



Ministry of Agriculture and Forestry

Lao P.D.R



Asia-Pacific Network for Sustainable Forest

Management and Rehabilitation

PROJECT PROPOSAL

ON

Sustainable Forest Management Project in Northern Provinces of Lao PDR

March, 2014

Project title	Sustainable Forest Management in Northern Provinces of Lao PDR	
Supervisory agency	Ministry of Agriculture and Forestry, Lao PDR	
Executing agency	Department of Forestry, Ministry of Agriculture and Forestry	
Expected project duration: 01/07/2014 to 30/06/2019, 60 months		
The sites of the project: Namor District of Oudomxay Province, Thonpheun District of Borkeo Province, Namtha District and Nam Ha National Protected Area of Luang Namtha Province, Lao PDR as well as Shang Yong Natural Reserve in Yunnan, China		
Total budget(USD) 3,563,433.00	APFNet grant(USD): 2,982,573.00	Counterpart contribution (USD) (in cash and in-kind): 580,860.00
<p>Project summary:</p> <p>The Forestry Strategy 2020 of Lao PDR, adopted by Ministry of Agriculture and Forestry in July 2005, set the objective of increasing forest coverage from 47% to 70% by 2020. The Strategy aims to generate a sustainable supply of forest products, preserve unique and threatened habitats and promote environmental conservation and protection. The three northern Provinces of Laos (Luang Namtha, Oudomxay and Borkeo Provinces), where 11 of the 19 districts and 334 villages are identified as very poor communities, are endowed with rich forest resources which play an important role in maintaining the livelihood of local communities, promoting rural development and conservation of environment and biodiversity. However, deforestation and forest degradation in the three Provinces remains as a great challenge and has posed threats to sustainable management of forest ecosystem and sustainable development of local communities. It has become a common goal and task of the Central and Provincial governments to reverse the trend of deforestation and forest degradation by taking effective measures, including strengthening land use planning, promoting restoration and rehabilitation of degraded forests, improving livelihood, conserving biodiversity and facilitating participation of local communities in forest management.</p> <p>The project will mainly carry out land use planning, restoration and rehabilitation of degraded forest land, 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 by</p> <ul style="list-style-type: none"> - 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. <p>The project will last for 5 years and be implemented by the Ministry of Agriculture and Forestry of Lao PDR with supports from line ministries, departments and the three provincial authorities.</p>		
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Date		Date

Table of Contents

1. Background and Rationale.....	1
2. Goal and Objectives	2
3 Outputs and Activities	2
4 Risks and Assumptions	11
5 Project Management.....	12
6 Budget, Funding Resources and Financial Management	13
7 Monitoring and Evaluation	13
8 Visibility and Sustainability	13
Annex A Project Logical Framework.....	14
Annex B Project Organization Chart.....	19
Annex C Overall Work Plan.....	20
Annex D Budget by Activity.....	22
Annex E Budget by Category.....	28
Annex F Project Site Information.....	29

1 Background and Rationale

The 7th Party Congress of the Lao People's Party in 2001 set poverty reduction as one of the national goals to be reached by 2020. National Growth and Poverty Eradication Plan (NGPEP), adopted by Central Planning Committee in 2003, put forward measures to promote economic, cultural and ecological sustainable development, which will enable Lao to get out of the status of "least developed economy" by 2020.

Lao PDR is an economy which strongly depended on agriculture production. Most of its population are living in country side especially in forest area. 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. 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 2020 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.

Luang Namtha, Oudomxay and Borkeo Provinces are located in the northern part of Lao PDR, with forestland taking up 63%, 77% and 80% of their total land area respectively and forest coverage of 37%, 32% and 42% respectively. 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.

To contribute to the achievement of National Growth and Poverty Eradication Plan and Forest Strategy 2020, the three 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 7232 ha, 393845 ha and 3000 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 respond the actual needs, the project is proposed. The project will be implemented in Namtha District, Luang Namtha Province, Namor District, Oudomxay Province, Thonpheun District, Borkeo Province, Nam Ha National Protected Area of Lao PDR and Xishuangbanna National Natural Reserve, China. The villages, namely Houayhom, Nampheang and Donegneun, are selected from the three districts as pilot sites of the project. The detailed information about the project area is provided in annex F.

2 Goal and Objectives

2.1 Goal

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

2.2 Objectives

- To explore, test and demonstrate effective approaches on forest restoration and forest management and responding mechanism to generate sustainable flow of benefit to closely related stakeholders.
- To strengthen forest law enforcement and promote cooperation on trans-boundary biodiversity conservation.
- To share information and knowledge of best practices on forest restoration and rehabilitation.

3 Outputs and Activities

Objective 1 To explore, test and demonstrate effective methods and mechanisms in generating sustainable flow to closely related stakeholders

OUTPUT 1 Forest land use plan at district and village levels developed

Activity 1.1 Develop strategic forest land use plan at 3 pilot districts

Activity 1.1.1 Review forest land uses in 3 pilot districts

Review will be conducted on forest land use and forest land use plans at the three selected districts to analyse the gap and needs to develop/update forest land use strategic plan. The analysis will mainly focus on forest related policies and laws, the information on socio-economic development plans including forestry and agriculture development plans, and problems and challenges in the current forest land use plans in the three districts.

Activity 1.1.2 Establish GIS-based forest land information system

GIS-based forest land information system will be established to facilitate integrated land use planning in the 3 districts by producing land use maps and supportive information for decision making. A working team in each district will be established and trained to collect and analyse data and maintain the system.

Activity 1.1.3 Interpret the satellite images

Satellite images for the 3 districts will be purchased. A working team in each district will be established and trained to interpret the satellite images. The information resulted from satellite images will be input into GIS-based forest land information system, contributing to producing forest land use mapping in the districts.

Activity 1.1.4 Conduct ground truth

Based on the analysis of the data from activity 1.1.3 and data on land zoning and current forest inventory in Laos, the ground truth will be conducted for boundaries and zoning correction, reclassifying the forest categories. Forest land use maps will be produced.

Activity 1.1.5 Develop strategic forest land use plan

Based on the data collected, consultation meetings will be held to draft strategic forest land use plan for each district. The Plan shall be 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.

Activity 1.2 Develop a participatory land use plan at 3 pilot villages

Activity 1.2.1 Conduct baseline survey on land uses in the pilot villages

On the basis of results from activity 1.1, detailed surveys will be carried out for all types of land, mainly focusing on production forest land, village use forest land and agriculture land. Information on socio-economic development, forest resources, wood products and NTFPs, forest management practices and traditional knowledge, the attitude and behaviours on forest management of villagers will be collected and analysed. Constraints, problems and challenges on land use and forest management will be identified.

Activity 1.2.2 Develop forest land use plan

A land use plan for each village will be drafted on the basis of the reasonable balance among ecological protection, biodiversity conservation, village development demand and land resources availability etc. A forest land use plan will be developed for village use forest, protection forest and conservation forest. The safeguards for the implementation of the forest land use plan will be proposed. The participatory approaches such as questionnaire, semi-structure interviews and group meetings will be applied to collect views and opinions from villagers and related stakeholders.

Activity 1.3 Develop a manual on forest land use planning

The consultants will be contracted to compile a manual on forest land use planning based on the reports and outcomes resulted from activity 1.1 and activity 1.2. The manual will be written in English and translated into Lao language.

OUTPUT 2 The best practices and approaches for forest restoration and rehabilitation demonstrated

Activity 2.1 Demonstrate forest restoration and rehabilitation at selected plots

Activity 2.1.1 Screen sites for forest restoration and rehabilitation

During the preparation of the project, sites for forest restoration and rehabilitation have been preliminary identified by experts together with target villagers (see maps in annex F). The project will organize coordination meetings with local stakeholders to finalize the location and area of the sites. The agreements will be signed by the authorized manager of the land and local forest authority, defining the use rights of the sites, avoiding conversion of the project sites into other uses, ensuring the continuity of the project in situ in case the land was sold to a third party, and allowing access of project staff, village members, labours and visitors to demonstration sites for activities, maintenance or study tour. About 150 ha in pilot villages will be identified for forest restoration and rehabilitation. GPS devices will be used to mark the perimeter of the demonstration sites and update site maps.

Activity 2.1.2 Tree species selection

Tree species of high value and high demand, suitable to local conditions of soil and climate will be selected in the consultation with villagers and forest officers at local level, with a priority on native tree species. The species producing NTFPs at high demand of local villages and market will also be considered.

Activity 2.1.3 Tree planting and sites maintaining

A forest restoration and rehabilitation plan for each site, including design, site preparation, planting, maintenance and monitoring, will be developed by contracted consultants. The technicians from local forest offices will train farmers to implement the activities on sites and provide technical assistance to planting and sites maintaining based on the project work plan as an in-kind contribution.

Activity 2.2 Assess sustainability of restored and rehabilitated forest ecosystem

Activity 2.2.1 Set up criteria and indicators for sustainability assessment

A team of consultants will draft criteria and indicators to monitor and assess sustainability of restoration and rehabilitated forest ecosystem. The criteria and indicators will focus on soil and water conservation, tree growth, biomass, carbon sequestration and economic return.

Activity 2.2.2 Plots design and data collection

Plots for monitoring and data collection will be designed by a specialized research institute with assistance from a consultant. The data of baseline and data changes over time will be collected for assessment based on criteria and indicators resulted from activity 2.2.1 such as soil physical characteristics, and soil erosion and accumulation.

Activity 2.3 Develop NTFPs management plan for pilot villages

Activity 2.3.1 NTFPs survey

Review of supply of and demand for NTFPs in the three provinces will be conducted. NTFPs survey in the pilot villages will be organized, which will cover species, area, cultivation, production, consumption and trade in the pilot villages. An analysis will be carried out on traditional knowledge and skills of villages in cultivation of NTFPs, regulations, strength and weakness to develop NTFPs in the pilot villages. Recommendations on potential development of NTFPs in the pilot villages will be proposed.

Activity 2.3.2 Produce NTFPs development plan

Based on the survey and analysis on NTFPs, interviews and group discussions in each pilot village will be organized to develop participatory management plan of NTFPs under the framework of the forest land use plan produced in Activity 1.2. The NTFP management plan will include a 10-years strategic plan and annual work plan within project period, which will cover cultivation, harvest, processing and marketing.

Activity 2.4 Demonstrate selected NTFPs management

Households in the selected villages will be chosen to demonstrate NTFPs management. The selected households will be trained on the techniques of cultivation, management, harvest and processing of NTFPs. The cost of seedlings and necessary equipment will be provided by the project. Broom grass, Tavoy cardamom, Boehmeria, Persea villosa, paper mulberry, red mushroom, bitter bamboo shoot, *Dendrocalamus hamiltonii* could be selected. Low income households in the selected villages will be prioritized in the selection. The selected households shall sign agreements with local forest authority and deliver techniques and experiences to other households in the village.

Activity 2.5 Develop benefit sharing mechanism among stakeholders

Activity 2.5.1 Sign agreements among stakeholders

Agreements among households, village community, and forest offices for project implementation will be reached for sharing of project benefits and responsibility. The agreements will cover land use stability for demonstration, in-kind contribution, project input, maintaining and access rights of demonstration sites and etc.

Activity 2.5.2 Develop incentives for villagers to involve in forest restoration and rehabilitation

Such substantial incentives for villagers involved in the project will be explored in the aspects of seedlings supply of NTFPs, facilities for substitute energy, equipment of NTFP cultivation and harvesting, training opportunity, potential benefits from the management of forest established, and rights to harvest upon maturity of forest built.

Activity 2.6 Establish village forest nurseries

A simply designed village nursery in each pilot village will be established to produce seedlings of native species of high value and high market demand for forest restoration and rehabilitation, and NTFPs development at village level. A consultant will be contracted to design the nurseries and provide training for villagers. Tools, equipment and materials for establishing the nurseries will be covered by the projects. Labour inputs from local villages will be in-kind contribution.

Output 3 Forest inspection system improved

Activity 3.1 Develop forest law enforcement strategy

Review on forest law enforcement will be organized to analyse experiences and lessons learned, identify issues, challenges, needs and gaps to improve forest law enforcement. In line with international processes, a strategy on forest law enforcement will be developed.

