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Asia-Pacific Network for Sustainable Forest Management and Rehabilitation

PROJECT PROGRESS REPORT

Sustainable Forest Management in Northern Provinces of Lao PDR [2014P1-ASEM]

1st August 2014 to 28th February 2022

Department of Forestry, Ministry of Agriculture and Forestry

Basic Information

Basic information		Sustainable Forest Management in Northern		
Dasic Information		Provinces of Lao PDR [2014P1-ASEM]		
Supervisory Agency		Ministry of Agriculture and Forestry, Laos		
Executing Agency		Department of Forestry, Ministry of Agriculture		
Encouning rigonoy		and Forestry	if, ministry of right-distance	
Implementing Agency		•	PoFI and PoNRE (Nam Ha	
impremening rigency		NPA) of Oudomxay, Bokeo and Luang Namtha		
		provinces, Shangyong NR/Xishuangbanna,		
		Provincial Forestry Bureau of Yunnan Province		
Date of Project Agreement		31 March 2014		
Duration of implementation			7/2019, 60 months and	
1		extended to the 28/02/		
Total project budget (USD)		3,563,433.00		
APFNet assured Grant (USD)		2,982,573.00		
Counterpart contribution (USD)	(in	580,860.00		
cash and in-kind)				
Cumulative grant disbursed by		2,297,977.42		
APFNet (USD)				
APFNet disbursed grant to MAF		1,214,496.56 (actual expenditure as of		
(USD)		28/02/2022 \$1,206,547.00)		
APFNet disbursed grant to Yunnan		41,300		
Forest Administration (USD)				
APFNet total grant to China Forestry		1,042,180.86 (USD) =7,295,266 (RMB)		
Star (USD)				
Disbursement to Laos	Dat	e of Disbursement	Amount (USD)	
Advanced payment for	November 2013		50,000	
feasibility study				
Second installment-1	August 2014		50,000	
Second installment-2	September 2014		50,000	
Third installment	February 2015		435,420	
Fourth installment	August 2018		200,000	
Fifth installment Sept		tember 2019 161,786		
Sixth installment July		2020	267,290	
Total (USD)			1,214,496	
Reporting status Report		orting schedule ¹	Project progress status ²	

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¹ Reporting schedule could be on track/behind/ahead of schedule

² Project progress status could be ranked as satisfactory, dissatisfactory, moderately satisfactory, moderately dissatisfactory

	Moderately satisfactory
behind	Satisfactory
	behind

Reviewed and Endorsed by

Prepared and submitted by

f Department of Forestr

Sousath SAYAKOUMMAN Phavanar SOMBANPHENG

DG of Department of Forestry Project Steering Committee Chair

signature Date

0 6 JUL 2023

Project Director signature

Date

0 6 JUL 2023

Abbreviations and Acronym

Acronym and	Full Name		
Abbreviation			
APEC	Asia-Pacific Economic Cooperation		
APFNet	Asia-Pacific Network for Sustainable Forest Management		
	and Rehabilitation		
DAFO	District Agriculture and Forestry Office		
DG	Director General		
DDG	Deputy Director General		
DoF	Department of Forestry		
DoFI	Department of Forestry Inspection		
ECTF	Experimental Center of Tropical Forestry, Chinese		
	Academy of Forestry		
MAF	Ministry of Agriculture and Forestry		
NAFRI	National Agriculture and Forestry Research Institute		
NPA	National Protected Areas		
VF&NTFP-MD	Village and Forestry and Non-Timber Forest Product		
	Management Division		
LNT	Louang Namtha		
BK	Bokeo		
PAFO	Provincial Agriculture and Forestry Office		
PFB	Yunnan Provincial Forestry Bureau		
PMO	Project Manager Office		
PoFI	Provincial office of Forestry Inspection		
PFRM	Provincial Forest Resources Management		

List of Project Steering Committee and Project Team

	Project Steering Committee			
No.	Name	Position	Responsibility	
1	Mr. Sousath SAYAKOUMMANE	DG of Department of Forestry	Chair of PSC	
2	Dr. Oupakone Alounsavath	DDG of Department of Forestry	The assistant of PSC Chair	
3	Mr. Thongphun LATTANALUNGSY (retired	DDG of Department of Forestry Inspection	Member	
4	Mr. Chansamone Phongoudo	m DDG of National Agriculture and Forestry Research Institute	Member	
5	Mr. Thuang Namvongsa	DDG of LNT, Provincial Agriculture and Forestry Office	Member	
6	Mr. Inthanom Xayvithoon	DDG of BK, Provincial Agriculture and Forestry Office	Member	
7	Mr. Bounkerth Sanongxay	DDG of ODX, Provincial Agriculture and Forestry Office	Member	
8	Mr. Xu Zhijiang	Director, International Cooperation Office, Forestry Department of Yunnan Province	Member	
9	Mr. Soundavanh Boulivong	Vice Governer of Tonpherng District	Member	
10	Mr. Thongdaeng Sitthison	Vice Governor of Namthar Distric	Member	
11	Mr. Somchanh Thavivanhac	Vice Governor of Narmor Distric	Member	
12	Mr. Chanpheang Xayyalath	Deputy head of LNT Border soldiers' division	Member	
Project Team				
1	Mr. Somsack Sysomvang (former) Mr. Phavanar	Project Director	Project implementation including overall coordination of project team at different	

	Sombanpheng (present)		levels, progress monitoring,
			and evaluation, supervision on
			the management of project
			operation progress and fund
			use, as well as progress
			reporting to APFNet
2	Mr. Airyai Vongxay	Project Director Assistant	
3	Ms. Tongngern	Project Coordinator Assistant	
	Phongsavath		
4	Ms. Vivanh	Project Financial Officer	
	Kommamuang		
5	Mr. Boumy Lorlaithong	Project Communication Officer	

1. Project Overview

The Lao government, adopted by Ministry of Agriculture and Forestry (MAF) in July 2005, is responsible for the Forestry Strategy (FS) 2020 of Lao PDR, set the objective of increasing forest coverage from 47% to 70% by 2025. The Strategy aims to generate a sustainable supply of forest products, preserve unique and threatened habitats and promote environmental conservation and protection. The government of Lao PDR has given priority to improving forestland use planning, promoting restoration of degraded land, strengthening forest law enforcement to curb illegal logging and shifting cultivation, enhancing biodiversity conservation and initiating village forestry to increase participation of local communities in forest management to generate economic flow of benefits to communities. To contribute to the achievement of FS 2020, the three northern Provinces of Laos (Luang Namtha, Oudomxay and Borkeo Provinces) are striving hard to reduce poverty of forest dependent communities and increase forest cover. In this regard, the three provinces are trying to well define forest land use planning, strengthen forest law enforcement to reduce deforestation caused by illegal logging and shifting cultivation, promote development of community forestry to encourage the participation of forest dependent communities in forest management to generate sustained flow of benefits for them, and accelerate restoration and rehabilitation of degraded forests. The three provinces have set the goal of restoring degraded forests of 7.232 ha, 39.3845 ha and 3.000 ha by 2020 respectively. To achieve the above goal, the three provinces are seeking opportunities to explore, demonstrate and extend the effective and practical approaches and models for community forestry, restoration and rehabilitation of degraded forest and applicable mechanism for biodiversity conservation.

To support sustainable forest management in the three targeted provinces (Luang Namtha, Oudomxay, and Bokeo Province) in northern Laos, MAF and APFNet conducted a project feasibility study in 2013. Subsequently, the project agreement on "Sustainable Forest Management in Northern Parts of Laos" (Project ID: 2014P1-ASEM) was officially sign by MAF and APFNet on March 31th, 2014. The project primarily focuses on assisting local governments and communities in managing forest resources sustainably by 1) exploring and demonstrating efficient approaches to forest restoration and management, which can help to generate a sustainable flow of benefit to closely related stakeholders, 2) enhancing capacity for enforcing forest law, promoting trans-boundary cooperation on biodiversity conservation, and 3) disseminating information and knowledge of best practices.

The implementation of field activities was started from August 2014. There were three departments under the two ministries the Ministry of Agriculture and Forestry (MAF) and the Ministry of Forest Resources: The Department of Forestry is responsible for land use planning at the district level and forest rehabilitation, the Department of Forest Inspection is responsible for law enforcement, and the Department of Forest Resources under the Ministry of Forest Resources is responsible for conservation. It originally intended to run for 60 months until July 2019, however, due to local capacity limitations in implementing the project, scheduling conflicts for restoration activities, and the impact of the COVID-19 pandemic, the project was requested to extend to Feb 28th, 2022.

APFNet's committed budget contribution to this project was US \$ 3.0 million over a five-year period, among which US \$ 1,214,496.56 was allocated to the Ministry of Agriculture and Forestry, Laos to support the field activities in northern Laos. US\$ 1,042,180.86 was transferred to the China Forestry

Star Company for installation of the forest fire monitoring system in Nam Ha NPA and Shangyong NR, US\$ 41,300 was used in Shangyong NR for transboundary biodiversity conservation.

