to the watershed area of the Nam Beng Irrigation Sub-scheme, which were located in the upper areas of the Ben River and also targeted by the Northern Rural Infrastructure Development Project (ADB/NRI-AF) supported by the Asian Development Bank, were selected. The Project supported the development of land and forest use plans for the targeted villages. ADB/NRI-AF planned to support agricultural promotion through conventional irrigation development, but did not focus on forest conservation in the upstream area, which provides a stable supply of agricultural water. Thus, collaboration with the ADB/NRI-AF aimed to pilot

		an "irrigation and watershed management model" with the purpose of synergizing forest management and livelihood improvement by supporting forest conservation in the upstream area of the irrigation project.
7	Tree planting in forest areas based on land use plans, and support for cultivation of cardamom, fruit trees, etc. to improve village livelihoods	In the five villages mentioned above, the Project supported afforestation in the forestlands through agreement with the villages, especially in the water source area. Cardamom planting as a livelihood improvement activity, and fruit tree planting in communal areas such as schools, were also supported.

Activity 4-2-2 Pilot identified priority forestry policy(s).
Activity 4-2-3 Evaluate the results of piloting.

The results of implementing the identified priority forestry policies, as well as challenges and lessons learned, are described below. The numbering of the Results in Table 55 corresponds to the numbering of the Activities of Table 53 and Table 54.

Table 55: Results of Pilot Projects for Priority Forestry Policies, Challenges and Lessons

Results	Challenges and lessons
Luang Prabang Province	
1. Support for establishing and strengthening the PPT-PPTA Protection Forests Management Committee	
・ On April 19, 2018, a provincial-level management committee was set up, consisting of concerned agencies chaired by the head of the PAFO (No. 261/PG/LPB). A district-level management committee consisting of concerned agencies was established in each of the three districts, chaired by the deputy district governor. The Project reported on the activities and discussed the issues related to forest management in PPT-PPTA. ・ A PPT-PPTA field office was established with the support of LENS2/WB. The management system was further strengthened by assigning forest officers.	・ The Project has built a cross-sectoral management system headed by the head of the PAFO, but continuous management activities and budgetary measures are required to maintain such a management structure. ・ Three field offices have been completed in the Protection Forest with the funds of LENS2/WB, but due to lack of budget, there is no district staff stationed. It is still difficult to substantially strengthen the management structure.
2. Support for formulating Protection Forest Management Plans for PPT-PPTA	
The following activities were carried out to formulate the PPT-PPTA Protection Forest management plan. ・ In order to identify the boundary of PPT-PPTA, past decisions on the three forest categories in the province were collected. ・ Analysis work was conducted using a digital elevation model in PPT-PPTA, and important watershed areas for sourcing water were identified, such as steep slopes (35 degrees or steeper), water purification facility intakes, dams, and Tat Kwanshi waterfalls. ・ A list of concession areas that may be affected by PPT-PPTA were created from the relevant organizations of districts, provinces and villages. ・ With the cooperation of the Faculty of Agriculture, Forestry and Resources, Souhanuvong University, the C/P collected basic village information in the target villages, and identified important water sources and rivers, risk areas which had landslides in the past, and the habitat of endangered species. ・ Totally Protected Zone (TPZ), which is a strict protected area, and Controlled Use Zone (CUZ), which allows a certain level of land use, were demarcated by compiling the above information.	- The Project supported the C/Ps in learning GIS data analysis. However, they still have basic understanding and need further technical support. -As a leading case of a cross-sectoral Protection Forest management planning, the Project contributed to the discussion on the revision of the Protection Forest Decree based on the knowledge and lessons learned through this work.

・ In consultation with related organizations, the Project organized forest conservation and afforestation activities necessary for forest management. ・ The results from above were put together to formulate a Protection Forest management plan, which was explained to the provincial-level management committee. The plan was revised based on the comments and then approved by the PAFO.	
3. Consensus building and approval of protection forest boundaries and installation of boundary posts	
・ In collaboration with the FIPD and the PAFO/DAFO, field surveys and village consultations were conducted to confirm the boundaries of the PPT-PPTA. In addition, the Project supported the installation of boundary posts in cooperation with LENS2/WB. -The revised boundary for the Protection Forest was approved by the head of the PAFO. Information has already been shared and sent to the Protection Forests Division and the FIPD under of the DOF. ・ Through collaborative work between the administrative officers and villagers involved in the formulation of Protection Forest boundaries, awareness of the Protection Forest its management has been raised.	- Examination of Protection Forest boundary data revealed that the local government officials and villagers did not understand the exact location, making delineation work difficult. For the practicality of Protection Forest management, it is necessary to clarify and confirm the boundary of Protection Forest area through village consultation. -Since it is difficult to confirm the Protection Forest boundary on site, it is necessary to use topographic maps and set the boundary per watershed based on mountain ridges, valleys, rivers, etc. (roads are also acceptable). ・ GIS data of Protection Forest boundaries tends to be scattered, and centralized data management is still an issue.
4. Feasibility study on the payment for forest environmental services	
・ From May 9 to June 16, 2017, the Project collected information on the status of forest environment services from hydropower generation companies, tourism companies, and related departments in Luang Prabang Province. ・ Although the Project could not confirm the payment cases in the manner stipulated in PMD No. 333, the Project was able to collect information on the situation regarding environmental payments. ・ (Case 1) A case in which a water company supports forest patrol fees in a neighboring village in a part of the PPT-PPTA. ・ (Case 2) A case where guide fees are collected from tourists who use the trekking road from Tat Kwanshi Falls to Long Lao Village (inside PPT-PPTA), putting the collected fees into the village fund. ・ The admission fee for Tat Kwanshi Waterfall is currently centrally managed by the Provincial Finance Department. The Department of Information, Culture and Tourism requests the funds as necessary for the maintenance of park facilities. These funds could potentially be used for forest management in the catchment areas of the waterfall. The results of this survey were presented at the above-mentioned management committee and shared with concerned departments and LENS2/WB. They became the basic data for the Payment for Forest Environmental Services (PFES) support implemented by LENS2.	・ Hydropower companies were obliged to conduct surveys on environmental and social impacts at the beginning of the Project and formulate the Environmental Management Plan (EMP) and Watershed Management Plan (WMP). The forestry sector has not been fully involved. The forestry sector needs to be actively involved in the EMP and the WMP to strengthen the management of the hydropower dam catchment areas. ・ LENS2 had discussions with concerned departments based on the results of this survey, but due to the lack of adequate implementation regulation, movement toward the implementation of benefit sharing has not been in progress. In order to facilitate the initiative, legislative arrangement regarding the implementation of payment for forest environmental service would be required.
5. Feasibility study on ecotourism for forest protection and livelihoods improvement	
・ The feasibility study was conducted in collaboration with Luang Prabang University and a private business operator in Lao PDR. ・ The study investigated representative villages in PPT-PPTA	・ This study included tourism companies to explore the possibility of private investment, but commercialization has not progressed so

and collected information on natural resources, historical resources, cultural resources, economic resources, etc. ・ As a result, six trekking routes and activities in two homestay model villages were proposed, and their potential for ecotourism were confirmed.	far. It is necessary to continue to support the possibility for future private investment.
Oudomxay Province	
6. Creating a village-level land and forest use plan in collaboration with the Asian Development Bank irrigation project	
The Project supported the formulation of land and forest use plans at the village level for five villages located in the upstream of the Beng River through the following actions. ・ Socio-economic surveys in the target area ・ Orientation and establishment of a village forest management committee ・ Village land and forest zoning ・ Installation of sign boards and boundary posts ・ Awareness-raising activities related to the importance of forests and strengthening law enforcement ・ Formulation of village forest management regulations ・ Formulation of plans for tree planting and Non-Timber Forest Product (NTFP) planting activity based on village land and forest planning ・ Deforestation monitoring based on village land and forest zone (Activity 4-3-2)	・ Each activity was completed as planned, and the implementation capacity between local governments was strengthened. -As an "irrigation and watershed management model", it was planned to proceed in collaboration with the ADB/NRI-AF. Since the progress of the ADB/NRI-AF has been delayed, it was agreed that the collaboration would be limited only at the level of implementing pilot activities.
7. Tree planting in forest areas based on land use plans, and support for cultivation of cardamom, fruit trees, etc. to improve village livelihoods	
・ Training on cardamom cultivation techniques was conducted for participants in NTFP (cardamom cultivation) activities, and 62,500 seedlings for 233 households were supported ・1,946 seedlings of native species and fruit trees were planted in 3.1 hectares of village protection forests and school orchards	No particular problems have been observed because the support is in response to requests of the villagers. The harvest season has not yet arrived, but it is desirable to train on post-harvest quality control and marketing of cardamom in the future.

Activity 4-2-4 Provide feedback on the evaluated results to the provincial and national levels.

Based on the knowledge and lessons learned from pilot activities related to Protection Forest management, the Project compiled comments for the revision of the Prime Miniser Decree (PMD) on Protection Forests and proposed them to the DOF's department in charge. The main proposals forcused on 1) clarification of Protection Forest management structure; 2) management purpose; 3) methods for formulating Protection Forest boundaries; 4) methods for demarcating TPZ and CUZ; 5) methods for formulating management plans and collecting necessary data items; and 6) management of payment for forest environmental services. The Project made practical comments and suggestions based on the findings from the pilot activities.

Regarding payment for forest environment services and ecotourism, the results were reported and discussed at the JCC and other meetings. In the revised Forestry Law, ecotourism was newly included together with REDD+ for the new forestland concessions. Payment of environmental services in forest conversions was also included as an important policy instrument.

The Project planned to promote watershed conservation in the upstream area in cooperation with NRI-AF/ADB as an "irrigation and watershed management model" in Oudomxay Province, but due to the delay of NRI-AF/ADB project activities, the Project was not able to go beyond exchanging opinions for this concept and implementing at the level of pilot activities. However, the ADB is preparing a successor project, and it is possible that these results will be utilized in the future. It has also been agreed that the target villages in the six northern provinces funded by the GIZ will also cover the upstream areas of the ADB project (GIZ Project 1 has already been implemented in Houaphanh, Luang Prabang, and Sayaburi provinces). In GIZ Project 2 (under formulation), there are plans to expanded to Oudomxay, Bokeo, and Luang Namtha provinces (see Activity 3-1-10), and it is expected that the five pilot villages will also be

covered. The results from the Project will be used in its implemenation.

Activity 4-3 Pilot forest monitoring as a part of REDD+ monitoring.

Activity 4-3-1 Develop a provincial forest monitoring plan.

In order to carry out forest monitoring, the purpose, target, method, and implementation structure of forest monitoring were discussed with the C/Ps of the PAFO. Based on the analysis of drivers of deforestation and forest degradation, it was agreed that the conversion of forest land into agricultural land (including slash-and-burn agriculture) would be the main subject of forest monitoring, and the village forest areas were selected as the areas for monitoring. A total of 16 villages located in and adjacent to PPT-PPTA in Luang Prabang Province, and five villages in Oudomxay Province which already have land use plans, were selected as the target areas for deforestation monitoring.

As for the implementation strucuture, the Forestry Division and Forest Inspection Division of the PAFOs and the Forestry Unit and Forest Inspection Unit of the DAFOs were in charge of forest monitoring. The PAFOs identify the deforestion areas based on the most recent satellite images available for the target areas, and the DAFOs carry out field investigations. The Project has built a system of reporting between the PAFO and DAFO as well.

The forest monitoring was carried out during the dry season from January-April 2019 and January-April 2020, when the slashing and burning of forest were carried out for farming. The Project provided technical training on the monitoring method for the forest officers of the PAFOs and DAFOs.

Activity 4-3-2 Support the implementation of provincial forest monitoring based on the plan.

1) Development of near real-time Provincial Deforestation Monitoring System

In designing forest monitoring, the Project developed a near real-time Provincial Deforestation Monitoring System (PDMS) that enables more accurate monitoring using the most recent satellite images and field investigations. Using Google Earth Engine, a service for satellite images and a spatial information platform provided by Google free of charge, the Project developed a script for detecting deforestation areas by analyzing the satellite images of different time points and by extracting deforestion areas applicable to northern, central, and southern Lao PDR. In addition, the Project developed a web application that can be used to browse the candidate deforestation areas, provide instructions for field investigation, and store collected information. Further, the ODK Collect application was modified to prepare a questionaire form for field investigation. This software can help district forest officers who conduct field investigations to fill in monitoring information on a tablet and automatically send them to the server via the internet.

Since the number of human resources who have knowledge of GIS and satellite image analysis was limited in rural areas, the Project designed a user-friendly application with a simple user interface so that the local government officials could use it without difficulties. In addition, a user manual was developed as a reference for local users.

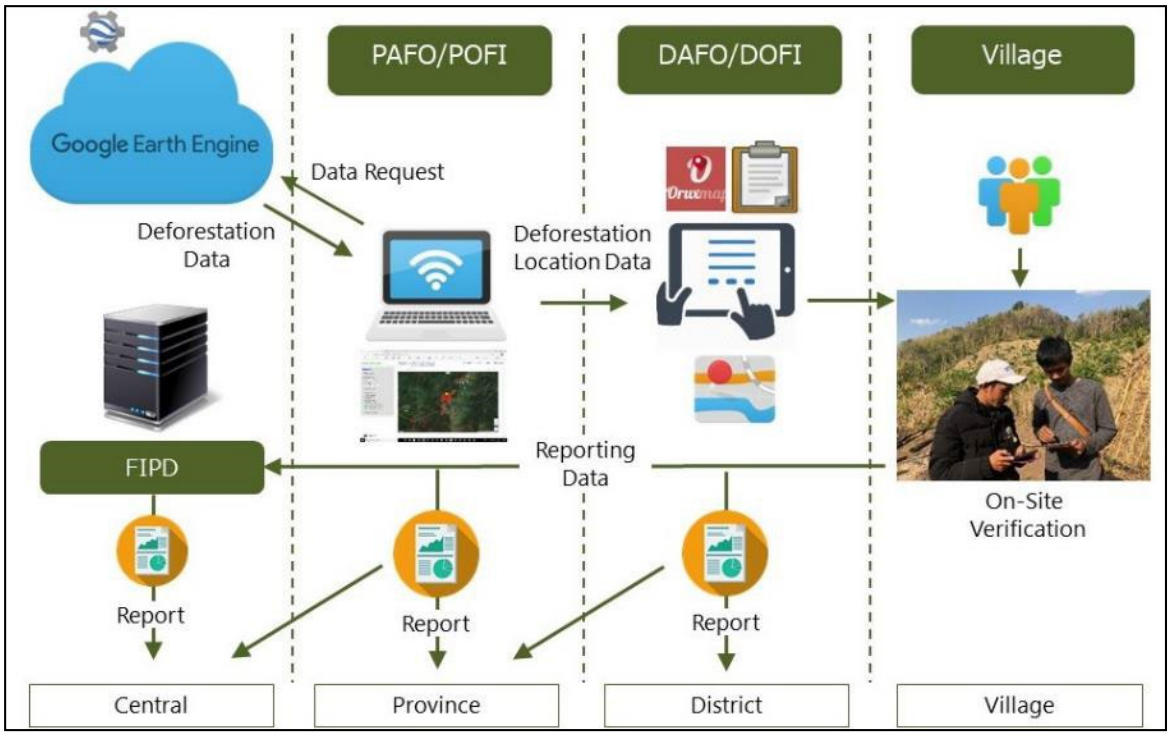


Figure 24: Implementation Flow of Provincial Deforestation Monitoring System

2) Implementation of near-real time Provincial Deforestation Monitoring System

The Project first supported the PDMS in Luang Prabang Province from January to April 2019. Subsequently, from January to April 2020, the Project supported Luang Prabang and also the additional target villages in Oudomxay Province where land use planning had been supported since April 2019. Prior to the implementation, a five-day technical training was conducted for the PAFO and DAFO forest officers to teach them how to implement monitoring using the PDMS. In addition, during the monitoring period, follow-up training was conducted to address various issues that emerged through on-site monitoring.

Activity 4-3-3 Review the monitoring result to assess the situation of the forestry sector.

The results of deforestation monitoring were as follows. In Luang Prabang Province, there was a difference between the number of detected deforestation areas by province and the number of actual deforesation areas reported from the field. This was due to the limited number of district forest officers, such that it was not possible to carry out a sufficient number of surveys in response to requests from the PAFO.

Table 56: Results of Forest Reduction Monitoring

	First monitoring period (January-April 2019)	Second monitoring period (January-April 2020)
Luang Prabang Province		
Number of points determined by the system as deforested areas	25	95
Number of deforested points confirmed and reported by field inspection	15	55
Oudomxay Province		
Number of points determined by the system as deforested areas		70
Number of deforested points confirmed and reported by field inspection		82 *

* Includes deforested areas discovered through field inspection.

In addition, the Project held a review meeting every year. The main opinions given by the users from the provinces and districts were as follows.

- Until now, deforestation monitoring has been conducted based on reports from villagers, so it was extremely difficult to know the actual situation. The PDMS has made it possible to more accurately identify deforestation areas.
- It has become possible to record the necessary information according to the questionnaire on the tablet and easily report it. Even if you don't have a tablet, you can create a report with your mobile phone by installing the software.
- It is effective as a tool for strengthening law enforcement. Administrative guidance was given to offenders and fines were collected based on the rules. The fines were stored in a village fund and used for forest patrol activities in the village. However, there are cases where the agricultural land use was permitted in some forest conservation areas, and it is necessary to discuss how to proceed with law enforcement.
- The PDMS will also contribute to the review of village boundaries and land use zoning. It was found that the defined village forest conservation areas were designated in agricultural land, and we had to discuss whether the zoning was appropriate.
- Further discussion is needed on how to use this tool from a law enforcement perspective, whether it has all the information needed for law enforcement, and how to utilize the collected information.
-
- In Oudomxay Province, the government budget for the management of the Beng River basin has been utilized to expand the PDMS in other target areas in the dry season of 2021 and carry out deforestation monitoring. This good practice suggests that the PDMS is an appropriate technology that can be operated with the implementation capacity of Lao PDR even after the completion of the Project.

Activity 4-4 Promote cooperation on REDD+ between the central level and provincial level.
Activity 4-4-1 Provide feedback on the lessons from the provincial REDD+ readiness exercise to the national level (e.g. National REDD+ Strategy, NFMS).

The PRAP was formulated through a consultation process, including with the participation of the National REDD+ Office, and the content of the PRAP and its formulation process were shared with the central level. The PRAP has also contributed to obtaining external REDD+ funding, which GIZ has applied to the GCF (the I-GFLL Project) as a fund for implementing PRAPs in the six provinces targeted under the FCPF-CF. Since then, the planned activities under PRAP has been carried out by using the funds of the I-GFLL.

Activity 4-4-2 Assist the province to foster their understanding on JCM-REDD+.

The JCM-REDD+ demonstration project being carried out in Pongsay District, Luang Prabang Province, was described in the PRAP as one of the demonstration activities that contributes to REDD+ in the province.

Activity 4-5 Strengthen the foundation to expand the PAREDD Approach.
Activity 4-5-1 Provide advice to the proposed JCM-REDD+ project.

The Project explained the progress in the preparation of the PRAP to the implementing entity of the JCM-REDD+ demonstration project at an appropriate time. The Project also shared the draft PRAP with the implementing entity of the JCM-REDD+ demonstration project through the JICA Laos Office.

Activity 4-5-2 Conduct Training of Trainers (ToTs) to increase the staff who can apply the PAREDD Approach in their administrative units.

A total of 39 forest officers from the 12 districts (including 19 from the nine districts in which PAREDD was not implemented) in Luang Prabang Province participated in a two-day training program held on October 12-14, 2016. The former C/Ps of PAREDD explained the methods to mitigate deforestation and the PAREDD Approach in the training.

For the LENS2 project supported by the World Bank, the C/Ps of F-REDD who have knowledge and experience from PAREDD set up two villages, namely Xiengmouak Village (Luang Prabang City) and Ponkeo Village (Nan District), as training sites. As instructors, the C/Ps conducted training on the PAREDD Approach for the C/Ps of LENS2/WB (mainly district staff) through lectures and on-the-job training (OJT). In addition, when LENS2/WB provided support for 12 villages, technical support was also provided through a form of OJT.

The participants received training on safeguards, including gender considerations, when applying the PAREDD Approach at the village level, and discussed the nessesary matters to consider while

implementing the approach.

The PAREDD Approach has been recognized as a tool for participatory forest management by the organizations concerned with forest management at the provincial and district levels through the training programs.

Activity 4-5-3 Continue field monitoring of the PAREDD sites (e.g. Village Development Fund as the future basis for REDD+ Benefit Sharing Mechanism), and provide feedback on the lessons to the provincial and national levels.

The Project monitored the outputs of the PAREDD Project in the four target villages in Xiengngun District at the PAREDD project sites and compiled the monitoring results into a report. In the forest areas of the target villages, 18.9 hectares, accounting for 1.1% of the village forest areas, decreased. However, it was confirmed that more than 95% of the forest area designated for protection through the village land use planning was protected. From the perspective of promoting alternative livelihood options, it was confirmed that both the number of livestock and income had improved. However, since some households reduced the number of livestock due to illness, continuous follow-up was required by district extension workers.

Activity 4-5-4 Assist the province to access and/or coordinate external funds and other donor projects, as the resources to implement the REDD+ activities, including the PAREDD Approach.

The Project had reached an agreement with the relevant officials of the PAFO that the Project would exchange information with LENS2/WB Project and would use the funds provided by the LENS2/WB Project to implement the PAREDD Approach in their target villages in PPT-PPTA.

CliPAD decided to make a request to the GCF for project funding for the implementation of the PRAP in the six target provinces of the FCPF-CF. In the consultation between CliPAD and JICA, it was agreed that JICA would also be an implementing partner of the I-GFLL Project. This idea was included in the preliminary proposal for the GCF-funding within GIZ. In particular, at the provincial level, forest monitoring utilizing the PDMS was carried out in the target provinces of the I-GFLL Project, and adjustments of the PDMS have been made in cooperation with GIZ.

Necessities and lessons for ensuring sustainability

- The implementation structure of REDD+ at the provincial level was designed based on the institutional arrangement of forest management at the start of the Project. Several years have passed since then, and the departments as well as staff in charge of the forestry sector has changed significantly. Thus, it is necessary to regularly review the implementation structure and the staff in charge.
- From the perspective of improving the capacity of C/Ps at the local level, some positive results were observed with regards to the implementation of participatory land use planning, forest management and livelihood improvement activity through the training and OJT provided by the Project. On the other hand, the introduction of payment for forest environment services to secure sustainable funds still requires stronger initiatives on policy and institutional arrangements, otherwise it is difficult for the local-level officials to get positive outcomes. The results of these feaibility studies were taken up as feedback for the policies in the discussion of forestry law revision. However, further institutionalization is needed to put it into practice and there is a need to promote discussions involving policy makers at the central level and in other sectors.
- While livelihood improvement activities take time to produce tangible benefits and outcomes, the actual project period was limited to two to three years, so the emphasis was on initial support for planning and for providing financial and technical support. However, for activities that can generate relatively short-term profits (e.g. cardamom planting), support for marketing and value-added products will be useful in the future. In that case, it is also necessary to consider support involving private businesses.
- With the revision of the PMD on Protection Forests, Protection Forest management will become a key policy in the forestry sector of Lao PDR. The methodologies, knowledge, and lessons learned through the Protection Forest boundary demarcation and the formulation of Protection Forest management plans in Luang Prabang and Oudomxay provinces related to Activity 4-2 can be utilized in the future in cooperation with GCF REDD+ RBP.
- For the sustainability of forest monitoring activities in Activity 4-3, it is necessary to 1) institutionalize the PDMS and 2) improve the implementation structure. For 1), in order to expand the PDMS nationwide, it is necessary to institutionalize the PDMS as an official forest monitoring tool for law enforcement. The

DOFI is already gaining a better understanding of the usefulness of the PDMS, but further support is needed for institutionalization. Regarding 2), cooperation between the Forestry Inspection Division and the Provincial Forestry Division of the PAFO, and cooperation between the DOFI and DOF at the central level, are both important. Together with GIZ, it is necessary to strengthen the coordination so that expansion of the PDMS can proceed smoothly.

(5) Miscellaneous General Matters

1) Joint Coordination Committee (JCC)

The R/D of the Project stipulates that JCC meetings shall be held at least once a year and whenever needed. As the MONRE DFRM was the implementing agency of the Project at its commencement, the 1st JCC meeting was chaired and co-chaired by the DFRM and JICA Laos Office, respectively. The 2nd JCC meeting was delayed due to the restructuring of forest management organizations which occurred after the first meeting. After the completion of the restructuring, the rest of the JCC meetings were held with the DOF as the implementing agency. Table 57 shows the dates and gives brief descriptions of the JCC meetings.

Table 57: Record of Holding the JCC Meetings

Meeting	Date	Main agenda items
1st meeting	November 12, 2015	Approximately 40 people, including members of the JCC, staff of the C/P organizations (the DFRM, DOF, and Luang Prabang Province) concerned with the Project, and staff of the Japanese Embassy participated in the meeting, chaired and co-chaired by the Director General of the DFRM and the Deputy Chief Representative of JICA Laos Office, respectively. The participants had discussions on the work plan and PDM indicators. The participants achieved agreement on the revision to PDM Version 1.
2nd meeting	May 12, 2017	Approximately 40 people, including members of the JCC, staff of the C/P organizations (the DOF and Luang Prabang Province) concerned with the Project, and staff of the Japanese Embassy participated in the meeting, chaired and co-chaired by the Director General of the DOF and the Deputy Chief Representative of JICA Laos Office, respectively. The participants had discussions on the output of the activities implemented so far, the plan for activities up to the end of Term I, and the drafts of the revised R/D, PDM, and PO. They also discussed the changes in the composition of the JCC and the Project implementation structure after the integration of the forest management organization into the MAF and agreed on the need to assign C/Ps as soon as possible. The participants achieved agreement on the revision to PDM Version 2.
3rd meeting	October 13, 2017	Approximately 30 people including members of the Mid-term Review mission and the JCC and staff of the C/P organizations (DOF and Luang Prabang Province) concerned with the Project, participated in the meeting, chaired and co-chaired by the Director General of DOF and the Chief Representative of JICA Laos Office, respectively. The results of the Mid-term Review were presented in the meeting. The participants agreed that the revision of the Forestry Law and FS 2020, extension of the assistance to Oudomxay Province, and exploration of access to GCF are to be conducted in Term II. They also achieved agreement on the revision to PDM Version 3.
4th meeting	February 28, 2018	Approximately 30 people, including members of the JCC and staff of the C/P organizations (the DOF, Luang Prabang Province and Oudomxay Province) concerned with the Project, participated in the meeting, chaired and co-chaired by the Director General of the DOF and the Deputy Chief Representative of JICA Laos Office, respectively. The participants had discussions on the output of the activities implemented in Term I and plan for activities in Term II and the drafts of the revised the PDM, PO, and DPO. They agreed on the need to revise R/D and also to assign C/Ps as soon as possible. The participants agreed on the revision to PDM Version 4.
5th meeting	March 28, 2019	Approximately 20 people, including members of the JCC and staff of the C/P organizations (the DOF, Luang Prabang Province and

		Oudomxay Province) concerned with the Project, participated in the meeting, chaired and co-chaired by the Director General of DOF and the Deputy Chief Representative of JICA Laos Office, respectively. The participants had discussions on the output of the activities implemented from February 2018 to March 2019 and the plan for activities from April 2019 to the end of the Project, October 2020. Further, the drafts of the revised PDM and PO were approved. They agreed on the revision to PDM Version 5.
6th meeting	November 6, 2020	Approximately 27 people, including members of the JCC and staff of the C/P organizations (the DOF) concerned with the Project, participated in the meeting, chaired and co-chaired by the Director General of the DOF and the Deputy Chief Representative of JICA Laos Office, respectively. The participants had discussions of the output of activities implemented so far and the plan for activities during the extension period up to September 2021. They also had discussions of the necessary area of support according to the revised Forestry Law. In addition, although the revision to PDM Version 6 was agreed upon in the R/D revision on July 31, the revision to PDM Version 6 was confirmed again at this meeting.
7th meeting	January 25, 2022	Approximately 20 people, including the members of the JCC and staff of the C/P organizations (the DOF) concerned with the Project, participated in the meeting, chaired and co-chaired by the Director General of DOF and the Chief Representative of JICA Laos Office, respectively. The participants had discussions of the outcome of the activities implemented and also sustainability after the completion of the Project.

2) Responses to Mid-term Review

Despite the fact that the original plan of the Project did not include a Mid-term Review, the review was conducted between October 2 and October 13, 2017 for the objective evaluation of the progress and appropriate revision of the support strategy for the rest of the Project. The Project held discussions with the relevant organizations (the DOF, Luang Prabang Province, and development partners) on the review, arranged the review meetings, and provided logistical support to the review team in accordance with the request from JICA headquarters and the Laos Office. The Project assisted the JCC in organizing its third meeting while the review team was in Lao PDR.

3) Annual Workshops

The Project is to organize a workshop once a year with the purpose of sharing the information and achievements of the Project to the relevant organizations of the GoL and related donors. As shown in Table 58, four workshops were held.

Table 58: Record of Holding the Annual Workshops

Workshop	Date	Main subjects
1st workshop	February 24, 2016	Approximately 40 people from the forestry sector, research institutions, local universities, and development partners participated in the workshop. The Project team members explained the purpose and the work plan of the Project. The participants had a question-and-answer session and exchanged opinions on the Project.
2nd workshop	May 24, 2016	Approximately 35 people from the forestry sector, research institutions, local universities, and development partners participated in the workshop. The Project team members presented the outputs of the activities and the work plan up to the completion of Term I and the participants exchanged opinions on the outputs and plan.

3rd workshop	April 11, 2018	Approximately 22 people from the forestry sector, research institutions, local universities, and development partners participated in the workshop. The Project team members presented the outputs of the activities of the Term I and the work plan up to the completion of the Term II and the participants exchanged opinions on the outputs and plan.
4th workshop	January 25, 2022	Approximately 20 people from the forestry sector, research institutions, local universities, and development partners participated in the workshop. The Project team members presented the outputs of the activities of the whole Project and the participants exchanged opinions on sustainability after the Project, etc.

4) Public Relations Activities and Participation in International Conferences

The Project implemented the public relations activities summarized in the table below to share information about the Project, such as its objectives, activities, and outputs, with wider stakeholders. In addition, the Project supported the arrangements for JICA headquarters' photo-shooting mission (for the REDD+ Platform) (November 2016), hosted a study tour of university students (March 2017), and received the visitors from JICA, Japanese private companies, academia and NGOs.

Table 59: Records of Public Relations Activities and Participation in International Conferences

Public relations activities	Details
Project leaflet	Leaflets in Japanese, English and Lao
Project website (on JICA's web page)	A total of 59 articles (Japanese and English)
Project newsletter	A total of 20 newsletters (Japanese, English and Lao)
Contribution to "*Shizen Kankyo Dayori* (Nature and Environment Letters) (No. 13)" published by JICA	Presentation of the Project
Appearance in/on local media	・Joint meeting of FCPF target provinces: one article ・1st Annual workshop: three articles ・1st PRTF Meeting for Luang Prabang: two articles ・Multi-sector workshop for the promotion of measures to control deforestation and forest conservation in Luang Prabang Province: one article ・2nd JCC Meeting: three articles ・2nd Annual workshop: three articles ・4th REL/MRV TWG Meeting ・Final Consultation of PRAP for Luang Prabang: one article ・3rd JCC Meeting: two articles ・4th JCC Meeting: three articles ・5th JCC Meeting: two articles ・6th JCC Meeting: one article *The number of reports is for those that appeared in newspapers, on radio, and on TV.
Poster presentation and distribution of the newsletters in the Round Table meetings (annual meetings of the GoL and development partners) in 2016 and 2017	English and Lao
A side event at UNFCCC COP21, "Efforts by Japan's Public Private Partnership toward the REDD+ Initiative" (November 2015)	Assisted the presentation by the GoL participants

"Japan's contribution for the implementation of REDD+" co-organized by the Ministry of the Environment, JICA, etc. (July 2016)	Coordinated participation of the GoL participants and assisted the presentation
"Tokyo International Conference on the Forest Governance Initiative" co-organized by JICA, JAXA, etc. (October 2017)	Coordinated participation of the GoL participants

5) JICA-RECOFTC Partnership Program

JICA and RECOFTC are implementing a partnership program in accordance with the MoU to cooperate in the forestry sector. Upon request from JICA to coordinate the implementation of the partnership program for Lao PDR, the Project provided support for the planning and implementation of the program activities.

- 2015–2016: Capacity development needs assessment on REDD+ for the forestry officers of Luang Prabang Province; preparation of the capacity development plan for the following years.
- 2016–2017: Trainings on PaMs and safeguards for the districts in Luang Prabang Province; revision and distribution of the awareness raising materials previously developed by RECOFTC with financial support from JICA.