Activity 3.2 Establish efficient mechanisms on information sharing and communication in forestry inspection within Laos and with neighbor economies

Activity 3.2.1 Develop inter-village forest inspection network

Based on the strategy developed in activity 3.1, a package of public awareness raising on forest law enforcement will be produced within the project targeted districts to enhance the public recognition of importance of the forest law enforcement.

An effective inter-village forest inspection network will be set up at village cluster level. A specific forest protection team will be formed, consisting of 2-3 forest guards appointed by each village within one cluster, to conduct the regular joint patrolling to monitor the illegal activities related to forest management.

Activity 3.2.2 Develop immediate response system

As an immediate response tool, a mobile-based information instant noting system will be established on forest incidences and illegal trans-boundary activities.

Activity 3.3 Equip two selected check points

Necessary equipment and facilities such as computer, monitoring camera, and life detector will be purchased and equipped for the two check points near the border between China and Laos. The remote monitoring system with high resolution camera will be deployed and installed at the check points along the main road of transportation to achieve the monitoring 24 hours a day without any interval or stop.

OUTPUT 4 Cooperation on trans-boundary biodiversity conservation Enhanced

Activity 4.1 Establish the forest fire monitoring system along the border

The project will introduce and employ an advanced fire monitoring system of Forest Watcher in Nam Ha NPA, Lao PDR and Shang Yong NR, China. The system in each site will operate independently and automatically collect and analyze information and data on forest fire, which will help the sides to communicate in time to control and put off forest fires. Two systems of Forest watcher will be purchased and two work stations will be equipped or built by the project. The towers and cables will be built by Nam Ha NPA, Lao PDR and Shang Yong NR, China as an in-kind contribution.

Activity 4.2 Strengthen the biodiversity conservation

Activity 4.2.1 A regional consultation initiated

A regional consultation on trans-boundary biodiversity conservation will be proposed for GMS region, with Lao PDR as Chair and other economies including China, Thailand, Cambodia, Vietnam and Myanmar as members. The consultation will be held annually to exchange information of laws, regulations and efforts on trans-boundary biodiversity conservation and discuss and identify possible joint efforts and actions to improve trans-boundary biodiversity conservation.

Activity 4.2.2 Endangered and rare species survey

The project will support the Nam Ha NPA and Shang Yong NR to collaboratively conduct inventory and update the catalogue of the endangered and rare species in Nam Ha NPA and Shang Yong NR.

Activity 4.2.3 Wild elephant tracking

The tracking system will be set up in the elephant corridor in Nam Ha NPA and Shang Yong NR to monitor the wild elephant migration. The tracking system will provide the information and data for study of the changes of wild elephant families.

Activity 4.2.3 Regular joint patrolling

Joint patrolling along the border will be organized by the Nam Ha NPA and Shang Yong NR at least twice a year. The patrolling will enhance the communication and cooperation on law enforcement in case of the illegal activities taken place.

Activity 4.3 Establish information-sharing system on trans-boundary biodiversity conservation

To strengthen cooperation between Nam Ha NPA and Shang Yong NR and improve trans-boundary biodiversity conservation, an information sharing system will be developed to exchange information between Nam Ha NPA and Shang Yong NR on species of wildlife and plants, illegal case records and activities.

OUTPUT 5 Capacity of forest staff and communities improved

Activity 5.1 Capacity needs assessment and plan for trainings

The training needs assessment for forestry staff and villagers have been preliminary conducted during pre-survey of the project. A team of consultant will be contracted to finalize the training needs assessment and develop a capacity building strategy for forest staff and villagers. On the basis of the training needs assessment and a capacity building strategy, a training plan will be developed.

Activity 5.2 Capacity Building for Forestry and Forestry Inspection Departments staff

Activity 5.2.1 Training courses

Based on findings of the training need assessment, the following trainings are proposed to enhance the professional skills of forestry staff on forest restoration and rehabilitation and the capacity of forestry inspection staff on forest law enforcement. The training package will be developed by contracted consultants or institutes international or national in regard with specific training topic and requirement.

No.	Title	Description	Participants
1	Forest land use planning	Participatory forest inventory methodologies, data analysis, satellite images interpretation, application of GPS or BDS (Beidou navigation system)	30 participants from forestry department at different level
2	Forest management and rehabilitation	Forest management plan, forest restoration concepts and methods, objective trees selection, sample collection and data analysis, soil preparation.	30 participants from forestry department at different level
3	Laws and regulations	Laws, regulations, and policies on forest, wildlife, forest restoration and rehabilitation, and NTFPs in Laos	30 participants from forestry department , and from forestry inspection departments at different level
4	GIS and mapping	Software, database, mapping etc.	30 participants from forestry department , and from forestry inspection departments at different level
5	Seedling production	Seed germination, propagation, and seedlings producing etc.	30 participants from forestry department at local level
6	Payment of forest ecosystem	Concept and valuation of ecosystem service, payment mechanism and experience in other countries	30 participants from forestry department , and from forestry inspection departments at different level
7	Project	Plan and report written technique training	30 participants from forestry department ,

	management		and from forestry inspection departments at different level
8	Methodologies on soil and water conservation, and carbon accounting	Indicators on the measurement of sustainability, carbon accounting on forest restoration and rehabilitation, samples and data collection on soil and water erosion, biomass	30 participants from forestry departments at different level, and institutes relevant to project implementation

Activity 5.2.2 Overseas Study Tour

Three overseas trainings will be arranged to increase the capacity and knowledge for forestry staff related to the project implementation. The tasks of the training will be categorized into NTFPs development, forest law enforcement and forest restoration and rehabilitation.

Activity 5.3 Capacity building for local communities

Activity 5.3.1 Field training

Along with the implementation of the project activities, field trainings are proposed as below.

No.	Title	Description
1	Forest land use planning and forest management	Concept of forest land use planning, laws and regulation, village land use plan introduction
2	Cultivation and management of NTFPs	Broom grass, Tavoy cardamom, Boehmeria, Persea villosa, Paper mulberry, Red mushroom, bitter bamboo shoot, <i>Dendrocalamus hamiltonii</i> etc.
3	Techniques on forest restoration and rehabilitation	Cultivation and silviculture techniques including site preparation
4	Processing on selected NTFPs	Processing and storage techniques on selected NTFPs
5	Techniques on establishment and use of substitute for energy facilities	It will be combined in equipment establishment by business company in demonstration householders
6	Nursery management for selected tree species	Seeds germination, seedlings producing, nursery management for tree species
7	Marketing on NTFPs	Concept of marketing, market analysis and market information of important NTFPs

Activity 5.3.2 Study tours

Four domestic field tours will be organized to learn successful stories on NTFPs development and forest restoration, and two study tours to China will be arranged to learn experiences on NTFPs production, processing and marketing, and community forest management in China. The participants in the study tours will be selected from the 3 pilot villages.

OUTPUT 6 Best practices and lessons documented and widely shared

Activity 6.1 Participation in conferences or training workshops related to community forestry, forest restoration and rehabilitation

Government officers or professionals involved in the implementation of the project will be selected and funded to attend appropriate international meetings and workshops addressing forest restoration and rehabilitation to present the best practices and lessons learned.

Activity 6.2 Documentation and publicity of project experiences

The project will produce quarterly newsletter on the progress, results and implementation of project activities in English and Lao languages. The newsletter will be freely delivered to related agencies of Lao PDR, international organizations and other stakeholders and posted on the websites of APFNet and MAF. Significant progress, experience and lessons learned obtained from the project will be documented and distributed.

Activity 6.3 Dissemination of the project achievements

Activity 6.3.1 A domestic workshop

A domestic high level workshop will be organized before completion of the project to share the achievements and best practices with policy makers, researchers and practitioners and discuss the potential applications of project findings in other places and implication on forest policy making.

Activity 6.3.2 An international conference

An international conference will be organised by the project with the participants from Lao and other economies to exchange experiences and lessons on sustainable forest management, mainly focusing on forest restoration and rehabilitation, village forestry, forest law enforcement and trans-boundary biodiversity conservation.

4 Risks and Assumptions

During implementation, the Project may confront some risks as stakeholder interest conflicts, capacity of implementing agencies and poor governance of community.

Mapping tenure right through participatory process may reveal disputes and lead to conflicts over resources within or between communities. The mapping also may make the government change its position from ignoring a community's use of particular area to actively denying their rights. The new investment on economic plantations in the project area will stimulate speculative land clearance. Project proponents should be aware of a number of risks for themselves and local communities when engaging in processes to obtain the sustainable forest management system.

5 Project management

The Project Steering Committee (PSC) will be formed by representatives from **DOF, DFRM, DOFI, NAFRI, PAFO, PONRE, POFI**, and provincial and district governors where the project is based. PSC will have meetings to review, discuss and approve the project overall work plan and budget, annual work plan and progress report. The PSC will also secure the coordination amongst relevant departments and institutions, and the sustainability of the actions after the life span of the project.

The Project Management Office (PMO) will be established at the Department of Forestry/Ministry of Agriculture and Forestry (MAF). The PMO, consisting of at least project director and coordinator, will be responsible for project operating and reporting. Provincial Project Management Office (PPMO) will operate under the supervision of PMO. The PPMOs will include project manager and supporting staff, and secure the implementation of the project activities in the provinces, and coordinate the activities of project teams at the pilot districts. The project teams will implement the project activities in the fields.

A Chief Technical Adviser will be contracted by APFNet with consultation with Ministry of Agriculture and Forestry to provide technical support for project implementation in: (i) preparing terms of references for international and national consultants (ii) leading the preparation of annual work plans and budgets, and reporting to PSC, (iii) monitoring the progress of the project activities, and (iv) endorsing the project technical and financial reports.

The input of the PSC members, PMO's staff, and project teams and groups at different levels will be applicant contributions to the project. The office space for PMO, PPMO and project team at the districts will be an in kind contribution by Lao PDR.

The Project organizational structure, shown in annex B, illustrates the project institutional framework at four administrative levels (National, Provincial, District and Village). This figure illustrates the multi-level setting, the participating institutions and their roles and functions, under which the project will operate to attain the project goal and objectives.

6 Budget, Funding Resources and Financial Management

The total budget of the project is US\$3,563,433.00, in which APFNet grants US\$2,982,573.00, and US\$ 580,860.00 contributed from the project recipients.

The Forestry Department of Ministry of Agriculture and Forestry of LAOs shall open a specific bank account for the Project to receive the grant from the APFNet and takes the responsibility of funds management. A separate implementation norms and financial management guideline will be prepared for smooth operation of the project. A full-time accountant hired for the project management office will record all the expenditures and keep the supporting documents. All expenditure should be done with the signatures of Project Director and the Chief Technical Adviser(CTA). A transparent and systematic accounting system for the project will be developed to enable the records of expenses in line with budget lines and management costs, and the financial monitoring system for tracking the disbursements and fund transaction. Financial statement will be submitted to APFNet with the annual progress report. Biannual external auditing and a final auditing will be carried out by an independent auditing firm.

7 Monitoring and Evaluation

Project monitoring and evaluation will follow the procedure of APFNet. The monitoring and evaluation within project will be based on the outcome-oriented approach. The project director and CTA will monitor overall progress of the project. Project managers at provincial level will monitor the progress of the project implementation in the field. Mid-term and final evaluation will be organized by APFNet in collaboration with Lao evaluation team and assessments will be conducted if necessary.

8 Visibility and Sustainability

Project website will be built in the first project year. Electronic updates (e-news) will be produced approximately every 3 months to highlight progress and share insights on common issues of concern. The implementing agency of the project will seek to engage newspapers, radio and TV stations to disseminate information.

Dissemination of project results can be made in number of ways, by verbal (through radio, television, conducting meeting, etc.), documentation/publication and put into internet system or website.

The resources shall be explored to carry out follow-ups such as maintenance of project sites, extension of experiences in other places and integration of recommendations in forest policy making.