After approximately eight years of implementation, the project achieved several key outcomes, including:

- Demonstrated land use planning at the district and village levels, incorporating degraded forest restoration and local livelihood development. The project selected three target villages—Houay Hom, Nam Pheang, and Don Ngeun—from Namtha District in Luang Namtha Province, Na Mor District in Oudomxay Province, and Thon Pheun District in Bokeo Province. The project aimed to reverse the trend of deforestation and forest degradation through land use planning, restoration and rehabilitation of degraded forests, and improved local livelihoods through biodiversity conservation and community participation. In addition to the district and village land use plans developed by this project, more detailed action plans were developed for forest restoration and rehabilitation, as well as non-timber forest products (NTFPs) development in the three target villages. Forest restoration demonstration sites covering 100 ha and NTFP demonstration sites were established in these villages.
- Strengthened the forest law enforcement system. As law enforcement plays a crucial role in a jurisdictional approach to reducing emissions from deforestation and forest degradation (REDD+), the project supported the development of Forest Law Enforcement Action Plans (FLEAPs) for the target provinces in northern Laos. These plans prioritize threats, organize and strengthen the implementation of wildlife and forest law enforcement through preventive interventions, proactive strategies to detect forest offenses and identify violators, and efforts to reduce illegal activities to manageable levels. In addition, forest inspection site station was established, and village level forest inspection teams were established to conduct regular patrol for illegal activities.
- Enhanced transboundary forest fire monitoring and biodiversity conservation. The project introduced an advanced forest fire monitoring and early warning system in Nam Ha NPA, Louang Namtha, Lao PDR, and Shang Yong NR, China. The system, consisting of forest monitoring towers, forest watchers, and fire control centers, operated independently and automatically collected and analyzed information and data on forest fires. This system improved the protection of forest resources, especially the monitoring capabilities for forest fires, and promoted modern forestry management towards intelligence, efficiency, and refinement. The project also established a new version of a camera trap supported by Shang Yong NR in Nam Ha NPA for surveying endangered and rare species in the transboundary area. A long-term mechanism for biodiversity conservation was established between Nam Ha NPA and Shang Yong NR.

We express our gratitude to APFNet for its financial support, expertise, and facilitation, both domestic and international, which contributed to the success of the project. We hope to continue the cooperation between APFNet and MAF in the future.

CONTENTS

1. BACKGROUND AND INTRODUCTION1
1. 2 Project goal(s) and objectives
1.3 Project expected outputs and outcomes4
2. PROJECT IMPLEMENTATION16
2.1 Project schedule and implementation arrangements
2.2 Project resources and costs
2.3 Procurement and consultant recruitment
2.4 Monitoring & evaluation and reporting
2.5 Dissemination and knowledge sharing
3. PROJECT PARTNERES' PERFORMANCE
3.1 Performance of Supervisory Agency (if any)
3.2 Performance of Executing Agency
3.3 Performance of Implementing Agency (IA)
4. PROJECT PERFORMANCE21
4.1 Project achievements
4.2 Project Impacts
4.3 Sustainability
4.5 Project Communication and dissemination
Promotion activities between 2014-2022
5. PROGRESS SUMMARY, LESSONS LEARNED AND RECOMMENDATIONS 28
5.1 Progress summary
5.2 Lessons learned and recommendations
Annex A Implementation status (scheduled versus actual)

1. BACKGROUND AND INTRODUCTION

1.1 Project Context

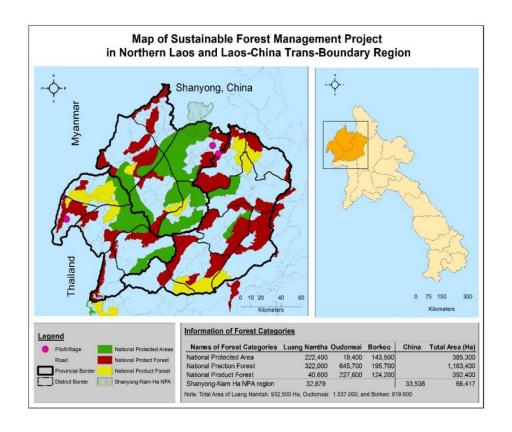
Lao PDR is at an important stage of its national development planning process. 2020 marked the conclusion of the implementation of the 8th National Socio-Economic Development Plan (NSEDP 2016-2020) and the development of the 9th NSEDP 2021-2025, which would guide the economy development for the next five years. This development has been dominated by the challenges associated with COVID-19 response and recovery, sustainability and climate change, quality and inclusive growth, human capital, infrastructure development and the graduation from Least Developed economy status, which Lao PDR hopes to achieve.

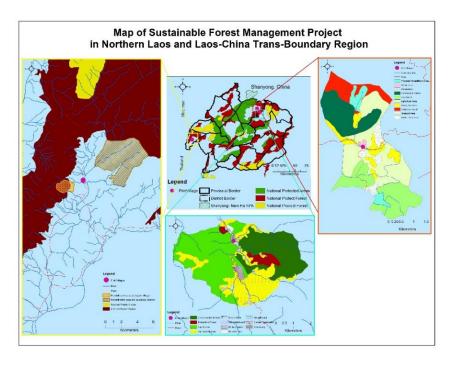
Lao PDR is an economy which strongly depended on agriculture production. Most of its population is living in the economy side especially in forested areas. Laos has a great variety of tropical forest ecosystems distributed over mountains, plateaus and plains. Laos designates three main forest categories which are owned by the State and under the Ministry of Agriculture and Forestry's (MAF) mandate. These are: Production Forest Areas, Conservation Forest Areas, and Protection Forest Areas. Forests are the economic base for rural communities, which provide local households with food, fuel and construction materials, land and employment and sustain their livelihoods. Deforestation rates in Laos are high and about 80% of the economy's forests are degraded or highly degraded. Forest degradation results in the release of greenhouse gasses and the loss of economic, ecological and sociocultural functions, which negatively impacts rural livelihoods. Once degraded, forests become vulnerable to permanent conversion to agriculture given that national policy allows degraded forestland to be allocated for nonforest purposes. Therefore, sustainable forest management is most important approach to generate sustainable flow of benefits to stakeholders and contribute to the achievement of NGPEP. The Forest Strategy 2020 of Lao PDR aims to increase forest coverage from 47% to about 70% by 2025 to generate a sustainable supply of forest products, preserve unique and threatened habitats and promote environmental conservation and protection. The government of Lao PDR has given priority to improve forest land use planning, promoting restoration of degraded land, strengthening forest law enforcement to curb illegal logging and shifting cultivation, enhancing biodiversity conservation and initiating village forestry to increase participation of local communities in forest management to generate economic flow of benefits to communities.

In recent years, the government, local authorities, development partners and people of all ethnic groups have focused on sustainable forest management and protection, planted and rehabilitated degraded forest, increasing forest cover from 41.5% (9.8 million hectares) in 2002

to 62% (14.7 million hectares) by 2020. The formulation of Forestry Strategy to 2035 and vision to 2050 are based on the Party's guidance on forestry and forestland, National Socio-Economic Development Plan, National Master Plan for Land Allocation, National Rural Development and Poverty Eradication Plan, national and international sustainable development, and the impacts of climate change. In addition, the formulation is also based on the overall assessment of the implementation of Forestry Strategy in the past, the important roles of forest and forestland, and the consultation with all relevant sectors and development partners. Formulation of Forestry Strategy to 2035 and Vision to 2050: "Forest resources are wealthy, play potential role on national socio-economic development, protect an environment and biodiversity as well as being a sustainable source of livelihood for people without resource depletion". By 2025, forest, forestland, environment and biodiversity in Lao PDR are conserved, protected and developed in a green and sustainable manner. Forests and forestland cover 70% of the economy's land area. Forests can provide sustainable ecological services and contribute substantially to social economic development and the livelihoods of people living in forest areas are improved.

Luang Namtha, Oudomxay and Bokeo Provinces are located in the northern part of Lao PDR along the border of China, with forestland taking up 63% (589,349 ha), 77% (1,186,300 ha) and 80% (500,989 ha) of their total provincial land area respectively when project initiated in 2014. Most the population in the three provinces live in and depend on forest and are poverty-stricken. 334 villages in 11 districts of the three provinces are identified as poorest communities, which heavily depend on forest for food security, livelihood and income by continuing their traditional way of shifting cultivation. Shifting cultivation and illegal logging contribute most to deforestation, forest degradation and decrease of forest cover in the three provinces and the trend is still going on. The key drivers of deforestation and forest degradation include unclear forest land use planning, weak forest law enforcement, poverty of forest dependent communities, and poor capacity of forest institutions on helping local communities to generate sustainable flow of benefits from forest management.





Location of targeted project areas.

To respond the actual needs, the project was proposed in 2014. The project was implemented in Namtha District, Luang Namtha Province, Namor District, Oudomxay Province, Thonpheun District, Bokeo Province, Nam Ha National Protected Area of Lao PDR and Xishuangbanna National Natural Reserve, China. Located in the south-west tip of Yunnan province, in south-west of China, Xishuangbanna Biosphere Reserve that borders Laos to the east and Myanmar to the west (Mekong region or upper Mekong basin). Shang yong Protected Area is over 320 km², 600-1,700 m in altitude, and borders the Nam Ha National Park in Laos. It has a tropical climate with average monthly temperature of 15.1-21.7°C and an annual monsoon precipitation, mainly from May to Oc- tober, of 1,300 -1,600 mm. The natural vegetation of the Shangyong Protected Area consists of rain forest, evergreen broadleaved forest, bamboo forest and grassland. The villages, namely Houayhom, Nampheang and Donegneun, were selected from the three districts as pilot sites of the project.

1. 2 Project goal(s) and objectives

Project goal: To explore and demonstrate innovative approaches on forest restoration and rehabilitation for promoting sustainable forest management in northern part of Lao PDR.

Project objectives: The project will mainly carry out land use planning, restoration, and rehabilitation of degraded forest land, NTFP development, forest law enforcement, and transboundary biodiversity conservation to promote and facilitate the sustainable forest management in the three targeted provinces, and mainly focus on helping local authorities and communities to sustainably manage forest resources by

- Exploring and demonstrating effective approaches on forest restoration and forest management, which can help to generate sustainable flow of benefit to closely related stakeholders:
- Strengthening capacity on forest law enforcement, promoting trans-boundary cooperation on biodiversity conservation;
- Sharing the information and knowledge of best practices on forest restoration and rehabilitation.