The Lao side was able to enhance its capacity through a participatory workshop method applied by RECOFTC. The training programs were designed effectively by utilizing the existing training materials. Meanwhile, as RECOFTC seemed to have its coordination functions and technical resources in Bangkok, they had certain limitations to coordinating directly with the REDD+ stakeholders in Lao PDR. There were cases where the Project needed to support RECOFTC in preparing the necessary arrangements and provide logistical support in Vientiane as well as in Luang Prabang Province. As the program content tended to favor the areas which RECOFTC has advantages in, matching needs and interests were sometimes difficult.

2-2 Project Purpose and Indicators

The achievement status of the project objectives of the Project is summarized as follows based on the Joint Revew (Chapter III).

Project goal:

Capacity for Sustainable Forest Management is strengthened through incorporation of REDD+ into the sector strategy and improvement of forest resource information.

Indicators and their means of verification (MOV)	Level of achievement
Indicator 1: Revised FS 2020 approved MOV: Approval document	Medium Due to restrictions to holding meetings due to the spread of COVID-19, formulation work has been significantly delayed, and the government approval schedule has been postponed from the initial target of August 2021 to March 2022. However, within the Project period, the final draft of FS 2035 is expected to be formulated and approved at the MAF level. In the final draft, REDD+ is listed as one of the seven goals, and the revised Forestry Law also newly stipulates the promotion of REDD+ implementation at each scale and also for forest concessions. Several other important outcomes were seen during the Project period, including the revision of Forestry Law (2019), completion of the SoI (approved in November 2020), National REDD+ Strategy (approved in April 2021), and the 1st MRV (the UNFCCC technical analysis completed in June 2021). In addition, FLEGT's VPA negotiations and the development of TLAS are progressing, although taking longer than expected, to strengthen timber legality and trade. In addition, the government has begun measures such as tree planting in degraded forest areas, the promotion forest regeneration, and reviewing the three forest categories. Such important measures are being promoted, and discussions among stakeholders in the process of formulating and implementing these measures are serving as useful insights for the revision of FS 2020.
Indicator 2: The NFMS operational in compliance with the UNFCCC requirements. MOV: Approval document of the NFMS Operational Plan.	High The indicators have already been achieved, since the operational plan (NFMS Roadmap) was approved in November 2020. The NFMS developed with the support of the Project can be judged as being in accordance with the UNFCCC requirements, and it can be also assessed as "operational" for the following reasons: ・The NFMS has been described in the REDD+ Technical Annex, and the UNFCCC review has been completed. ・Reorganization of the REL/MRV TWG into the NFMS TWG and three subgroups in accordance with the NFMS Roadmap. They have started operations and therefore more a effective environment for step-by-step development of the NFMS is in place. ・The FCPF-CF ERP's MRV schedule has been agreed to in the ERPA, and necessary activities and capacity building for its implementation have been planned and being continuously implemented. ・The NRS approved in April 2021 includes a chapter on the NFMS which summarizes the current status of the NFMS (e.g. the first MRV results, monitoring of drivers of deforestation and forest degradation, carbon registry, and information disclosure). In addition, the national FREL/FRL calculated by the NFMS, and the MRV results (included in the REDD+ Technical Annex) are both submitted to the UNFCCC through the MONRE, which is the UNFCCC's national focal point, and have been finalized after technical reviews. Such achievements exceed the

	initial target.
Indicator 3: Based on the information generated by the NFMS, effectiveness of REDD+ activities is evaluated among the stakeholders (e.g. MONRE, MAF, Local Government and Development Partners) through a consultative process. MOV: Evaluation summary submitted to NRTF	Medium The indicators and the means of their verification were interpreted as follows. The indicators have been achieved as the REDD+ Technical Annex and Safeguards Report (SoI) for the REDD+ results period have been submitted to the UNFCCC after being approved by the chair of the NRTF. ・The MRV results of the REDD+ results period (2015-2018) generated by the NFMS were shared with the FSSWG and the NFMS TWG (formerly the REL/MRV TWG). The REDD+ Technical Annex and associated documents were approved by the MAF and then submitted to the UNFCCC in July 2020 through the MONRE. ・In addition, based on the information generated from the NFMS, analysis was conducted for forest and land use, emissions and removals, and for identifyng countermeasures in the NRS. ・The Safeguards Report (SoI) for the above-mentioned results period evaluates the background and situation REDD+ safeguards in Lao PDR, and the how they were applied in the implementation of REDD+ (implementation of PaMs). At the central level, the SG-TWG was in charge of preparation and was consulted with other stakeholders including government departments, project experts, NGOs, and the private sector. At the local level, the PAFO and other agencies related to environmental managment, the DAFO, as well as representatvies for local communities, women, and persons with disabilities were consulted. A third-party NGO conducted facilitation. The report was written in English (with Lao language as a summary) and approved by the MAF, and then published through the UNFCCC. ・Since REDD+ in Lao PDR has met the requirements for applying for the GCF REDD+ RBP Pilot Program, JICA, the DOF, and the Project have cooperated to prepare the necessary documents for application. The first drafts of the key documents were completed. It is expected that future revisions will be neeeded to meet the requirements of the second phase of the GCF REDD+ RBP program following the completion of its first phase.
Indicator 4: Results of the activities in Luang Prabang and Oudomxay provinces are utilized for the formulation of national forestry/REDD+ policies. MOV: Feedback workshop report	High The results and lessons learned from the planning and implementation of pilot activities and forest monitoring activities to counter deforestation in Luang Prabang and Oudomxay provinces have contributed to the improvement of national-level policies and also the access to REDD+ external funding. The actions are further progressing as indicated below. Thus it can be said that achievements have exceeded the initial targets. ・As a result of sharing the results in the NFMS TWG based on the annual review of the PDMS piloted in the two provinces, the PDMS was positioned as a forest monitoring tool in the NFMS operation plan (NFMS Roadmap). It is planned to be extended to the six northern provinces in collaboration with the FCPF-CF ERP. Extension to two other provinces is already underway through collaboration with the I-GFLL Project. ・The FCPF-CF ERP has been formulated and approved based on the PRAPs of the six northern provinces, including those from the two REDD+ provinces. This has opened an opportunity for Lao PDR to obtain future results-based payments. ・The I-GFLL Project of the GCF/GIZ was launched in three provinces, including Luang Prabang. An additional project is being formed for the remaining three provinces, including Oudomxay. The institutional

	arrangements for REDD+ established with the support of the Project will be utilized in those projects. ・The results and findings related to the formulation and implementation of Protection Forest management plans, which were piloted to address deforestation in both provinces, were evaluated as valuable cases for the revision of the PMD on Protection Forests, which is currently being revised.

3. History of PDM Modification

The current Version 7 of the PDM has been reached through revisions made seven times since Version 0, which was attached to the R/D. The changes made in each revision are shown below.

1st Revision Approved at the 1st JCC Meeting (November 12, 2015)

Version 0	Version 1	Justification
Overall goal indicator 3 Forest cover in Luang Prabang increased xx% from year xxxx.	Luang Prabang Province achieves 10% reduction of emissions and 10% increase of removals (tCO2e) from their forest in 2025 against the baseline of 2017.	The indicator adopted the baseline and target of the FCPF-CF ER-PIN (as of November 2015).
Output indicator 1.2 [number] counterparts are trained through Off-the-Job trainings.	At least 120 persons from the counterpart agencies are trained through Off-the-Job Trainings.	The indicator assumed four times of Off-the-Job Training with 30 participants each, in collaboration with other development partners.
Output indicator 3.2 "xxx" TWG co-chaired by the Project operational following the developed TOR.	FREL/FRL & MRV TWG is operational following the developed TOR.	The Project was agreed to be the leading partner of the REL/MRV TWG, taking advantage of the packaged support to REL/MRV under Output 2. The Lao side decided not to adopt the "co-chair" system for the TWGs.

2nd Revision Approved at the 2nd JCC Meeting (May 12, 2017)

Version 1	Version 2	Justification
Activity 1.1.4. Based on 1.1.3 above, support development of other key policies (e.g. By-laws to the Forestry Law) (REDD+ related policies will be dealt with under Output 3).	Based on 1.1.3 above, support development of other key policies (e.g. Forestry Law revision, By-laws to the Forestry Law) (REDD+ related policies will be dealt with under Output 3).	The agreed additional support to the revision of the Forestry Law was reflected.
Activity 2.3 Support development of the national FREL/FRL.	Support the development of the national FREL/FRL, and the FREL/FRL for the ERP to the FCPF-CF.	The agreed additional support after the selection of Lao PDR as a FCPF-CF pipeline country was reflected.
Activity 2.3.1 Decide the plan and procedure for developing the national FREL/FRL.	Decide the plan and procedure for developing the national FREL/FRL, and the FREL/FRL for the ERP to the FCPF-CF.	Same as above
Activity 2.3.8 Hold consultation workshop(s) to decide the national FREL/FRL.	Hold consultation workshop(s) to decide the national FREL/FRL, and the FREL/FRL for the ERP to the FCPF-CF.	Same as above
Activity 2.3.9 Facilitate submission of the national FREL/FRL to the UNFCCC.	Facilitate submission of the national FREL/FRL to the UNFCCC, and the FREL/FRL for the ERP to the FCPF-CF.	Same as above
Activity 2.3.10.		The technical assessment process

Support the improvement of the national FREL/FRL by reflecting the technical assessment results of the UNFCCC.	Support the correspondences with the technical assessments of the FREL/REL by the UNFCCC and the FCPF-CF.	of FREL/REL was described more accurately. The agreed additional support after the selection of Lao PDR as a FCPF-CF pipeline country was reflected.
Activity 3.1.4. Raise awareness on the need for the REDD+ focal point (i.e. DFRM and DOF) and the UNFCCC focal point (MONRE-DDMCC) to cooperate with each other.	Facilitate collaboration between DOF (REDD+ focal point) and MONRE-DDMCC (UNFCCC focal point) on FREL/REL, MRV, and other related issues.	The results of the restructuring of forest management organizations was reflected. Specific areas for the DOF and DDMCC to cooperate were described.
Activity 3.1.7. In coordination with other stakeholders, support Laos on accessing the FCPF-CF (only if Laos is selected as a CF pipeline country).	In coordination with other stakeholders, support Laos on accessing the FCPF-CF. ~~(only if Laos is selected as a CF pipeline country).~~	The precondition was deleted after the selection of Lao PDR as a FCPF-CF pipeline country.
Activity 3.2. Support coordination role of the DFRM and the DOF in national REDD+.	Support the coordination role of the DOF in national REDD+.	The results of the restructuring of forest management organizations was reflected.
	Activity 4.1.5 Support the province to comply with the requirements as a FCPF-CF target province.	The activity was added since Lao PDR was selected as a FCPF-CF pipeline country.
Other changes ・ The term "DFRM" was replaced by "DOF", reflecting the restructuring of forest management organizations. ・ "Provincial REDD+ Strategy (PRS)" was renamed "Provincial REDD+ Action Plan (PRAP)". ・ Further revision to the Output, Indicator, Activities, and Work Plan are expected if Lao PDR is officially selected as a FCPF-CF country.		

3rd Revision Approved at the 3rd JCC Meeting (October 13, 2017) after incorporating the recommendations by the Mid-term Review

Version 2	Version 3	Reason for change
Overall goal indicator 3 Luang Prabang Province achieves 10% reduction of emissions and 10% increase of removals (tCO2e) from their forest in 2025 against the baseline of 2017.	(Addition) Year of baseline (year 2017) should be reconsidered based on the timing of submission of ERPD	The addition was noted based on the latest situation.
Indicator 4.5 9 districts not supported by PAREDD have at least 4 officers/district trained in PAREDD Approach.	PAREDD approach is applied at least one district not supported by PAREDD	It was agreed to be more meaningful to support the training and application of PAREDD Approach in a district where the Project has actual field activities, instead of providing trainings to the districts where the Project will not intervene.
Important assumptions (Output 1) Administrative structure of the sector remains unchanged, or the impact of change does not substantially risk the achievement	The impact of changes from reorganization does not substantially risk the achievement of outputs.	As the possibility of another restructuring of forest management organizations in the near future seems small, and it is a matter beyond the Project's

of outputs.		control, it was considered irrelevant as an important assumption.
Important assumptions (Output 3) Administrative structure of REDD+ remains unchanged, or the impact of change does not substantially risk the achievement of outputs.	The impact of organizational change does not substantially risk the achievement of outputs	Same as above
Important assumptions (Activity 3) The Proposed JCM-REDD+ project continues.	Deleted	Because JCM-REDD+ is a bilateral scheme of the two governments which is beyond the Project's control, it was considered irrelevant as an important assumption.
Important assumptions (Activity 4) JCM-REDD+ progresses as intended	Deleted	Same as above

4th Revision Approved at the 4th JCC Meeting (February 27, 2018) in response to the R/D revision including additional support for Oudomxay Province.

Version 2	Version 3	Reason for change
Implementing Agency: DOF-MAF, PAFO of Luang Prabang Province	Implementing Agency: DOF-MAF, PAFO of Luang Prabang and Oudomxay Provinces "Oudomxay" was also added to other parts as necessary.	Oudomxay Province was added as at target province in response to the R/D revision. "Oudomxay" was also added to other parts as necessary.
Activity 2.1.4. Test-run and modify the scope, institutional arrangement, process, and the physical system (before and after the 1st MRV).	In a step-wise manner, test-run and modify the scope, institutional arrangement, process, and the physical system (before and after the 1st MRV).	Added according to the latest situation.
Activity 2.2.3. "Measuring": Estimate emissions by sources and removals by sinks from the latest available Activity Data (AD) and Emission Factor (EF) (for 2018-2019, tbd).	"Measuring": Estimate emissions by sources and removals by sinks from the latest available Activity Data (AD) and Emission Factor (EF) (for 2018-2019, tbd) and support NFI implementation.	Reflected the additional support regarding the 3rd NFI implementation which required for MRV.
Activity 2.3.10. Support the correspondence with the technical assessments of the FREL/FRL by the UNFCCC and the FCPF-CF.	Support the improvement of the national FREL/FRL and REL for ER program by reflecting the correspondence with the technical assessments results of the FREL/FRL by of the UNFCCC and the FCPF-CF.	The addition was made based on the latest situation.
Activity 3.1.2. Provide technical inputs to the NRS.	Provide technical inputs to implementation of the NRS.	Same as above

5th Revision Approved at the 5th JCC Meeting (March 28, 2019) where new activities were added to Output 3.

Version 4	Version 5	Reason for change
-	Activity 3.1.8. Support the submission of Summary of Information (SoI) on safeguards, and development of Safeguard Information System (SIS).	Reflected the additional support regarding Summary of Information (SoI).
-	Activity 3.1.9. (If positive MRV results are confirmed) support Laos on accessing the GCF REDD+ Results-based Payment.	Reflected the additional support regarding the preparation of a funding proposal for the GCF REDD+ RBP pilot program.
-	Activity 3.1.10. Facilitate JICA's co-financing arrangement for the GCF funding proposal by GIZ.	The additional support regarding coordination for the partnership between JICA and GCF/GIZ's REDD+ implementation project.

6th Revision Approved at the 6th JCC Meeting (November 6, 2020)

The revised PDM attached to the minutes of the meeting for the R/D revision signed on July 31, 2020 was approved at the 6th JCC meeting. The content of the R/D revision are the postponement of activities due to COVID-19, additional support for the preparation of a funding proposal to the Results Based Payment Pilot Programme of GCF, and an associated one-year extension of the Project period.

Version 5	Version 6	Reason for change
Period of Project: 5 years from November 2015	6 years from November 2015	The postponement of activities due to COVID-19, additional support for preparing a funding proposal to the pilot program for REDD+ results-based payments of GCF, and associated one-year extension of the Project period.
	Activity 2.1.7. Implement the NFMS Operational Plan.	Same as above
	Activity 2.1.8. Extend the provincial forest monitoring system (PDMS) developed through Activity 4.3 to the FCPF-CF ERP provinces in collaboration with the GIZ-GCF and other projects.	Same as above

7th Revision Approved at the R/D revision signed on September 20, 2020, the project period has been re-extended.

Version 6	Version 7	Reason for change
Period of Project: 6 years from November 2015	6 years and 3 months from November 2015	The postponement of activities due to COVID-19, smooth transition to the next project scheduled to start in February 2022, and four-month extension of the Project period due to

		support for preparing a fund proposal for the pilot program for REDD+ results-based payments of GCF.

4. Other

4-1 Results of Environmental and Social Considerations (if applicable)

N.A.

4-2 Results of Considerations on Gender/Peace Building/Poverty Reduction (if applicable)

N.A.

III Results of Joint Review

1. Results of Review based on DAC Evaluation Criteria

1-1 Relevance: High

1-1-1 Consistency with the Policies of the Government of Laos

The GoL endorsed the FS 2020 in 2005 and the 8th Five-Year Plan of the National Socio-Economic Development Plan (2016-2020) (hereinafter referred to as the "8th NSEDP") in 2016. Both policy documents highlight the increase of forest cover through tree planting and forest restoration, sustainable forest management (SFM), and promotion of REDD+ as follows.

Objectives/Targets of FS 2020 and the 8th NSEDP

The FS 2020 states the following as sector development targets to be met by 2020.

1) Improve the quality of existing forested area, increasing it to 70% (of the total land area) by naturally regenerating up to six million ha and planting trees up to 500,000 ha in un-stocked forest area as an integral part of a rural livelihood support system encompassing stable supplies of forest products and the prevention of natural disasters.
2) Provide a sustainable flow of forest products for domestic consumption and generate household income through their sale and export, thus contributing to livelihood improvement, fiscal revenue, and foreign exchange earnings while increasing direct and indirect employment.
3) Preserve the many species and unique habitats that are, for different reasons, threatened both within the country and elsewhere.
4) Conserve the environment, including the protection of soil, conservation of watersheds, and climate stability.

Forestry objectives and targets in the 8th NSEDP

1) Stop illegal logging and trade of wood products and wildlife trafficking
2) In order to achieve the 70% forest cover target, restore two million ha of degraded land in Conservation, Protection, and Production Forests.
3) Promote the planting of 500,000 ha of traditional and industrial tree crops in the three forest categories.
4) Develop forest allocation and management plans at the village level in 1,500 villages.
5) Complete the pilot on the establishment of two model national natural parks (Nam Et-Phou Louey and Nakai-Nam Theun) and propose Hin Nam Nor Protected Area to the United Nations Educational, Scientific and Cultural Organization (UNESCO) as a natural World Heritage Site.
6) Develop readiness for reducing emissions from deforestation and degradation (REDD+), aiming for the reduction of domestic emissions as well as for forest carbon credit trading in 2020.

In the 9th NSEDP, the forestry sector activities are similar to those in the 8th NSEDP, but it sets the REDD+ specific target and priority activity for climate change mitigation as follows:

(Target)

- Reduce greenhouse gas emissions from deforestation to about 30 million tonnes of carbon dioxide equivalent (tC02e) and sell forest carbon credits worth at least USD 95 million

(Priority activity)

- Continue the implementation of the Nationally Determined Contributions (NDC) and greenhouse gas emission reduction mechanisms, such as REDD+ projects, in order to contribute to international greenhouse gas emissions reduction

This clearly demonstrates a deepening of understanding of REDD+ linked with SFM and its potential to raise funds to further strengthen forest management at the national level.

In addition, both the 1st and 2nd NDCs submitted to the UNFCCC in 2015 and 2021, respectively, identify the land use and forestry sector as the largest GHG emitter and set the emission reduction targets for this sector. The NRS has been finalized and disclosed on the UNFCCC REDD+ Web Platform, together with other REDD+ documents, and REDD+ is set as one of the seven targets of the final draft of FS 2035.

Given the above policy and development plan, the Project, which aims to strengthen capacity for SFM

through the incorporation of REDD+ into both national and sector strategies and the improvement of forest resource information, is highly relevant with the policy directions of the GoL.

1-1-2 Consistency with the Needs of the Target Groups

Central Level

There is increased interest in the promotion of the REDD+ activities as a possible measure for addressing deforestation and forest degradation, and as a potentially significant financial source through results-based-payments or the sale of emissions reductions for off-set.

Given the increased interest in REDD+ in Lao PDR and the assistance for capacity development given by the Project and other development partners, a series of initiatives have been undertaken by the GoL, such as the establishment of the NRTF in 2008, acceptance of the ERPD by the FCPF Carbon Fund in 2018, acceptance of the national FREL/FRL by the UNFCCC in January 2019, submission of the Cancun Safeguards implementation summary (SoI) and the NRS to the UNFCCC, and acceptance of the REDD+ Technical Annex by the UNFCCC, confirming an emissions reduction of about 14 million tCO2e during the period of 2015-2018. Among these, the Project played a key role in supporting the construction of the national FREL/FRL and RL (Reference Level) for the Emission Reduction Program area (six northern provinces), the SoI, the UNFCCC's acceptance of the REDD+ positive result during the MRV period of 2015-2018, and preparation of the NFMS Roadmap. The Project also made important contributions to the finalization of the NRS and the Emission Reduction Payment Agreement (ERPA).

In addition, the Project assisted the drafting of the Funding Proposal and other associated documents for the GCF REDD+ RBP Pilot Program, which unfortunately had already exhausted its entire budget with eight other countries that had applied earlier than Lao PDR. However, the ERPA has been signed and there will be RBP according to the first MRV results in 2022 for the three years from 2019 to 2021.

The 2019 Forestry Law, which has 175 articles in total and 45 articles more than the 2007 Forestry Law, provides fairly detailed regulations on timber legality, plantation promotion, REDD+ promotion, and village-level forest planning. The Project facilitated communications between the DOF and the development partners and has been assisting the revision of the PMD on Protection Forests and MAF regulations on REDD+ projects.

Provinces of Luang Prabang and Oudomxay

The inclusion of these two provinces in the ERP Area of the FCPF Carbon Fund was informally agreed to among the DFRM, the DOF, and concerned development partners, including JICA's F-PREP project prior to JICA's Detail Survey for the Project in March 2015. In October 2015, the Idea Note to develop the ERP for the area consisting of six northern provinces, including these two, was approved at the Carbon Fund meeting.

Regarding the concept and activities of REDD+, all six provinces started from scratch. It was agreed upon that a PRAP would be developed for each province as the first step. For Luang Prabang Province, where JICA has been active for a long time, the Project assisted PRAP development. In addition, some policy pilot activities were implemented in a Provincial Protection Forest near the city of Luang Prabang and the PDMS was first developed, piloted, and operationalized. For Oudomxay Province, the FCPF RP assisted PRAP development, but there has been very limited support for forestry activities. Therefore, the PAFO of Oudomxay Province, the Project, and the small irrigation development project financed by the Asian Development Bank (ADB) cooperated to pilot the concept of "irrigation and watershed management", in which the Project supported land/forest use planning, livelihood improvement activities, and PDMS piloting in some villages in the upstream of one of the small irrigation schemes.

In the meantime, the ERPD was approved in 2018 and I-GFLL Project 1, financed by GiZ and GCF, commenced REDD+ activities in three provinces, including Luang Prabang. Further, I-GFLL Project 2, covering all six provinces, is being prepared for submission and approval by GCF. In addition, the RBP from the Carbon Fund, based on the results of the MRV in 2022, will hopefully flow into the ERP area. At the moment, the PAFO of Oudomxay, which has recognized the usefulness of the PDMS, is continuing and expanding the PDMS with support from the ADB project.

REDD+ activities consist not only of having an institutional framework at the central level, but also of field activities such as participatory land/forest use planning and support for livelihood improvement, including ecotourism and law enforcement, which the Project supported, meeting the needs for these activities in the two provinces.

It can be said that the forestry sector and management in Lao PDR is now at a turning point, from physical natural resource use to the provision of environmental services. There is an urgent need for institutional and staff capacity development, as well as for financial sources. The Project, which aims at realizing sustainable forest management by strengthening the capacity to implement REDD+, is well-aligned with these needs and expectations.

1-1-3 Consistency with the Policy and Strategy of Japan's ODA

The "Country Assistance Policy for Laos" issued by the Ministry of Foreign Affairs of Japan in 2019, refers to the forestry sector as follows: "Japan provides assistance for sustainable forest resource management and income generation including collaboration with REDD+ and Green Climate Fund. This assistance has the purpose of forest preservation, climate change mitigation, and poverty reduction." The Project reflects Japan's ODA policy for Laos well.

1-1-4 Coordination with Other Development Partners

The Project has maintained close coordination and collaboration with many development partners in almost all of its activities throughout the Project duration. The main ones are listed below.

FCPF Readiness Project

- Coordination with REDD+ related work, including the NRS, the Cancun Safeguards information system technical document, the Benefit Sharing Plan, and the Project operation manual for GFLL
- Collaboration in the 2nd NFI and the replacement of hardware and software at the FIPD Remote Sensing Unit. (For details, see Section 1-2, "Input by the Lao Side" in Chapter II, "Results of the Project".)

SUFORD, RECOFTC, FAO, Fro-Feb (FLEGT/VPA) and others

- Facilitation of the formation of an informal group to prepare input to the drafts of the Forestry Law at various stages and in various forums, including presentations at FSSWG meetings, technical meetings with the drafting team of the DOF, and the informal meeting with the minister responsible for the legislation to be submitted by the GoL to the National Assembly.

EFI through RECOFTC

- Collaboration in coordinated assistance for the formulation of FS 2035.

SilvaCarbon, University of Boston, and FCPF experts

- Improvement of degradation monitoring, particularly the interpretation of time series satellite images and sample-based area estimation

GCF/GiZ (I-GFLL Project 1)

- Expansion and field level implementation of the PDMS in three northern provinces

LENS2 Project (a World Bank project implemented by the Environment Protection Fund)

- In the pilot Protection Forest in Luang Prabang Province, following discussion with the Luang Prabang PAFO and the LENS2 Project, the Project mostly conducted upstream work, e.g. village-level land use planning, support for livelihood improvement, and boundary delineation in two villages, while cooperating in the implementation of LENS2 Project in other villages.

As stated above, the degree of coordination and cooperation with other development partners is very high.

1-1-5 Appropriateness of Project Design and Approach (See "Efficiency" for Details)

The approach taken by the Project to achieve the Project purpose and to address emerging issues was appropriate.

Given the unknown or emerging status of the Forestry Law revision, MRV results, the GCF REDD+ RBP Pilot Program, the ERP, and the ERPA at the commencement stage of the Project, the DOF and JICA took a step-wise approach to cooperation on these issues, meaning that necessary work was added to the PDM and work plans after confirmation of previous stages. In addition, improvement by the Project of the institutional set-up in accordance with emerging needs, such as the restructuring of REL/MRV TWG into the NFMS

TWG, was also an appropriate approach.

Due to a delay in some important work caused by the various restrictions related to COVID-19 and preparation for GCF REDD+ RBP, the Project's duration was extended twice. However, the delay was kept to a minimum because of two resident experts living in Lao PDR from the beginning of the Project (three from January 2021). These resident experts were able to consult directly with the C/P staff in the implementation of work under their responsibility; for work under the responsibility of the experts in Japan, the resident experts were also able to play coordination roles so that the Japan-based experts could communicate and implement this work in a remote modality. However, the explosion of community infections of COVID-19 in the capital city Vientiane and many provinces since April 2020 induced stricter restrictions on meetings and the working modality, which made face-to-face consultations very difficult and limited the number of participants in remote ones. This caused a delay of longer than half a year in policy-related work including the formulation of FS 2035.

1-2 Effectiveness: High

The purpose of the Project is: "Capacity for Sustainable Forest Management is strengthened through incorporation of REDD+ into the sector strategy and improvement of forest resource information." The indicators and the levels of achievement are as follows.

1-2-1 Prospect for the Achievement of Project Purpose

The Project Purpose was achieved at a high level. A summary for each indicator is presented below (see Chapter II.2.2 for details):

Indicator	Means of Verification (MOV)	Level of achievement
Indicator 1: Revised FS 2020 approved	Approval document	Medium The MAF plans to get an endorsement of the final draft of FS 2035 at the government meeting in March 2022. In order to do so, the MAF needs to submit the final version by mid-February. Therefore, the final version is very likely to be ready by the end of the Project.
Indicator 2: The NFMS operational in compliance with UNFCCC requirements	Approval document of the NFMS Operational Plan	High
Indicator 3: Based on the information generated by the NFMS, effectiveness of REDD+ activities is evaluated among the stakeholders (e.g. MONRE, MAF, Local Government and Development Partners) through a consultative process	Evaluation summary submitted to the NRTF	Medium The submission of the REDD+ Technical Annex and the SoI to the UNFCCC was significant in opening up the possibility of Lao PDR to access the GCF REDD+ RBP. On the other hand, due to the delay in approval of NRS and LNSIS as well as the exhaustion of the fund for GCF REDD+ RBP Pilot Program, Lao PDR could not access the RBP during the Project period.
Indicator 4: Results of the activities in Luang Prabang and Oudomxay provinces are utilized for the formulation of national forestry/REDD+ policies	Feedback workshop report	High In particular, the fact that both provinces have become a part of the FCPF-CF ERP, and also have been included in I-GFLL support, shall contribute to the high level of impact and sustainability.

1-2-2 Appropriateness of project logical framework and indicators

No changes were made to the Overall Goal and the Project Purpose. At the Output level, support for Oudomxay Province was added to Output 4 in the second phase (February 2018-). This was because the expansion of JICA support was agreed upon at the request of the MAF in early 2017, when the formulation of the FCPF-CF ERP started following the adoption of the ER-PIN. In light of the above, the logical framework was appropriate, and it was possible to modify Output 4 without changing the original structure of the PDM.

The Project is appropriately designed so that the Project Purpose will be achieved through the delivery of each Output. The indicators of the Project Purpose were all set in a form that allows for objective evaluation.

The indicators of the Project Purpose and their Means of Verification (MOV) were clear for Indicator 1 and Indicator 2.

For Indicator 3, however, the indicators and the MOV needed to be interpreted in accordance with the actual situation. The evaluation was made based on the following facts for the REDD+ results period (2015-2018): (1) the REDD+ Technical Annex estimates the effectiveness of REDD+ activities as MRV results; (2) information from the NFMS was used in the preparation of the NRS; (3) the Safeguards Report (SoI) assesses the effectiveness of the application of PaMs and safeguards during the results period; and (4) the proposal for the GCF REDD+ RBP is being prepared. This was due to the fact that none of the four REDD+ readiness components (the NRS, FREL/FRL, NFMS, and SIS) existed in Lao PDR at the beginning of the Project, making it difficult to predict what would determine "…the effectiveness of REDD+ activities".

For Output 4, the following was used to determine the achievement of indicators: (1) the integration of forest monitoring (PDMS) into the NFMS; (2) the launching of the FCFP-CF ERP, including both provinces; (3) the launching of the I-GFLL in Luang Prabang Province and the initiation by GIZ of the formulation of additional support including Oudomxay Province; (4) the initiation of the revision of PMD on Protection Forest Management based on findings from the formulation and implementation of the Protection Forest Management Plan in Luang Prabang Province; and (5) a feasibility study of payment for forest environmental service and ecotourism, and contribution to the revision of the Forest Law based on the findings. As in the case of Output 3, it was difficult to predict at the beginning of the Project what would determine that the produced results were "utilized for the formulation of national forestry/REDD+ policies".

1-2-3 Management of External Factors for the achievement of the Project Purpose

The important assumptions leading to the achievement of the Project Purpose were managed as follows:

- "The impact of changes from organizational restructuring does not substantially risk the achievement of outputs": there were some impacts on the Project, such as the rearrangement and transfer of work among the organizations, transfer of personnel, and appointment of the Lao C/Ps before and after the restructuring of the forest management organization (integrated into the MAF) in April 2016. No major issues were observed after the restructuring was completed.
- "GoL decides to submit the 1st national MRV report to the UNFCCC": fulfilled.
- "GoL decides to submit the FREL/FRL to the UNFCCC": fulfilled.
- "NRS is approved without delay (expected within 2017)": the approval of the NRS was significantly delayed to April 2021. Although the impacts of the delay to the development of the NFMS, MRV, and FREL/FRL under Output 2, as well as the development of the SoI and preparation for the GCF REDD+ RBP were mitigated, it was inefficient in terms of the absence of clear policies and lack of transparency both domestically and internationally.

1-3 Efficiency: Medium

Inputs from both JICA and the GoL were mostly provided as planned, and were used appropriately and efficiently in the delivery of the Outputs.

In response to the spread of COVID-19, from March 2020 until the end of the Project, the GoL continued to implement infection control measures, including restrictions on movement, in-office work, and meetings. This significantly affected the implementation of the planned activities.

1-3-1 Basic Plan, Work Plan, and Results

The Project went through three revisions of the R/D and was extended for 16 months.