Annex A Project Logic Framework

Items	Intervention logic	Verifiable indicators of achievement	Sources of information and means of verification	Assumptions
Goal	To explore and demonstrate innovative approaches on sustainable forest management in northern part of Lao PDR		Forest inventory in Laos Development report on forest sector	National policies on forest management continued
Objective 1	To develop, test and demonstrate effective approaches on forest restoration and rehabilitation and responding mechanism to generate sustainable flow of benefit to villagers	Forest restoration and rehabilitation approach developed and tested Villagers' income from forest management increased	Statistics data from Lao government Project progress report Evaluation report on the project	Actively participation by forest agencies and other stakeholders from pilot villages, districts, and provinces
Objective 2	To strengthen cooperation on trans-boundary biodiversity conservation and improve forest law enforcement	Communication platform between Namha PA and Shangyong NR established Strategy on forest law enforcement developed	Annual reports of Namha PA and Shagyong NR	Commitment of government and other stakeholders
Objective 3	To share information and knowledge on best practices on forest restoration and rehabilitation	Experience on forest restoration and rehabilitation documented Learning lessons and experience from other economies or international organizations	Documentations and publications of the project Conference reports	Interest on forest restoration and rehabilitation enjoyed by institutes and personnel relevant to education, research, and practice
Output 1	Forest land use plan at levels of	Plans of land use and forest	Land use plans of pilot villages	High level political

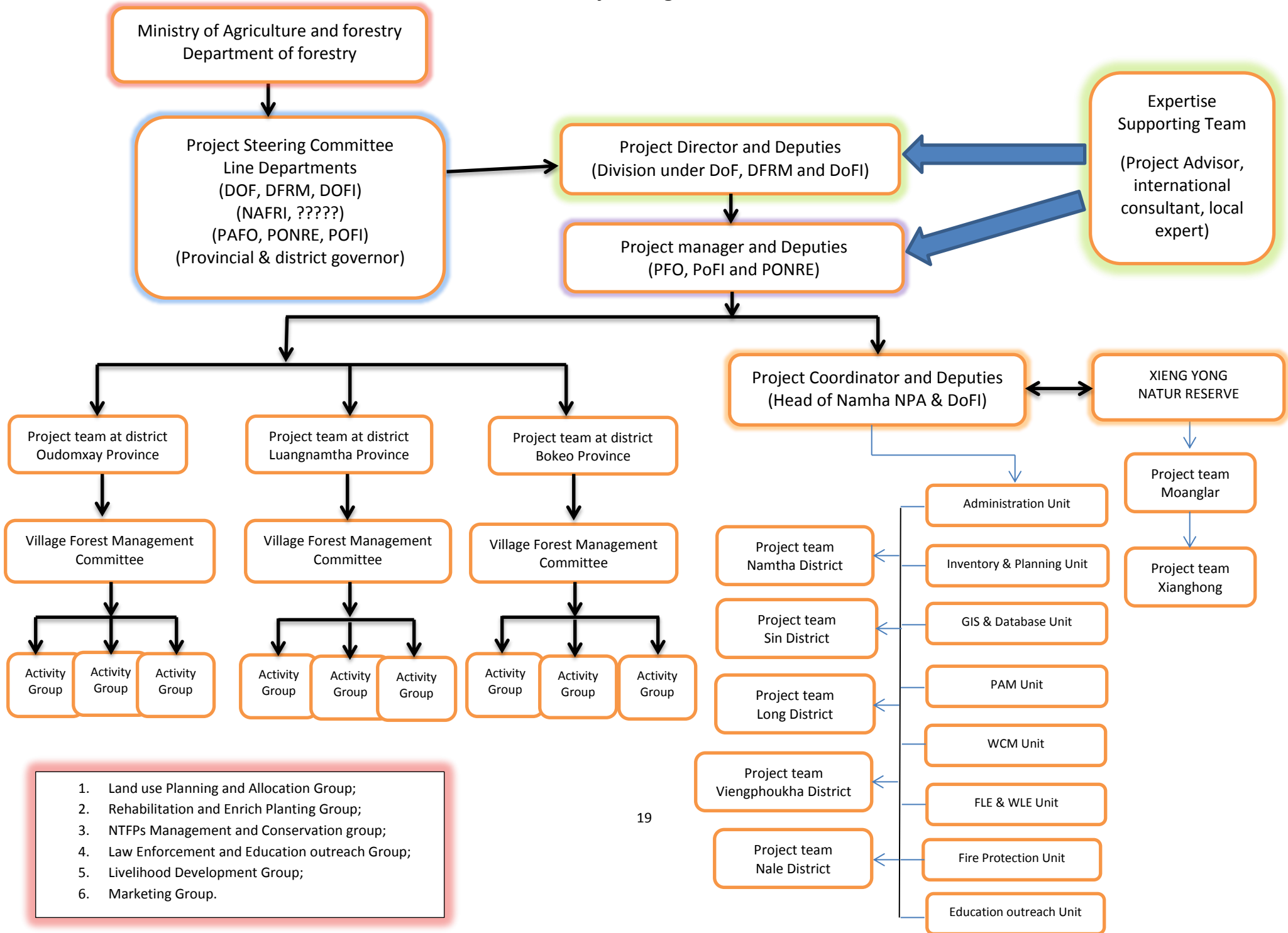
	village and district developed	management adopted by forestry departments and villages	and districts Project reports	support to improve forest management
Activity 1.1	Develop strategic forest land use plan at 3 pilot districts	Database Field survey Mapping of forest land use	Forestry inventory Project record Reports of consultation meetings	Departments of forestry, and pilot villages actively participate in the forest land use plan and forest management plan
Activity 1.2	Develop a participatory village land use plan at 3 pilot villages	Baseline survey of villages Forest management plans	Forestry development plan Records of participatory group discussions	
Activity 1.3	Develop a manual on forest land use planning	Handbook on forest land use plan	APFNet publications Project reports	Villagers will respond positively and responsibly to new opportunities for NTFPs development
Output 2	Forest restoration and rehabilitation model demonstrated at pilot villages	About 150 ha degraded forest land restored and rehabilitated Area of NTFPs planting increased The amount of processing increased	Statistics data from government and forestry agencies	
Activity 2.1	Demonstrate forest restoration and rehabilitation at selected plots	Demonstration plots in the pilot villages	Project reports Forest land use plan and implementation of the pilot villages	Villagers and forestry department commitment to be involved in forest restoration
Activity 2.2	Assess the sustainability of restoration and rehabilitated forest ecosystem	Plots for monitoring Indicators and data of assessment	Assessment reports Project reports	An interest by forest inspection existing for improving forest law enforcement
Activity 2.3	Develop NTFPs management plan for pilot villages	NTFPs management plan	NTFPs management plan Project reports	
Activity 2.4	Demonstrate selected NTFPs management	The number of householders to cultivate NTFPs The area of NTFPs cultivated	Statistics data from forest office	Namha PA and

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	Project reports	Shangyong NR have interest to cooperate Other economies are willing to share their information
Activity 2.6	Establish village forest nursery to provide seedlings to local communities for forest restoration and rehabilitation, and NTFPs management	Village nursery Implementation plan of the nurseries Seedlings produced	Nursery Management Implementation Plan Project progress reports Seedlings produced from the nurseries	
Output 3	Forest inspection system improved	Performance on information sharing at levels of field and high increased		
Activity 3.1	Develop forest law enforcement strategy	Forest law enforcement strategy for Laos	Forest law enforcement strategy Development report in forestry sector	
Activity 3.2	Establish efficient mechanisms on information sharing and communication in forestry inspection within Laos and with neighbor economies	Dialogue and regular meeting with neighbor economies Database for sharing Organization at field level	Project reports Annual reports from forest inspection of Laos and neighbor economies Meeting minutes	
Activity 3.3	Equip two selected check points	Equipment established and function	Equipment at two check points Project reports	
Output 4	Cooperation on trans-boundary biodiversity conservation Enhanced	Common and trans-boundary monitoring and response system on forest fire and wildlife established	Project reports Annual reports from Namha PA and Shangyong NR	

Activity 4.1	Establish the forest fire remote alarming system along the border	Hardware and software system Management plan and implementation	Project reports Annual reports from Namha PA and Shangyong NR
Activity 4.2	Strengthen the biodiversity conservation	Field survey on endangered and rare species Tracking equipment set up and operation	Project reports Annual reports from Namha PA and Shangyong NR
Activity 4.3	Establish the database on trans-boundary biodiversity conservation	Hardware and software Data input and sharing	Project reports
Output 5	Capacity of forestry staff and communities built up	The number of staff from forestry departments trained The number of staff from forest inspection trained The number of villagers trained	Monitoring and evaluation reports
Activity 5.1	Training needs assessment and planning	Assessment on training needs	Training needs report
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	Training courses reports Study tours reports
Activity 5.3	Capacity building for local communities	The number of villagers to attend training courses and study tours	Field training records Study tours report

Output 6	Best practices and lessons learned documented and widely shared	Documentations on forest restoration and rehabilitation developed	Publications, annual report, and website of APFNet
Activity 6.1	Participation in conferences or training workshops related to community forestry, forest restoration and rehabilitation	The number of participants to attend workshops and conferences	Reports submitted by participants
Activity 6.2	Documentation and publicity of project experiences	Documentations, articles, and publications Copies of project booklet distributed	Publications, annual report, and website of APFNet
Activity 6.3	Dissemination on forest restoration and rehabilitation	Domestic meeting and international conference	Meeting report and conference report

ANNEX B Project Organization Chart



1. Land use Planning and Allocation Group;
2. Rehabilitation and Enrich Planting Group;
3. NTFPs Management and Conservation group;
4. Law Enforcement and Education outreach Group;
5. Livelihood Development Group;
6. Marketing Group.

Annex C Project Overall Workplan

标识号	Activity	2013		2014				2015				2016				2017				2018				2019			
		Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1	Inception workshop																										
2	OUTPUT 1: Forest land use plan at levels of village and district developed																										
3	Activity 1.1 Develop strategic forest land use plan at 3 pilot districts																										
4	Activity 1.1.1 Review forest land uses in 3 pilot districts																										
5	Activity 1.1.2 Establish GIS-based forest land information system																										
6	Activity 1.1.3 Interpret the satellite images																										
7	Activity 1.1.4 Conduct ground truthing																										
8	Activity 1.1.5 Develop strategic forest land use plan																										
9	Activity 1.2 Develop a participatory village land use plan at 3 pilot villages																										
10	Activity 1.2.1 conduct baseline survey on land uses in the pilot villages																										
11	Activity 1.2.2 Develop forest land use plan																										
12	Activity 1.3 Develop a manual on forest land use planning																										
13	OUTPUT 2 The best practices and approaches for forest restoration and rehabilitation demonstrated																										
14	Activity 2.1 Demonstrate forest restoration and rehabilitation at selected plots																										
15	Activity 2.1.1 Screen sites for forest restoration and rehabilitation																										
16	Activity 2.1.2 Tree species selection																										
17	Activity 2.1.3 Tree planting and sites maintaining																										
18	Activity 2.2 Assess the sustainability of restoration and rehabilitated forest ecosystem																										
19	Activity 2.2.1 Set up criteria and indicators for sustainability assessment																										
20	Activity 2.2.2 Plots design and data collection																										
21	Activity 2.3 Develop NTFPs management plan for pilot villages																										
22	Activity 2.3.1 NTFPs survey																										
23	Activity 2.3.2 Produce NTFPs development plan																										
24	Activity 2.4 Demonstrate selected NTFPs Management																										
25	Activity 2.5 Develop benefit sharing mechanism among stakeholders																										
26	Activity 2.5.1 Sign agreements among stakeholders																										
27	Activity 2.5.2 Develop the incentives for villagers involving in forest restoration and rehabilitation																										
28	Activity 2.6 Establish village forest nurseries																										
29	Output 3 Forest inspection system improved																										
30	Activity 3.1 Develop forest law enforcement strategy																										