1.3 Project expected outputs and outcomes

During the implementation of the project from 2014-2022, many activities were implemented as planned in three target provinces: Louang Namtha, Oudomxay and Bokeo, but some activities were not implemented due to the Covid-19 pandemic. The main activities have been conducted and going well like rehabilitation, restoration, forest land use plan, forest management plan, Law enforcement, forest protection and improved the livelihood of three

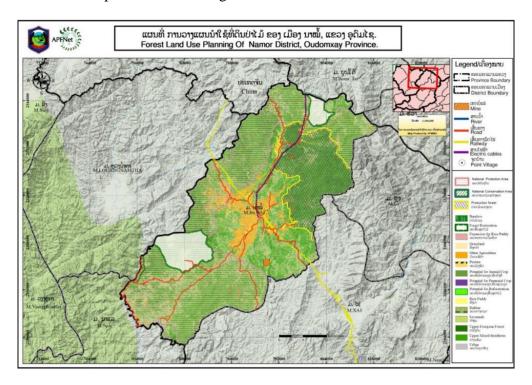
target villagers: Houy Hom village, Nampheng village and Donengern village. Throughout the implementation in 8 years, the project has achieved the following outcomes:

> Output 1: Develop Forest land use plan (FLUP) at district and village levels

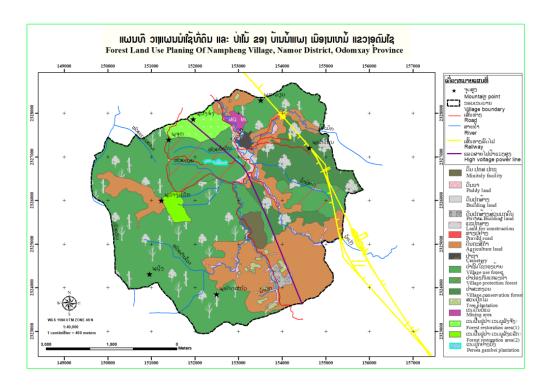
Village and district level FLUP finalized and translated 6 plans (three in district level, three in village level) of three target villages (Houy Hom, Nampheng, Donengern) in three pilot districts (Louang Namtha, Namor, Tonpherng) in two versions Lao and English are designed to allocate and categorize each type of forest use and forest land to make it clear, with a clear focus on the systematic management, protection, development and use of forest resources throughout the economy in a green and sustainable manner to increase forest cover to 70% of the economy. The forest land use plan covers planning between 2021 and 2025. The forest land use plans in village and district level consisted of forest land use maps, adjustments on land use and planning, implementation safeguards for forest land use plan (i.e. organizational, technical and financial supports), the management plan for the conservation, protection and production forests and plan for reforestation and afforestation as well as policy recommendations on how to integrate the strategic forest land use plan into socio-economic development plan at district or even provincial level. Three types of forests were included in the plans: village use forest, protection forest and conservation forest. The Forest and land use planning does not only cover the allocation of forest land to villagers for using purposes, but it also covers all forest management activities, including the development and implementation activities in all forest types within the district's jurisdiction, whether it is owned by government, community, or individuals. The status of forest land uses has been reviewed. Analysis including forest related policies and laws, information on socio-economic development, problems and challenges in the current forest and agricultural development plans have been analyzed during this process. The three plans cover all district and village administration areas to ensure forests and forest lands have been used sustainably and constantly provided various benefits for government, individuals, families, and entrepreneurs, for instance, income generation for households, food security, household appliances, and environmental values.

For the district land use plans, the objective is to integrate the forest land use plan into socio-economic development plan at district or provincial level. The three plans cover general information of socio-economic information of the districts, agriculture and forest land use maps, the management plan for the conservation, protection and production forests and plan for reforestation and afforestation as well as impacts of the infrastructure development on forest and forestland. While, for the land use plans at village level, the three plans were developed based on the reasonable balance among ecological protection, biodiversity conservation, village development demand and land resources availability etc. The forest land use plans were developed for village use forest, protection forest and conservation forest. The participatory

approaches such as questionnaire, semi-structure interviews and group meetings were applied to collect views and opinions from villagers and related stakeholders.



Land use plan map in district level (i.e. Namor District)



Land use plan in village level (i.e. Nampheng village)

Forest Management Plan (FMP) at village level completed in 2018. In 2021, the project reviewed the three FMPs, and forest land use statistic of target three districts. The land use types of target villages have dramatic changes from forest areas to other multipurpose such as agriculture, infrastructural activities, and housing. This is why the project reviewed FMP of three target provinces. DAFOs have been requested for areas re-checking and the village's maps shall be re-demarcated. The project team from the Village Forest and NTFPs Management Division in cooperation with the staffs from PAFOs and DAFOs have been conducted the field survey for data collection, and demarcated maps of three target provinces. The three Village Forest Management planning can be conducted in any village both inside and outside Protection, Conservation, and Production Forest areas according to the forestry law, No. 64/NA, dated 13 June 2019. The main objective of Village Forest Management Plan is to support and promote villagers to take responsibility, ownership, and cooperation in the sustainable development, conservation, and utilization of natural resources such as soil, water, forest, and NTFPs as well as income generation from forest management for the villagers. The ownership by local people and the village administration authority is a key indicator of the level of success of sustainable forest resource management. Central government and local administration authorities in cooperation with development partners support villagers in different ways to take ownership of the management and protection of forests as a valuable national resource. Enriched village forests can be used by villagers as a valuable livelihood source while at the same time preventing destructive activities thereby contributing to national socio-economic development. The development of the FMPs also provided a solid foundation for the forest restoration and rehabilitation at project demonstration area.

Besides, the signboard and the poles (100 m per one pole) of areas marking have been set up in all forest types (especially in risky areas) and other land-use types in three target villages: Houy Hom, Nampheng and Donngern villages.

> Output 2: Demonstrate Forest restoration and rehabilitation at selected plots

Forest Restoration in three targeted villages

174 ha degraded forest land be rehabilitated or restored through tree planting activity in three provinces (Louang Namtha, Oudomxay, Bokeo). The objective of forest restoration and

rehabilitation is to formulate detailed operational approaches in both technical and management aspects on forest restoration and forest management, which can help to generate sustainable flow of benefit to closely related stakeholders. With the following three main goals:

- 1) to select tree species used for rehabilitation in target degraded forest;
- 2) to identify appropriate approaches and planting patterns based on different site conditions;
- 3) to develop detailed implementation plan for seedlings propagation and annual planting work.

The forest restoration and rehabilitation plans were developed in three target provinces (Louang Namtha, Oudomxay, Bokeo), included design, site preparation, planting, maintenance and monitoring, have been developed by contracted consultants. Tree species for forest restoration and sustainable forest management were selected based on the following criteria: (1) Fast-growing native pioneer species with high productivity were selected for the initial stages of restoration of degraded lands. These species can help in facilitating the environment for later successional, longer-lived species that their end products are more valuable (better timber quality; (2) local and native species, especially those are endangered. Native trees are more appropriate than exotics, because they are often better adapted to local environmental conditions, seeds may be more generally available, and farmers are usually familiar with them and their uses; (3) Shade tolerant species that were for enrichment planting, and sunlight demanding species for new plantation. Besides, mixed species stands were preferred. (4) Quality of plant material were secured. Height of the seedling for transplanting was greater than 40cm; (5) Container seedling was required to ensure survival rate of young trees. Degraded forests that need to be restored by the project was natural regenerated secondary forest where some big trees scattered in the forest. Enrichment planting was applied with shade tolerant species, which were normally belong to dominant trees of local climax vegetation, such as *Pometiapinnata*, *Xyliaxylocarpa*, and *Gmelina arborea*etc.

The technicians from local forest offices have been trained the villagers to implement the activities on sites and provided technical assistance to planting and sites maintaining based on the project work plan as an in-kind contribution. The forest restoration in three target villages were conducted through: (1) defining the regenerated area by using satellite images and aerial photographs to delineate degraded areas and barren land. Forest survey has also been conducted in this process to gather the information of the condition of land use by individuals, legal entity and the organizations in regenerating area, and assess the condition of degraded forest area and germplasm trees to define regenerating techniques. Based on the data and information of targeted areas, techniques, budget and income generation were identified in the forest restoration planning; (2) Implementation of the forest restoration plan was prepared from village participants selection, demarcation of forest area including fallow forest area, barren land area and degraded forest area according to the information in the map, seedling and site preparation in three restoration planting methods (systematic planting, enrichment planting and natural rehabilitation); (3) Monitoring conduction through village forest production group establishment, forest law and regulation dissemination, checkpoints patrolling, seedling survival rate and growth monitoring. Tree species of high value and high demand, suitable to

local conditions of soil and climate have been selected in the consultation with villagers and forest officers at local level, with a priority on native tree species.

NTFP Plantation

The species producing NTFPs at high demand of local villages and market were also be considered. The project developed the NTFPs Management Plan to formulate detailed operational approaches in both technical and management aspects on NTFPs management, which help to generate sustainable flow of benefit to rural community stakeholders. In accordance with management objectives, species used for the project were used to support the project objectives of exploring and demonstrating effective approaches on livelihood improvement through NTFP development. Species with high market value and intercropping with agricultural crops (agroforestry) were preferred. The planted species for NTFPs management including fiber plant, fruit trees, spice plants, and aromatic plants were selected, including *Macadamia ternifolia*, Cardamom (*Amomum villosum*), *Amomum tsaoko*, etc. The project supported the seedlings maintaining cost to the villagers and the villagers contributed trees planting and restoration. The project has been selected tree species i.e. *Amomium Tsaoko*, Macademia, Cardamom, Agar wood and *Persia kurrzi*. in high value and high demandof local village and market, that are suitable to local soil and climate conditions by the consultation with villagers and forest officers at local level.