R/D revision	Justification
1st revision Feb. 2018	Changes in C/P organization due to the restructuring of the forest management organization of the GoL, and addition to support for Oudomxay Province.
2nd revision July 2020	The Project period was extended by 12 months to allow for delays in activities due to COVID-19, and to support the preparation of a proposal for the GCF REDD+ RBP.
3rd revision Sep. 2021	The Project period was extended by four months to allow for delays in activities due to the continuation of COVID-19, to avoid gaps until the commencement of the next project, and to support the preparation of a proposal for the GCF REDD+ RBP.

Such changes from the original plan were due to the fact that the scope and content of support have been changed in response to increasing needs along with the progress of the Lao forestry sector and REDD+, and also due to the expansion of JICA's support strategy (see 1-3-2 below for a summary of changes). The extension of the Project period, mainly due to COVID-19, was another main factor for the changes.

The Project actively promoted collaboration with other donor support. In terms of costs, following cost-sharing collaborations were realized, resulting in significant efficiency gain in JICA's support cost:

- 2nd NFI: (JPY 9 million)
- 3rd NFI: (JPY 14 million)
- Forest degradation monitoring: SilvaCarbon and others (JPY 8 million)
- FIPD equipment: FCPF RP (JPY 38 million)
- Luang Prabang Province, Protection Forest Management activities: LENS2 (JPY 68 million).
- PDMS collaboration: I-GFLL (JPY 55 million)
- Forest Strategy: European Forest Institute (JPY 5 million)

1-3-2 Generation of Outputs and Levels of Achievement

As assessed for each Output in Chapter II.2.1, the Activities were generally implemented as planned and contributed to the achievement of the expected Outputs. The changes to the Output and Activity levels are summarized below.

Output 1	Addition of support for the Forestry Law revision and development of the PMD on Protection Forest Management (Activity 1-1-4 extended).
Output 2	Addition of support for the implementation of the NFMS Roadmap, including the priority actions (Activity 2-1-7 added); support for the dissemination of the PDMS (Activity 2-1-8 added); and support for the FCPF-CF ERP (Activities 2-3-8, 2-3-9, and 2-3-10 extended).
Output 3	Addition of support for MAF regulation on REDD+ projects and forest carbon trading (Activity 3-1-2 extended); the FCPF-CF ERP (Activity 3-1-7 extended); safeguards (Activity 3-1-8 added); accessing the GCF REDD+ RBP (Activity 3-1-9 added); and facilitating cooperation with the GCF/GIZ I-GFLL (Activity 3-1-10 added).
Output 4	Addition of support to Oudomxay Province mainly related to Outputs 4.2 Pilot activities; and 4.3 Forest monitoring.

1-3-3 Management of External Factors and Pre-conditions for the Achievement of the Outputs

The External Factors and Pre-conditions leading to the achievement of the Outputs were managed as follows:

External Factors

- "GoL commits to progress the revision of FS 2020 and development of other policies as scheduled": the government's commitment to FS 2035 (synonymous with "revision of FS 2020"), the revision of the Forestry Law, and the PMD on Protection Forest Management was sufficient. However, the time-consuming process, combined with the impact of COVID-19, delayed the process more than expected.
- "Cooperation with MONRE-DCC, as the responsible agency for 'Reporting' of the MRV, proceeds efficiently": the cooperation was generally smooth. However, the delay of the BUR by the MONRE-DCC affected the reporting of the MRV results (as an annex to the BUR).
- "Development of NRS and other national policies/institutions for REDD+ progress as scheduled": the development of the NRS and other REDD+ policies and institutions were an unprecedented attempt for the Lao PDR, and the time-consuming process, combined with the impact of COVID-19, has delayed the

process more than expected.
- "TWGs are established and the TORs are decided without delay": although the TWGs were affected by the government's restructuring of the forest management organization, significant impact was avoided.
- "Provincial REDD+ is supported under the national policy": fulfilled.

Pre-Conditions
- "Both the Lao and Japanese sides decide the project framework and implementation arrangement without delay": although there was an impact made by the government restructuring of the forest management organization, significant impact on the actual cooperation was avoided.

1-3-4 Quantity, quality and timing of inputs

As mentioned earlier, although the Project revised the support for the Output (Output 4) and Activity levels according to the situation, the quantity, quality, and timing of inputs by both JICA and the GoL were generally appropriate and efficiently used for the implementation of the activities.

Lao side inputs

Based on the R/D, the following Lao side inputs were provided:

Counterpart personnel	Although there were some gaps before and after the restructuring of the forest management organization in 2016, basically, appropriate C/Ps were appointed.
Office and equipment	Office and equipment were provided at DOF headquarters and FIPD in Vientiane, and at PAFO in Luang Prabang (initially in PAFO) and Oudomxay provinces.
Project operation cost	In Term I, 769,000,000 LAK (about 9,600,000 yen) was invested in addition to the 80,000 USD (about 8,769,000 yen) spent on the National Forest Inventory (NFI). In Term II, 1,350,000,000 LAK (about 14,130,000 yen) was invested. Therefore, the C/P budget, excluding NFI, was 2,119,000,000 LAK (about 23,730,000 yen) in Term I and Term II (converted at the exchange rates of the respective payment dates).

Japanese side inputs

Based on the R/D, the following Japanese side inputs were provided:(as of January 17, 2021)

Team of Japanese and local experts	A total of 17 expert positions for a total of 185.57 MM were filled. A total of seven local staff positions were filled.
Trainings	29 training sessions in Lao PDR, three Project trainings in Japan, and eight third-country training courses and workshops were conducted.
Equipment and machinery	Office equipment (PCs, printers, etc.), office amenity equipment (air conditioners, internet conferencing systems, etc.), high-resolution satellite background map services, FIPD server spare parts, and one motorcycle were procured and provided.
Project operation cost	JPY 270,337,941 yen was expended.

The inputs were basically provided in an appropriate quantity and quality. In addition, two experts (Chief Advisor and Deputy Chief Advisor) from the beginning of the Project until the end of 2020, and three experts (with the addition of Remote Sensing Advisor 3) from the beginning of 2021 until the end of the Project, were based in Vientiane to promote close cooperation with the Lao side. In particular, although no other experts were able to travel to Lao PDR after March 2020 due to the COVID-19 outbreak, they appropriately fulfilled their tasks remotely. The roles of the three experts, local staff, and local consultants were critical to minimize delays in activities during this period.

1-4 Impact: High

The Overall Goal, Indicators, and Means of Verification of the Project are as follows.

Overall Goal	Objectively Verifiable Indicators	Means of Verification
Sustainable Forest Management is promoted through full implementation of REDD+ and in coordination with the Forest Strategy.	1. REDD+ MRV periodically reported through the BURs.	1. National MRV report in the BURs.
	2. SFM shows progress in line with the revised FS 2020.	2. [assess against the targets of the revised FS 2020].
	3. Luang Prabang and Oudomxay provinces achieve 10% reduction of emissions and 10% increase of removals (tCO2e) from their forests in 2025 against the baseline of 2017 (Note: Baseline year should be reconsidered once the ERPD is submitted).	3. Comparison between the baseline and the MRV results.

1-4-1 Prospect for Achievement of the Overall Goal: Relatively High (See details below in Section IV, "For the Achievement of Overall Goals after Project Completion")

As stated in the sections on "Relevance", "Effectiveness", and "Efficiency", Lao PDR now has almost a completely developed strategy, policy, and regulatory framework. Further, the necessary support from development partners like JICA, World Bank, and GiZ/KfW will be provided in key areas of policy formulation through bylaws, the use of innovative and user-friendly technologies, and field level activities for the implementation of FS 2035 and the Forestry Law.

However, REDD+ schemes, including results-based payment and sales of emissions reductions for off-setting, are evolving in and out of the UNFCCC. These include technical innovations, from time-consuming wall-to-wall mapping to direct identification of changed areas (deforestation, degradation, etc.) and advanced tools for forest monitoring. Thus, Lao PDR needs continued assistance to select appropriate REDD+ schemes, including payment or off-setting sales, and to meet the requirements of the selected schemes using efficient technology. Emerging schemes like the LEAF Coalition set higher requirements, particularly for the accuracy of emissions reduction estimates, more frequent estimates of forest carbon changes, detailed reporting on the implementation of Cancun Safeguards, and consistency between different scales in terms of contribution to the achievement of the NDC.

1) Causal relationship: High

The Project purpose, "Capacity for Sustainable Forest Management is strengthened through incorporation of REDD+ into the sector strategy and improvement of forest resource information", has a high causal relationship to the Overall Goal.

2) Ripple effects: High

The Overall Goal is so broad that it covers all elements necessary for SFM, including human, legal, institutional, and financial resources of the target group, which consists of mostly government officers involved in REDD+. There are several positive ripple effects for society, especially for local people and the environment. These are as follows.

<u>Poverty alleviation and improvement of rural livelihoods</u>

Some of the revenue from REDD+ RBP or ER sales will be used for the capacity building of policy, institutional, and human resource development, and for implementing SFM. However, a relatively large portion will be invested at the village level, including for participatory land/forest use planning and to support livelihood improvements, including micro-infrastructure and nature-based tourism (village development activities) for the alleviation of poverty, which is one of root causes of encroachment into forests.

<u>Increased self-governance in village development activities in consultation with Districts</u>

The participatory approach in planning and implementing village development activities will enhance self-governance by village communities, and at the same time will strengthen communications with Districts, which will assist planning and implementation of village development activities.

Respect for customary use of lands and forests and respect for traditional knowledge by the local communities, including small ethnic groups

REDD+ is designed to respect customary forest/land uses and the traditional knowledge of local people, including in particular small ethnic groups and women, in land use planning, village forest management planning, and other village development activities. Consultations on the planning of village development activities will ensure knowledge transfer for livelihood improvement as well as the review and recognition of sustainable traditional knowledge.

Improved and increased coordination with other sectors

REDD+ and the implementation of FS 2035 both aiming for protection of existing forest and restoration of degraded forest area need clear and realistic land use planning in general and delineation of forestland in particular in a fully participatory manner. The National Master Plan for Land Allocation sets area allocated to eight land categories, including forestland and agricultural land, and FS 2035 centers around 70% of national land to be categorized as forestland. For this purpose, coordination with relevant sectors, especially agriculture, land management, and other infrastructure development sectors, will be improved and increased.

Increased watershed protection

Investment of the revenue from REDD+ RBP or ER sales in promotion of SFM will not only improve forest management including forest protection, biodiversity conservation, and restoration, but also contribute to the enhancement of the forest functions of soil and water conservation. This is especially the case in the watersheds of hydropower dams and irrigation schemes, ensuring stable power generation and water supply for agriculture under climate change

Negative effects: Very low

No unintended negative impact is envisaged at this point. The Lao National Safeguards Information System (LNSIS) will be developed and operated for the Cancun Safeguards and the social and environmental management plans to be in place for REDD+ activities. These instruments also apply to the activities financed by REDD+ RBP to mitigate adverse impacts to a minimum.

1-5 Sustainability: Medium

The prospect of the sustainability of the Project is assessed “Medium” from the assessment of the following factors.

1-5-1 Policy and Institutional Sustainability: Relatively High

The policy environment for the Project has become more favorable than it was when the Project started in November 2015, as stated in the Relevance section above. The GoL stresses the importance of increasing forest cover through the maintenance of existing natural forests, tree planting in and forest restoration of degraded forest, and the reduction of CO2 emissions from deforestation and forest degradation in the 9th NSEDP, the NDC, FS 2035, the 2019 Forestry Law, the NRS, and other forest-related policy documents.

The DOF has been preparing several important bylaws for the implementation of the Forestry Law, including the three PMDs on Forest and Forestland and the MAF Regulations on REDD+ projects. The DOF is also working with Department of Agricultural Land Management (DALAM) of the MAF and the Department of Land Management of the MONRE to produce a joint regulation for the recognition of land/forest use rights and the demarcation of areas of local people living inside of the forest categories before those categories are established, to ensure both forest protection and livelihood improvements. Once they are finalized and handbooks or manuals for field applications are produced, and extension and training for both local officers and people are conducted, the land and forest management situation is expected to become more sustainable.

1-5-2 Organizational Sustainability: Medium

In 2016, all forestry-related responsibilities, including REDD+, were re-consolidated in the DOF and MAF.

Since then, the revision of the Forestry Law and REDD+ work have been done by the DOF/MAF in a relatively smooth way. This is expected to remain the case for the foreseeable future. In addition, the processing of agriculture and forest products, previously under the jurisdiction of the Ministry of Industry and Commerce (MOIC), is now under the MAF. This will further streamline the chain of custody of wood products, hence contributing to closing a big gap between wood production and the demand for processing.

However, due to budget difficulties and a relatively large ratio of government staff to total population in comparison with other ASEAN countries, the government has started: 1) organizational restructuring and 2) a reduction in the number of government staff. As of October 2021, the Department of Policy and Legal Affairs has been merged with the Permanent Secretary Office at the MAF, and the Division of Plantation Promotion has been merged with the Division of Production Forest at the DOF. It is said that further restructuring is under consideration and that this will mean more work per staff member. Therefore, further institutional and staff capacity development and institutional efficiency is indispensable.

Furthermore, as stated in Chapter II-2.1, "Necessary Actions and Lessons Learned", the number and capacity of staff members in the REDD+ Division and the FIPD, as well as their adaptability to the increasing sophistication of REDD+ schemes, are limited. Further capacity development is a pressing need for achieving the Overall Goal.

1-5-3 Technical Sustainability: Medium

As stated in Chapters I and II-2.1, the Project conducted capacity development for the core C/P staff of the Project activities through workshops, training both domestically and outside of the country, and through joint implementation of activities throughout the Project period. As a result, some capacity development has been gained with different degrees for the Output and activities. Particularly, Output 1, capacity development for policy, has shown good progress. For example, the drafting of the revised Forestry Law and Forest Strategy was initiated by the Lao side in the Lao language, then drafts were shared with development partners for comments and proposals for improvement in the form of consultations and writing. Through these experiences and with this confidence, further capacity development in this field can be expected.

As stated in Chapter II-2.1, however, the number and capacity of staff members in the REDD+ Division and the FIPD, as well as their adaptability to the increasing sophistication of REDD+ schemes, are limited. In order to achieve the Overall Goal, more capacity development, as well as the involvement of relevant researchers and domestic consultants, are indispensable.

1-5-4 Financial Sustainability: Medium

At the time of writing this review, the budget allocated by the Ministry of Finance is limited to a recurrent budget for such things as salary and allowances, with some funds for travel and meetings. The Forest Protection Fund (FPF) is the only source for forest management and inspection in the field. The small amount available for it has been decreasing at a rate commensurate to logging volume from natural forest. Payment for forest environmental services, including loss of biodiversity defined in Article 82 in the Forestry Law, is yet to be realized through sub-laws. Thus, an insufficient budget is considered one of the main obstacles for the DOF/MAF for forest management.

In the forest sector of Laos, the donor community has been quite active in providing technical and financial support to more than supplement the limited government budget, including that of the FPF, contributing to the realization of positive REDD+ results.

REDD+ revenues have the potential to be a game changer in this situation. With a relatively large amount of revenue from the Carbon Fund and the GCF REDD+ RBP, the DOF could implement many activities defined in FS 2035 and strengthen law enforcement, then apply for other RBP schemes or emissions reduction sales as a result of the self-implementation of forest protection and restoration measures.

However, there are a couple of issues concerning REDD+ revenues. One is its still-evolving nature. For example, the GCF REDD+ RBP Phase 1 has exhausted the allocated budget; further, the design of the next phase, including the total budget and requirements, is not clear. The FCPF Carbon Fund will end after the second payment in 2025. The centralized market mechanism under the UNFCCC has been agreed to at COP

26, but it still needs detailed rules and will not be operational for two to three years.

Another issue is that the requirements of the LEAF Coalition and the Jurisdiction and Nested REDD+ (JNR) developed by Verra, which is said to meet the future requirements of the market mechanism under the UNFCCCC, will become more sophisticated and detailed, and it is difficult for only the government staff to meet these requirements. Thus, the DOF needs donor assistance or to hire consultants to fulfil the requirements, which may be different among various REDD+ schemes.

It can be concluded that a most stable and predictable financial source would be domestic payment for forest eco-system services, as defined in Article 82 of the Forestry Law. The DOF needs to address this issue as early as possible with assistance from development partners.

2. Key Factors Affecting Implementation and Outcomes

Even through the Project Purpose has been achieved at a high level, as stated above in the section on "Effectiveness", there was a delay in some important activities, as follows.

1) Delay in FS 2035 formulation

The MAF Committee for evaluation of FS 2020 implementation and FS 2035 formulation was established in September 2019. The submission and approval of the FS 2035 at the GoL meeting was not accomplished at the time of writing this report. This is mostly due to two factors. First, the review of FS 2020 implementation took a very long time and second, meetings and the working modality of government staff due have been restricted due to the explosion of COVID-19, especially in Vientiane.

2) Delay in some elements of REDD+ and loss of opportunity to submit a Funding Proposal for GCF REDD+ RBP.

In the meeting between the DOF and the JICA mission on this issue in February 2020, both sides agreed to accelerate the drafting, finalization, and submission of the NRS, the SIS development document, the SoI, and the REDD+ Technical Annex to the 1st BUR to the UNFCCC, and the Funding Proposal and associated annexes to the GCF, the tabling of which was targeted for the 28th GCF Board meeting in March 2021.

However, only the SoI was prepared in time and submitted to the UNFCCC in November 2020. The 1st MRV was also finalized in time, but the 1st BUR, to which the results of MRV were annexed as the REDD+ Technical Annex, was delayed, with its submission in July 2020. The UNFCCC Technical Analysis Report of REDD+ Technical Annex, which is one of requirements for Funding Proposal submission, was made public in June 2021. Other documents were delayed for various reasons, and JICA as the AE and the DOF missed an opportunity to submit a Funding Proposal before the REDD+ RBP fund was exhausted at the 30th GCF Board meeting in November 2020. .

3. Evaluation of the Results of the Project Risk Management

1) FS 2035

The Project, together with other development partners, urged the DOF to finalize the FS 2035 as early as possible, but at the same time requested consultations with stakeholders, especially development partners. As a result, one multi-stakeholder consultation meeting was organized in June 2021, and two rounds of comment and revision proposal were organized. In addition to this, the explosion of COVID-19 hindered drafting work incorporating comments and proposals for revision, which is outside of the control of the government or the Project.

2) REDD+ documents and FP to GCF RBP

Several times, the Project urged the DOF and the MONRE-DCC, which is responsible for drafting the National Communications and BURs and is the UNFCCC's national focal point, to expedite the REDD+ related documentation and submission to the UNFCCC. The Project also assisted the DOF in drafting the SoI and provided essential comments on several draft versions of the SIS development documents under DOF-JICA agreements. However, it took a long time within the DOF/MAF for the NRS to be finalized in the Lao language as the official strategy, mostly due to the very new and multi-sectoral nature of the NRS. However, all of the required documents have been submitted to the UNFCCC and disclosed on its REDD+ web-

platform.

As for the use of GCF REDD+ RBP, consultation between the DOF and JICA has been progressing, and the drafting of a Funding Proposal and associated documents related to socio-environmental impacts and gender are also underway. It is expected that the DOF and JICA could revise and finalize the Funding Proposal and its Annexes as necessary as soon as the next phase of GCF REDD+ RBP is decided at a future GCF Board meeting.

4. Lessons Learnt

4-1 Sector Strategy Reflecting the Latest Trends in Land and Forest Use in and out of the Country

In the case of the FS 2020, which JICA also assisted, the first draft was ready in 2003 in the Lao language, but it took almost two years to get an endorsement from the government. In the second year, a couple of major changes took place. One was the expansion of commercial cropping, including commercial trees like rubber, and the other was a discussion of "avoided deforestation", which was renamed REDD+ and included in the Bali agreement in 2007. Thus, the FS 2020 did not provide policy directions on these issues.

Lao PDR will graduate from the status of least developed country in 2027 but will be so for next five years and, due to the small size of its land and population, the regional economic situation has more impact on land use in Lao PDR than vice-versa. Forest conversion will continue for the time being due to such government priorities as developing more hydropower dams. In addition, as stated below, international schemes on forests are still being developed. Therefore, in order to present the forest policy for the future, it is very important to understand the latest land and forest use trends and analyze their background, as well as to know the direction of international discussion on forests, including REDD+ and where Lao PDR should stand. Therefore, the delay in finalization and approval of FS 2035 itself may not be a problem as long as the trends and background pointed out above are captured and measures and guidelines for addressing them are presented in the text.

4-2 Understanding, Adaptation to, and Capacity Building for Sophisticated and Elaborated Forest Policy Measures, Including REDD+ Schemes and Technological Innovations

As mentioned above in the section on "Sustainability", even though the UNFCCC's framework on REDD+ has been agreed upon at COP meetings, some other certification and payment schemes with stricter requirements for such things as the accurate estimate of emission reductions are being established. In addition, the market mechanism under the UNFCCC, which is expected to be operational in a couple of years, will not accept the REDD+ results as a modality; rather, it is thought that more detailed methodologies will be developed for specific activities such as emissions reduction from planned or unplanned deforestation separately. In order to meet future requirements, new technologies to directly assess areas of deforestation or forest degradation are being developed by overseas research institutes, rather than the detection of change between land forest use maps at different time points, as has been done in Lao PDR.

On the other hand, Lao PDR has been negotiating FLEGT/VPA and the TLAS, which is its core, is also being developed in both soft and hard aspects. The GoL intends to apply the TLAS to all wood production and exports, but its structure is very complex and coordination among the ministries and departments involved is essential for its smooth operation. In addition, the PDMS and Operational Logging and Degradation Monitoring (OLDM), which detects deforestation and degradation on a real-time basis, are being developed. Their effective use is considered very important as a supplementary measure for TLAS operation.

Lao PDR has initiated the development and establishment of sophisticated forest policy measures and innovative technologies to support them, which is very appropriate for a country with a very low population density. The establishment of a coordination system, organizational adaptation to the complex policy measures and innovative technologies, and capacity development are indispensable.

IV For the Achievement of Overall Goals after Project Completion

1. Prospects to achieve Overall Goal

The Overall Goal of the Project is "Sustainable Forest Management is promoted through full implementation of REDD+ and in coordination with the Forest Strategy". The prospects for achieving this goal are assessed "relatively high" through the examination of indicators summarized in the table below.

Objectively Verifiable Indicators	Means of Verification	Prospects for Achievement
1. REDD+ MRV periodically reported through the BURs.	1. National MRV report in the BURs.	Moderate - Relevant DOF staff acquired skills and knowledge in conducting 1st national MRV, but MRV report writing and Q&A sessions with UNFCCC experts required support from the Project experts. - Due to the delay in BUR preparation, the submission of the MRV report was also delayed. In accordance with the Paris Agreement, the BUR will become the Biennial Transparency Report (BTR), the first if which is to be submitted by the end of 2024. - In order to receive results-based payment, other REDD+ elements like a new SoI report and the further development of the SIS and NFMS need to be prepared and reported to the UNFCCC. Through coordinated support by the development partners, continued capacity development is also required.
2. SFM shows progress in line with the revised FS 2020.	2. [assess against the targets of the revised FS 2020].	Relatively High - With existing and planned support, together with the government's strong commitment to achieving 70% forest cover, it is very likely that the priority activities in FS 2035 will be implemented with good progress.
3. Luang Prabang and Oudomxay provinces achieve 10% reduction of emissions and 10% increase of removals (tCO2e) from their forest in 2027 against the baseline of 2017. (Note: Baseline year should be reconsidered once ERPD is submitted.)	3. Comparison between the baseline and the MRV result.	Relatively High - The 1st national MRV shows better performance of emission reductions in the northern region, including the two provinces. - With the implementation of I-GFLL Project 1 and I-GFLL Project 2 and GFLL with RBP from the Carbon Fund, it is likely that the northern region will have more positive results.

Proposal on Indicators 2 and 3

Regarding Indicator 2, it is difficult to identify the priority targets and their baselines for performance measurement because the FS 2035 is not yet finalized. This is expected to be done in line with the approved version of FS 2035.

Regarding Indicator 3, the national FREL/FRL had not been prepared yet at the time of the Project

commencement. The ERPD for the FCPF Carbon Fund, which includes the Reference Level using the same data and method as the national one, was submitted and approved in 2018. The baseline year should be 2015, which is the last year of the reference period in the ERPD, and the "Note" in the bracket should be removed for the evaluation.

2. Plan of Operation and Implementation Structure of the Lao Side to Achieve the Overall Goal

The DOF acknowledges and appreciates the skills and capacities gained as well as the support provided through the Project, and will endeavor not only to maintain them but also to extend them to new staff or staff in other divisions in order to make it corporate knowledge.

The DOF has the intention of joining seminars and workshops organized by international organizations on such matters as the emerging sophisticated and elaborated schemes and innovative technologies. Moreover, the DOF will restructure its divisions in line with new roles and responsibilities.

3. Recommendations for the Laos side

It is recommended that the DOF incorporate the items described in the sections on "Sustainability" and "Lessons Learned" in its five-year and annual plans, and implement them.

4. Monitoring Plan from the End of the Project to Ex-post Evaluation

JICA will conduct an ex-post evaluation to verify the achievement of the Overall Goal in three to five years after the Project completion. The DOF will monitor Indicator 2 through the formulation and review of annual plans. As for Indicator 1, it is not known at this point whether the national MRV results in 2022 will be annexed to the first BTR for submission to the UNFCCC. This will depend on the future modality of the REDD+ RBP under the UNFCCC and other schemes, the GoL's policy and capacity to implement such actions (including cooperation with development partners), and the ability of Lao PDR to generate positive REDD+ results (emissions reduction and increased removals).

Annex 1

Results of the Project

(List of Dispatched Experts, Counterparts, and Trainings, etc)

Annex 1-1 List of Experts

Term I

No.	Name	Field
1	Noriyoshi KITAMURA	Chief Advisor/Forest Policy and Forest Management
2	Eiji EGASHIRA	Deputy Chief Advisor/REDD+ Policy
3	Takayuki NAMURA	Provincial REDD+ Action Plan & Implementation 1/Gender
4	Takuya MORI	Forest Information System 1/Forest Database 1
5	Yuta MORIKAWA	Forest Inventory 1/FREL, FRL/MRV 1
6	Daisuke YUMIYAMA	Forest Inventory 2/ Provincial REDD+ Action Plan & Implementation 2
7	Ryota KAJIWARA/ Kenichi MATSUBAYASHI	Remote Sensing/Forest Database 2
8	Gakumin KATO	Forest Information System 2

Term II

No.	Name	Field
1	Noriyoshi KITAMURA	Chief Advisor/Forest Policy and Forest Management
2	Eiji EGASHIRA	Deputy Chief Advisor/REDD+ Policy
3	Takayuki NAMURA	Provincial REDD+ Action Plan & Implementation 1/Gender 1
4	Masamichi HARAGUCHI	Forest Information System 1/Forest Database 1
5	Gakumin KATO/ Hiroyuki KOZU	Forest Information System 2/Forest Database 2
6	Yuta MORIKAWA	Forest Inventory 1/FREL, FRL/MRV 1
7	Daisuke YUMIYAMA	Forest Inventory 2/ Provincial REDD+ Action Plan & Implementation 2
8	Kenichi MATSUBAYASHI	Remote Sensing 1
9	Takahiro KOIDE	Remote Sensing 2
10	Paula J. Wiliams	REDD+ Safeguard
11	Atsuko Nonoguchi	Gender 2
12	Jeremy Pierre Ferrand	Remote Sensing 3
13	Dandy Aditya Novresiandi	Development of deforestation detection script

Annex 1-2 List of Counterparts

No.	Name	Job Title
1	Vongdeuane VONGSYHALATH	Project Director, Director General of the Department of Forest Resource Management
2	Saly SINGSAVANH	Project Manager, Director of Planning and Cooperation Division
3	Savanh CHANTHAKOUMMAN	Project Manager, Director of REDD+ Office
4	Linthong KHAMDY	Director of Forest Inventory and Planning Division
5	Syphavanh INTHAPATHA	Acting Director of REDD+ Division
6	Somvang SYHALATH	Director, Protection Forest and Conservation Forest Inventory Service
7	Phonkeo PHONSALY	Deputy Director of Forest Resource Management of Luang Prabang province
8	Tui PHOMMACHANH	Head of Protection Forest Management Unit
9	Bounpheng PHOUTHAVONG	Deputy Head of Protection Forest Management Unit
10	Sontisith LOUNYALATH	Technical Officer of Forest Resource Management Section
11	Xang SANAPHON	Representative of Agriculture and Forestry Department of Luang Prabang province
12	Hongkham SENEANACHACK	Technical staff of Provincial Forestry Section
13	Soulideth BOUNMANEE	Technical staff of the Agriculture and Cooperative

This structure was agreed upon at the 4th JCC (February 28, 2018) after the start of the Second Term. In order to avoid frequent changes in every personnel shift, job title holders within DOF were nominated for the main positions in the Project and the officials were to be appointed appropriately by the main position holders.