Annex C Project Overall Workplan

标识号	Activity	13		2014				2015				2016				2017				2018				2019			
		Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
31	Activity 3.2 Establish efficient mechanisms on information sharing and communication in forestry inspection within Laos and with neighbour economies																										
32	Activity 3.2.1 Develop inter-village forest inspection network																										
33	Activity 3.2.2 Develop immediate response system																										
34	Activity 3.3 Equip two selected check points																										
35	OUTPUT 4 Cooperation on trans-boundary biodiversity conservation Enhanced																										
36	Activity 4.1 Establish the forest fire monitoring system along the border																										
37	Activity 4.2 Strengthen the biodiversity conservation																										
38	Activity 4.2.1 A regional consultation initiated																										
39	Activity 4.2.2 Endangered and rare species survey																										
40	Activity 4.2.3 Wild elephant tracking																										
41	Activity 4.2.4 Regular joint patrolling																										
42	Activity 4.3 Establish information-sharing system on trans-boundary biodiversity conservation																										
43	OUTPUT 5 Capacity of forest staff and communities improved																										
44	Activity 5.1 Needs assessment and planning of trainings																										
45	Activity 5.2 Capacity building for staff of departments of forestry and forestry inspection																										
46	Activity 5.2.1 Training courses																										
47	Activity 5.2.2 Overseas study tours																										
48	Activity 5.3 Capacity building for local communities																										
49	Activity 5.3.1 Field training																										
50	Activity 5.3.2 Study tours																										
51	OUTPUT 6 Best practices and lessons documented and widely shared																										
52	Activity 6.1 Participation in conferences/trainings/workshops related to community forestry, forest restoration and rehabilitation																										
53	Activity 6.2 Documentation and publicity of project experiences																										
54	Activity 6.3 Dissemination of project achievements																										
55	Activity 6.3.1 A domestic workshop																										
56	Activity 6.3.2 An international conference																										

Annex D Project Budget by Activity

Activity	Unit	Unit Cost	No of Units	Cost (USD)		
				Subtotal	APFNet Grant	Counterpart
OUTPUT 1 Forest land use plan at village and district levels developed				166,800	147,400	19,400
Activity 1.1 Develop strategic forest land use plan at 3 pilot districts				122,500	106,100	16,400
Activity 1.1.1 Review forest land uses in 3 pilot districts				15,000	8,600	6,400
ITA Person.month	Person.month	6,000	1	6,000	5,600	400
Review Report	Report	3,000	3	9,000	8,000	1,000
Activity 1.1.2 Establish GIS-based forest land information system				8,500	7,500	1,000
Hardware and software	Set	1,500	3	4,500	4,500	-
System design	System	4,000	1	4,000	3,000	1,000
Activity 1.1.3 Interpret the satellite images				39,000	37,000	2,000
Purchase of images	Image	8,000	3	24,000	24,000	-
ITA Person.month	Person.month	6,000	0.5	3,000	3,000	-
Interpretation	District	4,000	3	12,000	10,000	2,000
Activity 1.1.4 Conduct ground truthing	District	10,000	3	30,000	25,000	5,000
Activity 1.1.5 Develop strategic forest land use plan				30,000	28,000	2,000
Consultation	Meeting	3,000	4	12,000	10,000	2,000
ITA Person.month	Person.month	6,000	2	12,000	12,000	-
distric strategic plan	plan	2,000	3	6,000	6,000	-
Activity 1.2 Develop a participatory village land use plan at 3 pilot villages				27,300	24,300	3,000
Activity 1.2.1 Conduct baseline survey on land uses in the pilot villages				18,000	15,000	3,000
ITA Person.month	Person.month	6,000	0.5	3,000	3,000	-
village survey	survey	5,000	3	15,000	12,000	3,000

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Annex D Project Budget by Activity

Activity 1.2.2 Develop forest land use plan				9,300	9,300	-
ITA	Person.month	6,000	0.8	4,800	4,800	-
village plan	plan	1,500	3	4,500	4,500	-
Activity 1.3 Develop a manual on forest land use planning				17,000	17,000	-
ITA	Person.month	6,000	1.5	9,000	9,000	-
manual development	manual	8,000	1	8,000	8,000	-
OUTPUT 2 The best practices and approaches for forest restoration and rehabilitation demonstrated				454,400	397,600	56,800
Activity 2.1 Demonstrate forest restoration and rehabilitation at selected plots				219,000	173,500	45,500
Activity 2.1.1 Screen sites for forest restoration and rehabilitation				2,100	1,600	500
village meeting	meeting	200	3	600	600	-
field visit	visit	500	3	1,500	1,000	500
Activity 2.1.2 Tree species selection				3,300	3,300	-
ITA	Person.month	6,000	0.3	1,800	1,800	-
species selection	site	500	3	1,500	1,500	-
Activity 2.1.3 Tree planting and sites maintaining				213,600	168,600	45,000
ITA	Person.month	6,000	0.6	3,600	3,600	-
planting	ha	1,200	150	180,000	160,000	20,000
maintaining	ha	200	150	30,000	5,000	25,000
Activity 2.2 Assess the sustainability of restoration and rehabilitated forest ecosystem				44,600	44,600	-
Activity 2.2.1 Set up criteria and indicators for sustainability assessment	Person.month	6,000	0.8	4,800	4,800	-
Activity 2.2.2 Plots design and Data collection				39,800	39,800	-
ITA	Person.month	6,000	0.8	4,800	4,800	-
equipment and installation	set	15,000	1	15,000	15,000	-

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Annex D Project Budget by Activity

data collection	year	2,500	5	12,500	12,500	-
analysis and reporting	report	1,500	5	7,500	7,500	-
Activity 2.3 Develop NTFPs management plan for pilot villages				31,500	30,000	1,500
Activity 2.3.1 NTFPs survey				19,200	18,700	500
ITA	Person.month	6,000	1.2	7,200	7,200	-
training	course	1,500	1	1,500	1,500	
survey	survey	1,500	3	4,500	4,000	500
analysis report	report	2,000	3	6,000	6,000	-
Activity 2.3.2 Produce NTFPs management plan				12,300	11,300	1,000
ITA	Person.month	6,000	0.8	4,800	4,800	-
NTFP Plan	plan	2,500	3	7,500	6,500	1,000
Activity 2.4 Demonstrate selected NTFPs Management	demonstration	6,000	3	18,000	15,000	3,000
Activity 2.5 Develop benefit sharing mechanism among stakeholders				129,300	124,500	4,800
Activity 2.5.1 Sign agreements among stakeholders	meeting	300	6	1,800	1,500	300
Activity 2.5.2 Develop the incentives for villagers involving in forest restoration and rehabilitation				127,500	123,000	4,500
solar engery facilities	household	1,000	60	60,000	60,000	-
biogas	household	1,500	15	22,500	20,000	2,500
stove	household	250	60	15,000	13,000	2,000
seeds and seedlings for restoration and NTFPs	household	300	60	18,000	18,000	-
equipment for NTFP cultivation	household	200	60	12,000	12,000	-
Activity 2.6 Establish village forest nursery	nursery	4,000	3	12,000	10,000	2,000
Output 3 Forest inspection system improved				129,000	116,000	13,000
Activity 3.1 Develop forest law enforcement strategy				9,000	9,000	-
ITA	Person.month	6,000	1	6,000	6,000	-

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Annex D Project Budget by Activity

strategy developing	strategy	3,000	1	3,000	3,000		
Activity 3.2 Establish efficient mechanisms on information sharing and communication in forestry inspection within Laos and with neighbour economies				80,000	67,000	13,000	
Activity 3.2.1 Develop inter-village forest inspection network	cluster.year	5,000	13	65,000	52,000	13,000	
Activity 3.2.2 Develop immediate response system	system	15,000	1	15,000	15,000	-	
Activity 3.3 Equip two selected check points	set	20,000	2	40,000	40,000	-	
OUTPUT 4: Cooperation on trans-boundary biodiversity conservation Enhanced				1,130,000	1,020,000	110,000	
Activity 4.1 Establish the forest fire monitoring system along the border	set	500,000	2	1,000,000	900,000	100,000	
Activity 4.2 Strengthen the biodiversity conservation				110,000	100,000	10,000	
Activity 4.2.1 A regional consultation initiated	workshop	10,000	1	10,000	10,000		
Activity 4.2.2 Endangered and rare species survey	survey	20,000	2	40,000	35,000	5,000	
Activity 4.2.3 Wild elephant tracking	set	20,000	2	40,000	35,000	5,000	
Activity 4.2.4 Regular joint patrolling	times	2,000	10	20,000	20,000	-	
Activity 4.3 Establish the information-sharing system on trans-boundary biodiversity conservation	set	20,000	1	20,000	20,000	-	
OUTPUT 5 Capacity of local forest staff and communities improved				223,800	206,800	17,000	
Activity 5.1 Needs assessment and planning of Trainings				6,800	6,800	-	
	ITA	Person.month	6,000	0.8	4,800	4,800	-
Assessment	report	2,000	1	2,000	2,000	-	
Activity 5.2 Capacity building for staff of departments of forestry and forestry inspection				150,000	140,000	10,000	
Activity 5.2.1 Training courses	course	6,000	10	60,000	50,000	10,000	
Activity 5.2.2 Overseas study tours	tour	30,000	3	90,000	90,000	-	

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Annex D Project Budget by Activity

Activity 5.3 Capacity building for local communities				67,000		67,000
Activity 5.3.1 Field training	course	1,000	7	7,000	7,000	-
Activity 5.3.2 Study tours				60,000	60,000	-
Domestic tours	tour	5,000	6	30,000	30,000	
Overseas tour	tour	30,000	1	30,000	30,000	
OUTPUT 6 Best practices and lessons documented and widely shared				215,000	210,000	5,000
Activity 6.1 Participation in conferences/trainings/workshops related to community forestry, forest restoration and rehabilitation	participant	2,000	15	30,000	30,000	-
Activity 6.2 Documentation and publicity of project experiences				110,000	110,000	-
Newsletter	issue	1,000	20	20,000	20,000	-
Website	website	10,000	1	10,000	10,000	-
Best practice and experiences	documentation	8,000	10	80,000	80,000	-
Activity 6.3 Dissemination of project achievements				75,000	70,000	5,000
Activity 6.3.1 A domestic workshop	workshop	25,000	1	25,000	20,000	5,000
Activity 6.3.2 An international conference	conference	50,000	1	50,000	50,000	-
Project inception workshop	workshop	20,000	1	20,000	20,000	-
Project management				1,018,650	686,650	332,000
<i>Project staff</i>				138,000	66,000	72,000
Project director and coordinators	Person.month	1,000	40	40,000		40,000
Secretary	Person.month	500	60	30,000	30,000	-
Interpreters	Person.month	600	60	36,000	36,000	-
Financial officer	Person.month	800	40	32,000		32,000
CTA consultation	Person.month	6,000	20	120,000	120,000	-

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Annex D Project Budget by Activity

DSA for ITA and CTA	person.day	200	978	195,600	195,600	
Travel Cost for ITA and CTA	person.time	1,000	60	60,000	60,000	
<i>Operating cost</i>				310,000	50,000	260,000
Office rental	office	50,000	5	250,000		250,000
Communication	office	5,000	5	25,000	25,000	-
Running of the vehicle	office	2,000	5	10,000		10,000
Consumables	office	5,000	5	25,000	25,000	-
Equipment				195,050	195,050	-
Desktop computer	set	800	12	9,600	9,600	-
Laptop	set	1,000	7	7,000	7,000	-
Printer	set	400	12	4,800	4,800	-
Photocopier	set	2,000	5	10,000	10,000	-
Scanner	set	200	7	1,400	1,400	-
Fax machine	set	300	7	2,100	2,100	-
Camera	set	500	7	3,500	3,500	-
Vedio Camera	set	800	7	5,600	5,600	-
Recorder	set	150	7	1,050	1,050	-
<i>4-drive vehicle</i>	vehicle	30,000	5	150,000	150,000	-
Total				3,357,650	2,804,450	553,200
Overhead				145,783	118,123	27,660
External Evaulation	times	30,000	2	60,000	60,000	
GRAND TOTAL				3,563,433	2,982,573	580,860