Developing Village Nurseries

The project supported the establishment of three nurseries in each village to produce and maintain seedlings. There are three types of Nurseries, namely temporary, permanence and semi-permanence nursery. One nursery (temporary) of 1.2 ha was improved in Na lue village, Louang Namtha, One nursey (semi-permanence) (Size: 14m x 14m) was established nursery in Nampheng village, Oudomxay and one nursey (temporary) (Size: 9m x 12m) was established nursery near the planting site in Donngern village, Bokeo. The project supported each nursery to purchase materials and paid the salary for the nursery staffs to maintain, produce seedlings, watering and weeding the seedlings for restoration activity.

Output 3: Forest inspection system improved

Development of Forest Law Enforcement Action Plan (FLEAP)

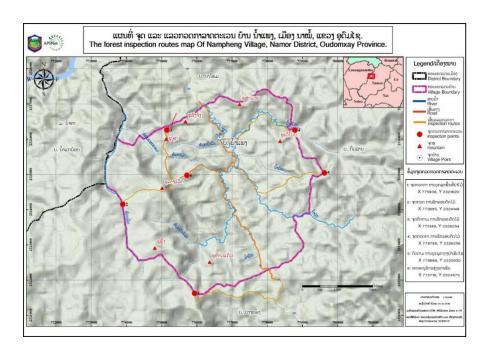
The law enforcement is identified as a key intervention for a jurisdictional REDD+ approach. The detection and suppression of forest crime is a core component of the Forest Inspection Strategy Action Plan. The FLEAP is described to address the needs, as identified for addressing deforestation and forest degradation in BOKEO, LUANGNAMTHA and OUDOMXAY Provinces. The purpose of the FLEAP is to help prioritize threats, organize and strengthen the implementation of wildlife and forest law enforcement using three approaches: (1) employing preventative interventions that lead to increased compliance and reduced need for enforcement, (2) employing proactive strategies to increase the detection of forest offences and identifying violators, and (3) reducing illegal activity to manageable levels. The following sections are included in the FLEAP for the three provinces:

- 1. Production Forests
- 2. Protection Forests
- 3. National Conservation Area
- 4. Village Use Forest
- 5. Wood manufacturing business
- 6. Commercial sawmills
- 7. Plantations
- 8. Wildlife habitat
- 9. Wildlife trade
- 10. Concessions

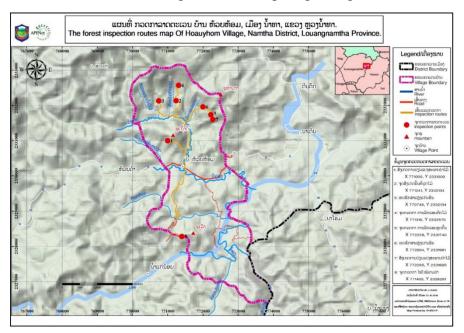
Details of specific actions are included in the Forest Law Enforcement Action Plan. Review on forest law enforcement has been organized to analyze experiences and lessons learned, identify issues, challenges, needs and gaps to improve forest law enforcement.

Forest Patrolling

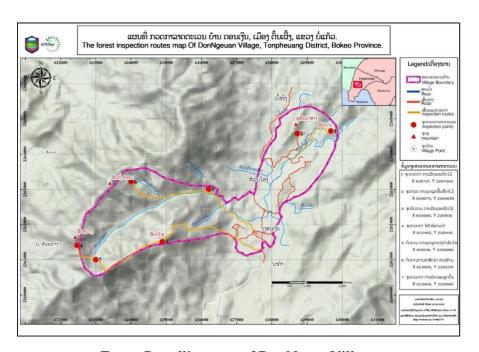
Construct forest fire route in three target provinces along the trees planting border by the villagers. LNT have been set up the protection route around 2,000m length with 5m wide, ODX have been set up the protection route around 1,500m length with 5m wide and Bokeo have been set up the protection route around 1,500m length with 5m wide along the new trees planting site. This activity was important because it has prevented, mitigated and reduced the severity of wildfires and stopped fires from spreading to other areas. The Village Conservation Monitoring Units (VCMUs) were established, trained, and provided tools for monitoring forest encroachment, fires, and land clearance. The size of each VCMU varies depending upon the level of threat to forests, critical habitats for wildlife, and human density, factors that determine the frequency of patrolling required.



Forest Patrolling route at Nampheng Village



Forest Patrolling route at Hoauyhom Village



Forest Patrolling rout of DonNgern Village

Develop inter-village forest inspection network

13 inter-village forest inspection teams conduct regular joint patrolling every month in three target provinces. The PoFI, DoFI and the villagers have conducted a patrolling to serve their responsibility on protecting natural forest resources within the village's forest area, the

report of regular patrolling is being made by village forest inspection teams but again it's based on the result of the actual situation patrolling each time, the report will be directly submitted to PoFI, then it will be sent to PPMO and CPMO accordingly. During patrols from years 1-5, it can be seen that the wood smuggling still carried on, illegal logging and hunting, the perpetrators have been punished according to the forest law.

Equip the Bokeo and Oudomxay check points, the project purchased some necessary equipment and facilitied such as computer, monitoring camera, and life detector to two check points to achieve the monitoring in 24 hours a day without any interval or stop the deforestation and wildlife hunting. Patrolling uniforms were purchased for the patrol groups in three target villages. The joint patrolling team was the first unit to prevent and protect the forest resources in their respective village's areas. The patrolling uniforms have been provided for all team members, including suit jackets, long pants and shoes. The patrolling uniforms are very important in patrolling. When the team wearing it being neat, different from other villagers, reliable and be safe with quality uniforms.

Output 4: Cooperation on trans-boundary biodiversity conservation

The output is to enhance the cooperation on trans-boundary biodiversity conservation between Nam Ha Conservation Forest Area, Lao PDR and Shang Yong National Forest reserve, China. The cooperation comprises with an establish and operation of the forest fire monitoring system along the border, survey of endangered and rare wildlife species, wild elephant tracking, and regular joint patrolling along the border.

Forest Fire Monitoring

During the past few decades until now, forests in Lao PDR have been experiencing high pressures from forest fire. It is estimated that 90% of forest fires in Lao PDR are due to shifting cultivation, especially in the Northern provinces. To deal with the current forest fire related issues and problems in Lao PDR and respond to its Forest Strategic Vision for 2020, improving facilities, techniques and capacity of forest fire prevention and control would be necessary. Introducing forest fire monitoring system into Lao PDR's forest management activities is one of the feasible solutions.

The project introduced and employed an advanced fire monitoring system of Forest Watcher in Nam Ha NPA, Louang Namtha, Lao PDR and Shang Yong NR, China. The system in each site operated independently and automatically collect and analyze information and data on forest fire, which help the sides to communicate in time to control and put off forest fires. Forest fire monitoring system uses an infrared-sensitive camera installed on a tower (Forest Watcher) in the project demonstration site and back-end command and control platforms in the control center to automatically monitor fire outbreaks. The forest fire monitoring tower can be left unattended, monitoring in real-time throughout the day. The forest watcher can cover a radius of 15km within 30 minutes and has a target positioning

accuracy of within 100 meters. The forest monitoring system is integrated with advanced information technology, is characterized as short cruise period, fast image recognition, high positioning accuracy, real-time data transmission and all-weather monitoring. It could serve as a reliable high-tech platform that supports a series of forest fire prevention and control works in Lao PDR.

The project constructed a set of front-end intelligent monitoring terminals and two forest watcher towers. The forest fire monitoring system in Nam Ha NPA was established in 2015, the acceptance check has been organized by all related parties in July 2018. The road to forest fire monitoring tower were repaired and completed. The project also established a new version camera trap supported by Shangyong NR in Nam Ha National Protected Area for endangered and rare species' survey. The forest monitoring system has been operated independently and automatically to collect and analyze information and data on forest fire, which helped to communicate in time to control and put off forest fires. Two Forest watchers have been constructed and two work stations have been equipped or built by the project. For each year the project supported the budget to maintain the road and the tower. The emergence of forest fire monitoring system effectively improved the protection of forest resources, especially forest fire monitoring capability, and successfully propel modern forestry management towards intelligence, refining and high efficiency.



Forest Watcher Tower

Transboundary Lao-China Patrolling and Wild elephant Tracking

Regular joint patrolling and wild elephant tracking conducted along the border between Nam Ha National Protect area, Louang Namtha, Lao PDR and Shang Yong NR, China twice a year by the Nam Ha NPA and Shang Yong NR. The patrolling enhanced the communication and cooperation on law enforcement in case of the illegal activities taken place. After established the forest fire monitoring systems in Kiu Lom, Nam Ha NPA, Louang Namtha Province. Now the problem of the commanding center is that the screen or monitor cannot turn on, the staff there try to repair it but doesn't work, the machine need to repair by the company staffs. During the patrolling the forest conditions are still abundant, but the forestry staffs found some villagers cut some trees and hunting the wildlife. The tracking system was set up in the elephant corridor in Nam Ha NPA and Shang Yong NR to monitor the wild elephant migration. The tracking system provided the information and data for study of the changes of wild elephant families. The Shang Yong Natural Reserve of China and Nam Ha National Protect Area of Laos jointly developed a plan for wild elephant tracking. They confiscated woods, a chainsaw saw and two guns and punish them by the regulation. The staffs of conservation forest section have set the camera traps to track the wild elephants along the borders every year, around 20 camera traps were set in Nam Ha National Protected Area. According the report until now, the staffs and villagers found more than 20 wild elephants in the Nam Ha NPA areas.