No.	Position in the Project	Job Title
1	Project Director	**Director, Planning and Cooperation Division**
2	Project Manager	Deputy Director, REDD+ Division
3	Output 1 Team Leader	Director, Planning and Cooperation Division
4	Output 2 Team Leader	Lead division: Director, Forestry Inventory and Planning Division Cooperating division: Director, REDD+ Division
5	Output 3 Team Leader	Director, REDD+ Division
6	Output 4 Team Leader	Forestry Section Chief, Provincial Agriculture and Forestry Office, Luang Prabang province Forestry Section Chief, Provincial Agriculture and Forestry Office, Oudomxay province

Annex 1-3 List of other Training and Workshop

1. Domestic training in Laos

No.	Target Output	Training	Modality	Participant
1	Output1	REDD+ Training for Benefit Sharing, Social and Environmental Safeguard and Legal Framework Technical Working Group	Collaborative assisntace	25
2	Output1	REDD+ Training to REL/MRV, Land Use & Enforcement and Implementation of Mitigation Technical Working Groups	Collaborative assisntace	25
3	Output4	Introduction of safeguard on sustainable forest management and REDD+	Collaborative assisntace	39
4	Output4	Basic Understanding of REDD+ for Provincial REDD+ Task Force Members	Collaborative assisntace	33
5	Output4	Social Safeguard for SFM and REDD+ at local level	Collaborative assisntace	37
		Total		159

2. Technical training and workshop in Laos

No.	Target Output	Training	Modality	Participant
1	Output2	NFI Kick-off meeting	Direct Assistance	20
2	Output2	Preparation Training for NFI Survey (2015-2016)	Direct Assistance	15
3	Output2	Progress sharing workshop for NFI	Direct Assistance	5
4	Output2	Wrap up Meeting for NFI	Direct Assistance	20
5	Outpu2	Preperation Training for NFI Survay (2016-2017)	Direct Assistance	20
6	Output2	MD/RV Training	Direct Assistance	4
7	Output2	Kick-off meeting on how to deal with chages in Upland Crop	Direct Assistance	12
8	Output2	Kick-off meeting on how to deal with chages around agricultural area	Direct Assistance	12
9	Output2	Supplementary meeting on how to deal with chages in Upland Crop	Direct Assistance	12
10	Output2	Kick-off Meeting for modification of areas of coniferous forest and needleleaf-broadleaf mixed forest	Direct Assistance	12
11	Output2	Kick-off meeting for MD/RV revision	Direct Assistance	12
12	Output2	Kick-off Meeting for identification of categories in the areas where any changes found	Direct Assistance	12
13	Output2	Survey for drivers of deforestation and forest degradation	Collabrative Assistance	34
14	Output2	Supplementary meeting on drivers of deforestation and degradation of forest	Collaborative Assistance	10
15	Output2	Phase 2 detailed plan briefing session	Direct Assistance	20
16	Output2	NFI Kick-off meeting	Direct Assistance	20
17	Output2	3rd NFI training	Direct Assistance	20
18	Output2	Remote Sensing/GIS training	Direct Assistance	10
19	Output2	Quality Control survey training	Direct Assistance	2
20	Output2	Forest Type Map 2019 kick-off meeting	Direct Assistance	10
21	Output2	RV survey training	Direct Assistance	2
22	Output2	GT survey training	Direct Assistance	9
23	Output2	Carbon amount calculation training	Direct Assistance	24
24	Output2	Forest Type Map creation training	Direct Assistance	10
25	Output2	Forest degradation monitoring workshop	Direct Assistance	18
26	Output2	Forest degradation monitoring workshop	Direct Assistance	15
27	Output2	ER Program MTT Meeting	Direct Assistance	10
28	Output2	ER Program MTT Meeting	Direct Assistance	9
29	Output2	ER Program MTT Meeting	Direct Assistance	5
30	Output2	ER Program MTT Meeting	Direct Assistance	4
31	Output2	ER Program MTT Meeting	Direct Assistance	5
32	Output2	ER Program MTT Meeting	Direct Assistance	5
33	Output2	NFMS training	Direct assistance	46
34	Output2	ER Program MTT Meeting	Direct Assistance	5
35	Output2	ER Program MTT Meeting	Direct Assistance	6
36	Output2	ER Program MTT Meeting	Direct Assistance	5
37	Output2	ER Program MTT Meeting	Direct Assistance	4
38	Output2	ER Program MTT Meeting	Direct Assistance	7
39	Output2	ER Program MTT Meeting	Direct Assistance	5
40	Output2	ER Program MTT Meeting	Direct Assistance	6
41	Output2	ER Program MTT Meeting	Direct Assistance	6
42	Output2	ER Program MTT Meeting	Direct Assistance	7
43	Output2	ER Program MTT Meeting	Direct Assistance	8
44	Output2	ER Program MTT Meeting	Direct Assistance	8
45	Output2	ER Program Collect Earth Online Interpretation Workshop	Direct Assistance	10
46	Output2	ER Program MTT Meeting	Direct Assistance	8
47	Output2	ER Program MTT Meeting	Direct Assistance	5
48	Output2	ER Program MTT Meeting	Direct Assistance	6
49	Output2	ER Program MTT Meeting	Direct Assistance	5
50	Output2	ER Program MTT Meeting	Direct Assistance	7
51	Output2	ER Program MTT Meeting	Direct Assistance	7
52	Output2	ER Program MTT Meeting	Direct Assistance	8

53	Output2	Training for NFMS server system administrators	Direct Assistance	7
54	Output2	Training for NFMS web-portal administrators	Direct Assistance	7
55	Output2	MMR/MRV pre-training	Direct Assistance	14
56	Output3	FCPF CF Joint Meeting	Collaborative Assistance	63
57	Output3	Workshop on REDD+ social safeguard and BSM	Indirect Assistance	36
58	Output3	Technical Working Group (TWG) meeting on BSM	Indirect Assistance	20
59	Output3	Workshop on options of REDD+ strategy for environmental and social impact	Indirect Assistance	27
60	Output3	Joint Steering Committee of JCM-REDD+ trial project and JCM-REDD+Workshop	Indirect Assistance	23
61	Output3	Workshop on REDD+ BSM and Safeguard	Indirect Assistance	35
62	Output3	FCPF Participants Committee Twenty-Fifth Meeting (PC25), 3/26-30, Washington, D.C. U.S.	Indirect assistance	unknown
63	Output3	FCPF Carbon Fund Eighteenth Meeting (CF18)	Indirect assistance	unknown
64	Output3	NFMS Progress confirmation workshop	Indirect assistance	18
65	Output3	GCF Forestry sector workshop	Indirect assistance	50
66	Output3	SG-TWG	Direct assistance	25
67	Output3	1st SoI Consulting (Vientiane)	Direct assistance	38
68	Output3	SoI Central Regional Consulting (Province and District)	Direct assistance	29
69	Output3	SoI Central Regional Consulting (District and Villages)	Direct assistance	21
70	Output3	SoI Southern Region Consulting (Province and District)	Direct assistance	20
71	Output3	SoI Southern Region Consulting (District and Villages)	Direct assistance	32
72	Output3	SoI Northern Region Consulting (Province and District)	Direct assistance	29
73	Output3	SoI Northern Region Consulting (District and Villages)	Direct assistance	36
74	Output3	2nd SoI Consulting (Vientiane)	Direct assistance	19
75	Output3	3rd SoI Consulting (Vientiane)	Direct assistance	22
76	Output3	4th SoI Consulting (Vientiane)	Direct assistance	21
77	Output3	ER Program 1st MMST Meeting	Direct assistance	8
78	Output3	ER Program 2nd MMST Meeting	Direct assistance	9
79	Output3	ER Program 3rd MMST Meeting	Direct assistance	14
80	Output3	ER Program 4th MMST Meeting	Direct assistance	7
81	Output3	Southern Region Consulting Workshop on GCF REDD + Outcome Payment	Direct assistance	38
82	Output3	MAF rule drafting meeting for REDD + Project	Direct assistance	8
83	Output4	District Consultation Meeting (1) in Luang Prabang	Direct Assistance	55
84	Output4	PRAP Consultation Meeting (1) in Luang Prabang	Direct Assistance	52
85	Output4	PRAP Consultation Meetng (2) in Luang Prabang	Direct Assistance	63
86	Output4	District Consultation Meeting (2) in Luang Prabang	Direct Assistance	296
87	Output4	Consultation Meeting for village cluster in Luang Prabang	Direct Assistance	459
88	Output4	PRAP Consulatation Meeting in Luang Prabang	Direct Assistance	59
89	Output4	1st PRTF Meeting	Direct Assistance	35
90	Output4	2nd PRTF Meeting	Direct Assistance	33
91	Output4	3rd PRTF Meeting	Direct Assistance	58
92	Output4	Provincial Deforestation Monitoring System Training for Luang Prabang Province	Direct Assistance	14
93	Output4	Provincial Deforestation Monitoring System Training for Oudomxay/Luang Praban Province	Direct Assistance	24
94	Output4	PPT-PPTA Protected Forests Management Committee Meeting	Collaborative Assistance	unknown
95	Output4	Village fund management training	Direct Assistance	15
96	Output4	Organic fertilizer training for vegetable cultivation	Direct Assistance	23
97	Output4	Livestock management training	Direct Assistance	23
98	Output4	Provincial Deforestation Monitoring System Training for Houaphanh Province	Direct Assistance	32
99	Output4	Provincial Deforestation Monitoring System Training for Sayaboury Province	Direct Assistance	36
100	Output4	Provincial Deforestation Monitoring System Training for Luang Prabang Province	Direct Assistance	25
101	Output4	Provincial Deforestation Monitoring System Training for DOFI/DOF	Direct Assistance	13
		Total		2,558

3. REL/MRV TWG & REL Draft Team Meeting

No.	Target Output	Training	Modality	Participant
1	Output3	Kick-off meeting for REL/MRV TWG establishment (1)	Direct Assistance	12
2	Output3	Kick-off meting for REL/MRV TWG establishment (2)	Direct Assistance	9
3	Output3	1st REL/MRV TWG Meeting	Direct Assistance	30
4	Output3	2nd REL/MRV TWG Meeting	Direct Assistance	31
5	Output3	6 TWG Joint Meeting	Indirect Assistance	33
6	Output3	3rd REL/MRV TWG Meetng	Direct Assistance	33
7	Output3	4th REL/MRV TWGMeeting	Direct Assistance	30
8	Output3	Small Group Technical Meeting	Direct Assistance	25
9	Output3	5th REL/MRV TWG Meeting	Direct Assistance	25
10	Output2	REL Drafting Team Meeting (1)	Direct Assistance	7
11	Output2	REL Drafting Team Meeting (2)	Direct Assistance	6
12	Output2	REL Drafting Team Meeting (3)	Direct Assistance	5
13	Output2	REL Drafting Team Meeting (4)	Direct Assistance	6
14	Output2	REL Drafting Team Meeting (5)	Direct Assistance	8
15	Output2	REL Drafting Team Meeting (6)	Direct Assistance	10
16	Output2	REL/MRV training	Direct assistance	33
17	Output3	WORKSHOP on Country Needs Assessment for Implementation of National Forest Monitorin	Indirect assistance	3
18	Output3	6th REL/MRV TWG Meeting	Direct assistance	22
19	Output3	7th REL/MRV TWG Meeting	Direct assistance	15
20	Output3	8th REL/MRV TWG Meeting	Direct assistance	24
21	Output3	9th REL/MRV TWG Meeting	Direct assistance	20
22	Output3	NFMS TWG installation preparatory meeting	Direct assistance	10
23	Output3	NFMS TWG MRV Sub-Group Establishment Preparatory Meeting	Direct assistance	8
24	Output3	NFMS TWG Forest Monitoring Sub-Group Establishment Preparatory Meeting	Direct assistance	8
25	Output3	NFMS TWG Data Management Sub-Group Establishment Preparatory Meeting	Direct assistance	6
26	Output3	1st NFMS TWG meeting	Direct assistance	29
		Total		448

4. FSSWG & NRTF

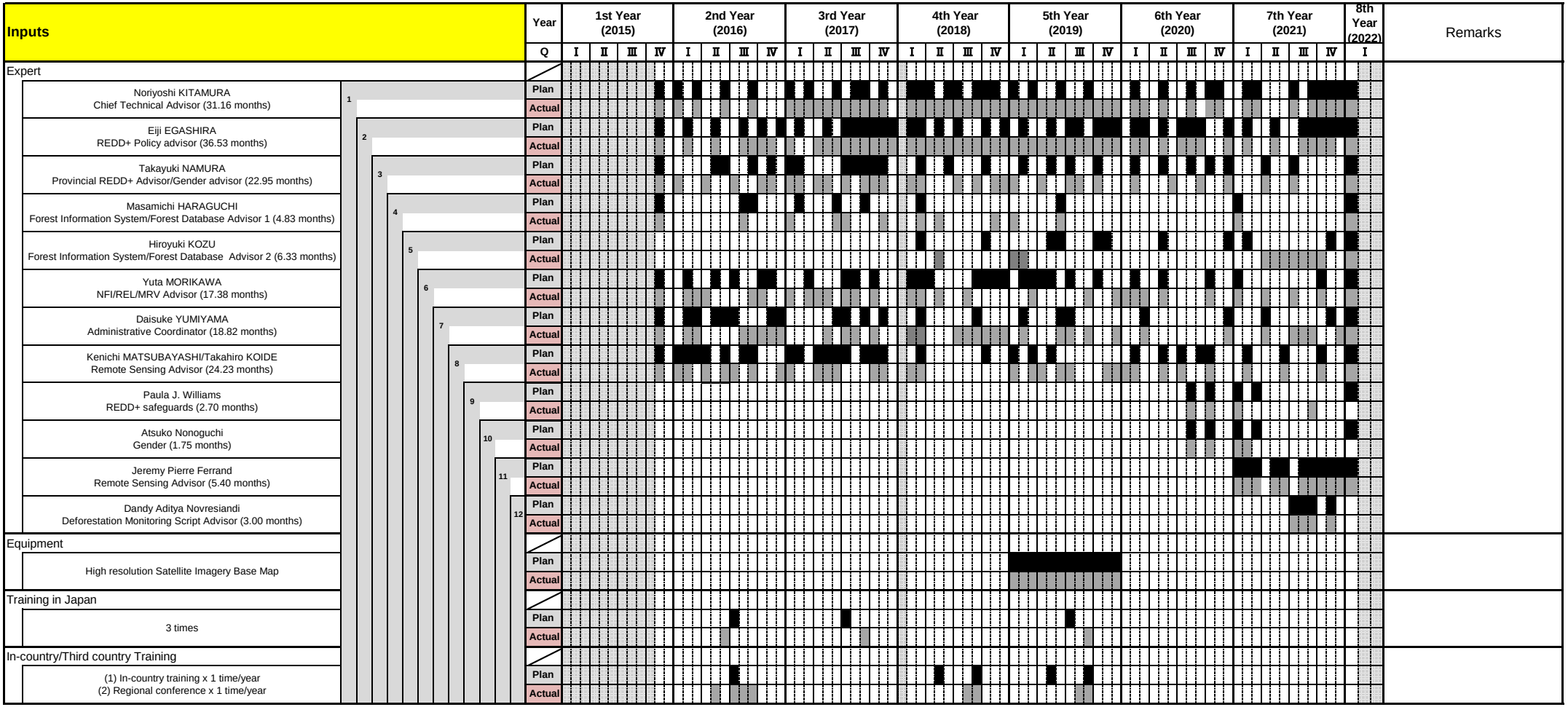
No.	Target Output	Training	Modality	Participant
1	Output1	10th FSSWG	Direct Assistance	56
2	Output1	1st FSSWG	Direct Assistance	46
3	Output1	2nd FSSWG	Direct Assistance	62
4	Output1	3rd FSSWG	Direct Assistance	62
5	Output1	4th FSSWG	Direct Assistance	40
6	Output1	5th FSSWG	Direct Assistance	43
7	Output1	6th FSSWG	Direct Assistance	45
8	Output1	7th FSSWG	Direct Assistance	53
9	Output1	8th FSSWG	Direct Assistance	38
10	Output1	9th FSSWG	Direct Assistance	32
11	Output3	1st NRTF	Indirect assistance	25
12	Output3	2nd NRTF	Indirect assistance	22
13	Output3	3rd NRTF	Indirect assistance	18
14	Output3	4th NRTF	Indirect assistance	20
15	Output3	5th NRTF	Indirect assistance	32
		Total		594

Annex1-4

Revised Plan of Operation

January 2022

Project Title: Sustainable Forest Management and REDD+ Support Project (F-REDD)



Activities / Sub-Activities	1	2	3	4	5	6	7	7	7	7	7	8	Year	1st Year (2015)				2nd Year (2016)				3rd Year (2017)				4th Year (2018)				5th Year (2019)				6th Year (2020)				7th Year (2021)					Responsibility	
													Q	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	Japan	GoL
Output 1: Capacity of the central government on policy development, implementation and sector coordination is enhanced.																																											
1.1. Support development of forestry related regulations and policies.													Plan	FS2020 review or alternatives, support other key policies, cooperate with Output 4																														Forestry Policy/Forest Management advisor	PCD/DOF
													Actual																															
1.1.1. Agree on the orientation of FS2020 revision.	x												Plan																															
													Actual																															
1.1.2. Support the FS2020 revision following the orientation agreed on, and by incorporating the National REDD+ Strategy.	x												Plan																															
													Actual																															
1.1.3. Facilitate coordinated support to the policy needs of GoL through the FSSWG framework.	x												Plan																															
													Actual																															
1.1.4. Based on 1.1.3 above, support development of other key policies (e.g. Forestry Law revision, By-laws to the Forestry Law) (REDD+ related policies will be dealt with under Output 3).	x		x				x						Plan																															
													Actual																															
1.1.5. Provide feedback on the results of policy piloting in Luang Prabang and Oudomxay to the national policy.	x		x				x						Plan																															
													Actual																															
1.2. Conduct capacity building sessions for targeted technical areas (e.g. PES, NFMS, REDD+).													Plan	Trainings, participate in international WSs, etc.																														Forestry Policy/Forest Management advisor	PCD/DOF Capacity building target: DOF, LPB, other agencies concerned.
													Actual																															
1.2.1. In coordination with other stakeholders, conduct in-country training sessions for the related fields.	x												Plan																															
													Actual																															
1.2.2. Conduct training sessions in Japan and third countries.	x												Plan																															
													Actual																															
1.2.3. In coordination with other stakeholders, support participation of the counterparts to international conferences and workshops.	x												Plan																															
													Actual																															
1.3. Support sector coordination.													Plan	Support FSSWG secretariat function, FSSWG meetings																														Forestry Policy/Forest Management advisor	PCD/DOF
													Actual																															
1.3.1. Support the function of the FSSWG secretariat (e.g. information sharing, policy dialogues, stakeholder coordination).	x												Plan																															
													Actual																															
1.3.2. Support quarterly organization of the FSSWG meetings.	x												Plan																															
													Actual																															
1.3.3. Promote synergizing the FSSWG and the SWG-ARD, and other initiatives (e.g. RTIM).	x												Plan																															
													Actual																															

Activities / Sub-Activities	1	2	3	4	5	6	7	7	7	7	7	8	Year	1st Year (2015)				2nd Year (2016)				3rd Year (2017)				4th Year (2018)				5th Year (2019)				6th Year (2020)				7th Year (2021)					Responsibility	
													Q	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	Japan	GoL
Output 2: Emission reductions and removals resulting from the implementation of the REDD+ activities are quantified at the national scale by using the NFMS.																																											
2.1. Support the development of the NFMS.													Plan	Plan, decide scope/institutional arrangement/process, develop system, test-run and modify (1), modify (2), Manual, Operational Plan																													Forest Information System/Forestry database advisor	FIPD/DOF
													Actual																															
2.1.1. Decide the scope of the NFMS and its develop plan.				x									Plan																															
													Actual																															
2.1.2. Decide the institutional arrangement and operational process.				x									Plan																															
													Actual																															
2.1.3. Build the physical system based on the NFIS prototype.				x									Plan																															
													Actual																															
2.1.4. In a step-wise manner, test-run and modify the scope, institutional arrangement, process, and the physical system (before and after the 1st MRV).				x	x								Plan													Modify (1)						Modify (2)											
													Actual																															
2.1.5. Develop the NFMS Operational Manual after the 2nd modification.				x	x								Plan																															
													Actual																															
2.1.6. Develop the NFMS Operational Plan.				x	x								Plan																															
													Actual																															
2.1.7 Implement the NFMS Operational Plan.		x		x		x		x					Plan																															
													Actual																															
2.1.8 Extend the provincial forest monitoring system (PDMS) developed through Activity 4.3 to the FCPF-CF ERP provinces in collaboration with the GIZ-GCF and other projects.			x				x	x					Plan																															
													Actual																															
2.2. Support the 1st national MRV for REDD+ by using the NFMS.													Plan	Decide MRV procedure test and modify through NFMS test-run, 1st MRV, Evaluate, improve																													FREL・FRL/MRV/NFI advisor Remote sensing advisor	FIPD/DOF
													Actual																															
2.2.1. Decide the MRV procedure (e.g. technical methods, work process, institutional arrangement).						x							Plan																															
													Actual																															
2.2.2. Modify the MRV procedure after the 1st test-run of the NFMS.						x						x	Plan																															
													Actual																															
2.2.3. "Measuring": Estimate emissions by sources and removals by sinks from the latest available Activity Data (AD) and Emission Factor (EF) (for 2018-2019, tbd) and support NFI implementation.						x							Plan																															
													Actual																															
2.2.4. "Reporting": Facilitate inputs from the forestry sector to the national GHG Inventory (assuming that the 3rd National Communications will be submitted in 2017, and the BUR in 2019).						x							Plan												Collaborate with the 3rd National Communications								Submit through 2019											
													Actual																															
2.2.5. "Verifying": Facilitate necessary arrangements required under the UNFCCC.						x							Plan																															
													Actual																															

2.3.	**Support the development of the national FREL/FRL, and the FREL/FRL for the ERP to the FCPF-CF.**													Plan	Driver/PaMs、AD、EF、Historical trend, reference scenario, consult, submit to UNFCCC, improve	FREL・FRL/MRV/NFI advisor	FIPD/DOF
														Actual			
2.3.1.	Decide the plan and procedure for developing the national FREL/FRL, and the FREL/FRL for the ERP to the FCPF-CF.						X							Plan			
														Actual			
2.3.2.	Conduct driver analysis and specify Policies and Measures (PaMs).												X	Plan			
														Actual			
2.3.3.	Develop the 2015 forest type map and calculate the Activity Data (AD).												X	Plan			
														Actual			
2.3.4.	Organize available Emission Factor (EF) from the NFI (2016-2017) results and other sources.						X							Plan			
														Actual			
2.3.5.	Develop the 2015 forest carbon map.						X							Plan			
														Actual			
2.3.6.	Analyze historical trend based on multi-year forest carbon maps.						X							Plan			
														Actual			
2.3.7.	Define the national circumstances and reference scenario.						X							Plan			
														Actual			
2.3.8.	Hold consultation workshop(s) to decide the national FREL/FRL, and the FREL/FRL for the ERP to the FCPF-CF.						X							Plan			
														Actual			
2.3.9.	Facilitate submission of the national FREL/FRL, and the FREL/FRL for the ERP to the FCPF-CF.						X							Plan			
														Actual			
2.3.10.	Support the improvement of the national FREL/FRL and REL for ER program by reflecting the technical assessment results of the FREL/FRL of the UNFCCC and the FCPF-CF.						X							Plan			
														Actual			
2.4.	**Support the next National Forest Inventory (NFI) scheduled in 2016-2017.**													Plan	Plan, conduct, compile	FREL・FRL/MRV/NFI advisor	FIPD/DOF
														Actual			
2.4.1.	Support developing the plan for the next NFI (e.g. scope, institutional arrangement, work procedure).						X	X	X	X	X	X		Plan			
														Actual			
2.4.2.	Provide technical support to the field survey.						X	X	X	X	X	X		Plan			
														Actual			
2.4.3.	Support compilation of the NFI survey results, including QA/QC (data will be stored into the NFMS).						X	X	X	X	X	X		Plan			
														Actual			

Activities / Sub-Activities	1	2	3	4	5	6	7	7	7	7	7	8	Year	1st Year (2015)				2nd Year (2016)				3rd Year (2017)				4th Year (2018)				5th Year (2019)				6th Year (2020)				7th Year (2021)					Responsibility	
													Q	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	Japan	GoL
Output 3: Institutional development, management, and coordination of national REDD+ is enhanced.																																											
3.1. Provide technical inputs to the national REDD+ policies and institutions.													Plan	Technical inputs to National REDD+ Strategy and other requirements for result-based payment, M&E, Cooperate with Output 4																													REDD+ Policy advisor	R-Division/ DOF
													Actual																															
3.1.1. In coordination with other stakeholders, facilitate the development of National REDD+ Strategy (NRS).		x											Plan																														
													Actual																															
3.1.2. Provide technical inputs to implementation of the NRS.		x											Plan																														
													Actual																															
3.1.3. Provide technical inputs to other national REDD+ policies (e.g. Safeguard, Benefit Sharing Mechanism).		x											Plan																														
													Actual																															
3.1.4. Facilitate collaboration between DOF (REDD+ focal point) and MONRE-DCC (UNFCCC focal point) on FREL/FRL, MRV and other related issues.		x											Plan																														
													Actual																															
3.1.5. Based on the information obtained through the NFMS, evaluate the effectiveness of REDD+ activities among the stakeholders through a consultative process.		x											Plan																														
													Actual																															
3.1.6. Enhance synergy between REDD+ in Luang Prabang and Oudomxay, and the national level (including NFMS).		x	x										Plan																														
													Actual																															
3.1.7. In coordination with other stakeholders, support Laos on accessing the FCPF-CF and implementation of the ERP.		x											Plan																														
													Actual																															
3.1.8 Support the submission of Summary of Information (SoI) on safeguards, and development of Safeguard Information System (SIS).	x	x						x	x	x	x		Plan																														
													Actual																															
3.1.9 Support Laos on accessing the GCF REDD+ Results-based Payment.	x	x						x	x	x	x		Plan																														
													Actual																															
3.1.10 Facilitate JICA's co-financing arrangement and co-implementation of the GIZ GCF Program.	x	x	x										Plan																														
													Actual																															

Activity			Schedule	Responsible	Counterpart
3.2. Support the coordination role of the DOF in national REDD+.		Plan	(in collaboration with other donors) Support NRTF, TWGs	REDD+ Policy advisor	R-Division/ DOF
		Actual			
3.2.1. Provide technical inputs to the NRTF.	x	Plan			
		Actual			
3.2.2. Provide technical inputs to the TWGs.	x	Plan			
		Actual			
3.2.3. Provide technical and operational support to the selected TWGs.	x	Plan			
		Actual			
3.3. Provide indirect support to JCM-REDD+ in line with its progress.		Plan	Indirect support to promote JCM-REDD+ following its technical and institutional progress	REDD+ Policy advisor	R-Divisio/ DOF
		Actual			
3.3.1. Provide technical inputs to the institutional and technical aspects of JCM-REDD+.	x	Plan			
		Actual			
3.3.2. Assist the counterparts to foster their understanding on JCM-REDD+.	x	Plan			
		Actual			

Activities / Sub-Activities	1	2	3	4	5	6	7	7	7	7	8	Year	1st Year (2015)				2nd Year (2016)				3rd Year (2017)				4th Year (2018)				5th Year (2019)				6th Year (2020)				7th Year (2021)					Responsibility	
												Q	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	Japan	GoL
Output 4: REDD+ readiness in Luang Prabang Province and Oudomxay Province is enhanced.																																										
4.1. Establish an institutional framework for implementing REDD+ in the province.												Plan	Provincial REDD+ Task Force, driver analysis, Provincial REDD+ Strategy, Capacity building																													Provincial REDD+ Planning & Implementation/ Gender advisor	PAFO
												Actual																															
4.1.1. In line with the progress of the national policies, develop an institution for REDD+ in the province (e.g. provincial REDD+ Task Force).			x									Plan																															
												Actual																															
4.1.2. Identify the drivers of emissions and removals.			x									Plan																															
												Actual																															
4.1.3. In line with the progress of the national policies, develop the provincial REDD+ Action Plan (PRAP).			x				x	x	x	x	x	Plan																															
												Actual																															
4.1.4. Build technical capacity of the stakeholders to implement the PRAP.			x				x	x	x	x	x	Plan																															
												Actual																															
4.1.5. Support the province to comply with the requirements as a FCPF-CF target province.			x									Plan																															
												Actual																															
4.2. Pilot priority forestry policy(s) to address the drivers of emissions and removals.												Plan					Identify priority policy and way of intervention, M&E of piloting results, feedback to provincial policy and national policy																										Provincial REDD+ Planning & Implementation/ Gender advisor	PAFO
												Actual																															
4.2.1. Identify priority forestry policy(s) to address the drivers identified in 4.1.			x									Plan													(Oudomxa																			
												Actual																															
4.2.2. Pilot identified priority forestry policy(s).			x				x	x	x	x	x	Plan																															
												Actual																															
4.2.3. Evaluate the results of piloting.			x									Plan																															
												Actual																															
4.2.4. Provide feedback on the evaluated results to the provincial and national levels.			x									Plan																															
												Actual																															

4.3. Pilot forest monitoring as a part of REDD+ monitoring.													Plan	Plan, conduct, evaluate, cooperate with 1st MRV	Provincial REDD+ Planning & Implementation/ Gender advisor	PAFO
													Actual			
4.3.1. Develop a provincial forest monitoring plan.		x										x	Plan			
													Actual			
4.3.2. Support the implementation of provincial forest monitoring based on the plan.		x										x	Plan			
													Actual			
4.3.3. Review the monitoring result to assess the situation of the forestry sector.		x										x	Plan			
													Actual			
4.4. Promote cooperation on REDD+ between the central level and provincial level.													Plan	Feedback lessons to the central level, promote awareness on JCM-REDD+.	Provincial REDD+ Planning & Implementation/ Gender advisor	PAFO
													Actual			
4.4.1. Provide feedback on the lessons from the provincial REDD+ readiness exercise to the national level (e.g. National REDD+ Strategy, NFMS).		x											Plan			
													Actual			
4.4.2. Assist the province to foster their understanding on JCM-REDD+.		x											Plan			
													Actual			
4.5. Strengthen the foundation to expand the PAREDD Approach.													Plan	Feedback lessons to the central level, promote awareness on JCM-REDD+.	Provincial REDD+ Planning & Implementation/ Gender advisor	PAFO
													Actual			
4.5.1. Provide advice to the proposed JCM-REDD+ project.		x											Plan			
													Actual			
4.5.2. Conduct Training of Trainers (ToTs) to increase the staff who can apply the PAREDD Approach in their administrative units.		x				x	x	x	x	x			Plan			
													Actual			
4.5.3. Continue field monitoring of the PAREDD sites (e.g. Village Development Fund as the future basis for REDD+ Benefit Sharing Mechanism), and provide feedback on the lessons to the provincial and national levels.		x				x	x	x	x	x			Plan			
													Actual			
4.5.4. Assist the province to access and/or coordinate external funds and other donor projects, as the resources to implement the REDD+ activities, including the PAREDD Approach.		x											Plan			
													Actual			

Monitoring Plan	Year	1st Year (2015)				2nd Year (2016)				3rd Year (2017)				4th Year (2018)				5th Year (2019)				6th Year (2020)				7th Year (2021)				8th Year (2022)	Remarks
	Q	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	
Monitoring																															
Joint Coordinating Committee (JCC)	Plan																														
	Actual																														
Detailed Plan of Operation (DPO) - annual	Plan																														
	Actual																														
Joint Monitoring and Monitoring Sheet - biannual	Plan																														
	Actual																														
JICA HQ Monitoring Mission	Plan																														
	Actual																														
Post Monitoring	Plan																														In 3-5 years after project completion
	Actual																														
Reports/Documents																															
Mid-term Progress Report	Plan																														
	Actual																														
Project Completion Report	Plan																														
	Actual																														
Public Relations																															
Quarterly Newsletter	Plan																														
	Actual																														
Project Website	Plan																														
	Actual																														
Project Workshop	Plan																														
	Actual																														

Annex 2

List of Products (Reports, Manuals, Handbooks, etc.) Produced by the Project

Common

No.	Title	File	Remarks
Common-1	Project Leaflet	Common-1_Project Leaflet.pdf	
Common-2	Project Newsletter	Common-2_Project Newsletter	

Output 1

No.	Title	File	Remarks
1-1	2019　Forestry Law (English)	Forest Law (Eng) 2019.pdf	Not published.
1-2	2019 Forestry Law (Lao)	https://na.gov.la/legal/%e0%ba%9a%e0%ba%b1%e0%ba%99%e0%ba%94%e0%ba%b2%e0%ba%81%e0%ba%bb%e0%ba%94%e0%bb%9d%e0%ba%b2%e0%ba%8d/#:~:text=%E0%BA%81%E0%BA%BB%E0%BA%94%E0%BB%9D%E0%BA%B2%E0%BA%8D%E0%BA%A7%E0%BB%88%E0%BA%B2%E0%BA%94%E0%BB%89%E0%BA%A7%E0%BA%8D%20%E0%BA%9B%E0%BB%88%E0%BA%B2%E0%BB%84%E0%BA%A1%E0%BB%89%20(%E0%BA%AA%E0%BA%B0%E0%BA%9A%E0%BA%B1%E0%BA%9A%E0%BA%9B%E0%BA%B1%E0%BA%9A%E0%BA%9B%E0%BA%B8%E0%BA%87)%20%E0%BA%9B%E0%BA%B5%202019	
1-3	Forestry Strategy 2035 and Vision to 2050 (English)		Not included in the Supplementary Volume as it is not publishable.
1-4	Forestry Strategy 2035 and Vision to 2050 (Lao)		Same as above
1-5	Revised Prime Minister Decree on Protection Forest (English)		Same as above
1-6	Revised Prime Minister Decree on Protection Forest (Lao)		Same as above
1-7	MAF Regulation on REDD+ Projects and Forest Carbon Trade (English)		Same as above
1-8	MAF Regulation on REDD+ Projects and Forest Carbon Trade (Lao)		Same as above

Output 2

No.	Title	File	Remarks
2-1	NFMS User Manual	NFMS User Manual.pdf	
2-2	NFMS Data Installation Manual	NFMS Data Installation Manual.pdf	
2-3	NFMS DB Definition Document	NFMS DB Definition Document.pdf	
2-4	NFMS Server And Network Standard Operating Procedure	NFMS Servers & Network SOP v0.1.pdf	
2-5	NFMS WEB-PORTAL MANAGER USER'S GUIDE For Administrators of NFMS web-portal	NFMU web-portal Manager User's Guide.pdf	
2-6	National Forest Monitoring System Road map - English	http://dof.maf.gov.la/redd/en/nfms/	
2-7	National Forest Monitoring System Road map - Lao	http://dof.maf.gov.la/redd/en/nfms/	
2-8	Preliminary review for the estimation of carbon stock changes in forest-remaing-forest, land conversion and soil organic carbon	Preliminary review for the estimation of carbon stock changes.pdf	
2-9	The 3rd National Forest Inventory Survey in Lao People's Democratic Republic	5_3rd NFI Report_20201126.pdf	
2-10	Standard Operation Procedures (SOP) for the Terrestrial Carbon Measurement	16_NFI3 SOP Eng Manual - Lao PDR_fin.pdf	
2-11	Update of the Biomass Prediction Model for 'Regenerating Vegetation' in Lao PDR And Confirmation of the Threshold Years for its Regeneration into Forest	6_2nd RV Survey report_20201116.pdf	
2-12	Standard Operation Procedures (SOP) for Forest Type Map development	15_SOP_FTM_20200623	
2-13	Results achieved from Reducing Emissions from Deforestation and Forest Degradation, and Increasing Removals through Enhancement of Forest Carbon Stocks for REDD+ Results-Based Payments	4_LaoPDR_REDD+ results(UNFCCC)_20200720_combined.pdf	