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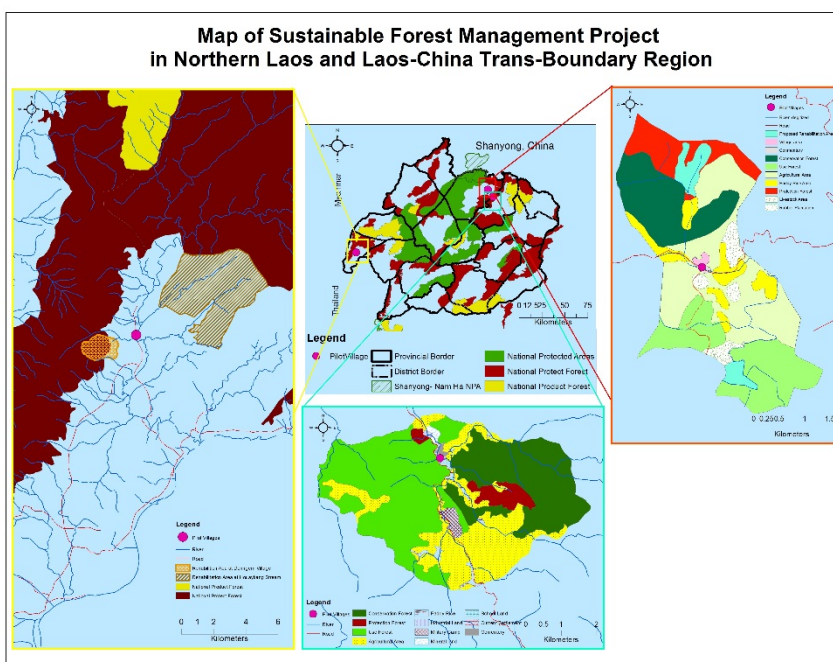
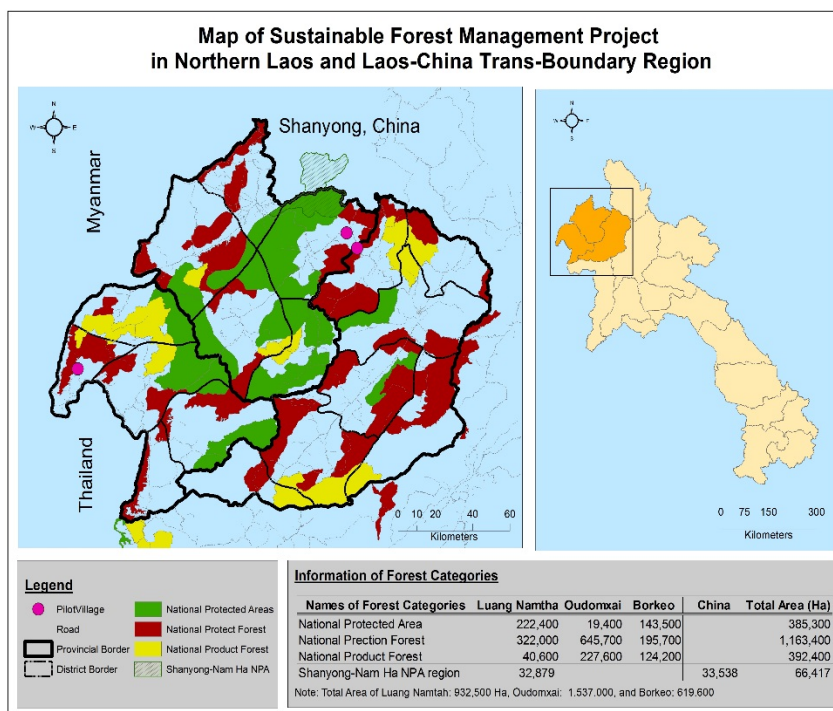
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Category	Unit	Unit Cost	No of Units	Cost (USD)		
				Subtotal	APFNet Grant	Counterp
International Technical				451,200	451,200	-
ITA and CTA	person.mont	6,000	32.6	195,600	195,600	-
DSA and Travel for ITA & CTA	lumpsum			255,600	255,600	-
Restoration and Rehabilitation	demonstratio	196,300	2.0	392,600	327,700	64,900
Community forest management	village	54,600	3.0	163,800	152,500	11,300
Transboundary Biodiversity	NR	565,000	2.0	1,130,000	1,020,000	110,000
Capacity Building	times	22,800	15.0	342,000	312,000	30,000
Dissemination	times	47,000	5.0	235,000	230,000	5,000
Project Management Cost				788,833	429,173	359,660
Operation Cost	office	62,000	5.0	310,000	50,000	260,000
Project Staff	lumpsum			138,000	66,000	72,000
Equipment	office	39,010	5.0	195,050	195,050	-
Overhead				145,783	118,123	27,660
External Evaluation	times	30,000	2.0	60,000	60,000	-
Total				3,563,433	2,982,573	580,860

Annex F Project Site Information

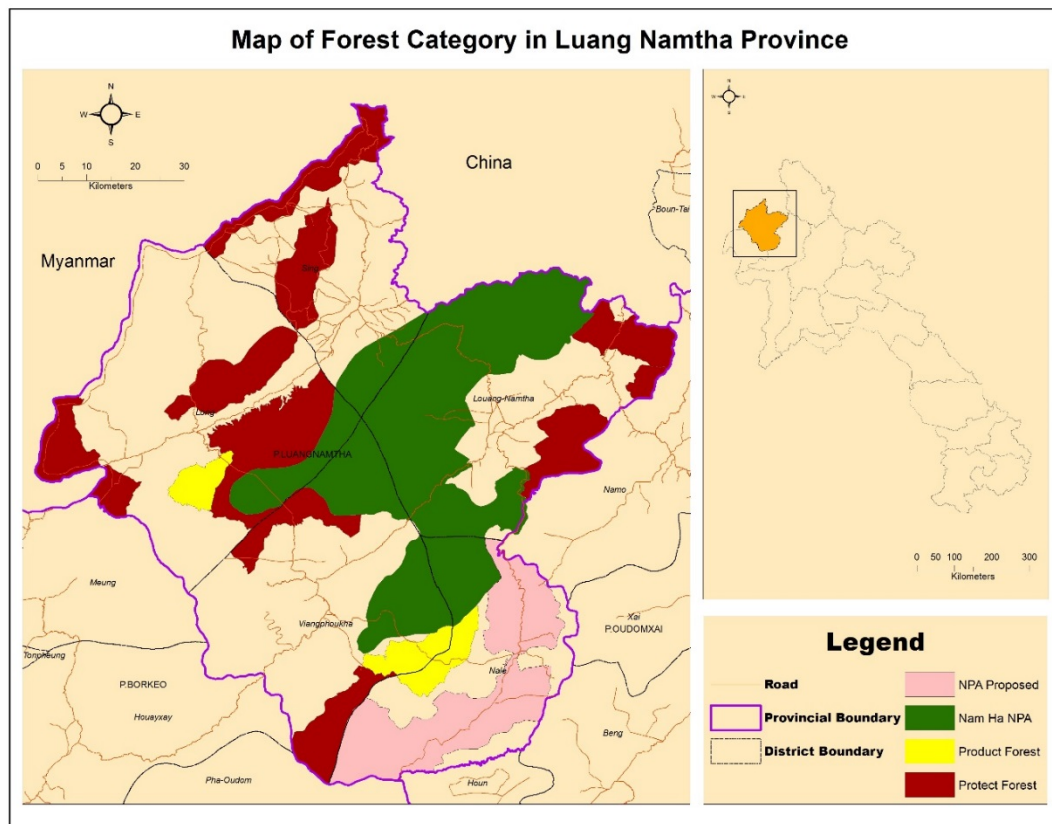
I Overall information of project area

The project will cover three provinces in north part of LAO along the border of China, i.e. Luangnamtha, Oudomxay and Bokeo. In each province, one village will selected as the project intervention site. The general pictures of project targeted area see as below.



II Provincial Information

Luang Namtha Province



1. Geographical feature: Luang Namtha has a border as following:

- China in the north,
- Borkeo province in the south,
- Oudomxai province in east,
- Myanmar in the west.

3. Area: 932,500 Ha

4. Population: 162,747 people (2010);

5. Number of districts: 5 districts:

- 1) Namtha district
- 2) Sing district
- 3) Long district
- 4) Viengphouka district
- 5) Nale district

6. Geographical feature.

Oudomxai province is mountainous which covers 85%. The rest is plain and Plateau area. The lowest elevation is 300 meters (at Xiengkok, Long district). The

highest elevation is 2,094 meters (at Northwest of Viengphouka district).

7. Climate feature.

There are two seasons in Oudoxai. Dry season is started from November to April. Raining season is started from May to October. Average of temperature is around 23.3 degree Celsius. Average of humidity is about 74%, Annual rain rate is 1,850 mm³. Average temperatures in the raining season range from about 25 to 30 degrees centigrade. Average dry season temperatures range from 10 to 25 degrees.

8. Forestry feature.

A. Total scattering forest area: 589,349 ha or equivalent to 63.20 % of total provincial area.

- Forest cover area: 343,900 Ha or equivalent to 36.87 % of total provincial area.
- Potential area of becoming forest: 344,300 Ha or equivalent to 36.92 % total provincial area. (source: forest cover assessment in 2010)

B. Three forest categories: 589, 199 Ha

- National protection forest 322,000 Ha
- National protected area 222,400 Ha
- National product forest 44,799 Ha

C. Forest rehabilitation: based on plan of product management in 2011-12, 18,377 ha of total product forest area were assessed. The province strives to rehabilitate the product forest (from 2015-2020) as following:

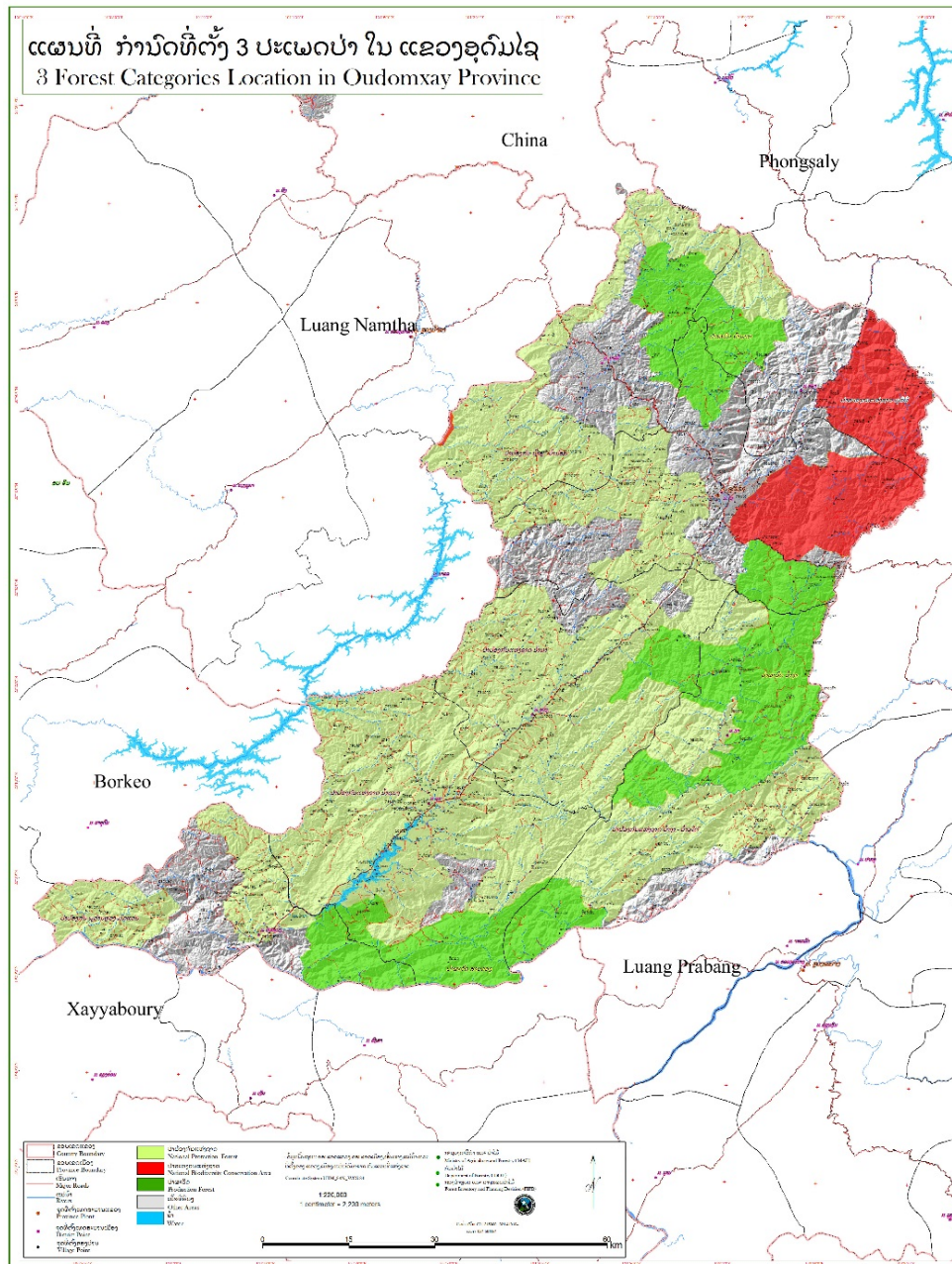
No	District	Product forest (Ha)				Expectation (Ha)	
		Forest area	Potential forest	Other	Total	To 2015	2015-2020
1	Viengphouka	1,110	2,103	258	3,471	600	1503
2	Nale	5,536	3,812	186	9,534	1,100	2,712
3	Long	3,196	1,430	746	5,372	410	1,020
Total area		<u>9,842</u>	<u>7,345</u>	<u>1,190</u>	<u>18,377</u>		

Note: outside of three forest categories was not yet done for rehabilitation plan.