Constructed forest fire route in Nam Ha NPA, this is the new activity that the project put in years 5. In the past, the forest fires had occurred in Nam Har protected area, in both the manmade and natural forms, which around 200 ha had been damaged. Therefore, this activity is very importance to prevent, mitigate and reduce the severity of burning in case the forest fire happens once again. The protection rout has been constructed in risk areas, especially in near agricultural or productive areas. Nam HA NPA staffs and villagers have been set up the protection route around 2,000m length with 5m wide. This activity very importance to prevent, mitigate and reduce the severity of burning.

Output 5: Capacity of forest staff and communities improved

The project improved the capacity of forest staff and local forest dependent community in sustainable forest management. A capacity need assessment, development of training plan, and training workshops have been developed in this project at different levels.

Training for forestry staffs and villagers respectively

The training proposed to enhance the professional skills of forestry staffs on forest restoration and rehabilitation and the capacity of forestry inspection staff on forest law enforcement. The training packages have been developed by relevant professional trainers in regard with specific training topics with 210 participants in total. After trained the staffs by the professional trainers, then the staffs have been trained them to the villagers to enhance the professional skills of villagers on forest restoration and rehabilitation and the capacity on forest law enforcement. The project held a lot of training courses, there are forest land use planning, forest management and rehabilitation, law and regulation, GIS and mapping, seedling production, payment of forest ecosystems, financial, project management, methodologies on soil and water conservation, and carbon accounting and etc.

1 oversea study tour for forestry staffs and villagers: represents from ECTF, Guangxi, China visited the three target provinces and the central staffs, they have been the exchanged the experience on rehabilitation and restoration. After oversea study tour, the project discussed with APFNet about rehabilitation activity in Laos, from Laos side was recommended APFNet to request the expert of ECTF came to Laos to design the planting model and assisted the best practice to Laos side.

Inter-provincial experience exchange /study tour have been conducted 3 time as 1 study tour in Paksong to see the experience on rehabilitation and restoration, 1 study tour with three target provinces to see the activity and experiences in other target villages, 1study tour in Luang Prabang, Vangvieng and Bolikhamxai to see the experience on NTFPs' company.

> Output 6: Project publicity

The project produced 2 newsletters on the progress, results, and implementation of project activities in English and Lao languages. The newsletters have been posted on project website and delivered to related agencies of Lao PDR. Significant progress, experience, and lessons learned obtained from the project have been documented and distributed.



Website updated and improved (http://laoapfnet.maf.gov.la/?lang=en)

2 brochures finalized in two languages (Lao and English), two brochures briefed the main progress and outcomes for each output have been prepared and developed in June 2020 and April 2022. The project brochure finalized, printed and handed to the stakeholders.

1 report on the best practice and lesson learn has been developed as one document for widely sharing or dissemination to all project stakeholders and will be posted on project website page, the detail of such report included: all information of project's staff, the project information, the result of all activities mentioned in the report, as well as the obstacles, problems or issues and other necessary information. Moreover, this report completed in both Lao and English versions. This report improved by a local expert and the ToR consulted, discussed, reviewed and agreed in amount of PD, PC, PCA and the expert.

1 Project video produced in two version Lao and English in 30 minutes, the video film with English dub and sub-title to disseminate the best practices of the project, the main project stakeholders from central, provincial, district and village levels have been interviewed as well as field data collection also conducted. This video used to promote the project both within Lao PDR and internationally.

2. PROJECT IMPLEMENTATION

2.1 Project schedule and implementation arrangements

The implementation of the project was that some activities were completed on schedule and some activities were delayed and canceled depending on the situation. Some activities were added to the annual plan based on discussions at the annual meeting. As the project progress report, annual work plan, annual budget could not be submitted to APFNet on time and not satisfied with the document requirement from donor, some activities were not conducted as planned and were delayed and project funds delayed as well.

The original project duration is 2014 - 2019, but according to the actual implementation of the project in the first year (2014 - 2015), the project was faced with many difficulties and challenges and some activities were not well designed or not suitable for implementing on ground. Therefore, the project committee and APFNet has decided for one year postpone (2015 - 2016). In late 2016, the project steering committee meeting has been organized and the meeting has agreed to revise the overall workplan which has determined the duration of the project implementation from 2016 - 2020. However, according to the annual project implementation in each year and it could not complete by 2020. Thereby, the project implementing agency has proposed to extent the project duration from 2020 to the end of February 2022 and APFNet has finally agreed with the propulsion.

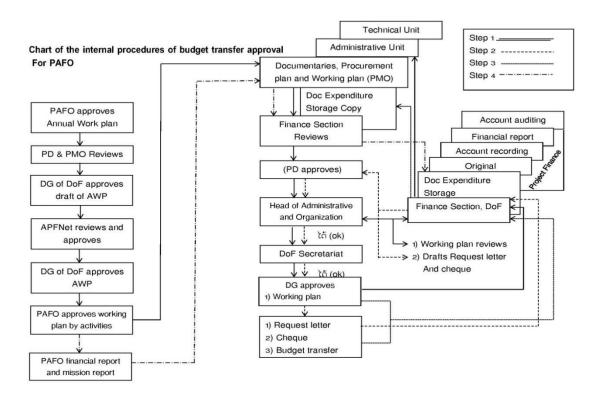
Besides, the maintenance of both hardware and software need human resources, technology, and budgets. The current local capacity and circumstances is very difficult to effectively manage the system after project ended. During the project period, the implementation of activities has been completed and almost achieved as expected, key achievements are reforestation and rehabilitation, FLUPs in three districts and villages, strengthen forest law enforcement and share information and knowledge of best practices on forest restoration and rehabilitation.

2.2 Project resources and costs

The annual work plan and budget was used the remaining budget from previous years due to the implementation activity delayed and some activities were canceled due to the situation of covid-19 pandemic.

The financial report is cover 5 years of project, the total project budget is 3,563,433.00 USD. APFNet assured Grant is 2,982,573.00 USD, and 580,860.00 USD is counterpart contribution. The project received seven times by APFNet, the total amount is 1,214,496.56 USD, including (1) 50,000 USD to the DoF bank account as advanced payment for project feasibility study, and the 6 times transferr to the project account. The total expense is 1,206,546.96 USD and the budget remaining is 4416.50 USD by March 30th, 2023. APFNet disbursed grant to Yunnan Forest Administration is USD 41,300, and disbursed grants to China Forestry Star company is 1,042,180.86 USD.

> Process of Project Budget approval



After the budget plan approval by DoF and APFNet, PAFO financial staff sent the requested letter, cheque and budget transfer to the finance section of DOF, after the financial staff of DOF implemented the internal process and transferred the budget to three target provinces then the PAFO could conducted the activity as plan. After implemented and conducted the activity the PAFO sent the report and financial report to finance section of DoF to summarized the activity and prepared to request the budget of next quarterly.

2.3 Procurement and consultant recruitment

The project procurement was followed the agreement on procurement of goods and services shall be made in accordance with APFNet PIIM (2013) and law(s) and regulation(s) in target economy(ies), which conform to generally accepted principles of good procurement practices, including safeguards against corrupt and illegal practice, and that no offer, gift, payment or benefit of any kind, which would or could be construed as an illegal or corrupt practice can be accepted, either directly or indirectly, an inducement or reward for the award or execution of procurement contracts. The prioritized procurement of such goods as vehicles, devices and equipment were purchased from the project grant Donor economy. Purchases with a price above LAK 5,000,000 were required a minimum quotation of 3 companies or supplier.

For hiring consultants, the project was advertised in newsletters, websites and more. The program staff and Project coordinator PC interviewed the candidates. The consultants hired from APFNet grant are:

- Village Forest Management Division (VFMD) Team work for FLUPs
- DOFI Team work for FLEAPs

- Mr. Zhang Jinfeng and Mr. Wang Weibin Consultant service for the Forest restoration plan and NTFPs plan
- Mr. Phaivanh Consultant service for Forest survey.
- Mr. Sounthone Kedphanh Consultant of NTFPs.
- Mr. Latsamai Sylavong Chief technical assistant (CTA) of project.
- Mr. Chaipheth Phommachanh Consultant service for translating the project documents, drafting and deigning the best practice and lesion learned.
- Mrs. Vilaykham Phetchanpheng Consultant service for designing of the Brochures and Newsletters.
- Mr. Ponevilay Luangphon Producer of Project video.

2.4 Monitoring & evaluation and reporting

Project monitoring and evaluation followed the procedure of APFNet. The monitoring and evaluation within project have been based on the outcome-oriented approach. The project director monitored overall progress of the project. Project managers at provincial level monitored the progress of the project implementation in the field. Internal evaluation was organized was organized by the PMO team in collaboration with APFNet to check the project implementation and management regularly and measure the progress, performance, achievement, issues and findings during the implementation.

Internal monitoring and evaluation were conducted every year by PD to check implementation and management of the Project and measure the progress, performance, achievements, issues, and findings to be shared in a timely manner.

2.5 Dissemination and knowledge sharing

The project was disseminated and shared the experience implementing and project outcome on website, newsletter, project video, best practice and lesson learn in 2 languages Lao and English to handing to relevant stakeholders and organized workshop with other project. The project has been produced 2 Newsletter, 2 brochures, 1 video project, 1 best practice and lesson learn and 1 workshop. Therefore, the project was promoted the project outcome trough the relevant exhibitions.