2-14	Standard Operation Procedures (SOP) for the Lao PDR's REDD+ MRV: based on the methodologies applied for the 1st FREL/FRL and the 1st National REDD+ Results.	17_SOP for ERs and REs Calculation_Clean.pdf	
2-15	Standard Operation Procedures (SOP) for the Lao PDR's REDD+ MRV: based on the methodologies applied for the 1st FREL/FRL and the 1st National REDD+ Results.	18_SOP for ERs and REs Calculation_Annex.zip	
2-16	Lao PDR's Forest Reference Emission Level and Forest Reference Level for REDD+ Results Payment under the UNFCCC (Submission Version)	7_FREL FRL Reports _submission_2018_laopdr.pdf https://redd.unfccc.int/files/2018_frel_submission_laopdr.pdf	
2-17	Lao PDR's Forest Reference Emission Level and Forest Reference Level for REDD+ Results Payment under the UNFCCC (Modified Version)	8_FREL FRL Reports_submission_modified_2018.pdf https://redd.unfccc.int/files/lao_2018_frel_submission_modified.pdf	
2-18	Report of the technical assessment of the proposed forest reference emission level/forest reference level of the Lao People's Democratic Republic submitted in 2018	https://unfccc.int/documents/194390	
2-19	The 2nd National Forest Inventory Survey in Lao People's Democratic Republic	Supporting-Docs/NFI-Report_20180108.pdf	
2-20	Development of a Lao-specific Equation for the Estimation of Biomass of 'Regenerating Vegetation' and Determination of the Threshold Years for its Regeneration into Forest	11_1st RV Survey Report_20180108.pdf	
2-21	National REDD+ Strategy Chapter 2: Background, analysis, and options consideration	NRS (ENG) section 2 on land use and changes F-REDD	

Output 3

No.	Title	File	Remarks
3-1	National REDD+ Strategy - English	http://dof.maf.gov.la/redd/en/nrs/	
3-2	National REDD+ Strategy - Lao	http://dof.maf.gov.la/redd/en/nrs/	
3-3	Lao PDR Emission Reduction Program Document	https://www.forestcarbonpartnership.org/country/lao-pdr	
3-4	1st Summary of Information on How Safeguards for REDD+ were addressed and respected by Lao People's Democratic Republic for the period 2015-2018	https://project.dof.maf.gov.la/redd/sis/?page_id=31	
3-5	Concept Note: Lao People's Democratic Republic: REDD+ RBP for results period [2015 - 2018]	https://www.greenclimate.fund/document/lao-people-s-democratic-republic-redd-rbp-results-period-2015-2018	
3-6	(internal draft) Funding proposal: Lao People's Democratic Republic: REDD+ RBP for results period [2015 - 2018]	Not included in the Supplementary Volume because it is before the final draft and publication status.	
3-7	Project Document	Same as above	
3-8	Environmental and Social Assessment	Same as above	
3-9	Environmental and Social Management Framework	Same as above	
3-10	Gender Assessment	Same as above	
3-11	Gender Action Plan	Same as above	

Output 4

No.	Title	File	Remarks
4-1	Provincial REDD+ Action Plan - English	E-PRAP_LPB.pdf	
4-2	Provincial REDD+ Action Plan - Lao	L-PRAP_LPB.pdf	
4-3	Phou Pheung-Phou Pha Thoun-Tad Kuang Si Provincial Protection Forest Management Plan - Lao	E-PPT-PPTA_Management_Plan.pdf	
4-4	Phou Pheung-Phou Pha Thoun-Tad Kuang Si Provincial Protection Forest Management Plan - English	L-PPT-PPTA_Management_Plan.pdf	
4-5	Feasibility study for Eco-tourism Phou Pheung, Phou Pha Thoun-Tad Kuang Si Provincial Protection Forest Area - English	E-Potential Ecotourism report.pdf	
4-6	Feasibility study for Eco-tourism Phou Pheung, Phou Pha Thoun-Tad Kuang Si Provincial Protection Forest Area - Lao	L-Potential Ecotourism report.pdf	
4-7	Survey on Implementation and Potential of Payment for Forest Ecosystem Services (PFES) in Luang Prabang - English	E-LPB_PFES report.pdf	
4-8	Near-real time Provincial Deforestation Monitoring System (PDMS): Web Application	https://nfms.maf.gov.la/pdms/index.php	
4-9	Near-real time Provincial Deforestation Monitoring System (PDMS) : Global Data Downloader	https://kkc-gee.com/laos/	
4-10	Post Monitoring and Evaluation Report on Participatry Forest Management Project for Reducing Deforestation - English	E-PAREDD monitoring report.pdf	
4-11	Post Monitoring and Evaluation Report on Participatry Forest Management Project for Reducing Deforestation - Lao	L-PAREDD monitoring report.pdf	

Annex 3

PDM (All versions of PDM)

ANNEX 1-1

Project Design Matrix

Project Title: Sustainable Forest Management and REDD+ Support Project

Version: draft 0

Dated 2015/06/16

Implementing Agency: DFRM-MONRE, DOF-MAF, PONRE and PAFO of Luang Prabang Province

Target Group: Government staff of the implementing agencies

Period of Project: 5 years from 2015

Project Site: Vientiane capital and Luang Prabang (LPB) Province

Narrative Summary			
Overall Goal	**Objectively Verifiable Indicators**	**Means of Verification**	**Important Assumption**
Sustainable Forest Management is promoted through full implementation of REDD+ and in coordination with the Forest Strategy.	1. REDD+ MRV periodically reported through BURs.	1. National MRV report through BURs.	
	2. SFM shows progress in line with the revised FS 2020.	2. [assess against the targets of the revised FS2020].	
	3. Forest cover in Luang Prabang increased xx % from year xxxx and thereby contribute to the FS implementation.	3. Comparison of forest cover.	
Project Purpose	**Objectively Verifiable Indicators**	**Means of Verification**	**Important Assumption**
Capacity for Sustainable Forest Management is strengthened through incorporation of REDD+ into the sector strategy and improved forest resource information.	1. Revised FS2020 approved.	1. Approval document.	Laos is equipped with the UNFCCC requirements for REDD+ result-based financing (i.e. National REDD+ Strategy, FREL/FRL, NFMS, SIS). NFMS is in constant operation based on the Operational Plan. Importance of forest conservation is supported, and necessary resources are secured. Negative impacts external to the forestry sector are effectively controlled and managed.
	2. NFMS operational in compliance with the UNFCCC.	2. Approval document of NFMS Operational Plan.	
	3. Based on the information generated by the NFMS, effectiveness of REDD+ activities is evaluated among the stakeholders (e.g. MONRE, MAF, Local Government, Development Partners) through a consultative process.	3. Evaluation summary submitted to the NRTF.	
	4. Results of activities in LPB province are utilized for the formulation of national forestry/REDD+ policies.	4. Feedback workshop report.	

Outputs	Objectively Verifiable Indicators	Means of Verification	Important Assumption
1. **Capacity of the central government on policy development, implementation and sector coordination is enhanced.** 1.1. Support development of forestry related regulations and policies. 1.2. Conduct capacity building sessions for targeted technical areas (e.g. PES, NFMS, REDD+). 1.3. Support sector coordination.	1. Role of REDD+ incorporated into the revised FS2020. 2. [number] counterparts are trained through Off-the-Job trainings. 3. FSSWGs held every quarter.	1. Verification of the revised FS2020. 2. Training session reports. 3. Working Group reports.	Administrative structure of the sector remains unchanged, or the impact of change does not substantially risk the achievement of outputs.
2. **Emission reductions and removals resulting from the implementation of the REDD+ activities are quantified at national scale by using the NFMS.** 2.1. Support development of the NFMS. 2.2. Support the 1st national MRV for REDD+ by using the NFMS. 2.3. Support development of the national FREL/FRL. 2.4. Support the next National Forest Inventory (NFI) scheduled in 2016-2017.	1. NFMS developed. 2. The 1st national MRV results reported to the national entity or focal point by using the NFMS. 3. The national FREL/FRL developed and submitted to the national entity or focal point. 4. Results of the NFI summarized.	1. Completion report of the 2nd modification. 2. 1st national MRV report by DFRM/DOF. 3. FREL/FRL submission by DFRM/DOF. 4. NFI (2016 - 2017) report.	GoL decides to submit the 1st national MRV report to the UNFCCC. GoL decides to submit the FREL/FRL to the UNFCCC.
3. **Institutional development, management and coordination of national REDD+ is enhanced.** 3.1. Provide technical inputs to the national REDD+ policies and institutions. 3.2. Support coordination role of DFRM and DOF in national REDD+. 3.3. Provide indirect support to JCM-REDD+ following its progress.	1. National REDD+ Strategy approved. 2. "xxx" TWG co-chaired by the Project operational following the developed TOR. 3. Recommendations made to the JCM-REDD+ Joint Committee along with the bilateral negotiation.	1. Approval document. 2. "xxx" TWG report. 3. Input records from the REDD+ focal point to the JCM Joint Committee.	National REDD+ Strategy is approved without delay (expected within 2017). Administrative structure of REDD+ remains unchanged, or the impact of change does not substantially risk the achievement of outputs.
4. **REDD+ readiness in Luang Prabang province is enhanced .** 4.1. Establish an institutional framework for implementing REDD+ in the province. 4.2. Pilot priority forestry policy(s) to address the drivers of emissions and removals. 4.3. Pilot forest monitoring as a part of REDD+ monitoring. 4.4. Promote cooperation on REDD+ between the central level and provincial level. 4.5. Strengthen the foundation to expand the PAREDD Approach.	1. Provincial REDD+ Strategy (PRS) approved. 2. Policy (s) effective to address drivers identified. 3. Provincial forest monitoring conducted. 4. JCM-REDD+ under proposal by a private entity integrated into the PRS. 5. 9 districts not supported by PAREDD have at least 4 officers/district trained in PAREDD Approach.	1. Approval document. 2. Evaluation report of the piloting results. 3. Monitoring report. 4. Verification of the PRS. 5. Training records.	

Activities	Inputs		Important Assumption
	Japanese side	Laos side	
1. Capacity of the central government on policy development, implementation and sector coordination is enhanced. **1.1. Support development of forestry related regulations and policies** 1.1.1. Agree on the orientation of FS2020 revision. 1.1.2. Support FS2020 revision following the orientation agreed on and by incorporating the National REDD+ Strategy. 1.1.3. Facilitate coordinated support to the policy needs of GoL through FSSWG framework. 1.1.4. Based on 1.1.3 above, support development of other key policies (e.g. By-laws to the Forestry Law) (REDD+ related policies will be dealt with under Output 3). 1.1.5. Feedback the results of policy piloting in Luang Prabang to the national policy. **1.2. Conduct capacity building sessions for targeted technical areas** (e.g. PES, NFMS, REDD+). 1.2.1. In coordination with other stakeholders, conduct in-country trainings on the related fields. 1.2.2. Conduct trainings in Japan and third countries. 1.2.3. In coordination with other stakeholders, support participation of the counterparts to international conferences and workshops. **1.3. Support sector coordination.** 1.3.1. Support the function of the FSSWG secretariat (e.g. information sharing, policy dialogues, stakeholder coordination). 1.3.2. Support organization of FSSWG meetings (quarterly). 1.3.3. Promote synergizing the FSSWG and the NRESWG, and other initiatives (e.g. through RTIM process).	1. Team of Japanese experts and national experts (tbd) Chief Adviser, Project Coordinator, Forestry Policy, Forest Information System, REDD+ Strategy, REDD+ implementation, Remote Sensing, Forest Inventory, Carbon Accounting, Database Management 2. Equipment and Machinery To be further discussed 3. Training To be further discussed 4. Project Operation cost To be further discussed	1. Counterpart personnel (tbd) Project Director Project Manager –DFRM Project Manager – DOF Component Manager for each output Component team member for each output 2. Office and equipment Office room(s) in DFRM, DOF, Luang Prabang 3. Project Operation Cost To be further discussed	GoL commits to progress the revision of FS2020, and development of other policies also progress as scheduled.

2. Emission reductions and removals resulting from the implementation of the REDD+ activities are quantified at national scale by using the NFMS. **2.1. Support development of the NFMS.** 2.1.1. Decide the NFMS development plan. 2.1.2. Decide the scope, institutional arrangement and operational process. 2.1.3. Build the physical system based on the NFIS prototype. 2.1.4. Test-run and modify the scope, institutional arrangement, process, and the physical system (before and after the 1st MRV). 2.1.5. Develop the NFMS Operational Manual after the 2nd modification. 2.1.6. Develop the NFMS Operational Plan. **2.2. Support the 1st national MRV for REDD+ by using the NFMS** 2.2.1. Decide the MRV procedure (e.g. technical methods, work process, institutional arrangement). 2.2.2. Modify the MRV procedure after the 1st test-run of the NFMS. 2.2.3. "Measuring": Estimate emissions by sources and removals by sinks from the latest available Activity Data (AD) and Emission Factor (EF) (for 2018-2019, tbd). 2.2.4. "Reporting": Facilitate inputs from forestry sector to the national GHG Inventory (assuming that the 3rd National Communications will be submitted in 2018-2019, and the BUR in 2019-2020). 2.2.5. "Verifying": Facilitate necessary arrangements required under the UNFCCC. **2.3. Support development of the national FREL/FRL.** 2.3.1. Decide the plan and procedure for developing the national FREL/FRL. 2.3.2. Conduct driver analysis and develop Policies and Measures (PaMs). 2.3.3. Develop the 2015 forest map for creating the AD, including QA/QC. 2.3.4. Organize available EF from the NFI (2016-2017) results and other sources. 2.3.5. Develop the 2015 carbon map from the AD and EF prepared. 2.3.6. Develop historical trend from the carbon maps of multiple years, including 2015. 2.3.7. Define the national circumstances and reference scenario. 2.3.8. Hold consultation workshop(s) to decide the national FREL/FRL. 2.3.9. Facilitate submission of the national FREL/FRL to the UNFCCC. 2.3.10. Support improvement of the national FREL/FRL by reflecting the technical assessment			Cooperation with MONRE-DDMCC, as the responsible agency of "Reporting" of the MRV, proceeds efficiently.

results of the UNFCCC. **2.4. Support the next National Forest Inventory (NFI) scheduled in 2016-2017.** 2.4.1. Support developing the plan for the next NFI (e.g. scope, institutional arrangement, work procedure) 2.4.2. Provide technical supports to the field survey. 2.4.3. Support compilation of the NFI survey results, including QA/QC (data will be stored into the NFMS). **3. Institutional development, management and coordination of national REDD+ is enhanced.** **3.1. Provide technical inputs to the national REDD+ policies and institutions.** 3.1.1. In coordination with other stakeholders, facilitate the development of National REDD+ Strategy. 3.1.2. Provide technical inputs to the National REDD+ Strategy. 3.1.3. Provide technical inputs to other national REDD+ policies (e.g. Safeguard, Benefit Sharing Mechanism). 3.1.4. Raise awareness on the need for the REDD+ focal point (i.e. DFRM and DOF) and the UNFCCC national entity or focal point (MONRE-DDMCC) to cooperate. 3.1.5. Based on the information obtained through the NFMS, evaluate the effectiveness of REDD+ activities among the stakeholders through a consultative process. 3.1.6. Enhance synergy between REDD+ in Luang Prabang and the national level, including the NFMS. 3.1.7. In coordination with other stakeholders, support Laos on accessing FCPF-CF (only if Laos is selected as a CF pipeline country). **3.2. 3.2 Support coordination role of DFRM and DOF in national REDD+.** 3.2.1. Provide technical inputs to the NRTF. 3.2.2. Provide technical inputs to the TWGs. 3.2.3. Provide technical and operational support to the selected TWGs.			Development of National REDD+ Strategy and other national policies/institutions for REDD+ progress as scheduled. TWGs are established and the TORs are decided without delay.

3.3. Provide indirect support to JCM-REDD+ following its progress. 3.3.1. Provide technical inputs to the institutional and technical aspects of JCM-REDD+. 3.3.2. Assist the counterparts to foster their understanding on JCM-REDD+.			JCM-REDD+ progress as intended.
4. REDD+ readiness in Luang Prabang province is enhanced. **4.1. Establish an institutional framework for REDD+ in the province.** 4.1.1. In line with the progress of national policies, develop an institution for REDD+ in the province (e.g. provincial REDD+ Task Force). 4.1.2. Identify the drivers of emissions and removals. 4.1.3. In line with the progress of national policies, develop the provincial REDD+ Strategy (PRS). 4.1.4. Build technical capacity of the stakeholders to implement the PRS. **4.2. Pilot priority forestry policy(s) to address the drivers of emissions and removals.** 4.2.1. Identify priority forestry policy(s) to address the drivers identified in 4.1. 4.2.2. Pilot identified priority forestry policy(s). 4.2.3. Evaluate the results of piloting. 4.2.4. Feedback the evaluated results to the province and the national level. **4.3. Pilot forest monitoring as a part of REDD+ monitoring.** 4.3.1. Develop the provincial forest monitoring plan. 4.3.2. Support implementation of provincial forest monitoring based on its plan. 4.3.3. Review the monitoring result to assess the situation of forestry sector. **4.4. Promote cooperation on REDD+ between the central level and provincial level.** 4.4.1. Feedback the lessons from the provincial REDD+ readiness exercise to the national level (e.g. National REDD+ Strategy, NFMS). 4.4.2. Assist the province to foster their understanding on JCM-REDD+.			Provincial REDD+ is supported under national policy.
4.5. Strengthen the foundation to expand the PAREDD Approach. 4.5.1. Provide advice to the JCM-REDD+ project proposed. 4.5.2. Conduct Training of Trainers (ToTs) to increase the staff who can apply PAREDD Approach in			The proposed JCM-REDD+ project continues.

their administrative unit. 4.5.3. Continue field monitoring of PAREDD sites (e.g. Village Development Fund as the future basis for REDD+ Benefit Sharing Mechanism), and feedback lessons to the province and the national level. 4.5.4. Assist the province to access and/or coordinate external funds and other donor projects, as the resources to implement REDD+ activities, including PAREDD Approach.			
			Pre-Conditions
			Both Lao and Japanese side decide the project framework and implementation arrangement without delay.
			<Issues and counter measures>

ANNEX 1-II

Tentative Plan of Operation

Version 0
Dated 2015/06/16

Project Title: Sustainable Forest Management and REDD+ Support Project

Inputs	Year	1st Year (2015)				2nd Year (2016)				3rd Year (2017)				4th Year (2018)				5th Year (2019)				6th Year (2020)				Remarks
		I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	
Expert	Plan					As provisionally indicated in the R/D, and to be determied through further discussions.																				
	Plan																									
	Plan																									
	Plan																									
Equipment	Plan					To be determined through furtehr discussions.																				
	Plan																									
Training in Japan	Plan					To be determined through furtehr discussions.																				
In-country/Third country Training	Plan																									

Activities / Sub-Activities	Year	1st Year (2015)				2nd Year (2016)				3rd Year (2017)				4th Year (2018)				5th Year (2019)				6th Year (2020)				Responsible Organization	
		I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	Japan	GoL
Output 1: Capacity of the central government on policy development, implementation and sector coordination is enhanced.																											
1.1. Support development of forestry related regulations and policies.		FS2020 review or alternatives, support other key policies, cooperate with Output 4																									
1.1.1. Agree on the orientation of FS2020 revision.	Plan					If agreed to start																					
1.1.2. Support FS2020 revision following the orientation agreed on, and by incorporating the National REDD+ Strategy.	Plan									Kick-off				Progress check				Approval									
1.1.3. Facilitate coordinated support to the policy needs by donor partners through FSSWG framework.	Plan																										
1.1.4. Based on 1.1.3 above, support development of other key policies (e.g. By-laws to the Forestry Law) (REDD+ related policies will be supported under Output 3).	Plan																										
1.1.5. Feedback the results of policy piloting in Luang Prabang to the national policy.	Plan																										
1.2. Conduct capacity building sessions for targeted technical areas (e.g. PES, NFMS, REDD+).		Trainings, participate in international WS, etc.																									
1.2.1. In coordination with other donor partners, conduct in-country trainings on the related fields.	Plan																										
1.2.2. Conduct trainings in Japan and third countries.	Plan																										
1.2.3. In coordination with other stakeholders, support participation of the counterparts to international conferences and workshops.	Plan																										
1.3. Support sector coordination.		Support FSSWG secretariat function, FSSWG meetings																									
1.3.1. Support the function of the FSSWG secretariat (e.g. information sharing, policy dialogues, donor coordination).	Plan																										
1.3.2. Support organization of FSSWG meetings (quarterly).	Plan																										
1.3.3. Promote synergizing the FSSWG and the NRESWG, and other initiatives (e.g. thorough RTIM process).	Plan																										

Lead: PCD/DFRM
Sub: PCD/DOF

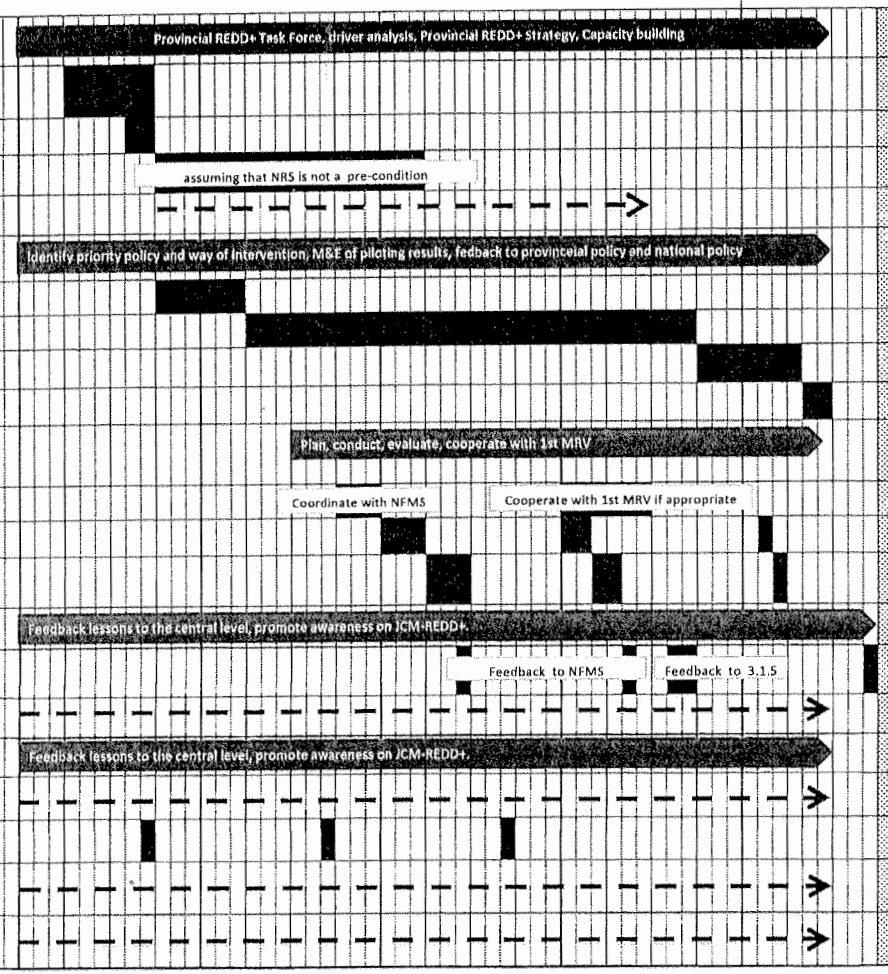
Lead: PCD/DFRM
Sub: PCD/DOF
Capacity building target: DFRM, DOF, LPB, other agencies concerned.

Lead: PCD/DFRM
Sub: PCD/DOF

Activities / Sub-Activities	Year	1st Year (2015) I	II	III	IV	2nd Year (2016) I	II	III	IV	3rd Year (2017) I	II	III	IV	4th Year (2018) I	II	III	IV	5th Year (2019) I	II	III	IV	6th Year (2020) I	II	III	IV	Responsible Organization: Japan	GoL
Output 2: Emission reductions and removals resulting from the implementation of the REDD+ activities are quantified at national scale by using the NFMS																											
2.1. Support development of the NFMS.		Plan, decide scope/institutional arrangement/process, develop system, test-run and modify (1), modify (2), Manual, Operational Plan																									
2.1.1. Decide the NFMS development plan.	Plan																									Lead: FIPD/DOF Sub: R-Div/DFRM R-Office/DOF	
2.2.2. Decide the scope, institutional arrangement and operational process.	Plan																										
2.2.3. Build the physical system based on the NFIS prototype.	Plan																										
2.2.4. Test-run and modify the scope, institutional arrangement, process, and the physical system (before and after the 1st MRV).	Plan													Modify (1)							Modify (2)						
2.2.5. Develop the NFMS Operational Manual after the 2nd modification.	Plan																	draft			finalize						
2.2.6. Develop the NFMS Operational Plan.	Plan																	draft			finalize & approve						
2.2. Support the 1st national MRV for REDD+ by using the NFMS.		Decide MRV procedure test and modify through NFMS test-run, 1st MRV, Evaluate, Improve																									
2.2.1. Decide the MRV procedure (e.g. technical methods, work process, institutional arrangement).	Plan																									Lead: FIPD/DOF Sub: R-Div/DFRM R-Office/DOF	
2.2.2. Modify the MRV procedure after the 1st test-run of the NFMS.	Plan																										
2.2.3. "Measuring": Estimate emissions by sources and removals by sinks from the latest available Activity Data (AF) and Emmission Factors (EF) (for 2018-2019, tbd).	Plan																										
2.2.4. "Reporting": Facilitate inputs from forestry sector to the national GHG Inventory(assuming that the 3rd National Communications submitted in 2018-2019, and the BUR in 2019-2020).	Plan											Collaborate with the 3rd National Communications									Submit through 2019 BUR						
2.2.5. "Verifying": Facilitate necessary arrangements required under the UNFCCC.	Plan																										
2.3. Support development of the national FREL/FRL.		Driver/PaMs, AD, EF, historical trend, reference scenario, consult, submit to UNFCCC, improve																									
2.3.1. Decide the plan and procedures for developing the national FREL/FRL.	Plan																									Lead: FIPD/DOF Sub: R-Div/DFRM R-Office/DOF	
2.3.2. Conduct driver analysis and develop Policies and Measures (PaMs).	Plan																										
2.3.3. Develop the 2015 forest map for creating the AD (including QA/QC).	Plan																										
2.3.4. Organize available EF from the NFI (2016-2017) results and other sources.	Plan																										
2.3.5. Develop the 2015 carbon map from the AD and EF prepared.	Plan																										
2.3.6. Develop historical trend from the carbon maps of multiple years, including 2015.	Plan																										
2.3.7. Define the national circumstances and reference scenario.	Plan																										
2.3.8. Hold consultation workshop(s) to decide the national FREL/FRL.	Plan																										
2.3.9. Facilitate submission of the national FREL/FRL to the UNFCCC.	Plan																										
2.3.10. Support improvement of the national FREL/FRL by reflecting the technical assessment results of the UNFCCC.	Plan																										
2.4. Support the next National Forest Inventory (NFI) scheduled in 2016-2017.						Plan, conduct, compile																					
2.4.1. Support developing the plan for the next NFI (e.g. scope, institutional arrangement, work procedure).	Plan																									Lead: FIPD/DOF Sub: R-Div/DFRM R-Office/DOF	
2.4.2. Provide technical supports to the field survey.	Plan																										
2.4.3. Support compilation of the NFI survey results (including QA/QC) (data will be stored into the NFMS).	Plan																										

Activities / Sub-Activities	Year	1st Year (2015) I	II	III	IV	2nd Year (2016) I	II	III	IV	3rd Year (2017) I	II	III	IV	4th Year (2018) I	II	III	IV	5th Year (2019) I	II	III	IV	6th Year (2020) I	II	III	IV	Responsible Organization: Japan	GoL
Output 3: Institutional development, management and coordination of national REDD+ is enhanced.																											
3.1. Provide technical inputs to the national REDD+ policies and institutions.		Technical inputs to National REDD+ Strategy and other requirements for result-based payment, M&E, Cooperate with Output 4																									
3.1.1. In coordination with other donor partners, facilitate the development of National REDD+ Strategy.	Plan																										
3.1.2. Provide technical inputs to the National REDD+ Strategy.	Plan																										
3.1.3. Provide technical inputs to other national REDD+ policies (e.g. Safeguard, Benefit Sharing Mechanism).	Plan																										
3.1.4. Raise awareness on the need for REDD+ focal point(s) and UNFCCC focal point (MONRE-DDMCC) to cooperate.	Plan																									Lead: R-Div./DFRM Sub: R-Office/DOF	
3.1.5. Based on the information obtained through the NFMS, evaluate the effectiveness of REDD+ activities through a consultative process.	Plan																										
3.1.6. Enhance synergy between REDD+ in Luang Prabang and the national level (including the NFMS).	Plan																										
3.1.7. In coordination with other stakeholders, support Laos on accessing FCPF-CF (only if Laos is selected as a CF pipeline country).	Plan	only if Laos is selected as a CF pipeline country																									
3.2. Support coordination role of DFRM and DOF in national REDD+.		(in collaboration with other donors) Support NRTF, TWGs																									
3.2.1. Provide technical inputs to the NRTF.	Plan																									Lead: R-Div./DFRM Sub: R-Office/DOF	
3.2.2. Provide technical inputs to the TWGs.	Plan																										
3.3.3. Provide technical and operational support to the selected TWGs.	Plan																										
3.3. Provide indirect support to JCM-REDD+ following its progress.		Indirect suppot to promote JCM-REDD+ following its technical and institutional progress																									
3.3.1. Provide technical inputs to the institutional and technical aspects of JCM-REDD+.	Plan																									Lead: R-Div./DFRM Sub: R-Office/DOF	
3.3.2. Assist the counterparts to foster their understanding on JCM-REDD+.	Plan																										

Activities / Sub-Activities	Year	1st Year (2015) I	II	III	IV	2nd Year (2016) I	II	III	IV	3rd Year (2017) I	II	III	IV	4th Year (2018) I	II	III	IV	5th Year (2019) I	II	III	IV	6th Year (2020) I	II	III	IV	Responsible Organization: Japan	GoL
Output 4: REDD+ readiness in Luang Prabang province is enhanced.																											
4..1 Establish an institutional framework for REDD+ in the province.																											(collaborate with the CPs of Output 3) Lead: xxx Sub: xxx
4.1.1. In line with the progress of national policies, develop an institution for REDD+ in the province (e.g. provincial REDD+ Task Force).	Plan																										
4.1.2. Identify the drivers of emission and removals.	Plan																										
4.1.3. In line with the progress of national policies, develop the provincial REDD+ Strategy (PRS).	Plan																										
4.1.4. Build technical capacity of the stakeholders to implement the PRS.	Plan																										
4.2. Pilot priority forestry policy(s) to address the drivers of emission and removals.																											Lead: xxx Sub: xxx
4.2.1. Identify priority forestry policy(s) of the province to address the drivers identified in 4.1.	Plan																										
4.2.2. Pilot identified priority forestry policy(s).	Plan																										
4.2.3. Evaluate the results of piloting.	Plan																										
4.2.4. Feedback the evaluated results to the province and the national level.	Plan																										
4.3. Pilot forest monitoring as a part of REDD+ monitoring.																											(collaborate with the CPs of Output 3) Lead: xxx Sub: xxx
4.3.1. Develop the provincial forest monitoring plan.	Plan																										
4.3.2. Support implementation of provincial forest monitoring based on its plan.	Plan																										
4.3.3. 4.3.3. Review the monitoring result to assess the situation of forestry sector.	Plan																										
4.4. Promote cooperation on REDD+ between the central level and provincial level.																											(collaborate with the CPs of Output 3) Lead: xxx Sub: xxx
4.4.1. Feedback the lessons from the provincial REDD+ readiness exercise to the national level (e.g. National REDD+ Strategy, NFMS).	Plan																										
4.4.2. Assist the province to foster their understanding on JCM-REDD+	Plan																										
4.5. Strengthen the foundation to expand PAREDD Approach.																											
4.5.1. Provide advice to the JCM-REDD+ project proposed.	Plan																										
4.5.2. Conduct Training of Trainers (ToTs) to increase the staff who can apply PAREDD Approach in their administrative unit.	Plan																										
4.5.3. Continue field monitoring of PAREDD sites (e.g. VDF as the future basis for REDD+ BSM), and feedback lessons to the province and the national level.	Plan																										
4.5.4. Assist the province to access and/or coordinate external funds and other donor projects, as the resources to implement REDD+ activities, including PAREDD Approach.	Plan																										



Monitoring Plan	Year	1st Year (2015)				2nd Year (2016)				3rd Year (2017)				4th Year (2018)				5th Year (2019)				6th Year (2020)				Remarks
		I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	sc	II	III	IV	I	II	III	IV	
Monitoring																										
Joint Coordinating Committee (JCC)	Plan																									Review progress, approve DPO, etc.
Set-up the Detailed Plan of Operation (DPO)	Plan																									To be approved in the JCC. Harmonize with Lao annual planning cycle (Oct - Sep).
Submission of Monitoring Sheet	Plan																									To be used as the basis for the DPO. Also to be reported to the JCC.
JICA Monitoring Mission from Japan	Plan																									To be scheduled in conjunction with the JCC.
Joint Monitoring (JM)	Plan																									Shall be a process for developing the MS.
Post Monitoring	Plan																	Scheduled in 2021 and 2023								Internal M&E by JICA Laos
Reports/Documents																										
Mid-term Progress Report	Plan																									
Project Completion Report	Plan																									Draft to be submitted at least 1 month before the completion of the project.
Public Relations																										
Quarterly Newsletter	Plan																									
Project website	Plan																									

Project Design Matrix

Project Title: Sustainable Forest Management and REDD+ Support Project (F-REDD) | Version: draft 1

Implementing Agency: DFRM-MONRE, DOF-MAF, PONRE and PAFO of Luang Prabang Province | 2015/11/23

Target Group: Government staff of the implementing agencies

Period of Project: 5 years from November 2015 **Project Site**: Vientiane capital and Luang Prabang (LPB) Province

Narrative Summary			
Overall Goal	**Objectively Verifiable Indicators**	**Means of Verification**	**Important Assumption**
Sustainable Forest Management is promoted through full implementation of REDD+ and in coordination with the Forest Strategy.	1. REDD+ MRV periodically reported through BURs.	1. National MRV report through BURs.	
	2. SFM shows progress in line with the revised FS 2020.	2. [asses against the targets of the revised FS2020].	
	3. Luang Prabang province achieves 10 % reduction of emissions and 10% increase of removals (tCO2e) from their forest in 2025 against the baseline of 2017.	3. Comparison between the baseline and the MRV result.	
Project Purpose	**Objectively Verifiable Indicators**	**Means of Verification**	**Important Assumption**
Capacity for Sustainable Forest Management is strengthened through incorporation of REDD+ into the sector strategy and improvement of forest resource information.	1. Revised FS2020 approved.	1. Approval document.	Laos is equipped with the UNFCCC requirements for REDD+ result-based financing (i.e. National REDD+ Strategy, FREL/FRL, NFMS, SIS). NFMS is in constant operation based on the Operational Plan. Importance of forest conservation is supported, and necessary resources are secured. Negative impacts external to the forestry sector are effectively controlled and managed.
	2. NFMS operational in compliance with the UNFCCC.	2. Approval document of NFMS Operational Plan.	
	3. Based on the information generated by the NFMS, effectiveness of REDD+ activities is evaluated among the stakeholders (e.g. MONRE, MAF, Local Government, Development Partners) through a consultative process.	3. Evaluation summary submitted to the NRTF.	
	4. Results of activities in LPB province are utilized for the formulation of national forestry/REDD+ policies.	4. Feedback workshop report.	