D. Area for plantation

Nowadays, the area for plantation is 33,715 Ha (rubber plantation: 33,642 Ha; fruit (tree) plantation: 60 Ha; and other tree species plantation 13 Ha.

Oudomxay Province



1 Background:

- In 1963, Oudomxai province was separated from Luang Prabang province (Before it was named: Lanxang province)
- In 1965, its name was changed to Muangxai province
- Since 1967 upto now, its name is changed to Oudomxai province
- In 1991, Parktha and Pha-u-dom districts was handed over to Borkeo province.

2. Location: Oudomxai has a border as following:

- Phosaly province (Laos) and Yunam province (China) in the north,
- Xayyaboury province in the south,
- Luang Prabang province in east,
- Borkeo and Luang Namtha in the west.

3. Area: 1,537,000 Ha

4. Population: 285,874 (2008); the density: 19 person/Km²

5. Number of districts: 7 districts:

- | | |
|--------------------|----------------------|
| 1) Xai district | 5) Beng district |
| 2) La district | 6) Houn district |
| 3) Namong district | 7) Parkbeng district |
| 4) Nga district | |

6. Geographical feature.

Oudomxai province is mountainous which covers 85%. The rest is plain and Plateau area. The lowest elevation is 282 meters (at Lard Han village, Nga district). The highest elevation is 1,900 meters (Gna village, Houn district)

7. Climate feature.

There are two seasons in Oudomxai. Dry season is started from November to April. Raining season is started from May to October. Average of temperature is around 23.3 degree Celsius. Average of humidity is about 74%, Annual rain rate is 1,536 mm³. Annual sun shy is around 1,986 hours and the fastest wind rate is 4m/mn (data average of 5 years, 2007-2011).

8. Forestry feature.

A. Total scattering forest area: 1,186,300 Ha or equivalent to 77.2% of total provincial area.

- Forest cover area: 493,800 Ha or equivalent to 32.1% of total provincial area.
- Potential area of becoming forest: 693,500 Ha or equivalent to 45.1% total provincial area. (source: forest cover assessment in 2010)

B. Three forest categories: 772,225 Ha

- National protection forest: 445,510 Ha
- National protected forest: 106,020 Ha
- National product forest: 220,695 Ha

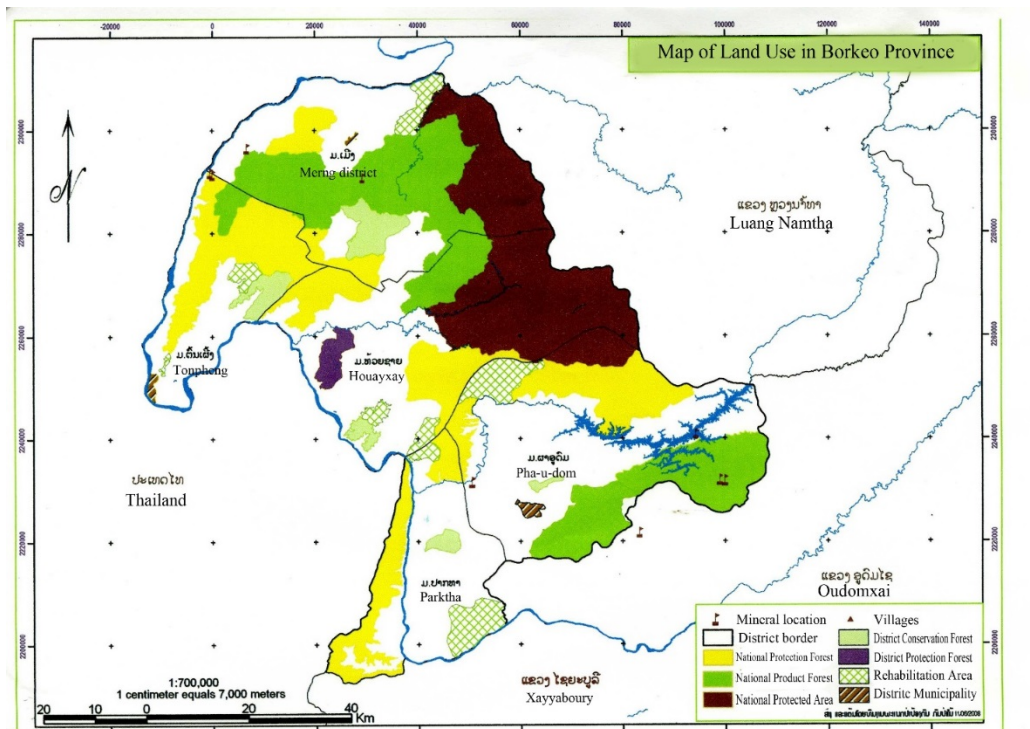
C. Forest rehabilitation: based on forest cover assessment in 2010, Oudomxay province strives to rehabilitate the product forest and an area outside the three forest categories (from 2015-2020) as following:

No	District	Product forest (Ha)				Area outside three forest categories (Ha)				Expectation (Ha)	
		Forest area	Potential forest	Other	Total	Forest area	Potential forest	Other	Total	To 2015	2015-2020
1	Ä§	12,920	11,800	7,580	32,300	24,232	28,743	40,225	93,200	40,543	16,370
2	ù¼	2,408	9,900	1,856	14,164	22,995	29,218	36,230	88,443	39,118	15,800
3	¼¼Ó	8,906	11,305	2,053	22,264	23,140	28,580	37,280	89,000	39,885	16,400
4	¼¼	32,636	12,800	36,155	81,591	23,935	28,380	39,742	92,057	41,180	16,350
5	Á@¼	7,115	10,300	373	17,788	24,440	28,760	40,800	94,000	39,065	16,519
6	»÷¼	14,040	12,100	8,960	35,100	24,284	28,476	40,640	93,400	40,576	16,540
7	¼¼Á@¼	6,976	10,300	164	17,440	24,518	28,749	41,033	94,300	39,049	16,450
Total area		<u>85,001</u>	<u>78,505</u>	<u>57,141</u>	<u>220,647</u>	<u>167,544</u>	<u>200,906</u>	<u>275,950</u>	<u>644,400</u>	<u>279,416</u>	<u>114,429</u>

D. Area for plantation

Nowadays, the area for plantation is 31,951 Ha (rubber plantation: 27,513 Ha; *Eucalyptus* tree plantation: 935 Ha; Teak plantation 198 Ha, Mai Makkao (unknown English name) 430 ¼¼, Agarwood plantation 2,595 Ha; *Anthocephalus chinensis* plantation and other tree species plantation 280 Ha.

Borkeo Province



1. Background:

- Before, Borkeo is a part of Luang Namtha province. Then it was separated and become Borkeo province in 1983. During that time, there were only three districts: Merng, Tonpheng, and Houayxay districts.
- Since 1991 – 1992, Oudomxai province handed over 2 districts to Borkeo province (Parktha and Pha-u-dom districts). Right now there are totally 5 districts in the province.

2. Location: Borkeo is located in the North-West of Laos which borders with following:

- Myanmar in the North,
- Xayaboury province in the South,
- Luang Namtha and Oudomxai provinces in the East,
- Thailand in the West.

3. Area: 619,600 Ha

4. Population: 158,683 people; the density: 26 persons/Km²

5. Number of districts: 5 districts:

- 1) Houayxay district
- 2) Tonpheng district
- 3) Merng district
- 4) Parktha district

5) Pha-u-dom district

6. Geographical feature.

Borkeo province is mountainous which covers 70%. The rest is plain and Plateau area. The lowest elevation is 400 meters. The highest elevation is 1,900 meters.

7. Climate feature.

There are two seasons in Borkeo. Dry season is started from November to May. Raining season is started from June to October. Average of temperature is around 25.6 degree Celsius. Annual rain rate is 1,994 mm³ (data average of 5 years, 2007-2011).

8. Forestry feature.

A. Total scattering forest area: 500,989 Ha or equivalent to = 80 % of total provincial area.

- Forest cover area: 263,019 Ha or equivalent to 42 %of total provincial area.
- Potential area of becoming forest: 237,969 Ha or equivalent to 38 %total provincial area. (source: forest cover assessment in 2010)

B. Three forest categories:	407,989 Ha
▪ National protection forest	175,514 Ha
▪ District protection forest (2 districts)	12,510 Ha
▪ National protected forest	76,400 Ha
▪ National product forest	123,593 Ha

C. Forest rehabilitation: based on 5 year strategic plan, Oudomxai province strives to rehabilitate the product forest and area outside the three forest categories (from 2015-2020) as following:

No	District	Product forest (Ha)				Area outside three forest categories (Ha)				Expectation (Ha)
		Forest area	Potential forest	Other	Total	Forest area	Potential forest	Other	Total	2011-2015
1	All districts	60,000	53,593	10,000	123,593	93,000	20,000	50,000	163,000	30,000
Total area		<u>60,000</u>	<u>53,593</u>	<u>10,000</u>	<u>123,593</u>	<u>93,000</u>	<u>20,000</u>	<u>50,000</u>	<u>163,000</u>	<u>30,000</u>