No.	Type	Detail		
1	Website	Sharing the project information, background, Newsletter,		
		brochure, project video and all activities on project.		
2	Brochure 1	The brochure 1 have two versions in Laos and English, it promoted the activities that implemented in years 1-3, the		
		brochure handed to the targets provinces and the some		
		handed trough the relevant exhibitions.		
3	Newsletter 1	Newsletter 1 have two versions in Lao and English, it promoted the activities that implemented in years 3-4, the newsletter was posted on the project website and handed to		

		the targets provinces and the some handed trough the relevant exhibitions.
4	Project video	Project video have been produced in two version Lao and English language, it showed the project background, targets, goal, output, outcome, all the implemented activities and cooperation with the village, this video will be posted on project website, YouTube and Facebook.
5	Workshop	The workshop has been organized 1 time with the AFoCO project in Paksong, it's the similar project as our project. This workshop was held for the villagers two, project staffs of both projects to share the knowledge, experience, solution, impact and best practice to each other.
6	Brochure 2	Brochure 2 has two versions Lao and English, it's promoted and shared the outcome of all activities in years 1-5, the brochure handed to the stakeholders and will be posted on project Website.
7	Newsletter 2	Newsletter 2 has two versions Lao and English; it's promoted and updated the outcome of all activities in years 5 and handed to the stakeholders and will be posted on the project website.
8	Best practice	1 report has been produced in two versions Lao and English; this report is promoted all project information, outputs, outcome and the best practice and lesion learned of the project.

3. PROJECT PARTNERES' PERFORMANCE

3.1 Performance of Supervisory Agency (if any)

The Ministry of Agriculture and Forestry, Laos is the Supervisory Agency (SA) for this project. The Ministry of Agriculture and Forestry is responsible for directing macro-level work and directing technical departments, such as directing the Department of Forestry and the Inspection Department to implement the Lao-China cooperation, and is responsible for signing government agreements. SA is also responsible for monitoring and evaluating the implementation of the project.

3.2 Performance of Executing Agency

The Department of Forestry is one of departments established under the Ministry of Agriculture and Forestry, for the purpose of administering the forestry sector. Main roles of DoF is to study and monitor the implementation of strategies and plans, to organize the administration and management of forestry all over the Laos, to elaborate long, medium and

short-term strategies for the development of forestry, forest industry, conservation and protection of the environment, to study and make proper use of the achievements of science and technology in the forest production. In this project, the Department of Forestry has the role of directing the preparation of annual programs, capacity building training for local staff, such as financial training, technical training, and other activities related to project-related activities. Revise the joint action plan with the locals and coordinate with the donors and compile the activities. Write monthly, quarterly and annual reports to the Ministry of Agriculture and Forestry for responsibility, as well as report to the donors on a regular basis.

3.3 Performance of Implementing Agency (IA) (if any), consultants (technical assistants), contractors, and suppliers

During the implementation phase of the project, we received a number of experts from the People's Republic of China and Lao experts, including in conjunction with the Forest Survey and Planning Division, who also signed agreements on land use planning at the district and village levels, as well as contracts for non-timber forest products and financial experts.

Most of the local relocation experts are not present at the project. In addition, the donors have sent a team of experts from the University of Lao PDR to help plan a dual forest reforestation and reforestation project that can be modeled and extended to other villages.

4. PROJECT PERFORMANCE

4.1 Project achievements

Many activities undertaken during the mentioned time frame were discussed, dialogues through formal and informal meetings to get better understanding of the new project document (overall work plan and AWP) and prioritizing project activities.

The project was achieved the target activities according to the approved plan and 3 project objectives, such as the main activity are piloting the reforestation and rehabilitation, plans of land use and forest management adopted by forestry departments and villages and succeed to strengthen forest law enforcement and promote cooperation on trans-boundary biodiversity conservation. the livelihood has been improved, conserved biodiversity and facilitated participation of local communities in forest management. The project mainly carried out land use planning, restoration and rehabilitation of degraded forestland, NTFP development, forest law enforcement and trans-boundary biodiversity conservation to promote and facilitate the sustainable forest management in the three targeted provinces, and mainly focus on helping local authorities and communities to sustainably manage forest resources.

One of the main achievements from this project is the development of land use plans.

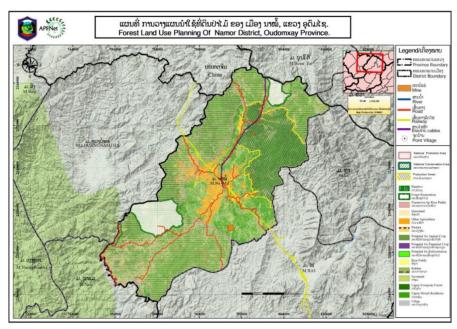
1. District land use plans:

The overall objective of district land use plan is to integrate the forest land use plan into

socio-economic development plan at district or even provincial level. The Plan covers the general information of socio-economic information of the districts, agriculture and forest land use maps, the management plan for the conservation, protection and production forests and plan for reforestation and afforestation as well as impacts of the infra-development project on forest and forestland. Three district land use plans have been produced as follows:

A) Land Use Plan of Namor District, Oudomxay Province

The land use planning in Namor district covers all forest management activities, including the development and implementation activities in all forest types within the district's jurisdiction, whether it is owned by government, community, or individuals. In addition, the plan also covers all village administration areas to ensure forests and forest lands have been used sustainably and constantly provided various benefits for government, individuals, families, and entrepreneurs, for instance, income generation for households, food security, household appliances, and environmental values. The land use plan of Nomor is valid for 5 years, which covers forest management activities and land use changes in each forestland of the district by aiming at the protection, management, utilization, and development of forestland in the sustainable manner aligning with the district socio-economic development. The forest categories in the district comprises with conservation forest 46,404.70 hectares, national protection forest by 83,900 hectares, district protection forest 2,840 hectares, national production forest 22,284 hectares, and district and village use forests 10,532 hectares.

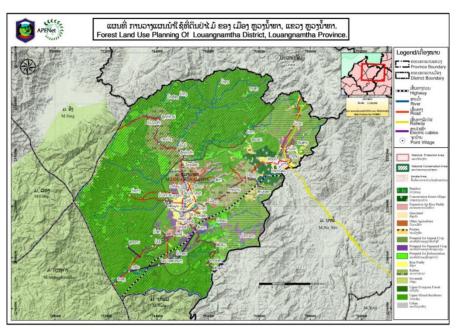


Map of land use plan of Namor District

B) Land Use Plan of Luang Namtha District, Luang Namtha Province

The land use planning of Namor district is valid for 5 years and covers forest management activities and land use changes in each forestland of the district by aiming at the protection, management, utilization, and development of forestland in the sustainable manner aligning with the district socio-economic development; and to be able to provide the timber and NTFPs

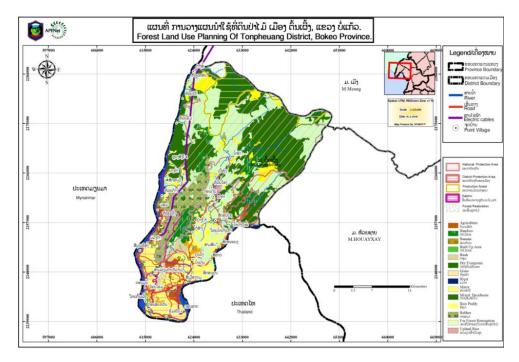
for public use, including maintaining the Namha NPA as it covers the district area of 120,529 hectares or approximately 54% of total NPA area, two protection forests: Namtha protection forest and Phousamyord-Namphak protection forest accounting for 817,399 hectares which cover three districts of two provinces such as Namor district of Oudomxay, La and Luang Namtha districts of Luang Namtha province. Within this, Luang Namtha district shares a small proportion of 24,604 hectares or approximately 3.01% of the total area of Phousamyord-Namphak protection forest.



Map of land use plan of Louangnatha District

C) Land Use Plan of Tonpheung District, Bokeo Province

The land use planning of Tonpheung district is valid for 5 years and covers forest management activities and land use changes in each forestland of the district by aiming at the protection, management, utilization, and development of forestland in the sustainable manner aligning with the district socio-economic development. The forests can provide the timber and NTFPs for public use, including the national protection forest Phoukiewlom around 7,000 hectares, national production forest Samchaemeuang with 4,344 hectares, district conservation forest with 4,936 hectares, and district protection forest with 39,106 hectares.



Map of land use plan of Tonpheuang District

2. Village land use plans:

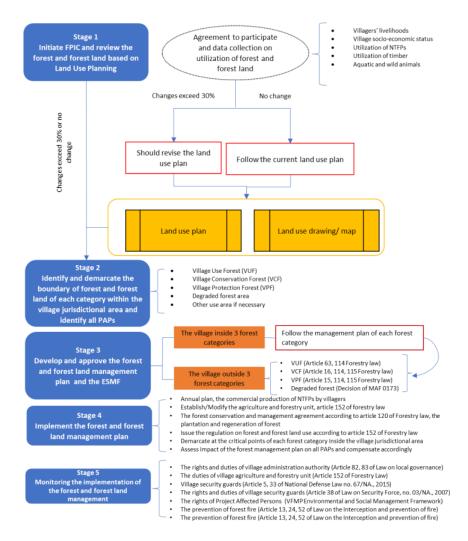
The land use plan for each village has been developed based on the reasonable balance among ecological protection, biodiversity conservation, village development demand and land resources availability etc. The forest land use plans were developed for village use forest, protection forest and conservation forest. The participatory approaches such as questionnaire, semi-structure interviews and group meetings were applied to collect views and opinions from villagers and related stakeholders. The three village land use plans were produced in this project.