Outputs	Objectively Verifiable Indicators	Means of Verification	Important Assumption
1. Capacity of the central government on policy development, implementation and sector coordination is enhanced. 1.1. Support development of forestry related regulations and policies. 1.2. Conduct capacity building sessions for targeted technical areas (e.g. PES, NFMS, REDD+). 1.3. Support sector coordination.	1. Role of REDD+ incorporated into the revised FS2020. 2. At least 120 persons from the counterpart agencies are trained through Off-the-Job trainings. 3. FSSWGs held every quarter.	1. Verification of the revised FS2020. 2. Training session reports. 3. Working Group reports.	Administrative structure of the sector remains unchanged, or the impact of change does not substantially risk the achievement of outputs.
2. Emission reductions and removals resulting from the implementation of the REDD+ activities are quantified at the national scale by using the NFMS. 2.1. Support development of the NFMS. 2.2. Support the 1st national MRV for REDD+ by using the NFMS. 2.3. Support development of the national FREL/FRL. 2.4. Support the next National Forest Inventory (NFI) scheduled in 2016-2017.	1. NFMS developed. 2. The 1st national MRV results reported to the national entity or focal point by using the NFMS. 3. The national FREL/FRL developed and submitted to the national entity or focal point. 4. Results of the NFI summarized.	1. Completion report of the 2nd modification. 2. 1st national MRV report by DFRM/DOF. 3. FREL/FRL submission by DFRM/DOF. 4. NFI (2016 - 2017) report.	GoL decides to submit the 1st national MRV report to the UNFCCC. GoL decides to submit the FREL/FRL to the UNFCCC.
3. Institutional development, management and coordination of national REDD+, is enhanced. 3.1. Provide technical inputs to the national REDD+ policies and institutions. 3.2. Support coordination role of DFRM and DOF in national REDD+. 3.3. Provide indirect support to JCM-REDD+ in line with its progress.	1. National REDD+ Strategy approved. 2. FREL/FRL & MRV TWG is operational following the developed TOR. 3. Recommendations made to the JCM-REDD+ Joint Committee along with the bilateral negotiation.	1. Approval document. 2. Meeting report of the TWG. 3. Input records from the REDD+ focal point to the JCM Joint Committee.	National REDD+ Strategy is approved without delay (expected within 2017). Administrative structure of REDD+ remains unchanged, or the impact of change does not substantially risk the achievement of outputs.
4. REDD+ readiness in Luang Prabang Province is enhanced. 4.1. Establish an institutional framework for implementing REDD+ in the province. 4.2. Pilot priority forestry policy(s) to address the drivers of emissions and removals. 4.3. Pilot forest monitoring as a part of REDD+ monitoring. 4.4. Promote cooperation on REDD+ between the central level and provincial level. 4.5. Strengthen the foundation to expand the PAREDD Approach.	1. Provincial REDD+ Strategy (PRS) approved. 2. Policy (s) effective to address drivers identified. 3. Provincial forest monitoring conducted. 4. JCM-REDD+ under proposal by a private entity integrated into the PRS. 5. 9 districts not supported by PAREDD have at least 4 officers/district trained in PAREDD Approach.	1. Approval document. 2. Evaluation report of the piloting results. 3. Monitoring report. 4. Verification of the PRS. 5. Training records.	

Activities	Inputs		Important Assumption
	Japanese side	Laos side	
1. Capacity of the central government on policy development, implementation and sector coordination is enhanced. **1.1. Support development of forestry related regulations and policies** 1.1.1. Agree on the orientation of FS2020 revision. 1.1.2. Support FS2020 revision following the orientation agreed on, and by incorporating the National REDD+ Strategy. 1.1.3. Facilitate coordinated support to the policy needs of GoL through the FSSWG framework. 1.1.4. Based on 1.1.3 above, support development of other key policies (e.g. By-laws to the Forestry Law) (REDD+ related policies will be dealt with under Output 3). 1.1.5. Give feedback on the results of policy piloting in Luang Prabang to the national policy. **1.2. Conduct capacity building sessions for targeted technical areas** (e.g. PES, NFMS, REDD+). 1.2.1. In coordination with other stakeholders, conduct in-country training sessions for the related fields. 1.2.2. Conduct training sessions in Japan and third countries. 1.2.3. In coordination with other stakeholders, support participation of the counterparts to international conferences and workshops. **1.3. Support sector coordination.** 1.3.1. Support the function of the FSSWG secretariat (e.g. information sharing, policy dialogues, stakeholder coordination). 1.3.2. Support organization of the FSSWG meetings (quarterly). 1.3.3. Promote synergizing the FSSWG and the NRESWG, and other initiatives (e.g. through the RTIM process).	1. Team of Japanese and national experts Forestry policy/Forest management REDD+ Policy Provincial REDD+ planning & implementation/Gender Forest information system/Forestry database FREL・FRL/MRV/NFI Remote sensing 2. Equipment and Machinery To be further discussed 3. Training To be further discussed 4. Project Operation cost To be further discussed	1. Counterpart personnel Project Director Project Manager –DFRM Project Manager – DOF Component Manager for each output Component team members for each output 2. Office and equipment Office room(s) In DFRM, DOF, Luang Prabang 3. Project Operation Cost To be further discussed	GoL commits to progress the revision of FS2020, and development of other policies also progress as scheduled.

2. Emission reductions and removals resulting from the implementation of the REDD+ activities are quantified at the national scale by using the NFMS. **2.1. Support development of the NFMS.** 2.1.1. Decide the scope of NFMS and its develop plan. 2.1.2. Decide the institutional arrangement and operational process. 2.1.3. Build the physical system based on the NFIS prototype. 2.1.4. Test-run and modify the scope, institutional arrangement, process, and the physical system (before and after the 1st MRV). 2.1.5. Develop the NFMS Operational Manual after the 2nd modification. 2.1.6. Develop the NFMS Operational Plan. **2.2. Support the 1st national MRV for REDD+ by using the NFMS** 2.2.1. Decide the MRV procedure (e.g. technical methods, work process, institutional arrangement). 2.2.2. Modify the MRV procedure after the 1st test-run of the NFMS. 2.2.3. "Measuring": Estimate emissions by sources and removals by sinks from the latest available Activity Data (AD) and Emission Factor (EF) (for 2018-2019, tbd). 2.2.4. "Reporting": Facilitate inputs from the forestry sector to the national GHG Inventory (assuming that the 3rd National Communications is submitted in 2017, and the BUR in 2019). 2.2.5. "Verifying": Facilitate necessary arrangements required under the UNFCCC. **2.3. Support development of the national FREL/FRL.** 2.3.1. Decide the plan and procedure for developing the national FREL/FRL. 2.3.2. Conduct driver analysis and specify Policies and Measures (PaMs). 2.3.3. Develop the 2015 forest type map and calculate the Activity Data (AD). 2.3.4. Organize available Emission Factor (EF) from the NFI (2016-2017) results and other sources. 2.3.5. Develop the 2015 forest carbon map. 2.3.6. Analyze historical trend based on multi-year forest carbon maps. 2.3.7. Define the national circumstances and reference scenario. 2.3.8. Hold consultation workshop(s) to decide the national FREL/FRL. 2.3.9. Facilitate submission of the national FREL/FRL to the UNFCCC. 2.3.10. Support the improvement of the national FREL/FRL by reflecting the technical assessment			Cooperation with MONRE-DDMCC, as the responsible agency of "Reporting" of the MRV, proceeds efficiently.

results of the UNFCCC. **2.4. Support the next National Forest Inventory (NFI) scheduled in 2016-2017.** 2.4.1. Support developing the plan for the next NFI (e.g. scope, institutional arrangement, work procedure). 2.4.2. Provide technical supports to the field survey. 2.4.3. Support compilation of the NFI survey results, including QA/QC (data will be stored into the NFMS). **3. Institutional development, management, and coordination of national REDD+, is enhanced.** **3.1. Provide technical inputs to the national REDD+ policies and institutions.** 3.1.1. In coordination with other stakeholders, facilitate the development of National REDD+ Strategy. 3.1.2. Provide technical inputs to the National REDD+ Strategy. 3.1.3. Provide technical inputs to other national REDD+ policies (e.g. Safeguard, Benefit Sharing Mechanism). 3.1.4. Raise awareness on the need for the REDD+ focal point (i.e. DFRM and DOF) and the UNFCCC focal point (MONRE-DDMCC) to cooperate with each other. 3.1.5. Based on the information obtained through the NFMS, evaluate the effectiveness of REDD+ activities among the stakeholders through a consultative process. 3.1.6. Enhance synergy between REDD+ in Luang Prabang and the national level (including the NFMS). 3.1.7. In coordination with other stakeholders, support Laos on accessing the FCPF-CF (only if Laos is selected as a CF pipeline country). **3.2. Support coordination role of the DFRM and the DOF in national REDD+.** 3.2.1. Provide technical inputs to the NRTF. 3.2.2. Provide technical inputs to the TWGs. 3.2.3. Provide technical and operational support to the selected TWG.			Development of National REDD+ Strategy and other national policies/institutions for REDD+ progress as scheduled. TWGs are established and the TORs are decided without delay.

3.3. Provide indirect support to the JCM-REDD+ in line with its progress.			
3.3.1. Provide technical inputs to the institutional and technical aspects of the JCM-REDD+.			JCM-REDD+ progress as intended.
3.3.2. Assist the counterparts to foster their understanding on the JCM-REDD+.			
4. REDD+ readiness in Luang Prabang Province is enhanced.			
4.1. Establish an institutional framework for REDD+ in the province.			
4.1.1. In line with the progress of national policies, develop an institution for REDD+ in the province (e.g. provincial REDD+ Task Force).			Provincial REDD+ is supported under national policy.
4.1.2. Identify the drivers of emissions and removals.			
4.1.3. In line with the progress of national policies, develop the provincial REDD+ Strategy (PRS).			
4.1.4. Build technical capacity of the stakeholders to implement the PRS.			
4.2. Pilot priority forestry policy(s) to address the drivers of emissions and removals.			
4.2.1. Identify priority forestry policy(s) to address the drivers identified in 4.1.			
4.2.2. Pilot identified priority forestry policy(s).			
4.2.3. Evaluate the results of piloting.			
4.2.4. Provide feedback on the evaluated results to the provincial and national levels.			
4.3. Pilot forest monitoring as a part of REDD+ monitoring.			
4.3.1. Develop the provincial forest monitoring plan.			
4.3.2. Support implementation of provincial forest monitoring based on the plan.			
4.3.3. Review the monitoring result to assess the situation of the forestry sector.			
4.4. Promote cooperation on REDD+ between the central level and provincial level.			
4.4.1. Provide feedback on the lessons from the provincial REDD+ readiness exercise to the national level (e.g. National REDD+ Strategy, NFMS).			
4.4.2. Assist the province to foster their understanding of the JCM-REDD+.			
4.5. Strengthen the foundation to expand the PAREDD Approach.			
4.5.1. Provide advice to the proposed JCM-REDD+ project.			The proposed JCM-REDD+ project continue.
4.5.2. Conduct Training of Trainers (ToTs) to increase the staff who can apply the PAREDD approach			

in their administrative unit. 4.5.3. Continue field monitoring of the PAREDD sites (e.g. Village Development Fund as the future basis for REDD+ Benefit Sharing Mechanism), and provide feedback lessons to the provincial and the national levels. 4.5.4. Assist the province to access and/or coordinate external funds and other donor projects, as the resources to implement the REDD+ activities, including the PAREDD approach.			
			Pre-Conditions
			Both Lao and Japanese side decide the project framework and implementation arrangement without delay.
			<Issues and counter measures>

Project Design Matrix

Project Title: Sustainable Forest Management and REDD+ Support Project (F-REDD) | Version 2

Implementing Agency: DOF-MAF, PAFO of Luang Prabang Province | 2017/05/12

Target Group: Government staff of the implementing agencies

Period of Project: 5 years from November 2015 **Project Site**: Vientiane capital and Luang Prabang (LPB) Province

Narrative Summary			
Overall Goal	**Objectively Verifiable Indicators**	**Means of Verification**	**Important Assumption**
Sustainable Forest Management is promoted through full implementation of REDD+ and in coordination with the Forest Strategy.	1. REDD+ MRV periodically reported through the BURs.	1. National MRV report in the BURs.	
	2. SFM shows progress in line with the revised FS 2020.	2. [assess against the targets of the revised FS2020].	
	3. Luang Prabang province achieves 10 % reduction of emissions and 10% increase of removals (tCO2e) from their forest in 2025 against the baseline of 2017.	3. Comparison between the baseline and the MRV result.	
Project Purpose	**Objectively Verifiable Indicators**	**Means of Verification**	**Important Assumption**
Capacity for Sustainable Forest Management is strengthened through incorporation of REDD+ into the sector strategy and improvement of forest resource information.	1. Revised FS2020 approved.	1. Approval document.	Laos is equipped with the UNFCCC requirements for REDD+ result-based financing (i.e. National REDD+ Strategy, FREL/FRL, NFMS, SIS). The NFMS is in constant operation based on the Operational Plan. Importance of forest conservation is supported, and necessary resources are secured. Negative impacts external to the forestry sector are effectively
	2. The NFMS operational in compliance with the UNFCCC requirements.	2. Approval document of the NFMS Operational Plan.	
	3. Based on the information generated by the NFMS, effectiveness of REDD+ activities is evaluated among the stakeholders (e.g. MONRE, MAF, Local Government, Development Partners) through a consultative process.	3. Evaluation summary submitted to the NRTF.	
	4. Results of the activities in LPB province are utilized for the formulation of national forestry/REDD+ policies.	4. Feedback workshop report.	

			controlled and managed.
Outputs	**Objectively Verifiable Indicators**	**Means of Verification**	**Important Assumption**
1. Capacity of the central government on policy development, implementation and sector coordination is enhanced. 1.1. Support development of forestry related regulations and policies. 1.2. Conduct capacity building sessions for targeted technical areas (e.g. PES, NFMS, REDD+). 1.3. Support sector coordination.	1. Role of REDD+ incorporated into the revised FS2020. 2. At least 120 persons from the counterpart agencies trained through Off-the-Job Trainings. 3. FSSWGs held every quarter.	1. Verification of the revised FS2020. 2. Training session reports. 3. Working Group reports.	Administrative structure of the sector remains unchanged, or the impact of change does not substantially risk the achievement of outputs.
2. Emission reductions and removals resulting from the implementation of the REDD+ activities are quantified at the national scale by using the NFMS. 2.1. Support development of the NFMS. 2.2. Support the 1st national MRV for REDD+ by using the NFMS. 2.3. Support development of the national FREL/FRL and the ERP of the FCPF-CF. 2.4. Support the next National Forest Inventory (NFI) scheduled in 2016-2017.	1. The NFMS developed. 2. The 1st national MRV results reported to the national entity or focal point by using the NFMS. 3. The national FREL/FRL developed and submitted to the national entity or focal point. 4. Results of the NFI summarized.	1. Completion report of the 2nd modification. 2. 1st national MRV report by DOF. 3. FREL/FRL submission by DOF. 4. NFI (2016 - 2017) report.	GoL decides to submit the 1st national MRV report to the UNFCCC. GoL decides to submit the FREL/FRL to the UNFCCC.
3. Institutional development, management and coordination of national REDD+ are enhanced. 3.1. Provide technical inputs to the national REDD+ policies and institutions. 3.2. Support the coordination role of DOF in national REDD+. 3.3. Provide indirect support to JCM-REDD+ in line with its progress.	1. National REDD+ Strategy (NRS) approved. 2. FREL/FRL & MRV TWG operational following the developed TOR. 3. Recommendations made to the JCM-REDD+ Joint Committee along with the bilateral negotiation.	1. Approval document. 2. Meeting report of the TWG. 3. Input records from the REDD+ focal point to the JCM Joint Committee.	NRS is approved without delay (expected within 2017). Administrative structure of REDD+ remains unchanged, or the impact of change does not substantially risk the achievement of outputs.
4. REDD+ readiness in Luang Prabang Province is enhanced. 4.1. Establish an institutional framework for implementing REDD+ in the province. 4.2. Pilot priority forestry policy(s) to address the drivers of emissions and removals.	1. Provincial REDD+ Action Plan (PRAP) approved. 2. Policy(s) effective to address drivers identified. 3. Provincial forest monitoring conducted. 4. JCM-REDD+ under proposal by a private entity	1. Approval document. 2. Evaluation report of the piloting results. 3. Monitoring report. 4. Verification of the PRAP.	

4.3. Pilot forest monitoring as a part of REDD+ monitoring. 4.4. Promote cooperation between the central level and provincial level on REDD+. 4.5. Strengthen the foundation to expand the PAREDD Approach.	integrated into the PRAP. 5. 9 districts not supported by PAREDD have at least 4 officers/district trained in PAREDD Approach.	5. Training records.	

Activities	Inputs		Important Assumption
	Japanese side	Laos side	
1. Capacity of the central government on policy development, implementation and sector coordination is enhanced. **1.1. Support development of forestry related regulations and policies** 1.1.1. Agree on the orientation of FS2020 revision. 1.1.2. Support the FS2020 revision following the orientation agreed on, and by incorporating the National REDD+ Strategy. 1.1.3. Facilitate coordinated support to the policy needs of GoL through the FSSWG framework. 1.1.4. Based on 1.1.3 above, support development of other key policies (e.g. Forestry Law revision, By-laws to the Forestry Law) (REDD+ related policies will be dealt with under Output 3). 1.1.5. Provide feedback on the results of policy piloting in Luang Prabang to the national policy. **1.2. Conduct capacity building sessions for targeted technical areas (e.g. PES, NFMS, REDD+).** 1.2.1. In coordination with other stakeholders, conduct in-country training sessions for the related fields. 1.2.2. Conduct training sessions in Japan and third countries. 1.2.3. In coordination with other stakeholders, support participation of the counterparts to international conferences and workshops. **1.3. Support sector coordination.** 1.3.1. Support the function of the FSSWG secretariat (e.g. information sharing, policy dialogues, stakeholder coordination). 1.3.2. Support quarterly organization of the FSSWG meetings. 1.3.3. Promote synergizing the FSSWG and the SWG-ARD, and other initiatives (e.g. RTIM).	1. Team of Japanese and national experts Forestry policy/Forest management REDD+ Policy Provincial REDD+ planning & implementation/Gender Forest information system/Forestry database FREL・FRL/MRV/NFI Remote sensing 2. Equipment and Machinery To be further discussed 3. Training To be further discussed 4. Project Operation cost To be further discussed	1. Counterpart personnel Project Director Project Manager – DOF Component Manager for each output Component team members for each output 2. Office and equipment Office room(s) in DOF and Luang Prabang 3. Project Operation Cost To be further discussed	GoL commits to progress the revision of FS2020 and development of other policies as scheduled.

2. Emission reductions and removals resulting from the implementation of the REDD+ activities are quantified at the national scale by using the NFMS. **2.1. Support the development of the NFMS.** 2.1.1. Decide the scope of the NFMS and its develop plan. 2.1.2. Decide the institutional arrangement and operational process. 2.1.3. Build the physical system based on the NFIS prototype. 2.1.4. Test-run and modify the scope, institutional arrangement, process, and the physical system (before and after the 1st MRV). 2.1.5. Develop the NFMS Operational Manual after the 2nd modification. 2.1.6. Develop the NFMS Operational Plan. **2.2. Support the 1st national MRV for REDD+ by using the NFMS** 2.2.1. Decide the MRV procedure (e.g. technical methods, work process, institutional arrangement). 2.2.2. Modify the MRV procedure after the 1st test-run of the NFMS. 2.2.3. "Measuring": Estimate emissions by sources and removals by sinks from the latest available Activity Data (AD) and Emission Factor (EF) (for 2018-2019, tbd). 2.2.4. "Reporting": Facilitate inputs from the forestry sector to the national GHG Inventory (assuming that the 3rd National Communications will be submitted in 2017, and the BUR in 2019). 2.2.5. "Verifying": Facilitate necessary arrangements required under the UNFCCC. **2.3. Support the development of the national FREL/FRL, and the FREL/FRL for the ERP to the FCPF-CF.** 2.3.1. Decide the plan and procedure for developing the national FREL/FRL, and the FREL/FRL for the ERP to the FCPF-CF. 2.3.2. Conduct driver analysis and specify Policies and Measures (PaMs). 2.3.3. Develop the 2015 forest type map and calculate the Activity Data (AD). 2.3.4. Organize available Emission Factor (EF) from the NFI (2016-2017) results and other sources. 2.3.5. Develop the 2015 forest carbon map. 2.3.6. Analyze historical trend based on multi-year forest carbon maps.			Cooperation with MONRE-DDMCC, as the responsible agency for "Reporting" of the MRV, proceeds efficiently.

2.3.7. Define the national circumstances and reference scenario. 2.3.8. Hold consultation workshop(s) to decide the national FREL/FRL, and the FREL/FRL for the ERP to the FCPF-CF. 2.3.9. Facilitate submission of the national FREL/FRL to the UNFCCC, and the FREL/FRL for the ERP to the FCPF-CF. 2.3.10. Support the correspondence with the technical assessments of the FREL/FRL by the UNFCCC and the FCPF-CF. **2.4. Support the next National Forest Inventory (NFI) scheduled in 2016-2017.** 2.4.1. Support developing the plan for the next NFI (e.g. scope, institutional arrangement, work procedure). 2.4.2. Provide technical support to the field survey. 2.4.3. Support compilation of the NFI survey results, including QA/QC (data will be stored into the NFMS).			
3. Institutional development, management, and coordination of national REDD+ is enhanced. **3.1. Provide technical inputs to the national REDD+ policies and institutions.** 3.1.1. In coordination with other stakeholders, facilitate the development of National REDD+ Strategy (NRS). 3.1.2. Provide technical inputs to the NRS. 3.1.3. Provide technical inputs to other national REDD+ policies (e.g. Safeguard, Benefit Sharing Mechanism). 3.1.4. Facilitate collaboration between DOF (REDD+ focal point) and MONRE-DDMCC (UNFCCC focal point) on FREL/FRL, MRV and other related issues. 3.1.5. Based on the information obtained through the NFMS, evaluate the effectiveness of REDD+ activities among the stakeholders through a consultative process. 3.1.6. Enhance synergy between REDD+ in Luang Prabang and the national level (including NFMS). 3.1.7. In coordination with other stakeholders, support Laos on accessing the FCPF-CF. **3.2. Support the coordination role of DOF in national REDD+.**			Development of NRS and other national policies/institutions for REDD+ progress as scheduled.

3.2.1. Provide technical inputs to the NRTF. 3.2.2. Provide technical inputs to the TWGs. 3.2.3. Provide technical and operational support to the selected TWGs.			TWGs are established and the TORs are decided without delay.
3.3. Provide indirect support to JCM-REDD+ in line with its progress. 3.3.1. Provide technical inputs to the institutional and technical aspects of JCM-REDD+. 3.3.2. Assist the counterparts to foster their understanding on JCM-REDD+.			JCM-REDD+ progress as intended.
4. REDD+ readiness in Luang Prabang Province is enhanced. **4.1. Establish an institutional framework for implementing REDD+ in the province.** 4.1.1. In line with the progress of the national policies, develop an institution for REDD+ in the province (e.g. provincial REDD+ Task Force). 4.1.2. Identify the drivers of emissions and removals. 4.1.3. In line with the progress of the national policies, develop the provincial REDD+ Action Plan (PRAP). 4.1.4. Build technical capacity of the stakeholders to implement the PRAP. 4.1.5. Support the province to comply with the requirements as a FCPF-CF target province.			Provincial REDD+ is supported under the national policy.
4.2. Pilot priority forestry policy(s) to address the drivers of emissions and removals. 4.2.1. Identify priority forestry policy(s) to address the drivers identified in 4.1. 4.2.2. Pilot identified priority forestry policy(s). 4.2.3. Evaluate the results of piloting. 4.2.4. Provide feedback on the evaluated results to the provincial and national levels.			
4.3. Pilot forest monitoring as a part of REDD+ monitoring. 4.3.1. Develop a provincial forest monitoring plan. 4.3.2. Support the implementation of provincial forest monitoring based on the plan. 4.3.3. Review the monitoring result to assess the situation of the forestry sector.			
4.4. Promote cooperation between the central level and provincial level on REDD+. 4.4.1. Provide feedback on the lessons from the provincial REDD+ readiness exercise to the national level (e.g. National REDD+ Strategy, NFMS).			

4.4.2. Assist the province to foster their understanding on JCM-REDD+. **4.5. Strengthen the foundation to expand the PAREDD Approach.** 4.5.1. Provide advice to the proposed JCM-REDD+ project. 4.5.2. Conduct Training of Trainers (ToTs) to increase the staff who can apply the PAREDD Approach in their administrative units. 4.5.3. Continue field monitoring of the PAREDD sites (e.g. Village Development Fund as the future basis for REDD+ Benefit Sharing Mechanism), and provide feedback on the lessons to the provincial and national levels. 4.5.4. Assist the province to access and/or coordinate external funds and other donor projects, as the resources to implement the REDD+ activities, including the PAREDD Approach.			The proposed JCM-REDD+ project continue.
			Pre-Conditions
			Both the Lao and Japanese sides decide the project framework and implementation arrangement without delay. **<Issues and counter measures>**

Project Design Matrix (with proposed revisions marked)

Project Title: Sustainable Forest Management and REDD+ Support Project (F-REDD) Version **3**

Implementing Agency: DOF-MAF, PAFO of Luang Prabang Province 2017/**10**/**13**

Target Group: Government staff of the implementing agencies

Period of Project: 5 years from November 2015 **Project Site**: Vientiane capital and Luang Prabang (LPB) Province

Narrative Summary			
Overall Goal	**Objectively Verifiable Indicators**	**Means of Verification**	**Important Assumption**
Sustainable Forest Management is promoted through full implementation of REDD+ and in coordination with the Forest Strategy.	1. REDD+ MRV periodically reported through the BURs.	1. National MRV report in the BURs.	
	2. SFM shows progress in line with the revised FS 2020.	2. [assess against the targets of the revised FS2020].	
	3. Luang Prabang province achieves 10 % reduction of emissions and 10% increase of removals (tCO2e) from their forest in 2025 against the baseline of 2017 **(Note: Baseline year should be reconsidered once ERPD is submitted)**.	3. Comparison between the baseline and the MRV result.	
Project Purpose	**Objectively Verifiable Indicators**	**Means of Verification**	**Important Assumption**
Capacity for Sustainable Forest Management is strengthened through incorporation of REDD+ into the sector strategy and improvement of forest resource information.	1. Revised FS2020 approved.	1. Approval document.	Laos is equipped with the UNFCCC requirements for REDD+ result-based financing (i.e. National REDD+ Strategy, FREL/FRL, NFMS, SIS). The NFMS is in constant operation based on the Operational Plan. Importance of forest conservation is supported, and necessary resources are secured. Negative impacts external to the
	2. The NFMS operational in compliance with the UNFCCC requirements.	2. Approval document of the NFMS Operational Plan.	
	3. Based on the information generated by the NFMS, effectiveness of REDD+ activities is evaluated among the stakeholders (e.g. MONRE, MAF, Local Government, Development Partners) through a consultative process.	3. Evaluation summary submitted to the NRTF.	
	4. Results of the activities in LPB province are utilized for the formulation of national forestry/REDD+ policies.	4. Feedback workshop report.	

			forestry sector are effectively controlled and managed.
Outputs	**Objectively Verifiable Indicators**	**Means of Verification**	**Important Assumption**
1. Capacity of the central government on policy development, implementation and sector coordination is enhanced. 1.1. Support development of forestry related regulations and policies. 1.2. Conduct capacity building sessions for targeted technical areas (e.g. PES, NFMS, REDD+). 1.3. Support sector coordination.	1. Role of REDD+ incorporated into the revised FS2020. 2. At least 120 persons from the counterpart agencies trained through Off-the-Job Trainings. 3. FSSWGs held every quarter.	1. Verification of the revised FS2020. 2. Training session reports. 3. Working Group reports.	~~Administrative structure of the sector remains unchanged, or~~ ŧThe impact of changes **from organizational restructuring** does not substantially risk the achievement of outputs.
2. Emission reductions and removals resulting from the implementation of the REDD+ activities are quantified at the national scale by using the NFMS. 2.1. Support development of the NFMS. 2.2. Support the 1st national MRV for REDD+ by using the NFMS. 2.3. Support development of the national FREL/FRL and the ERP of the FCPF-CF. 2.4. Support the next National Forest Inventory (NFI) scheduled in 2016-2017.	1. The NFMS developed. 2. The 1st national MRV results reported to the national entity or focal point by using the NFMS. 3. The national FREL/FRL developed and submitted to the national entity or focal point. 4. Results of the NFI summarized.	1. Completion report of the 2nd modification. 2. 1st national MRV report by DOF. 3. FREL/FRL submission by DOF. 4. NFI (2016 - 2017) report.	GoL decides to submit the 1st national MRV report to the UNFCCC. GoL decides to submit the FREL/FRL to the UNFCCC.
3. Institutional development, management and coordination of national REDD+ are enhanced. 3.1. Provide technical inputs to the national REDD+ policies and institutions. 3.2. Support the coordination role of DOF in national REDD+. 3.3. Provide indirect support to JCM-REDD+ in line with its progress.	1. National REDD+ Strategy (NRS) approved. 2. FREL/FRL & MRV TWG operational following the developed TOR. 3. Recommendations made to the JCM-REDD+ Joint Committee along with the bilateral negotiation.	1. Approval document. 2. Meeting report of the TWG. 3. Input records from the REDD+ focal point to the JCM Joint Committee.	NRS is approved without delay (expected within 2017). ~~Administrative structure of REDD+ remains unchanged, or~~ ŧThe impact of changes **from organizational restructuring** does not substantially risk the achievement of outputs.
4. REDD+ readiness in Luang Prabang Province is enhanced. 4.1. Establish an institutional framework for implementing REDD+ in the province. 4.2. Pilot priority forestry policy(s) to address the drivers of emissions	1. Provincial REDD+ Action Plan (PRAP) approved. 2. Policy(s) effective to address drivers identified. 3. Provincial forest monitoring conducted.	1. Approval document. 2. Evaluation report of the piloting results. 3. Monitoring report.	

and removals. 4.3. Pilot forest monitoring as a part of REDD+ monitoring. 4.4. Promote cooperation between the central level and provincial level on REDD+. 4.5. Strengthen the foundation to expand the PAREDD Approach.	4. JCM-REDD+ under proposal by a private entity integrated into the PRAP. 5. ~~9 districts not supported by PAREDD have at least 4 officers/district trained in PAREDD Approach.~~ **PARRED approach is applied at least one district not supported by PARRED.**	4. Verification of the PRAP. 5. ~~Training records.~~ **Monitoring report.**	

Activities	Inputs		Important Assumption
	Japanese side	Laos side	
1. Capacity of the central government on policy development, implementation and sector coordination is enhanced. **1.1. Support development of forestry related regulations and policies** 1.1.1. Agree on the orientation of FS2020 revision. 1.1.2. Support the FS2020 revision following the orientation agreed on, and by incorporating the National REDD+ Strategy. 1.1.3. Facilitate coordinated support to the policy needs of GoL through the FSSWG framework. 1.1.4. Based on 1.1.3 above, support development of other key policies (e.g. Forestry Law revision, By-laws to the Forestry Law) (REDD+ related policies will be dealt with under Output 3). 1.1.5. Provide feedback on the results of policy piloting in Luang Prabang to the national policy. **1.2. Conduct capacity building sessions for targeted technical areas (e.g. PES, NFMS, REDD+).** 1.2.1. In coordination with other stakeholders, conduct in-country training sessions for the related fields. 1.2.2. Conduct training sessions in Japan and third countries. 1.2.3. In coordination with other stakeholders, support participation of the counterparts to international conferences and workshops. **1.3. Support sector coordination.** 1.3.1. Support the function of the FSSWG secretariat (e.g. information sharing, policy dialogues, stakeholder coordination). 1.3.2. Support quarterly organization of the FSSWG meetings.	1. Team of Japanese and national experts Forestry policy/Forest management REDD+ Policy Provincial REDD+ planning & implementation/Gender Forest information system/Forestry database FREL・FRL/MRV/NFI Remote sensing 2. Equipment and Machinery To be further discussed 3. Training To be further discussed 4. Project Operation cost	1. Counterpart personnel Project Director Project Manager – DOF Component Manager for each output Component team members for each output 2. Office and equipment Office room(s) in DOF and Luang Prabang 3. Project Operation Cost To be further discussed	GoL commits to progress the revision of FS2020 and development of other policies as scheduled.