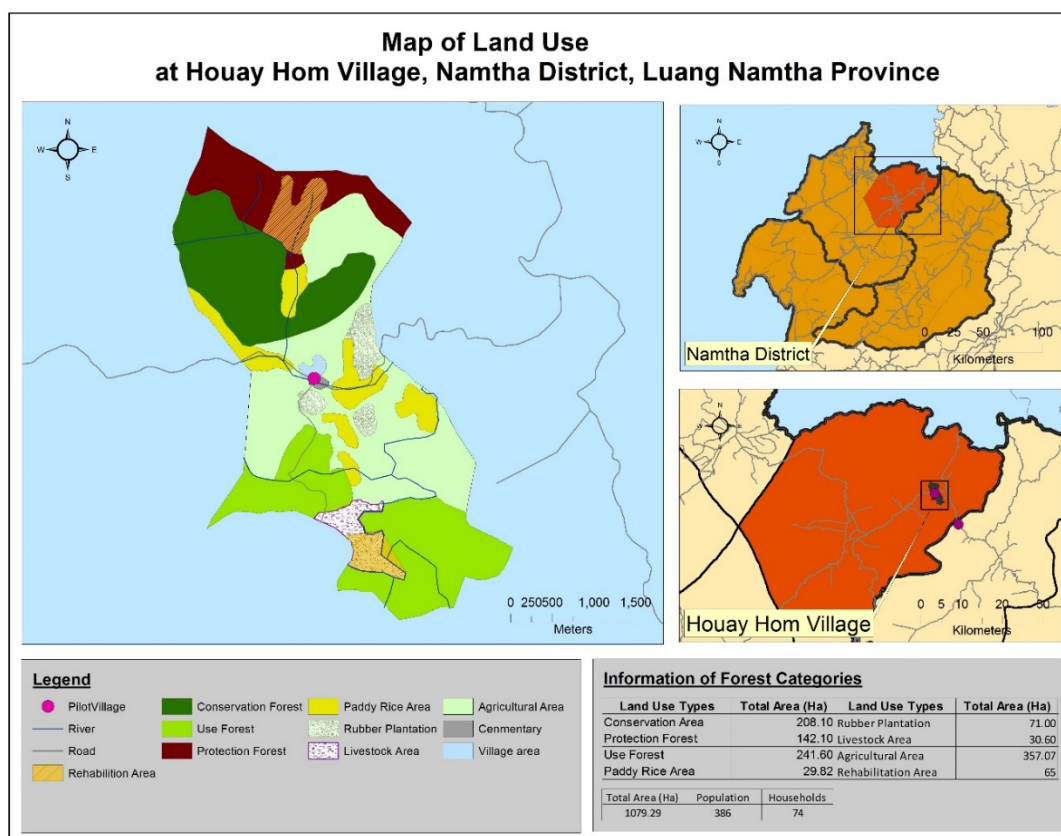
D. Area for plantation

Now a day, the area for plantation is 32,124 Ha (rubber plantation: 25,222 Ha; Teak plantation 1,352 Ha, Agarwood plantation 360 Ha; Palaquium annamensis Lec (Yang Bong) tree plantation 494 Ha; and other tree species plantation 4,696 Ha.

ANNEX F Village Information

Village 1: Houay Hom village, Houay Dam Village Cluster, Namtha District, Luangnamtha Province

1. Village map



2. Land Use data (Agriculture, Forestry, etc):

- ◆ Total area of village: 1,079.29 ha
- ◆ Total Forest area: 591.8 ha, including:
 - Conservation Forest: 208.1 ha
 - Protection Forest: 142.1 ha
 - Village use Forest: 241.6 ha
- ◆ Total Paddy field area: 29.82 ha
- ◆ Total Shifting Cultivation area: 10 ha
- ◆ Rubber plantation area: 71 ha
- ◆ Total Cash crop area (corn, sugar cane, etc.): 95 ha
- ◆ Livestock land: 30.6 ha

◆ ດວງ ອຸທິ ດຳ ດຳ ດຳ ດຳ: 251.07 ha

3. Total House Hold: 74 HH

4. Population: 386 person

5. Ethnic group: Kummou

6. Main occupation: Farmer, alternative job: Cash crop cultivation. (corn, sugar cane)

7. Forest type and main tree species in the production forest:

Mix deceduous forest consist of diverse species of fauna, but the key species including Xylia xylocarpa, Nauclea orientalis, Anthocephalus chinensis, Castanopsis hyxtrix, Indosasa Sinica and Bamboo sp.

8. Non-timber forest products:

The NTFPs is included tavoy cardamom, Boehmeria, bitter bamboo shoot, Dendrocalamus hamiltonii, ຫຸນ ຈ້ ຈ ຈ and etc.

9. Source of incomes (Agriculture, Forestry, Cultivation, Livestock, NTFPs, etc.)

- ◆ NTFPs : 107,000,000 Kip/year
- ◆ Livestock: 80,000,000 Kip/year
- ◆ Cultivation: 415,000,000 Kip/year
- ◆ Total: 602,000,000 Kip/year

10. Issues and Challenges affecting to forest resources:

- ◆ Shifting cultivation;
- ◆ Forest land conversion to rubber plantation;
- ◆ Agricultural land expansion (corn, sugar cane etc.)
- ◆ Illegal logging for both consumption and trade
- ◆ Wildlife hunting (affecting to seed dispersal);

11. Policy and Regulation to promote rehabilitation activities at degraded land (from village to provincial levels)

Referred to Order number 31/PM, Decision number 25/PM on Forest Management, Forestry and Wild animal and Aquatic species Laws Dissemination number: 16/PM and 17/PM, respectively; Instruction number 015/MAF and related regulations of province.

12. Land use planning map and forest management, protection, development and utilization forest resources, including Strategy and Action Plan on forest rehabilitation.

- ◆ Based on the directive, duty and outcome for 5 year plan on Socio-economic Development (2011-2015) of Luangnamtha province to fulfill the national GDP not less than 8.3 %, including Agriculture and Forestry products must be increases up to 6 % covered 60.92 % of GDP.
- ◆ Based on half quater planning VII (2011-2015) of Agriculture and Forestry Sectors number 056/LPAFO, dated 22/02/2013.
- ◆ Based on 5 years Agriculture and Forestry Strategy of VIII (2016-2020) number 106/LPAFO, dated 22/03/2013.

13. Demonstation site of forest rehabilitation at degraded land:

It is in the process of inventory and negotiation with stakeholders;

14. Strategy and Action plan on Communities NTFPs development:

Based on Provincial Socio-economic Development Plan emphasize on promotion and management sustainable logging, protection and scaling up the NTFPs according to management plan such as Rattan, Bamboo shoot. Stick on illegal logging, against the idea that rely on natural resources only for income generation.

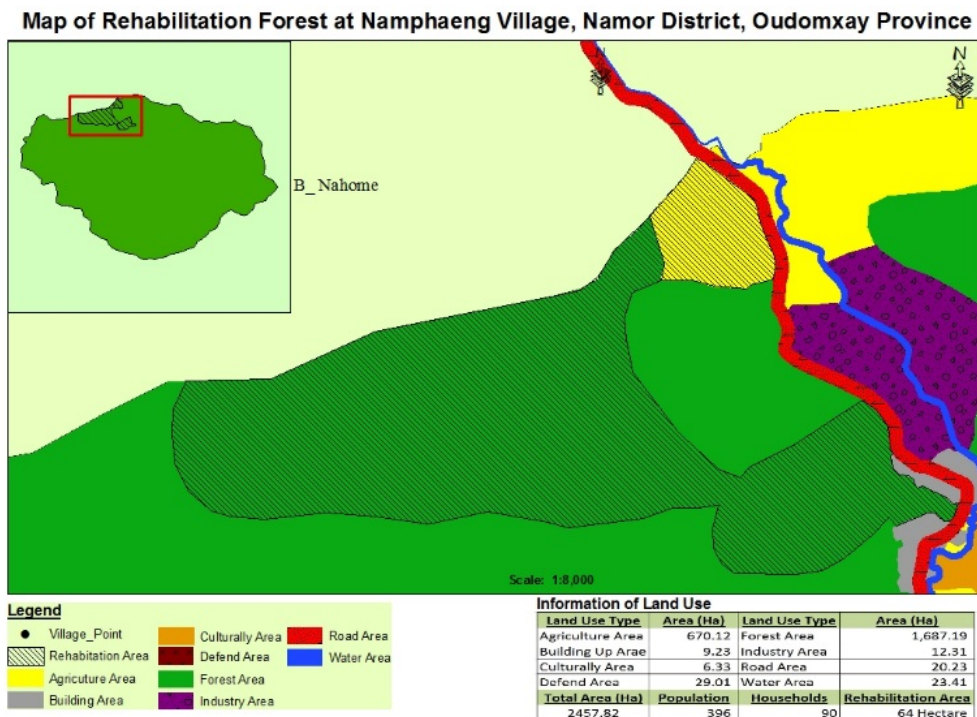
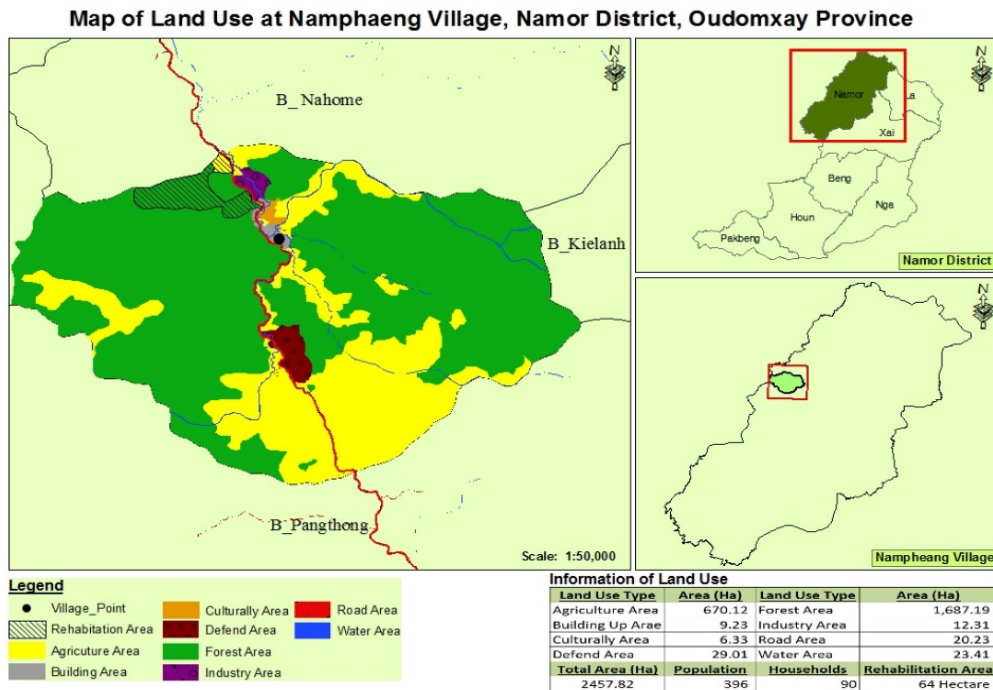
15. Forest nurseries to support forest rehabilitation activities and NTFPs development:

Currently, there is only provincial forest office's nursery at the target village for instand Houay Hom village;

16. Capacity building development plan for local communities and government staff, (technical and policy); include training of trainer, on the job training, international training, internal training and study tour program.

Village 2: Napheang Village, Namor district, Oudomxay province

1. Village Map



2. Land use

- Total village area is 2458 ha;
- Total Forest area is 1687 ha;
- Total agricultural cultivation land area is 670 ha,
- Resettlement land area is 9 ha;
- security land area is 29 ha;
- industrial land area is 12 ha;
- public work land area is 20 ha;
- Wetland is 23.

3. Total number of household is 79, and 90 families;

4. Population is 396, female is 205, 100% is Kummou ethnic group;

5. Main occupation is Farmers, but carried out (paddy rice and up land rice cultivation practices);

6. Forest type and main tree species in the production forest.

There are four forest types, i.e. industrial species plantation (2.7 ha), production forest (935 ha), conservation forest (651 ha) and production forest (98 ha). All the forest are semi-evergreen secondary forest, and the main tree species include *Castanopsis hyxtrix*, *Xylia xylocarpa*, *Gmelia arborea* etc.;

7. Type of non-timber forest products:

NTFPs is included bitter bamboo shoot, Sugar palm fruits, Broom grass, Tavoy cardamom, *Boehmeria*, *Persea villosa*, Paper mulberry, *Russula lepida* or Red mushroom, Bamboo shoot warm, etc.

8. Source of income (Agriculture, forestry, Cultivation, livestock, NTFPs, etc.)

The main source of income generation of local communities is come from agricultural production practices, Livestock and NTFPs for instance:

- Corn and rice cultivation practices, estimated income per year is about 216.000.000 Kip/year;
- Cow, buffalo, pig and poultry rearing, estimated income per year is about 35.000.000 Kip/year;
- None timber forest products trading, estimated income per year is about 200.000.000 Kip/year.

9. Issues and challenges that affected to forest resources.

- Illegal logging;
- Shifting cultivation practic,
- Intention forest burning, and
- Explointation of none timber forest products.