- A) Land Use Plan of Nampheng Village, Namor District, Oudomxay Province
- B) Land Use Plan of Houahorm Village, Luang Namtha District, Luang Namtha Province
 - C) Land Use Plan of Donngeun Village, Tongpheung District, Bokeo Province

3. Forest Management Plans:

Village forest management planning can be conducted in any village both inside and outside Protection, Conservation, and Production Forest areas according to the forestry law. The main objective of Village Forest Management Plan is to support and promote villagers to take responsibility, ownership, and cooperation in the sustainable development, conservation, and utilization of natural resources such as soil, water, forest, and NTFPs as well as income generation from forest management for the villagers. The ownership by local people and the village administration authority is a key indicator of the level of success of sustainable forest

resource management. Central government and local administration authorities in cooperation with development partners support villagers in different ways to take ownership of the management and protection of forests as a valuable national resource. Enriched village forests can be used by villagers as a valuable livelihood source while at the same time preventing destructive activities thereby contributing to national socio-economic development.



Village Forest management planning process

4.2 Project Impacts

Positive:

- Land use planning is developed and biodiversity is conserved in the three provinces in the district and village level. The LUFP helped the sustainable forest management, reduced deforestation, forest degradation and forest fire, and also managed the sustainable of forestland, forest and NTFPs used.
- Tree planting and rehabilitation were increased the forest cover, forestland and enrich forest resources. degraded forests are restored, livelihoods are improved and local communities are involved in forest management.

- NTFP's planting improved the livelihood of local communities is better, the villagers The villager could generate additional income from harvesting non-timber forest products, this activity also governs the reckless harvesting of non-timber forest products and makes nontimber forest products sustainable.
- Regular patrolling reduced deforestation and forest degradation in the three Provinces and threats to sustainable management of forest ecosystem.
- Cooperation along the Lao-China border along the Nam Ha NPA and Shang Yong NPA helped to enrich biodiversity, reduced deforestation, poaching, hunting and also helped manage the wild elephants.
 - Reduced the forest fire in Nam Ha NPA and Lao-China border by two forest fire tower.

Negative:

Some Activities could not be implemented due to the serious situation of Covid-19 pandemic, the experts who those expected to be contracted for conducting some specific activities could not come to Laos that made the project activity delayed. Sometimes planning is not in line with the actual situation in the implementation, the initial solution for some activities has been modified and added to the appropriate activities instead.

4.3 Sustainability

The activities of project have encouraged local villagers and communities to increasing forest and use forest and NTFPs for sustainable, climate change mitigation within productive landscapes where communities reside, ensuring sustainable livelihoods. Efforts will be made to link the activities with the villager to benefit from the synergies from the existing biodiversity. Specifically, sustainable land use, land use change, and forestry management interventions will be adopted at the community level for forest and to ensure connectivity between ecosystems and restorative activities. These efforts will aim at up-scaling and replicating at local levels, good practices and lessons that will be generated through the activities that reduces pressures on forest resources and provides sustainable flows of forest ecosystems.

4.4 Project changes

During the implementation of the project from 2014-2022, it seems that the project has problems and was not running smoothly, in which the project changes in many ways, whether it is forwarded to the relevant departments, frequent hiring of new experts, many project managers changed, has resulted in changes and delays in project information and implementation, such as a one-year suspension for review and referral from the REDD to the Village Forest and NTFP Management division. Below are the details:

• According to the project steering committee meeting organized in late 2016, the meeting has agreed to cut off the trees planting activity in Donngern village due to as field survey conducted by the representative from APFNet, the representative has pointed out that the proposed areas from trees plantation and restoration can be regenerated naturally;

- According to the roles and responsibilities between Reduction Emission from Deforestation and Forest Degradation Division (REDD+ Division) and Village Forest Management Division (VFMD). Therefore, the Department of Forestry decided to hand over the project from REDD+ Division to VFMD and the activity of village forest management planning for the target villages have been proposed by VFMD and agreed by APFNet to add this activity into the 3rd year annual workplan;
- The 5 years forest strategy planning at provincial level of those target provinces has been dropped because it's a bit huge area, hard to collect the data, requires a big among of budget and most importantly the plan shall be corresponded with 5 years development plan of each province. Therefore, this activity has been agreed to cut off by both sides;
- Based on the project framework and scope, the seedling to be planted in the determined areas of each villages, the seedling required to be produced by the villagers of each target villages with a technical support by DAFO. However, refers to the reality and actual implementation, the seedling which produced by villagers could not grow up as required of a minimum size of 20cm. So, some seedlings have been agreed to purchase for planting and the produced seedlings were targeted to be planted in determined areas in the later year;
- In the last year project annual workplan, APFNet has agreed to add more trees planting areas including: in Donngern (Bokeo) 30 ha, with the number of seedlings is 20,480 seedlings and the 6 specie: Afzelia xylocarpa, Pterocarpus macrocarpus, Dalbergia cultura, Toona sinensis (A. Jus.) Roem., Dalbergia cochinchinensis, Techtona Grandis (L.), and in Namphaeng (Oudomxay) 20 ha, with the number of seedlings is 14,410 seedlings and the 5 species: Afzelia xylocarpa, Pterocarpus macrocarpus, Dalbergia cultura, Albizia lucidior and Melia azedarach;

In addition to these issues, there are also issues related to changes due to the Covid-19 epidemic the plan delayed and changed, such as switching from face to face meetings to online meeting, or reduced held the large gatherings or canceled some activity.

4.5 Project Communication and dissemination

Promotion activities between 2014-2022

Activities	Promotion	Date	Funding source
	platforms		
Newsletter	Printing and	N1: 1 November	APFNet
	dissemination on	2021;	
	project website	N2: 21 June 2022	
Brochure	Printing and	B1: 17 October	APFNet
	dissemination on	2019	
	project website	B2: 21 June 2022	
Website	Posts	Years 3, 2019	APFNet
Video	YouTube,	July 2022	APFNet
	Facebook and		
	project website		

Project stories	None	None	None
Other project	None	None	None
dissemination			
materials that you			
want to include			
here			

5. PROGRESS SUMMARY, LESSONS LEARNED AND RECOMMENDATIONS

5.1 Progress summary

The implementation of the project from 2014 to 2022 has seen many successes, such as planting trees and non-timber forest products in the designated areas in the three target villages, which in the future will be able to increase the number and quantity of trees and NTFPs, and the people will be able to benefit as well as improve their livelihoods.

During the project period, the implementation of activities has been completed and almost achieved as expected, key achievements are reforestation and rehabilitation, FLUPs in three districts and villages, strengthen forest law enforcement and share information and knowledge of best practices on forest restoration and rehabilitation.

People are aware of their land use planning and ownership of people-owned forest resources, as well as generating additional income. This project is the first of its kind in afforestation and reforestation in three northern provinces, seen as a pilot project and can be extended to other provincial.

5.2 Lessons learned and recommendations

- To issue work permission for international consultant is require much time more than 3-6 months or not approve due to the situation of covid-19.;
- Limitation in communication and discussion among different levels (central, provincial, district and village level), across sectors (PAFO, PoFI and PFRM); and between Nam Ha NPA and Shangyong NR, and between PMO central level and APFNet. As mentioned earlier, the communication mechanism is critical for the success of the project, especially for the first year.
- Taking time to find suitable experts for land use planning and GIS position due to high skill/professional requirement.
- All the process of hiring specialists and payment follow the government procedures (DoF/MAF) may make some delays; the project therefore requires adding more time for the preparation in order to deliver results of each output on timeline.
- Some activities are delay and not as planned due to the serious situation of the COVID-19 pandemic.

- The coordination among all related stakeholders is still remarked as the core issue of the project and really needed to be improved and given greater focus on it.
- Reporting system is always delayed especially for financial report. The reporting system is always slow, especially the financial statements. This should be solved. The monthly financial statements must be thoroughly audited and must be submitted at the end of each month, no delay, so that there is time to prepare documents for the auditor each year
- Frequent changes of project staff or project specialists are not good for the project, as it will delay activities and lead to many other changes, inconsistent reporting and incomplete database. This issue should not occur in the implementation of the project.
- The seedling production is still remained as the main issue of the project due to the time period and seeds quality are not suitable to produce. So, some seedlings were purchased from other provinces and abroad.

Annex A Implementation status (scheduled versus actual)

Project			Progress made		
Objective/Outputs/	Indicators		(%completion of activities	Appraisal	Actual time
Activities	(in line with	Baseline of activities	and degree of	time	
(in line with	PD/AWPs)		output/objective		
PD/AWPs)			achievement)		
Objective 1	<u> </u>		approaches on forest restoration e flow of benefit to closely related		nagement and
Output 1: Forest land use plan at levels of village and district developed			 3 District-level FLUPs, 1 translated into English, 3 village-level FLUPs, 1 translated into English, 3 Village FMPs, 1 translated into English, 3 Village FMPs have been reviewed, signboards and the poles have been set up for all 		

		forest types in target villages.	
Activity 1.1 Develop strategic forest land use plan at 3 pilot districts	Database Field survey Mapping of forest land use	The 5 years planning of forest land use planning at target villages and districts to be completed, translated and	
Activity 1.2 Develop a participatory village land use plan at 3 pilot villages	Baseline survey of villages Forest management plans	 published as: 3 District-level FLUPs, 1 translated into English, 3 village-level FLUPs, 1 translated into English, 	
Activity 1.3 Develop a manual on forest land use planning		Canceled due to in Laos we already have a manual on forest land use planning	
Activity 1.4 Develop Forest Management Plans for pilot villages		- This activity has been added in years 3, the FMPs' draft of three pilot villages have been done, but the forest types of three pilot villages are change now.	