1.3.3. Promote synergizing the FSSWG and the SWG-ARD, and other initiatives (e.g. RTIM).	To be further discussed		
2. Emission reductions and removals resulting from the implementation of the REDD+ activities are quantified at the national scale by using the NFMS.			
2.1. Support the development of the NFMS.			
2.1.1. Decide the scope of the NFMS and its develop plan.			
2.1.2. Decide the institutional arrangement and operational process.			
2.1.3. Build the physical system based on the NFIS prototype.			
2.1.4. Test-run and modify the scope, institutional arrangement, process, and the physical system (before and after the 1st MRV).			
2.1.5. Develop the NFMS Operational Manual after the 2nd modification.			
2.1.6. Develop the NFMS Operational Plan.			
2.2. Support the 1st national MRV for REDD+ by using the NFMS			
2.2.1. Decide the MRV procedure (e.g. technical methods, work process, institutional arrangement).			Cooperation with MONRE-DDMCC, as the responsible agency for "Reporting" of the MRV, proceeds efficiently.
2.2.2. Modify the MRV procedure after the 1st test-run of the NFMS.			
2.2.3. "Measuring": Estimate emissions by sources and removals by sinks from the latest available Activity Data (AD) and Emission Factor (EF) (for 2018-2019, tbd).			
2.2.4. "Reporting": Facilitate inputs from the forestry sector to the national GHG Inventory (assuming that the 3rd National Communications will be submitted in 2017, and the BUR in 2019).			
2.2.5. "Verifying": Facilitate necessary arrangements required under the UNFCCC.			
2.3. Support the development of the national FREL/FRL, and the FREL/FRL for the ERP to the FCPF-CF.			
2.3.1. Decide the plan and procedure for developing the national FREL/FRL, and the FREL/FRL for the ERP to the FCPF-CF.			
2.3.2. Conduct driver analysis and specify Policies and Measures (PaMs).			
2.3.3. Develop the 2015 forest type map and calculate the Activity Data (AD).			
2.3.4. Organize available Emission Factor (EF) from the NFI (2016-2017) results and other sources.			

2.3.5. Develop the 2015 forest carbon map. 2.3.6. Analyze historical trend based on multi-year forest carbon maps. 2.3.7. Define the national circumstances and reference scenario. 2.3.8. Hold consultation workshop(s) to decide the national FREL/FRL, and the FREL/FRL for the ERP to the FCPF-CF. 2.3.9. Facilitate submission of the national FREL/FRL to the UNFCCC, and the FREL/FRL for the ERP to the FCPF-CF. 2.3.10. Support the correspondence with the technical assessments of the FREL/FRL by the UNFCCC and the FCPF-CF. **2.4. Support the next National Forest Inventory (NFI) scheduled in 2016-2017.** 2.4.1. Support developing the plan for the next NFI (e.g. scope, institutional arrangement, work procedure). 2.4.2. Provide technical support to the field survey. 2.4.3. Support compilation of the NFI survey results, including QA/QC (data will be stored into the NFMS).			
3. Institutional development, management, and coordination of national REDD+ is enhanced. **3.1. Provide technical inputs to the national REDD+ policies and institutions.** 3.1.1. In coordination with other stakeholders, facilitate the development of National REDD+ Strategy (NRS). 3.1.2. Provide technical inputs to the NRS. 3.1.3. Provide technical inputs to other national REDD+ policies (e.g. Safeguard, Benefit Sharing Mechanism). 3.1.4. Facilitate collaboration between DOF (REDD+ focal point) and MONRE-DDMCC (UNFCCC focal point) on FREL/FRL, MRV and other related issues. 3.1.5. Based on the information obtained through the NFMS, evaluate the effectiveness of REDD+ activities among the stakeholders through a consultative process. 3.1.6. Enhance synergy between REDD+ in Luang Prabang and the national level (including NFMS). 3.1.7. In coordination with other stakeholders, support Laos on accessing the FCPF-CF.			Development of NRS and other national policies/institutions for REDD+ progress as scheduled.

3.2. Support the coordination role of DOF in national REDD+. 3.2.1. Provide technical inputs to the NRTF. 3.2.2. Provide technical inputs to the TWGs. 3.2.3. Provide technical and operational support to the selected TWGs.			TWGs are established and the TORs are decided without delay.
3.3. Provide indirect support to JCM-REDD+ in line with its progress. 3.3.1. Provide technical inputs to the institutional and technical aspects of JCM-REDD+. 3.3.2. Assist the counterparts to foster their understanding on JCM-REDD+.			~~JCM-REDD+ progress as intended.~~
4. REDD+ readiness in Luang Prabang Province is enhanced. **4.1. Establish an institutional framework for implementing REDD+ in the province.** 4.1.1. In line with the progress of the national policies, develop an institution for REDD+ in the province (e.g. provincial REDD+ Task Force). 4.1.2. Identify the drivers of emissions and removals. 4.1.3. In line with the progress of the national policies, develop the provincial REDD+ Action Plan (PRAP). 4.1.4. Build technical capacity of the stakeholders to implement the PRAP. 4.1.5. Support the province to comply with the requirements as a FCPF-CF target province.			Provincial REDD+ is supported under the national policy.
4.2. Pilot priority forestry policy(s) to address the drivers of emissions and removals. 4.2.1. Identify priority forestry policy(s) to address the drivers identified in 4.1. 4.2.2. Pilot identified priority forestry policy(s). 4.2.3. Evaluate the results of piloting. 4.2.4. Provide feedback on the evaluated results to the provincial and national levels.			
4.3. Pilot forest monitoring as a part of REDD+ monitoring. 4.3.1. Develop a provincial forest monitoring plan. 4.3.2. Support the implementation of provincial forest monitoring based on the plan. 4.3.3. Review the monitoring result to assess the situation of the forestry sector.			
4.4. Promote cooperation between the central level and provincial level on REDD+.			

4.4.1. Provide feedback on the lessons from the provincial REDD+ readiness exercise to the national level (e.g. National REDD+ Strategy, NFMS). 4.4.2. Assist the province to foster their understanding on JCM-REDD+. **4.5. Strengthen the foundation to expand the PAREDD Approach.** 4.5.1. Provide advice to the proposed JCM-REDD+ project. 4.5.2. Conduct Training of Trainers (ToTs) to increase the staff who can apply the PAREDD Approach in their administrative units. 4.5.3. Continue field monitoring of the PAREDD sites (e.g. Village Development Fund as the future basis for REDD+ Benefit Sharing Mechanism), and provide feedback on the lessons to the provincial and national levels. 4.5.4. Assist the province to access and/or coordinate external funds and other donor projects, as the resources to implement the REDD+ activities, including the PAREDD Approach.			~~The proposed JCM-REDD+ project continue.~~
			Pre-Conditions
			Both the Lao and Japanese sides decide the project framework and implementation arrangement without delay.
			<Issues and counter measures>

Project Design Matrix

Project Title: Sustainable Forest Management and REDD+ Support Project (F-REDD) | Version 4

Implementing Agency: DOF-MAF, PAFO of Luang Prabang and Oudomxay Provinces | 2018/2/27

Target Group: Government staff of the implementing agencies

Period of Project: 5 years from November 2015

Project Sites: Vientiane capital, Luang Prabang (LPB) Province and Oudomxay (ODY) Province

Narrative Summary			
Overall Goal	**Objectively Verifiable Indicators**	**Means of Verification**	**Important Assumption**
Sustainable Forest Management is promoted through full implementation of REDD+ and in coordination with the Forest Strategy.	1. REDD+ MRV periodically reported through the BURs.	1. National MRV report in the BURs.	
	2. SFM shows progress in line with the revised FS 2020.	2. [assess against the targets of the revised FS2020].	
	3. Luang Prabang and Oudomxay province achieves 10 % reduction of emissions and 10% increase of removals (tCO2e) from their forest in 2025 against the baseline of 2017 (Note: Baseline year should be reconsidered once ERPD is submitted).	3. Comparison between the baseline and the MRV result.	
Project Purpose	**Objectively Verifiable Indicators**	**Means of Verification**	**Important Assumption**
Capacity for Sustainable Forest Management is strengthened through incorporation of REDD+ into the sector strategy and improvement of forest resource information.	1. Revised FS2020 approved.	1. Approval document.	Laos is equipped with the UNFCCC requirements for REDD+ result-based financing (i.e. National REDD+ Strategy, FREL/FRL, NFMS, SIS). The NFMS is in constant operation based on the Operational Plan. Importance of forest conservation is supported, and necessary resources are secured. Negative impacts external to the
	2. The NFMS operational in compliance with the UNFCCC requirements.	2. Approval document of the NFMS Operational Plan.	
	3. Based on the information generated by the NFMS, effectiveness of REDD+ activities is evaluated among the stakeholders (e.g. MONRE, MAF, Local Government and Development Partners) through a consultative process.	3. Evaluation summary submitted to the NRTF.	
	4. Results of the activities in LPB and ODY province are utilized for the formulation of national forestry/REDD+ policies.	4. Feedback workshop report.	

			forestry sector are effectively controlled and managed.
Outputs	**Objectively Verifiable Indicators**	**Means of Verification**	**Important Assumption**
1. Capacity of the central government on policy development, implementation and sector coordination is enhanced. 1.1. Support development of forestry related regulations and policies. 1.2. Conduct capacity building sessions for targeted technical areas (e.g. PES, NFMS, REDD+). 1.3. Support sector coordination.	1. Role of REDD+ incorporated into the revised FS2020. 2. At least 120 persons from the counterpart agencies trained through Off-the-Job Trainings. 3. FSSWGs held every quarter.	1. Verification of the revised FS2020. 2. Training session reports. 3. Working Group reports.	The impact of changes from organizational restructuring does not substantially risk the achievement of outputs.
2. Emission reductions and removals resulting from the implementation of the REDD+ activities are quantified at the national scale by using the NFMS. 2.1. Support development of the NFMS. 2.2. Support the 1st national MRV for REDD+ by using the NFMS. 2.3. Support development of the national FREL/FRL, and the FREL/FRL for the ERP to the FCPF-CF. 2.4. Support the next National Forest Inventory (NFI) scheduled in 2016-2017.	1. The NFMS developed. 2. The 1st national MRV results reported to the national entity or focal point by using the NFMS. 3. The national FREL/FRL developed and submitted to the national entity or focal point. 4. Results of the NFI summarized.	1. Completion report of the 2nd modification. 2. 1st national MRV report by DOF. 3. FREL/FRL submission by DOF. 4. NFI (2016 - 2017) report.	GoL decides to submit the 1st national MRV report to the UNFCCC. GoL decides to submit the FREL/FRL to the UNFCCC.
3. Institutional development, management and coordination of national REDD+ are enhanced. 3.1. Provide technical inputs to the national REDD+ policies and institutions. 3.2. Support the coordination role of DOF in national REDD+. 3.3. Provide indirect support to JCM-REDD+ in line with its progress.	1. National REDD+ Strategy (NRS) approved. 2. FREL/FRL & MRV TWG operational following the developed TOR. 3. Recommendations made to the JCM-REDD+ Joint Committee along with the bilateral negotiation.	1. Approval document. 2. Meeting report of the TWG. 3. Input records from the REDD+ focal point to the JCM Joint Committee.	NRS is approved without delay (expected within 2017). The impact of changes from organizational restructuring does not substantially risk the achievement of outputs.
4. REDD+ readiness in Luang Prabang and Oudomxay Provinces is enhanced. 4.1. Establish an institutional framework for implementing REDD+ in the province. 4.2. Pilot priority forestry policy(s) to address the drivers of emissions and removals.	1. Provincial REDD+ Action Plan (PRAP) approved. 2. Policy(s) effective to address drivers identified. 3. Provincial forest monitoring conducted. 4. JCM-REDD+ under proposal by a private entity integrated into the PRAP.	1. Approval document. 2. Evaluation report of the piloting results. 3. Monitoring report. 4. Verification of the PRAP.	

4.3. Pilot forest monitoring as a part of REDD+ monitoring. 4.4. Promote cooperation between the central level and provincial level on REDD+. 4.5. Strengthen the foundation to expand the PAREDD Approach.	5. PARRED approach is applied at least one district not supported by PARRED.	5. Monitoring report.	

Activities	Inputs		Important Assumption
	Japanese side	Laos side	
1. Capacity of the central government on policy development, implementation and sector coordination is enhanced. **1.1. Support development of forestry related regulations and policies** 1.1.1. Agree on the orientation of FS2020 revision. 1.1.2. Support the FS2020 revision following the orientation agreed on, and by incorporating the National REDD+ Strategy. 1.1.3. Facilitate coordinated support to the policy needs of GoL through the FSSWG framework. 1.1.4. Based on 1.1.3 above, support development of other key policies (e.g. Forestry Law revision, By-laws to the Forestry Law) (REDD+ related policies will be dealt with under Output 3). 1.1.5. Provide feedback on the results of policy piloting in Luang Prabang and Oudomxay to the national policy. **1.2. Conduct capacity building sessions for targeted technical areas (e.g. PES, NFMS, REDD+).** 1.2.1. In coordination with other stakeholders, conduct in-country training sessions for the related fields. 1.2.2. Conduct training sessions in Japan and third countries. 1.2.3. In coordination with other stakeholders, support participation of the counterparts to international conferences and workshops. **1.3. Support sector coordination.** 1.3.1. Support the function of the FSSWG secretariat (e.g. information sharing, policy dialogues, stakeholder coordination). 1.3.2. Support quarterly organization of the FSSWG meetings. 1.3.3. Promote synergizing the FSSWG and the SWG-ARD, and other initiatives (e.g. RTIM).	1. Team of Japanese and national experts Forestry policy/Forest management REDD+ Policy Provincial REDD+ planning & implementation/Gender Forest information system/Forestry database FREL・FRL/MRV/NFI Remote sensing 2. Equipment and Machinery To be further discussed 3. Training To be further discussed 4. Project Operation cost To be further discussed	1. Counterpart personnel Project Director Project Manager – DOF Component Manager for each output Component team members for each output 2. Office and equipment Office room(s) in DOF and Luang Prabang 3. Project Operation Cost To be further discussed	GoL commits to progress the revision of FS2020 and development of other policies as scheduled.

2. Emission reductions and removals resulting from the implementation of the REDD+ activities are quantified at the national scale by using the NFMS. **2.1. Support the development of the NFMS.** 2.1.1. Decide the scope of the NFMS and its develop plan. 2.1.2. Decide the institutional arrangement and operational process. 2.1.3. Build the physical system based on the NFIS prototype. 2.1.4. In a step-wise manner, test-run and modify the scope, institutional arrangement, process, and the physical system (before and after the 1st MRV). 2.1.5. Develop the NFMS Operational Manual after the 2nd modification. 2.1.6. Develop the NFMS Operational Plan. **2.2. Support the 1st national MRV for REDD+ by using the NFMS** 2.2.1. Decide the MRV procedure (e.g. technical methods, work process, institutional arrangement). 2.2.2. Modify the MRV procedure after the 1st test-run of the NFMS. 2.2.3. "Measuring": Estimate emissions by sources and removals by sinks from the latest available Activity Data (AD) and Emission Factor (EF) (for 2018-2019, tbd) and support NFI implementation. 2.2.4. "Reporting": Facilitate inputs from the forestry sector to the national GHG Inventory (assuming that the 3rd National Communications will be submitted in 2017, and the BUR in 2019). 2.2.5. "Verifying": Facilitate necessary arrangements required under the UNFCCC. **2.3. Support the development of the national FREL/FRL, and the FREL/FRL for the ERP to the FCPF-CF.** 2.3.1. Decide the plan and procedure for developing the national FREL/FRL, and the FREL/FRL for the ERP to the FCPF-CF. 2.3.2. Conduct driver analysis and specify Policies and Measures (PaMs). 2.3.3. Develop the 2015 forest type map and calculate the Activity Data (AD). 2.3.4. Organize available Emission Factor (EF) from the NFI (2016-2017) results and other sources.			Cooperation with MONRE-DCC, as the responsible agency for "Reporting" of the MRV, proceeds efficiently.

2.3.5. Develop the 2015 forest carbon map. 2.3.6. Analyze historical trend based on multi-year forest carbon maps. 2.3.7. Define the national circumstances and reference scenario. 2.3.8. Hold consultation workshop(s) to decide the national FREL/FRL, and the FREL/FRL for the ERP to the FCPF-CF. 2.3.9. Facilitate submission of the national FREL/FRL to the UNFCCC, and the FREL/FRL for the ERP to the FCPF-CF. 2.3.10. Support the improvement of the national FREL/FRL and REL for ER program by reflecting the technical assessment results of the FREL/FRL of the UNFCCC and the FCPF-CF. **2.4. Support the next National Forest Inventory (NFI) scheduled in 2016-2017.** 2.4.1. Support developing the plan for the next NFI (e.g. scope, institutional arrangement, work procedure). 2.4.2. Provide technical support to the field survey. 2.4.3. Support compilation of the NFI survey results, including QA/QC (data will be stored into the NFMS). **3. Institutional development, management, and coordination of national REDD+ is enhanced.** **3.1. Provide technical inputs to the national REDD+ policies and institutions.** 3.1.1. In coordination with other stakeholders, facilitate the development of National REDD+ Strategy (NRS). 3.1.2. Provide technical inputs to implementation of the NRS. 3.1.3. Provide technical inputs to other national REDD+ policies (e.g. Safeguard, Benefit Sharing Mechanism). 3.1.4. Facilitate collaboration between DOF (REDD+ focal point) and MONRE-DCC (UNFCCC focal point) on FREL/FRL, MRV and other related issues. 3.1.5. Based on the information obtained through the NFMS, evaluate the effectiveness of REDD+ activities among the stakeholders through a consultative process. 3.1.6. Enhance synergy between REDD+ in Luang Prabang and Oudomxay, and the national level (including NFMS).			Development of NRS and other national policies/institutions for REDD+ progress as scheduled.

3.1.7. In coordination with other stakeholders, support Laos on accessing the FCPF-CF.			TWGs are established and the TORs are decided without delay.
3.2. Support the coordination role of DOF in national REDD+.			
3.2.1. Provide technical inputs to the NRTF.			
3.2.2. Provide technical inputs to the TWGs.			
3.2.3. Provide technical and operational support to the selected TWGs.			
3.3. Provide indirect support to JCM-REDD+ in line with its progress.			
3.3.1. Provide technical inputs to the institutional and technical aspects of JCM-REDD+.			
3.3.2. Assist the counterparts to foster their understanding on JCM-REDD+.			
4. REDD+ readiness in Luang Prabang Province and Oudomxay Province is enhanced.			Provincial REDD+ is supported under the national policy.
4.1. Establish an institutional framework for implementing REDD+ in the province.			
4.1.1. In line with the progress of the national policies, develop an institution for REDD+ in the province (e.g. provincial REDD+ Task Force).			
4.1.2. Identify the drivers of emissions and removals.			
4.1.3. In line with the progress of the national policies, develop the provincial REDD+ Action Plan (PRAP).			
4.1.4. Build technical capacity of the stakeholders to implement the PRAP.			
4.1.5. Support the province to comply with the requirements as a FCPF-CF target province.			
4.2. Pilot priority forestry policy(s) to address the drivers of emissions and removals.			
4.2.1. Identify priority forestry policy(s) to address the drivers identified in 4.1.			
4.2.2. Pilot identified priority forestry policy(s).			
4.2.3. Evaluate the results of piloting.			
4.2.4. Provide feedback on the evaluated results to the provincial and national levels.			
4.3. Pilot forest monitoring as a part of REDD+ monitoring.			
4.3.1. Develop a provincial forest monitoring plan.			
4.3.2. Support the implementation of provincial forest monitoring based on the plan.			
4.3.3. Review the monitoring result to assess the situation of the forestry sector.			

4.4. Promote cooperation between the central level and provincial level on REDD+. 4.4.1. Provide feedback on the lessons from the provincial REDD+ readiness exercise to the national level (e.g. National REDD+ Strategy, NFMS). 4.4.2. Assist the province to foster their understanding on JCM-REDD+. **4.5. Strengthen the foundation to expand the PAREDD Approach.** 4.5.1. Provide advice to the proposed JCM-REDD+ project. 4.5.2. Conduct Training of Trainers (ToTs) to increase the staff who can apply the PAREDD Approach in their administrative units. 4.5.3. Continue field monitoring of the PAREDD sites (e.g. Village Development Fund as the future basis for REDD+ Benefit Sharing Mechanism), and provide feedback on the lessons to the provincial and national levels. 4.5.4. Assist the province to access and/or coordinate external funds and other donor projects, as the resources to implement the REDD+ activities, including the PAREDD Approach.			
			Pre-Conditions
			Both the Lao and Japanese sides decide the project framework and implementation arrangement without delay. **<Issues and counter measures>**

Project Design Matrix

Project Title: Sustainable Forest Management and REDD+ Support Project (F-REDD) Version 5

Implementing Agency: DOF-MAF, PAFO of Luang Prabang and Oudomxay Provinces 2019/03/28

Target Group: Government staff of the implementing agencies

Period of Project: 5 years from November 2015

Project Sites: Vientiane capital, Luang Prabang (LPB) Province and Oudomxay (ODY) Province

Narrative Summary			
Overall Goal	**Objectively Verifiable Indicators**	**Means of Verification**	**Important Assumption**
Sustainable Forest Management is promoted through full implementation of REDD+ and in coordination with the Forest Strategy.	1. REDD+ MRV periodically reported through the BURs.	1. National MRV report in the BURs.	
	2. SFM shows progress in line with the revised FS 2020.	2. [assess against the targets of the revised FS2020].	
	3. Luang Prabang and Oudomxay province achieves 10 % reduction of emissions and 10% increase of removals (tCO2e) from their forest in 2025 against the baseline of 2017 (Note: Baseline year should be reconsidered once ERPD is submitted).	3. Comparison between the baseline and the MRV result.	
Project Purpose	**Objectively Verifiable Indicators**	**Means of Verification**	**Important Assumption**
Capacity for Sustainable Forest Management is strengthened through incorporation of REDD+ into the sector strategy and improvement of forest resource information.	1. Revised FS2020 approved.	1. Approval document.	Laos is equipped with the UNFCCC requirements for REDD+ result-based financing (i.e. National REDD+ Strategy, FREL/FRL, NFMS, SIS). The NFMS is in constant operation based on the Operational Plan. Importance of forest conservation is supported, and necessary resources are secured. Negative impacts external to the
	2. The NFMS operational in compliance with the UNFCCC requirements.	2. Approval document of the NFMS Operational Plan.	
	3. Based on the information generated by the NFMS, effectiveness of REDD+ activities is evaluated among the stakeholders (e.g. MONRE, MAF, Local Government and Development Partners) through a consultative process.	3. Evaluation summary submitted to the NRTF.	
	4. Results of the activities in LPB and ODY province are utilized for the formulation of national forestry/REDD+ policies.	4. Feedback workshop report.	

			forestry sector are effectively controlled and managed.
Outputs	**Objectively Verifiable Indicators**	**Means of Verification**	**Important Assumption**
1. Capacity of the central government on policy development, implementation and sector coordination is enhanced. 1.1. Support development of forestry related regulations and policies. 1.2. Conduct capacity building sessions for targeted technical areas (e.g. PES, NFMS, REDD+). 1.3. Support sector coordination.	1. Role of REDD+ incorporated into the revised FS2020. 2. At least 120 persons from the counterpart agencies trained through Off-the-Job Trainings. 3. FSSWGs held every quarter.	1. Verification of the revised FS2020. 2. Training session reports. 3. Working Group reports.	The impact of changes from organizational restructuring does not substantially risk the achievement of outputs.
2. Emission reductions and removals resulting from the implementation of the REDD+ activities are quantified at the national scale by using the NFMS. 2.1. Support development of the NFMS. 2.2. Support the 1st national MRV for REDD+ by using the NFMS. 2.3. Support development of the national FREL/FRL, and the FREL/FRL for the ERP to the FCPF-CF. 2.4. Support the next National Forest Inventory (NFI) scheduled in 2016-2017.	1. The NFMS developed. 2. The 1st national MRV results reported to the national entity or focal point by using the NFMS. 3. The national FREL/FRL developed and submitted to the national entity or focal point. 4. Results of the NFI summarized.	1. Completion report of the 2nd modification. 2. 1st national MRV report by DOF. 3. FREL/FRL submission by DOF. 4. NFI (2016 - 2017) report.	GoL decides to submit the 1st national MRV report to the UNFCCC. GoL decides to submit the FREL/FRL to the UNFCCC.
3. Institutional development, management and coordination of national REDD+ are enhanced. 3.1. Provide technical inputs to the national REDD+ policies and institutions. 3.2. Support the coordination role of DOF in national REDD+. 3.3. Provide indirect support to JCM-REDD+ in line with its progress.	1. National REDD+ Strategy (NRS) approved. 2. FREL/FRL & MRV TWG operational following the developed TOR. 3. Recommendations made to the JCM-REDD+ Joint Committee along with the bilateral negotiation.	1. Approval document. 2. Meeting report of the TWG. 3. Input records from the REDD+ focal point to the JCM Joint Committee.	NRS is approved without delay (expected within 2017). The impact of changes from organizational restructuring does not substantially risk the achievement of outputs.
4. REDD+ readiness in Luang Prabang and Oudomxay Provinces is enhanced. 4.1. Establish an institutional framework for implementing REDD+ in the province. 4.2. Pilot priority forestry policy(s) to address the drivers of emissions and removals.	1. Provincial REDD+ Action Plan (PRAP) approved. 2. Policy(s) effective to address drivers identified. 3. Provincial forest monitoring conducted. 4. JCM-REDD+ under proposal by a private entity integrated into the PRAP.	1. Approval document. 2. Evaluation report of the piloting results. 3. Monitoring report. 4. Verification of the PRAP.	

4.3. Pilot forest monitoring as a part of REDD+ monitoring. 4.4. Promote cooperation between the central level and provincial level on REDD+. 4.5. Strengthen the foundation to expand the PAREDD Approach.	5. PARRED approach is applied at least one district not supported by PARRED.	5. Monitoring report.	

Activities	Inputs		Important Assumption
	Japanese side	Laos side	
1. Capacity of the central government on policy development, implementation and sector coordination is enhanced. **1.1. Support development of forestry related regulations and policies** 1.1.1. Agree on the orientation of FS2020 revision. 1.1.2. Support the FS2020 revision following the orientation agreed on, and by incorporating the National REDD+ Strategy. 1.1.3. Facilitate coordinated support to the policy needs of GoL through the FSSWG framework. 1.1.4. Based on 1.1.3 above, support development of other key policies (e.g. Forestry Law revision, By-laws to the Forestry Law) (REDD+ related policies will be dealt with under Output 3). 1.1.5. Provide feedback on the results of policy piloting in Luang Prabang and Oudomxay to the national policy. **1.2. Conduct capacity building sessions for targeted technical areas (e.g. PES, NFMS, REDD+).** 1.2.1. In coordination with other stakeholders, conduct in-country training sessions for the related fields. 1.2.2. Conduct training sessions in Japan and third countries. 1.2.3. In coordination with other stakeholders, support participation of the counterparts to international conferences and workshops. **1.3. Support sector coordination.** 1.3.1. Support the function of the FSSWG secretariat (e.g. information sharing, policy dialogues, stakeholder coordination). 1.3.2. Support quarterly organization of the FSSWG meetings. 1.3.3. Promote synergizing the FSSWG and the SWG-ARD, and other initiatives (e.g. RTIM).	1. Team of Japanese and national experts Forestry policy/Forest management REDD+ Policy Provincial REDD+ planning & implementation/Gender Forest information system/Forestry database FREL・FRL/MRV/NFI Remote sensing 2. Equipment and Machinery To be further discussed 3. Training To be further discussed 4. Project Operation cost To be further discussed	1. Counterpart personnel Project Director Project Manager – DOF Component Manager for each output Component team members for each output 2. Office and equipment Office room(s) in DOF and Luang Prabang 3. Project Operation Cost To be further discussed	GoL commits to progress the revision of FS2020 and development of other policies as scheduled.

2. Emission reductions and removals resulting from the implementation of the REDD+ activities are quantified at the national scale by using the NFMS. **2.1. Support the development of the NFMS.** 2.1.1. Decide the scope of the NFMS and its develop plan. 2.1.2. Decide the institutional arrangement and operational process. 2.1.3. Build the physical system based on the NFIS prototype. 2.1.4. In a step-wise manner, test-run and modify the scope, institutional arrangement, process, and the physical system (before and after the 1st MRV). 2.1.5. Develop the NFMS Operational Manual after the 2nd modification. 2.1.6. Develop the NFMS Operational Plan. **2.2. Support the 1st national MRV for REDD+ by using the NFMS** 2.2.1. Decide the MRV procedure (e.g. technical methods, work process, institutional arrangement). 2.2.2. Modify the MRV procedure after the 1st test-run of the NFMS. 2.2.3. "Measuring": Estimate emissions by sources and removals by sinks from the latest available Activity Data (AD) and Emission Factor (EF) (for 2018-2019, tbd) and support NFI implementation. 2.2.4. "Reporting": Facilitate inputs from the forestry sector to the national GHG Inventory (assuming that the 3rd National Communications will be submitted in 2017, and the BUR in 2019). 2.2.5. "Verifying": Facilitate necessary arrangements required under the UNFCCC. **2.3. Support the development of the national FREL/FRL, and the FREL/FRL for the ERP to the FCPF-CF.** 2.3.1. Decide the plan and procedure for developing the national FREL/FRL, and the FREL/FRL for the ERP to the FCPF-CF. 2.3.2. Conduct driver analysis and specify Policies and Measures (PaMs). 2.3.3. Develop the 2015 forest type map and calculate the Activity Data (AD). 2.3.4. Organize available Emission Factor (EF) from the NFI (2016-2017) results and other sources. 2.3.5. Develop the 2015 forest carbon map. 2.3.6. Analyze historical trend based on multi-year forest carbon maps.			Cooperation with MONRE-DCC, as the responsible agency for "Reporting" of the MRV, proceeds efficiently.

2.3.7. Define the national circumstances and reference scenario. 2.3.8. Hold consultation workshop(s) to decide the national FREL/FRL, and the FREL/FRL for the ERP to the FCPF-CF. 2.3.9. Facilitate submission of the national FREL/FRL to the UNFCCC, and the FREL/FRL for the ERP to the FCPF-CF. 2.3.10. Support the improvement of the national FREL/FRL and REL for ER program by reflecting the technical assessment results of the FREL/FRL of the UNFCCC and the FCPF-CF. **2.4. Support the next National Forest Inventory (NFI) scheduled in 2016-2017.** 2.4.1. Support developing the plan for the next NFI (e.g. scope, institutional arrangement, work procedure). 2.4.2. Provide technical support to the field survey. 2.4.3. Support compilation of the NFI survey results, including QA/QC (data will be stored into the NFMS). **3. Institutional development, management, and coordination of national REDD+ is enhanced.** **3.1. Provide technical inputs to the national REDD+ policies and institutions.** 3.1.1. In coordination with other stakeholders, facilitate the development of National REDD+ Strategy (NRS). 3.1.2. Provide technical inputs to implementation of the NRS. 3.1.3. Provide technical inputs to other national REDD+ policies (e.g. Safeguard, Benefit Sharing Mechanism). 3.1.4. Facilitate collaboration between DOF (REDD+ focal point) and MONRE-DCC (UNFCCC focal point) on FREL/FRL, MRV and other related issues. 3.1.5. Based on the information obtained through the NFMS, evaluate the effectiveness of REDD+ activities among the stakeholders through a consultative process. 3.1.6. Enhance synergy between REDD+ in Luang Prabang and Oudomxay, and the national level (including NFMS). 3.1.7. In coordination with other stakeholders, support Laos on accessing the FCPF-CF. 3.1.8. Support the submission of Summary of Information (SoI) on safeguards, and development of Safeguard Information System (SIS). 3.1.9. (If positive MRV results are confirmed) support Laos on accessing the GCF REDD+ Results-based Payment. 3.1.10. Facilitate JICA's co-financing arrangement for the GCF funding proposal by GIZ.			Development of NRS and other national policies/institutions for REDD+ progress as scheduled.