			So, the PC recommended to review and improve the plan again in years 5. The review forest management plans to be completed, translated and published, already set up the signboards and the poles for all forest types in target villages	
Output 2: Forest restoration and rehabilitation model demonstrated at pilot villages	- 150 ha for forest R&R in LNT and ODX	About 150 ha degraded forest land restored and rehabilitated Area of NTFPs planting increased The amount of processing increased	 50 ha for natural rehabilitation on 20 ha in LNT and 30 ha in ODX. 124.5 ha for tree planting in tree target provinces (34.4 ha in LNT, 60.1 ha in ODX and 30 ha in Bokeo). 2 nurseries established, 1 in ODX and 1 in Bokeo. 1 improved nursery in LNT 	

			- Constructed forest fire protection routes in 3 provinces
Activity 2.1 Demonstrate Forest restoration and rehabilitation at selected plots	- 150 ha for forest R&R in LNT and ODX	Demonstration plots in the pilot villages	 50 ha for natural rehabilitation on 20 ha in LNT and 30 ha in ODX. 124.5 ha for tree planting in tree target provinces (34.4 ha in LNT, 60.1 ha in ODX and 30 ha in Bokeo).
Activity 2.2 Assess the sustainability of restoration and rehabilitated forest ecosystem		Plots for monitoring Indicators and data of assessment	Uncompleted The PC has been canceled this activity in years 4 due to the project will be completed in 2022 and trees planting late, it has been done in 2021. So, the PC recommended to cancel this activity.
Activity 2.3 Develop NTFPs management	- 1 NTFPs Management	NTFPs management	1 NTFPs Management Operation plan

plan for pilot	Operation plan		The project hired the	
villages			international consultant from	
			Yunnan Academy of Forestry	
			was contracted to develop the	
			NTFP management plans for	
			three pilot villages. Then, the	
			plans had been completely	
			developed to formulate the	
			details and operational	
			approaches in both technique	
			and management aspects on	
			NTFPs management. The five	
			species of NTFPs were	
			introduced to plant as a	
			demonstrate model including:	
			Amomium Tsaoko, Macademia,	
			Cardamom, Agar wood and	
			Persia kurrzi. Some species	
			will be imported from China.	
Activity 2.4			f Luangnamtha Province	
710tivity 2.4		householders t	completed the planting of	

Demonstrate	cultivate NTFPs	cardamom (23,000 seedlings,	
		18 households) on 9.2 ha,	
selected NTFPs	The area of NTFPs	macadamia (750 seedlings, 2	
management	cultivated	households) on 2.1 ha	
		(imported from China), and	
		Boehmeria (7.500 seedlings,	
		households) on 4.5 ha.	
		Oudomxay Province	
		completed the planting of	
		cardamom (49,000 seedlings,	
		25 households) on 14.6 ha,	
		macadamia (700 seedlings, 4	
		households) on 1.59 ha,	
		agarwood (450 seedlings,	
		households) on 0.7 ha and	
		Machilus kurzii (3,000	
		seedlings, households) on 2 ha.	
		Bokeo Province, completed the	
		planting of cardamom (18,000	
		seedlings, 87 households) on 6	
		ha, macadamia (1,050	
		seedlings, 9 households) on 2.3	
		ha, in addition, the project also	
		supported to plant more sugar	
		palm (3,000 seedlings,	
		households) on 3.5 ha, and	

		Rattan (6,500 seedlings, households) on 7 ha. Note: <i>Amomium Tsaoko</i> has been planted in three target provinces on 2.75 ha but all seedlings were died due to the seedlings were small and transportation from China that too long. the incentives identified to	
Activity 2.5 Develop benefit sharing mechanism among stakeholders	Contracts between PMO and householders The labor input from villagers The number of householders to use facilities of alternative energy	supported the villagers to develop value chains for their NTFPs to increase their income, the project purchased more Rattan seedlings around 2,000 seedlings to the three target villages, which this specie is very popular in the market, the villagers could earn more money with this specie	

Activity 2.6 Establish village forest nursery to provide seedlings to local communities for forest restoration and rehabilitation, and NTFPs management Activity 2.7 Construct the forest fire protection route	- Establish village nursery with area of 0.5 ha in Oudomsay	Village nursery Implementation plan of the nurseries Seedlings produced	The project supports each nursery to purchase material and continue to pay nursery staff in LNT and ODX to maintain the seedlings and produce the seedlings for restoration and NTFPs. For Bokeo they construct the temporary nursery to maintained the seedlings before planted in 2021. LNT constructed the forest fire protection route which long 2000m and wide 5m. ODX constructed the forest fire protection route which long 1500m and wide 5m. BK constructed the forest fire protection route which long 1500m and wide 5m.		
Objective 2:	To strengthen forest	law enforcement and proi	mote cooperation on trans-boundar	ry biodiversity co	onservation.
Output 3 Forest	- 3 FLEAP	Performance on	- 3 FLEAP have been finalized, updated and		

inspection system improved	finalized - 13 intervillage forest inspection teams conduct regular joint patrolling; - Equip the Bokeo and ODX check point - Purchasing the patrol	information sharing at levels of field and high increased	translated. - 13 inter-village forest inspection teams conduct regular joint patrolling; - Equip the Bokeo and ODX check point - Purchasing the patrol uniform for the patrolling team, 1 suit including jacket, long pants and shoes.	
Activity 3.1 Develop Forest law enforcement strategy	uniform. - 3 FLEAP finalized	Forest law enforcement strategy for Laos	3 forest law enforcement strategy of Namor district, Oudomxay province, Louang Namtha district, Louang Namtha province and Tonpheung district, Bokeo province have been updated, translated. Now we waiting for	

	-		
Activity 3.2 Establish efficient mechanisms on information sharing and communication in forestry inspection within Laos and with	Dialogue and regular meeting with neighbor economies Database for sharing Organization at field level		
neighbor economies			
Activity 3.3 Equip two selected check points	Equipment established and function	1 check point in Bokeo and purchased 1 copy machine; 2 GPS full functions; 2 laptop computers; 1 filling cabinet; 1 desktop table and 2 smartphones. 1 field office in Oudomxay and purchased some necessary equipment to the office as 2 laptop computers; 2 GPS Map 62s; 1 Camera; 2 recorders, 1 filling cabinet, 3 desks and 15 chairs.	

Output 4 Cooperation on trans-boundary biodiversity conservation Enhanced		Common and trans- boundary monitoring and response system on forest fire and wildlife established	 The forest fire tower and access roads maintained Regular joint patrolling and wild elephant tracking conducted Survey results of rare species updated and translated Information-sharing system for transboundary biodiversity conservation established Constructed the forest fire protection route in Nam Ha National Park 	
Activity 4.1 Establish the forest fire remote alarming system along the border	Establish 2 towers and system	Hardware and software system Management plan and implementation	Have been established 2 forest tower and set up software system	

Activity 4.2 Strengthen the biodiversity conservation		Field survey on endangered and rare species, Tracking equipment set up and operation	Canceled due to the situation of Covid-19 pandemic		
Activity 4.3 Establish the database on transboundary biodiversity conservation Activity 4.4 Construct the forest fire protection route		Hardware and software Data input and sharing	The project has been canceled this activity in years 4 due to the Covid-19 pandemic and it is seems to be hard in establishing such system.		
Objective 3:	To share information	and knowledge of best p	ractices on forest restoration and r	ehabilitation.	
Output 5 Capacity of forestry staff and communities built up	Training coursesInterprovincial experience				

	exchange /study tour			
Activity 5.1 Training needs assessment and planning		Assessment on training needs	Forest fire alarming training in China. There were 11 participants from three countries including Laos, Cambodia and China: 5 representatives from Cambodia, 4 representatives from Laos and 2 representatives from China. These were great opportunities for forest firefighters to learn how to use and operate the new cutting-edge technology on forest fire and smoke warning systems efficiently. 1 financial training 1 GIS and GPS training 1 Law enforcement training	

Activity 5.2 Building capacity for staff of departments of forestry and forestry inspection	Training material produced The number of staff from forestry departments to attend training courses and study tours The number of staff from forest inspection to attend training courses and study tours	1 NTFPs training	
Activity 5.3 Capacity building for local communities	The number of villagers to attend training courses and study tours	1 oversea study tours in China 1 study tour in Paksong 1 study tour in three target provinces to exchange their experience 1 study tour in LPB, Viengchan and Bolikhamxay on NTFP management	

	Output 6: Best practices and lessons learned documented and widely shared	 2 issues of Newsletter released on quarterly basis Report on Best practices and lessons of the project 2nd Project Brochure Website updated and improved 1 Project video produced 	Documentations on forest restoration and rehabilitation developed		
Activity 6.1 The number of This activity was conducted in Participation in participants to attend abroad but due to the situation					

conferences or	workshops and	of covid-19 pandemic and	
training workshops	conferences	2022 was the last year of this	
related to		project we cannot postpone this	
community forestry,		activity, the PCA discussed	
forest restoration and		with PC to conduct this activity	
rehabilitation		with other project in Laos, the	
		PC agreed and approved to	
		conducted this activity in Laos.	
		The workshop between	
		APFNet and AFoCO project	
		for 34 representatives from the	
		target provinces and central	
		level have been conducted on	
		26-28.02.2022	
	D	2 newsletters produced in Sep	_
Activity 6.2	Documentations, articles, and	2021 and Jan 2022.	
Documentation and	publications and	1 brochure produced in 2020 and 2022.	
publicity of project		1 video produced.	
experiences	Copies of project	1 best practice and lesson	
	booklet distributed	learned produced.	

Activity 6.3 Dissemination on forest restoration and rehabilitation	Domestic meeting and international conference	This Activity have been canceled in years 3.	
Activity 6.4 Dissemination and awareness of Forest Law and Other related regulations		DOFI and POFI have been conducted meetings in February-March 2021 in three targets provinces include three target villages and sixteen nearly targets villages, there are 969 villagers attended. The meeting aims to ensure all stakeholders clearly understand on such Forest law and related regulations, it was emphasized on explaining the forest management at village level such as the role to protect, and the right manage and use of the resources in their forest areas. Especially, in part IV	

	and V of forest law (amended version)	