3.2. Support the coordination role of DOF in national REDD+. 3.2.1. Provide technical inputs to the NRTF. 3.2.2. Provide technical inputs to the TWGs. 3.2.3. Provide technical and operational support to the selected TWGs. **3.3. Provide indirect support to JCM-REDD+ in line with its progress.** 3.3.1. Provide technical inputs to the institutional and technical aspects of JCM-REDD+. 3.3.2. Assist the counterparts to foster their understanding on JCM-REDD+. **4. REDD+ readiness in Luang Prabang Province and Oudomxay Province is enhanced.** **4.1. Establish an institutional framework for implementing REDD+ in the province.** 4.1.1. In line with the progress of the national policies, develop an institution for REDD+ in the province (e.g. provincial REDD+ Task Force). 4.1.2. Identify the drivers of emissions and removals. 4.1.3. In line with the progress of the national policies, develop the provincial REDD+ Action Plan (PRAP). 4.1.4. Build technical capacity of the stakeholders to implement the PRAP. 4.1.5. Support the province to comply with the requirements as a FCPF-CF target province. **4.2. Pilot priority forestry policy(s) to address the drivers of emissions and removals.** 4.2.1. Identify priority forestry policy(s) to address the drivers identified in 4.1. 4.2.2. Pilot identified priority forestry policy(s). 4.2.3. Evaluate the results of piloting. 4.2.4. Provide feedback on the evaluated results to the provincial and national levels. **4.3. Pilot forest monitoring as a part of REDD+ monitoring.** 4.3.1. Develop a provincial forest monitoring plan. 4.3.2. Support the implementation of provincial forest monitoring based on the plan. 4.3.3. Review the monitoring result to assess the situation of the forestry sector. **4.4. Promote cooperation between the central level and provincial level on REDD+.** 4.4.1. Provide feedback on the lessons from the provincial REDD+ readiness exercise to the			TWGs are established and the TORs are decided without delay. Provincial REDD+ is supported under the national policy.

national level (e.g. National REDD+ Strategy, NFMS). 4.4.2. Assist the province to foster their understanding on JCM-REDD+. **4.5. Strengthen the foundation to expand the PAREDD Approach.** 4.5.1. Provide advice to the proposed JCM-REDD+ project. 4.5.2. Conduct Training of Trainers (ToTs) to increase the staff who can apply the PAREDD Approach in their administrative units. 4.5.3. Continue field monitoring of the PAREDD sites (e.g. Village Development Fund as the future basis for REDD+ Benefit Sharing Mechanism), and provide feedback on the lessons to the provincial and national levels. 4.5.4. Assist the province to access and/or coordinate external funds and other donor projects, as the resources to implement the REDD+ activities, including the PAREDD Approach.			
			Pre-Conditions
			Both the Lao and Japanese sides decide the project framework and implementation arrangement without delay.
			<Issues and counter measures>

Project Design Matrix

Project Title: Sustainable Forest Management and REDD+ Support Project (F-REDD) | Version 6

Implementing Agency: DOF-MAF, PAFO of Luang Prabang and Oudomxay Provinces | 2020/07/16

Target Group: Government staff of the implementing agencies

Period of Project: 6 years from November 2015

Project Sites: Vientiane capital, Luang Prabang (LPB) Province and Oudomxay (ODY) Province

Narrative Summary			
Overall Goal	**Objectively Verifiable Indicators**	**Means of Verification**	**Important Assumption**
Sustainable Forest Management is promoted through full implementation of REDD+ and in coordination with the Forest Strategy.	1. REDD+ MRV periodically reported through the BURs. 2. SFM shows progress in line with the revised FS 2020. 3. Luang Prabang and Oudomxay province achieves 10 % reduction of emissions and 10% increase of removals (tCO2e) from their forest in 2025 against the baseline of 2017 (Note: Baseline year should be reconsidered once ERPD is submitted).	1. National MRV report in the BURs. 2. [assess against the targets of the revised FS2020]. 3. Comparison between the baseline and the MRV result.	
Project Purpose	**Objectively Verifiable Indicators**	**Means of Verification**	**Important Assumption**
Capacity for Sustainable Forest Management is strengthened through incorporation of REDD+ into the sector strategy and improvement of forest resource information.	1. Revised FS2020 approved. 2. The NFMS operational in compliance with the UNFCCC requirements. 3. Based on the information generated by the NFMS, effectiveness of REDD+ activities is evaluated among the stakeholders (e.g. MONRE, MAF, Local Government and Development Partners) through a consultative process.	1. Approval document. 2. Approval document of the NFMS Operational Plan. 3. Evaluation summary submitted to the NRTF.	Laos is equipped with the UNFCCC requirements for REDD+ result-based financing (i.e. National REDD+ Strategy, FREL/FRL, NFMS, SIS). The NFMS is in constant operation based on the Operational Plan. Importance of forest

	4. Results of the activities in LPB and ODY province are utilized for the formulation of national forestry/REDD+ policies.	4. Feedback workshop report.	conservation is supported, and necessary resources are secured. Negative impacts external to the forestry sector are effectively controlled and managed.
Outputs	**Objectively Verifiable Indicators**	**Means of Verification**	**Important Assumption**
1. Capacity of the central government on policy development, implementation and sector coordination is enhanced. 1.1. Support development of forestry related regulations and policies. 1.2. Conduct capacity building sessions for targeted technical areas (e.g. PES, NFMS, REDD+). 1.3. Support sector coordination.	1. Role of REDD+ incorporated into the revised FS2020. 2. At least 120 persons from the counterpart agencies trained through Off-the-Job Trainings. 3. FSSWGs held every quarter.	1. Verification of the revised FS2020. 2. Training session reports. 3. Working Group reports.	The impact of changes from organizational restructuring does not substantially risk the achievement of outputs.
2. Emission reductions and removals resulting from the implementation of the REDD+ activities are quantified at the national scale by using the NFMS. 2.1. Support development of the NFMS. 2.2. Support the 1st national MRV for REDD+ by using the NFMS. 2.3. Support development of the national FREL/FRL, and the FREL/FRL for the ERP to the FCPF-CF. 2.4. Support the next National Forest Inventory (NFI) scheduled in 2016-2017.	1. The NFMS developed. 2. The 1st national MRV results reported to the national entity or focal point by using the NFMS. 3. The national FREL/FRL developed and submitted to the national entity or focal point. 4. Results of the NFI summarized.	1. Completion report of the 2nd modification. 2. 1st national MRV report by DOF. 3. FREL/FRL submission by DOF. 4. NFI (2016 - 2017) report.	GoL decides to submit the 1st national MRV report to the UNFCCC. GoL decides to submit the FREL/FRL to the UNFCCC.
3. Institutional development, management and coordination of national REDD+ are enhanced. 3.1. Provide technical inputs to the national REDD+ policies and institutions. 3.2. Support the coordination role of DOF in national REDD+. 3.3. Provide indirect support to JCM-REDD+ in line with its progress.	1. National REDD+ Strategy (NRS) approved. 2. FREL/FRL & MRV TWG operational following the developed TOR. 3. Recommendations made to the JCM-REDD+ Joint Committee along with the bilateral negotiation.	1. Approval document. 2. Meeting report of the TWG. 3. Input records from the REDD+ focal point to the JCM Joint Committee.	NRS is approved without delay (expected within 2017). The impact of changes from organizational restructuring does not substantially risk the achievement of outputs.
4. REDD+ readiness in Luang Prabang and Oudomxay Provinces is enhanced. 4.1. Establish an institutional framework for implementing REDD+ in	1. Provincial REDD+ Action Plan (PRAP) approved. 2. Policy(s) effective to address drivers identified.	1. Approval document. 2. Evaluation report of the piloting results.	

the province. 4.2. Pilot priority forestry policy(s) to address the drivers of emissions and removals. 4.3. Pilot forest monitoring as a part of REDD+ monitoring. 4.4. Promote cooperation between the central level and provincial level on REDD+. 4.5. Strengthen the foundation to expand the PAREDD Approach.	3. Provincial forest monitoring conducted. 4. JCM-REDD+ under proposal by a private entity integrated into the PRAP. 5. PARRED approach is applied at least one district not supported by PARRED.	3. Monitoring report. 4. Verification of the PRAP. 5. Monitoring report.	

Activities	Inputs		Important Assumption
	Japanese side	Laos side	
1. Capacity of the central government on policy development, implementation and sector coordination is enhanced. **1.1. Support development of forestry related regulations and policies** 1.1.1. Agree on the orientation of FS2020 revision. 1.1.2. Support the FS2020 revision following the orientation agreed on, and by incorporating the National REDD+ Strategy. 1.1.3. Facilitate coordinated support to the policy needs of GoL through the FSSWG framework. 1.1.4. Based on 1.1.3 above, support development of other key policies (e.g. Forestry Law revision, By-laws to the Forestry Law) (REDD+ related policies will be dealt with under Output 3). 1.1.5. Provide feedback on the results of policy piloting in Luang Prabang and Oudomxay to the national policy. **1.2. Conduct capacity building sessions for targeted technical areas (e.g. PES, NFMS, REDD+).** 1.2.1. In coordination with other stakeholders, conduct in-country training sessions for the related fields. 1.2.2. Conduct training sessions in Japan and third countries. 1.2.3. In coordination with other stakeholders, support participation of the counterparts to international conferences and workshops. **1.3. Support sector coordination.**	1. Team of Japanese and national experts Forestry policy/Forest management REDD+ Policy Provincial REDD+ planning & implementation/Gender Forest information system/Forestry database FREL・FRL/MRV/NFI Remote sensing 2. Equipment and Machinery To be further discussed 3. Training To be further discussed	1. Counterpart personnel Project Director Project Manager – DOF Component Manager for each output Component team members for each output 2. Office and equipment Office room(s) in DOF and Luang Prabang 3. Project Operation Cost To be further discussed	GoL commits to progress the revision of FS2020 and development of other policies as scheduled.

1.3.1. Support the function of the FSSWG secretariat (e.g. information sharing, policy dialogues, stakeholder coordination). 1.3.2. Support quarterly organization of the FSSWG meetings. 1.3.3. Promote synergizing the FSSWG and the SWG-ARD, and other initiatives (e.g. RTIM). **2. Emission reductions and removals resulting from the implementation of the REDD+ activities are quantified at the national scale by using the NFMS.** **2.1. Support the development of the NFMS.** 2.1.1. Decide the scope of the NFMS and its develop plan. 2.1.2. Decide the institutional arrangement and operational process. 2.1.3. Build the physical system based on the NFIS prototype. 2.1.4. In a step-wise manner, test-run and modify the scope, institutional arrangement, process, and the physical system (before and after the 1st MRV). 2.1.5. Develop the NFMS Operational Manual after the 2nd modification. 2.1.6. Develop the NFMS Operational Plan. 2.1.7. Implement the NFMS Operational Plan. 2.1.8. Extend the provincial forest monitoring system (PDMS) developed through Activity 4.3 to the FCPF-CF ERP provinces in collaboration with the GIZ-GCF and other projects. **2.2. Support the 1st national MRV for REDD+ by using the NFMS** 2.2.1. Decide the MRV procedure (e.g. technical methods, work process, institutional arrangement). 2.2.2. Modify the MRV procedure after the 1st test-run of the NFMS. 2.2.3. "Measuring": Estimate emissions by sources and removals by sinks from the latest available Activity Data (AD) and Emission Factor (EF) (for 2018-2019, tbd) and support NFI implementation. 2.2.4. "Reporting": Facilitate inputs from the forestry sector to the national GHG Inventory (assuming that the 3rd National Communications will be submitted in 2017, and the BUR in 2019). 2.2.5. "Verifying": Facilitate necessary arrangements required under the UNFCCC. **2.3. Support the development of the national FREL/FRL, and the FREL/FRL for the ERP to the FCPF-CF.**	4. Project Operation cost To be further discussed		Cooperation with MONRE-DCC, as the responsible agency for "Reporting" of the MRV, proceeds efficiently.

2.3.1. Decide the plan and procedure for developing the national FREL/FRL, and the FREL/FRL for the ERP to the FCPF-CF. 2.3.2. Conduct driver analysis and specify Policies and Measures (PaMs). 2.3.3. Develop the 2015 forest type map and calculate the Activity Data (AD). 2.3.4. Organize available Emission Factor (EF) from the NFI (2016-2017) results and other sources. 2.3.5. Develop the 2015 forest carbon map. 2.3.6. Analyze historical trend based on multi-year forest carbon maps. 2.3.7. Define the national circumstances and reference scenario. 2.3.8. Hold consultation workshop(s) to decide the national FREL/FRL, and the FREL/FRL for the ERP to the FCPF-CF. 2.3.9. Facilitate submission of the national FREL/FRL to the UNFCCC, and the FREL/FRL for the ERP to the FCPF-CF. 2.3.10. Support the improvement of the national FREL/FRL and REL for the ERP by reflecting the technical assessment results of the FREL/FRL of the UNFCCC and the FCPF-CF. **2.4. Support the next National Forest Inventory (NFI) scheduled in 2016-2017.** 2.4.1. Support developing the plan for the next NFI (e.g. scope, institutional arrangement, work procedure). 2.4.2. Provide technical support to the field survey. 2.4.3. Support compilation of the NFI survey results, including QA/QC (data will be stored into the NFMS). **3. Institutional development, management, and coordination of national REDD+ is enhanced.** **3.1. Provide technical inputs to the national REDD+ policies and institutions.** 3.1.1. In coordination with other stakeholders, facilitate the development of National REDD+ Strategy (NRS). 3.1.2. Provide technical inputs to implementation of the NRS. 3.1.3. Provide technical inputs to other national REDD+ policies (e.g. Safeguard, Benefit Sharing Mechanism). 3.1.4. Facilitate collaboration between DOF (REDD+ focal point) and MONRE-DCC (UNFCCC focal point) on FREL/FRL, MRV and other related issues.			Development of NRS and other national policies/institutions for REDD+ progress as scheduled.

3.1.5. Based on the information obtained through the NFMS, evaluate the effectiveness of REDD+ activities among the stakeholders through a consultative process. 3.1.6. Enhance synergy between REDD+ in Luang Prabang and Oudomxay, and the national level (including NFMS). 3.1.7. In coordination with other stakeholders, support Laos on accessing the FCPF-CF and implementation of the ERP. 3.1.8. Support the submission of Summary of Information (SoI) on safeguards, and development of Safeguard Information System (SIS). 3.1.9. ~~(If positive MRV results are confirmed)~~ Support Laos on accessing the GCF REDD+ Results-based Payment. 3.1.10. Facilitate JICA's co-financing arrangement ~~for the GCF funding proposal by GIZ.~~ and co-implementation of the GIZ GCF Program.			TWGs are established and the TORs are decided without delay.
3.2. Support the coordination role of DOF in national REDD+. 3.2.1. Provide technical inputs to the NRTF. 3.2.2. Provide technical inputs to the TWGs. 3.2.3. Provide technical and operational support to the selected TWGs.			
3.3. Provide indirect support to JCM-REDD+ in line with its progress. 3.3.1. Provide technical inputs to the institutional and technical aspects of JCM-REDD+. 3.3.2. Assist the counterparts to foster their understanding on JCM-REDD+.			
4. REDD+ readiness in Luang Prabang Province and Oudomxay Province is enhanced. **4.1. Establish an institutional framework for implementing REDD+ in the province.** 4.1.1. In line with the progress of the national policies, develop an institution for REDD+ in the province (e.g. provincial REDD+ Task Force). 4.1.2. Identify the drivers of emissions and removals. 4.1.3. In line with the progress of the national policies, develop the provincial REDD+ Action Plan (PRAP). 4.1.4. Build technical capacity of the stakeholders to implement the PRAP. 4.1.5. Support the province to comply with the requirements as a FCPF-CF target province.			Provincial REDD+ is supported under the national policy.
4.2. Pilot priority forestry policy(s) to address the drivers of emissions and removals.			

4.2.1. Identify priority forestry policy(s) to address the drivers identified in 4.1. 4.2.2. Pilot identified priority forestry policy(s). 4.2.3. Evaluate the results of piloting. 4.2.4. Provide feedback on the evaluated results to the provincial and national levels. **4.3. Pilot forest monitoring as a part of REDD+ monitoring.** 4.3.1. Develop a provincial forest monitoring plan. 4.3.2. Support the implementation of provincial forest monitoring based on the plan. 4.3.3. Review the monitoring result to assess the situation of the forestry sector. **4.4. Promote cooperation between the central level and provincial level on REDD+.** 4.4.1. Provide feedback on the lessons from the provincial REDD+ readiness exercise to the national level (e.g. National REDD+ Strategy, NFMS). 4.4.2. Assist the province to foster their understanding on JCM-REDD+. **4.5. Strengthen the foundation to expand the PAREDD Approach.** 4.5.1. Provide advice to the proposed JCM-REDD+ project. 4.5.2. Conduct Training of Trainers (ToTs) to increase the staff who can apply the PAREDD Approach in their administrative units. 4.5.3. Continue field monitoring of the PAREDD sites (e.g. Village Development Fund as the future basis for REDD+ Benefit Sharing Mechanism), and provide feedback on the lessons to the provincial and national levels. 4.5.4. Assist the province to access and/or coordinate external funds and other donor projects, as the resources to implement the REDD+ activities, including the PAREDD Approach.			
			Pre-Conditions
			Both the Lao and Japanese sides decide the project framework and implementation arrangement without delay.

			<Issues and counter measures>

Project Design Matrix

Project Title: Sustainable Forest Management and REDD+ Support Project (F-REDD) Version 7

Implementing Agency: DOF-MAF, PAFO of Luang Prabang and Oudomxay Provinces 2021/09/17

Target Group: Government staff of the implementing agencies

Period of Project: 6 years and four month from November 2015 **Project Sites**: Vientiane capital, Luang Prabang (LPB) Province and Oudomxay (ODY) Province

Narrative Summary			
Overall Goal	**Objectively Verifiable Indicators**	**Means of Verification**	**Important Assumption**
Sustainable Forest Management is promoted through full implementation of REDD+ and in coordination with the Forest Strategy.	1. REDD+ MRV periodically reported through the BURs.	1. National MRV report in the BURs.	
	2. SFM shows progress in line with the revised FS 2020.	2. [assess against the targets of the revised FS2020].	
	3. Luang Prabang and Oudomxay province achieves 10 % reduction of emissions and 10% increase of removals (tCO2e) from their forest in 2025 against the baseline of 2017 (Note: Baseline year should be reconsidered once ERPD is submitted).	3. Comparison between the baseline and the MRV result.	
Project Purpose	**Objectively Verifiable Indicators**	**Means of Verification**	**Important Assumption**
Capacity for Sustainable Forest Management is strengthened through incorporation of REDD+ into the sector strategy and improvement of forest resource information.	1. Revised FS2020 approved.	1. Approval document.	Laos is equipped with the UNFCCC requirements for REDD+ result-based financing (i.e. National REDD+ Strategy, FREL/FRL, NFMS, SIS). The NFMS is in constant operation based on the Operational Plan. Importance of forest
	2. The NFMS operational in compliance with the UNFCCC requirements.	2. Approval document of the NFMS Operational Plan.	
	3. Based on the information generated by the NFMS, effectiveness of REDD+ activities is evaluated among the stakeholders (e.g. MONRE, MAF, Local Government and Development Partners) through a consultative process.	3. Evaluation summary submitted to the NRTF.	

	4. Results of the activities in LPB and ODY province are utilized for the formulation of national forestry/REDD+ policies.	4. Feedback workshop report.	conservation is supported, and necessary resources are secured. Negative impacts external to the forestry sector are effectively controlled and managed.
Outputs	**Objectively Verifiable Indicators**	**Means of Verification**	**Important Assumption**
1. Capacity of the central government on policy development, implementation and sector coordination is enhanced. 1.1. Support development of forestry related regulations and policies. 1.2. Conduct capacity building sessions for targeted technical areas (e.g. PES, NFMS, REDD+). 1.3. Support sector coordination.	1. Role of REDD+ incorporated into the revised FS2020. 2. At least 120 persons from the counterpart agencies trained through Off-the-Job Trainings. 3. FSSWGs held every quarter.	1. Verification of the revised FS2020. 2. Training session reports. 3. Working Group reports.	The impact of changes from organizational restructuring does not substantially risk the achievement of outputs.
2. Emission reductions and removals resulting from the implementation of the REDD+ activities are quantified at the national scale by using the NFMS. 2.1. Support development of the NFMS. 2.2. Support the 1st national MRV for REDD+ by using the NFMS. 2.3. Support development of the national FREL/FRL, and the FREL/FRL for the ERP to the FCPF-CF. 2.4. Support the next National Forest Inventory (NFI) scheduled in 2016-2017.	1. The NFMS developed. 2. The 1st national MRV results reported to the national entity or focal point by using the NFMS. 3. The national FREL/FRL developed and submitted to the national entity or focal point. 4. Results of the NFI summarized.	1. Completion report of the 2nd modification. 2. 1st national MRV report by DOF. 3. FREL/FRL submission by DOF. 4. NFI (2016 - 2017) report.	GoL decides to submit the 1st national MRV report to the UNFCCC. GoL decides to submit the FREL/FRL to the UNFCCC.
3. Institutional development, management and coordination of national REDD+ are enhanced. 3.1. Provide technical inputs to the national REDD+ policies and institutions. 3.2. Support the coordination role of DOF in national REDD+. 3.3. Provide indirect support to JCM-REDD+ in line with its progress.	1. National REDD+ Strategy (NRS) approved. 2. FREL/FRL & MRV TWG operational following the developed TOR. 3. Recommendations made to the JCM-REDD+ Joint Committee along with the bilateral negotiation.	1. Approval document. 2. Meeting report of the TWG. 3. Input records from the REDD+ focal point to the JCM Joint Committee.	NRS is approved without delay (expected within 2017). The impact of changes from organizational restructuring does not substantially risk the achievement of outputs.
4. REDD+ readiness in Luang Prabang and Oudomxay Provinces is enhanced. 4.1. Establish an institutional framework for implementing REDD+ in	1. Provincial REDD+ Action Plan (PRAP) approved. 2. Policy(s) effective to address drivers identified.	1. Approval document. 2. Evaluation report of the piloting results.	

the province. 4.2. Pilot priority forestry policy(s) to address the drivers of emissions and removals. 4.3. Pilot forest monitoring as a part of REDD+ monitoring. 4.4. Promote cooperation between the central level and provincial level on REDD+. 4.5. Strengthen the foundation to expand the PAREDD Approach.	3. Provincial forest monitoring conducted. 4. JCM-REDD+ under proposal by a private entity integrated into the PRAP. 5. PARRED approach is applied at least one district not supported by PARRED.	3. Monitoring report. 4. Verification of the PRAP. 5. Monitoring report.	

Activities	Inputs		Important Assumption
	Japanese side	Laos side	
1. Capacity of the central government on policy development, implementation and sector coordination is enhanced. **1.1. Support development of forestry related regulations and policies** 1.1.1. Agree on the orientation of FS2020 revision. 1.1.2. Support the FS2020 revision following the orientation agreed on, and by incorporating the National REDD+ Strategy. 1.1.3. Facilitate coordinated support to the policy needs of GoL through the FSSWG framework. 1.1.4. Based on 1.1.3 above, support development of other key policies (e.g. Forestry Law revision, By-laws to the Forestry Law) (REDD+ related policies will be dealt with under Output 3). 1.1.5. Provide feedback on the results of policy piloting in Luang Prabang and Oudomxay to the national policy. **1.2. Conduct capacity building sessions for targeted technical areas (e.g. PES, NFMS, REDD+).** 1.2.1. In coordination with other stakeholders, conduct in-country training sessions for the related fields. 1.2.2. Conduct training sessions in Japan and third countries. 1.2.3. In coordination with other stakeholders, support participation of the counterparts to international conferences and workshops. **1.3. Support sector coordination.**	1. Team of Japanese and national experts Forestry policy/Forest management REDD+ Policy Provincial REDD+ planning & implementation/Gender Forest information system/Forestry database FREL・FRL/MRV/NFI Remote sensing 2. Equipment and Machinery To be further discussed 3. Training To be further discussed	1. Counterpart personnel Project Director Project Manager – DOF Component Manager for each output Component team members for each output 2. Office and equipment Office room(s) in DOF and Luang Prabang 3. Project Operation Cost To be further discussed	GoL commits to progress the revision of FS2020 and development of other policies as scheduled.

1.3.1. Support the function of the FSSWG secretariat (e.g. information sharing, policy dialogues, stakeholder coordination). 1.3.2. Support quarterly organization of the FSSWG meetings. 1.3.3. Promote synergizing the FSSWG and the SWG-ARD, and other initiatives (e.g. RTIM). **2. Emission reductions and removals resulting from the implementation of the REDD+ activities are quantified at the national scale by using the NFMS.** **2.1. Support the development of the NFMS.** 2.1.1. Decide the scope of the NFMS and its develop plan. 2.1.2. Decide the institutional arrangement and operational process. 2.1.3. Build the physical system based on the NFIS prototype. 2.1.4. In a step-wise manner, test-run and modify the scope, institutional arrangement, process, and the physical system (before and after the 1st MRV). 2.1.5. Develop the NFMS Operational Manual after the 2nd modification. 2.1.6. Develop the NFMS Operational Plan. 2.1.7. Implement the NFMS Operational Plan. 2.1.8. Extend the provincial forest monitoring system (PDMS) developed through Activity 4.3 to the FCPF-CF ERP provinces in collaboration with the GIZ-GCF and other projects. **2.2. Support the 1st national MRV for REDD+ by using the NFMS** 2.2.1. Decide the MRV procedure (e.g. technical methods, work process, institutional arrangement). 2.2.2. Modify the MRV procedure after the 1st test-run of the NFMS. 2.2.3. "Measuring": Estimate emissions by sources and removals by sinks from the latest available Activity Data (AD) and Emission Factor (EF) (for 2018-2019, tbd) and support NFI implementation. 2.2.4. "Reporting": Facilitate inputs from the forestry sector to the national GHG Inventory (assuming that the 3rd National Communications will be submitted in 2017, and the BUR in 2019). 2.2.5. "Verifying": Facilitate necessary arrangements required under the UNFCCC. **2.3. Support the development of the national FREL/FRL, and the FREL/FRL for the ERP to the FCPF-CF.**	4. Project Operation cost To be further discussed		Cooperation with MONRE-DCC, as the responsible agency for "Reporting" of the MRV, proceeds efficiently.

2.3.1. Decide the plan and procedure for developing the national FREL/FRL, and the FREL/FRL for the ERP to the FCPF-CF. 2.3.2. Conduct driver analysis and specify Policies and Measures (PaMs). 2.3.3. Develop the 2015 forest type map and calculate the Activity Data (AD). 2.3.4. Organize available Emission Factor (EF) from the NFI (2016-2017) results and other sources. 2.3.5. Develop the 2015 forest carbon map. 2.3.6. Analyze historical trend based on multi-year forest carbon maps. 2.3.7. Define the national circumstances and reference scenario. 2.3.8. Hold consultation workshop(s) to decide the national FREL/FRL, and the FREL/FRL for the ERP to the FCPF-CF. 2.3.9. Facilitate submission of the national FREL/FRL to the UNFCCC, and the FREL/FRL for the ERP to the FCPF-CF. 2.3.10. Support the improvement of the national FREL/FRL and REL for the ERP by reflecting the technical assessment results of the FREL/FRL of the UNFCCC and the FCPF-CF. **2.4. Support the next National Forest Inventory (NFI) scheduled in 2016-2017.** 2.4.1. Support developing the plan for the next NFI (e.g. scope, institutional arrangement, work procedure). 2.4.2. Provide technical support to the field survey. 2.4.3. Support compilation of the NFI survey results, including QA/QC (data will be stored into the NFMS). **3. Institutional development, management, and coordination of national REDD+ is enhanced.** **3.1. Provide technical inputs to the national REDD+ policies and institutions.** 3.1.1. In coordination with other stakeholders, facilitate the development of National REDD+ Strategy (NRS). 3.1.2. Provide technical inputs to implementation of the NRS. 3.1.3. Provide technical inputs to other national REDD+ policies (e.g. Safeguard, Benefit Sharing Mechanism). 3.1.4. Facilitate collaboration between DOF (REDD+ focal point) and MONRE-DCC (UNFCCC focal point) on FREL/FRL, MRV and other related issues.			Development of NRS and other national policies/institutions for REDD+ progress as scheduled.

3.1.5. Based on the information obtained through the NFMS, evaluate the effectiveness of REDD+ activities among the stakeholders through a consultative process. 3.1.6. Enhance synergy between REDD+ in Luang Prabang and Oudomxay, and the national level (including NFMS). 3.1.7. In coordination with other stakeholders, support Laos on accessing the FCPF-CF and implementation of the ERP. 3.1.8. Support the submission of Summary of Information (SoI) on safeguards, and development of Safeguard Information System (SIS). 3.1.9. ~~(If positive MRV results are confirmed)~~ Support Laos on accessing the GCF REDD+ Results-based Payment. 3.1.10. Facilitate JICA's co-financing arrangement ~~for the GCF funding proposal by GIZ.~~ and co-implementation of the GIZ GCF Program.			TWGs are established and the TORs are decided without delay.
3.2. Support the coordination role of DOF in national REDD+. 3.2.1. Provide technical inputs to the NRTF. 3.2.2. Provide technical inputs to the TWGs. 3.2.3. Provide technical and operational support to the selected TWGs.			
3.3. Provide indirect support to JCM-REDD+ in line with its progress. 3.3.1. Provide technical inputs to the institutional and technical aspects of JCM-REDD+. 3.3.2. Assist the counterparts to foster their understanding on JCM-REDD+.			
4. REDD+ readiness in Luang Prabang Province and Oudomxay Province is enhanced. **4.1. Establish an institutional framework for implementing REDD+ in the province.** 4.1.1. In line with the progress of the national policies, develop an institution for REDD+ in the province (e.g. provincial REDD+ Task Force). 4.1.2. Identify the drivers of emissions and removals. 4.1.3. In line with the progress of the national policies, develop the provincial REDD+ Action Plan (PRAP). 4.1.4. Build technical capacity of the stakeholders to implement the PRAP. 4.1.5. Support the province to comply with the requirements as a FCPF-CF target province.			Provincial REDD+ is supported under the national policy.
4.2. Pilot priority forestry policy(s) to address the drivers of emissions and removals.			

4.2.1. Identify priority forestry policy(s) to address the drivers identified in 4.1. 4.2.2. Pilot identified priority forestry policy(s). 4.2.3. Evaluate the results of piloting. 4.2.4. Provide feedback on the evaluated results to the provincial and national levels. **4.3. Pilot forest monitoring as a part of REDD+ monitoring.** 4.3.1. Develop a provincial forest monitoring plan. 4.3.2. Support the implementation of provincial forest monitoring based on the plan. 4.3.3. Review the monitoring result to assess the situation of the forestry sector. **4.4. Promote cooperation between the central level and provincial level on REDD+.** 4.4.1. Provide feedback on the lessons from the provincial REDD+ readiness exercise to the national level (e.g. National REDD+ Strategy, NFMS). 4.4.2. Assist the province to foster their understanding on JCM-REDD+. **4.5. Strengthen the foundation to expand the PAREDD Approach.** 4.5.1. Provide advice to the proposed JCM-REDD+ project. 4.5.2. Conduct Training of Trainers (ToTs) to increase the staff who can apply the PAREDD Approach in their administrative units. 4.5.3. Continue field monitoring of the PAREDD sites (e.g. Village Development Fund as the future basis for REDD+ Benefit Sharing Mechanism), and provide feedback on the lessons to the provincial and national levels. 4.5.4. Assist the province to access and/or coordinate external funds and other donor projects, as the resources to implement the REDD+ activities, including the PAREDD Approach.			
			Pre-Conditions
			Both the Lao and Japanese sides decide the project framework and implementation arrangement without delay.

			<Issues and counter measures>