10. Policy and Regulation to support the forest rehabilitation at degraded land (from village to provincial levels)

Annually the Namor Agriculture and Forestry Office give directive on forest resources management and conservation to local communities, side by side with establish the bitter bamboo shoot management group and issue the noted on forest rehabilitation, operated closed and open forest based on the season, and carried out the forest law dissemination to local communities.

11. GIS map that show the land use planning, forest resources management, protection, development and utilization, including the policy and action plan on forest rehabilitation:

Land use planning and land allocation had been done, but up to step 6, the remaining 2 step as extension and monitoring and evaluation were not yet implemented due to lack of fund support. However, there is no data and information, including GIS map are available.

12. Demonstration site for forest rehabilitation activity at degraded land:

There is no demonstration site for carried out the forest rehabilitation at degraded land therefore there is no funding support.

13. Strategy and action plan on NTFPs development by local communities:

Nampheang village authority has set up the plan for 2014 on corn cultivation practice at die back land of bitter bamboo shoot about 2 hectares, and will scaling up the cardamom planting at under story of secondary forest of about 10 hectares.

14. Sursery for provide seedling to rehabilitation and NTFPs development:

There is nursery at district level, and annually district agriculture and forestry office has provided seedling to villages authorities for planting.

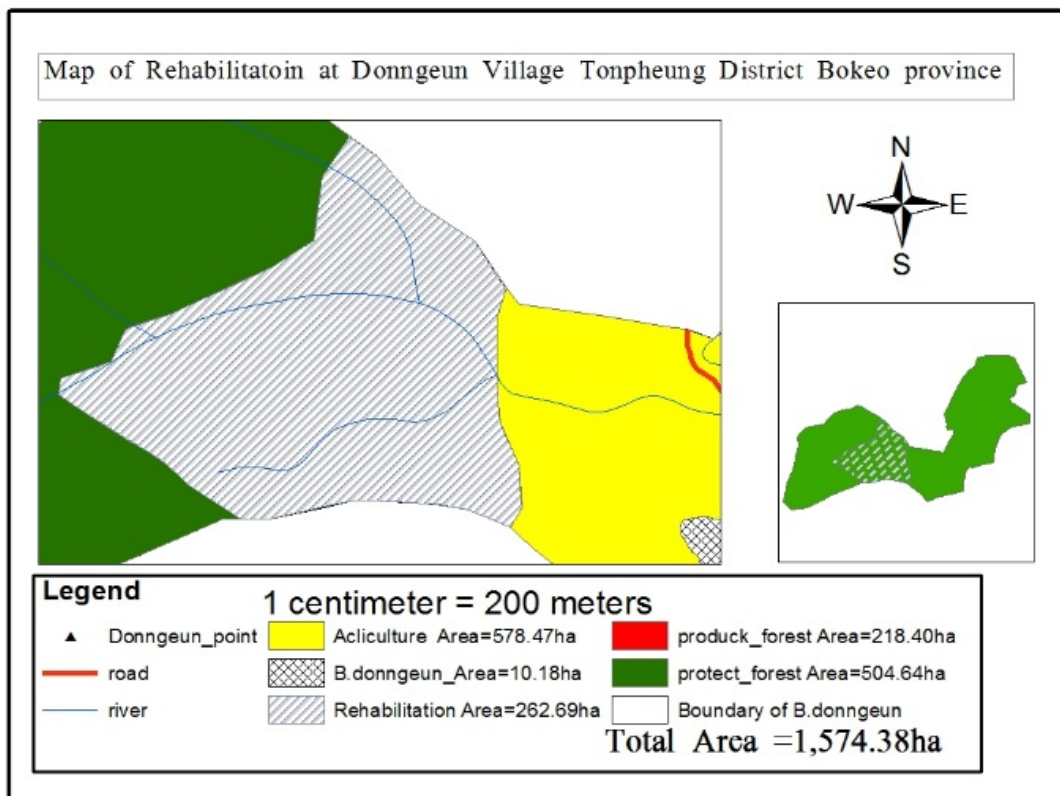
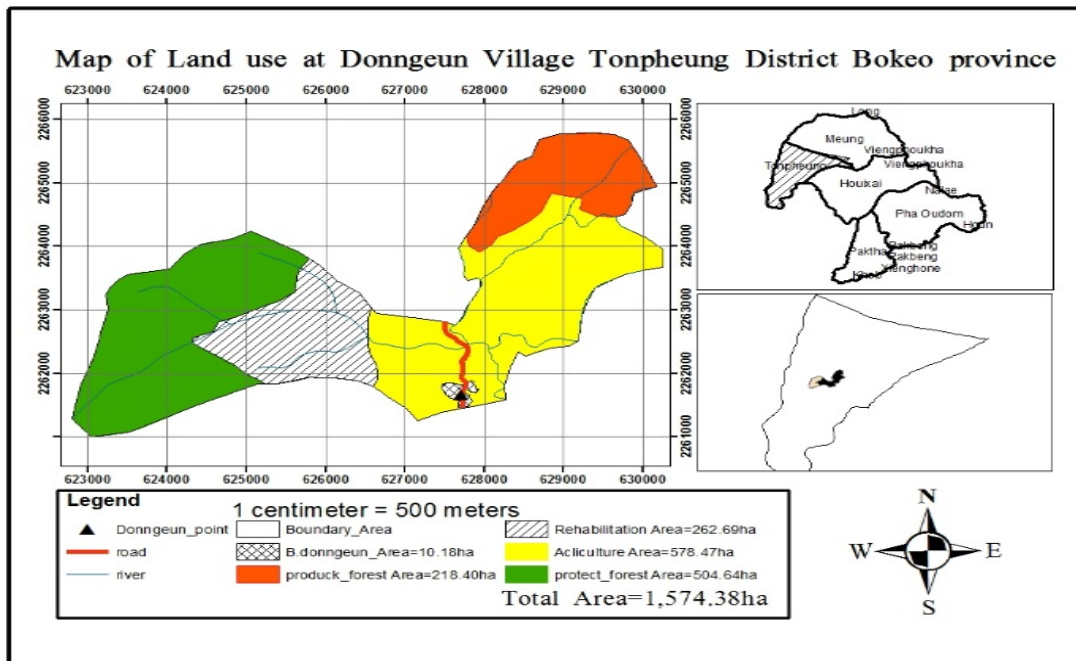
15. Capacity building plan for local staff and people (including technical and policy);

Training of trainer, on the job training, international training, internal training and study tour:

District agriculture and forestry office has conducted on the job training on NTFPs management and conservation, for instance: bitter bamboo shoot management and conservation to villagers; unless the villagers had attended the training course on forest resources management and protection at Luangnamtha and Vientiane provinces, and in Thailand.

Village 3: Donngeun Village, Tonpheung District, Bokeo Province

1. Village Map



2. Land use: (Agriculture, Forestry and others)

Donggneun village is a mountainous area that covers about 80 percent of total land area, the remaining 20 percent is plain. The elevation ranges from 500 – 1.200 m asl. Donggneun village is still rich in natural resources, the total area of paddy field is 72 ha, Irrigation rice area is 15 ha, Shifting cultivation land is 13 ha, rubber plantation area is 20,5 ha, tectona grandist plantation area is 8 ha, Mulberry garden is 2 ha, livelihood of local communities mainly relies on agricultural production and harvesting NTFPs e.g.

- Total village area is 1,588.77 ha;
- Total Forest area is 999.59 ha;
- Total agricultural area is 72 ha, and irrigation rice area is 15 ha;
- Total shifting cultivation area is 497.24 ha;
- Total rubber plantation area is 2.56 ha;
- Agricultural land (corn, sugar cane and etc.): 579 ha.

3. Households and population:

Total number of household is 119;

Population is 451, female is 227, main labor is 188, female 98; there is 8 productive units, the main religion is Buddhism and Secrit.;

Ethnic group is consisted of two main ethnic groups e.g. Yuan is covered 80.8% and Thaidam is covered 19.14 %;

Main occupation is Farmers, the alternative job is livestock and NTFPs collection;

4. Forest types and main tree species for production forest:

Protection forest, Village used forest, Upper rice field, Paddy rice field, cemetery forest, grassland, rubber plantation, and agricultural land. The species are including *Pterocarpus macrocarpus/Pterocarpus pedatus* (Mai Dou), *Xylia dolariformis* (Mai Dengnam), *Toona febrifuga* (Mai Yomhom), *Azelia xylocarpa* (Mai Dteka), and so on.

5. NTFPs:

(Mak Tao) Palm fruit (*Arenga saccharifera*), broom grass (Dok Kem), Rattan, Banana leaf, and so on.

6. Income source

The main income of local communities is come from agricultural production practices, livestock, and NTFPs collection, estimated income per year is about US\$ 1.200/head/year;

7. Problems and challenges on the forest (protection, production):

Even through the provincial authorities have the good measure to protect forest and forest resources from time to time basic, by means of creating different zonation e.g. Core zone, control use zone and buffer zone. However, it still has some problems happen such as shifting cultivation, illegal logging, intention forest burning, wildlife hunting, and exploitation of non-timber forest products. The reason behind those issues that local communities still lack of knowledge on forest resources management and environment protection.

8. Drivers of forest degradation and deforestation (soil and water erosion, shifting cultivation and encroachment)

Drivers of Deforestation:

- Shifting cultivation
- Population growth

Drivers of Forest Degradation

- Log cutting for construction building,
- Firewood cutting for sale

- NTFPs collection

9. Analysis on policies and laws related to rehabilitate degraded forest and forest lands

There was identification of areas where to rehabilitate deforestation and forest degradation, anticipatorily with local people. In addition, there was an establishment of regulations at provincial level for being enforced.

10. GIS based participatory land use planning and forest management plan (including rehabilitation strategy and planning)

The land use planning was done, unfortunately because there was none-monitoring and none-evaluation so that maps and reports were lost. It needs to be re-accessed and updated for developing land use planning; particularly determination of activities and regulations at next levels (district and village levels).

11. Model of rehabilitation in degraded forest and forest land

There is no good model on rehabilitation. However, rehabilitation area was determined (332 Ha) and demarcated/placed signs, which is located inside the national protection forest. The rest was not yet done because of lack of funding.

12. NTFPs based community development strategy and action plan (resource, marketing, and traditional knowledge and skills)

There was no existing NTFPs based community development strategy and action plan.

13. Village nursery for the rehabilitation and NTFPs development

There is no existing nursery for the rehabilitation and NTFPs development at village level.

14. Capacity building (both staff and villagers) including technical and policy (TOT, field, international and national training, classroom training and study tours)

Every year, PAFO had made announcement to village, titled on techniques on how to manage and harvest NTFPs properly based on the existing regulation, and promote a conservation of NTFPs.

Nam Ha NCBA

1. General information

Status: Established by PM Decree 164, 29 October 1993.

Location: Latitude: 20° 33'-21° 15' N, Longitude: 101° 7'-101° 37' E, Luang Namtha Province

Boundaries

The eastern border begins approximately 5 kilometers south of Luang Namtha and follows the Nam Tha river watershed south towards the border with Oudomxay province. Southern border lies within the Vieng Phoukha district at the upper reaches of the Nam Taleng in the southeast and the Nam Fa watershed in the southwest. The western border begins near the peak mountain (2,094 m) and escarpment, follows north the along the headwaters of the Nam Long and Nam Ma to the headwaters of the Nam Sing near Muang Sing. The northern border follows along the international boundary with China, Xieng Yong Reserve, in Sing district.

Area: 222,400 ha

Proposed Extensions

Gazetted in 1999

Extensions (submission No. 1092/DoF-1999) approved by Prime Ministerial Office, 25 August 1999.

Reasons for Proposed Extension or Excisions

Two extension zones were added in 1999, Nam Ha West and Nam Kong. Nam Ha West was seen has containing important evergreen forest and a mosaic of grasslands. Wildlife surveys (Tizard, et. al. 1997) had shown high populations of mammals and birds in some areas. The Nam Kong area adjoins the Xieng Yong Reserve in China and contains the only remaining population of Asian elephant in the area.

Access

From Luang Namtha to the southwest, there is a major road to Vieng Phoukha district and the Thailand border which passes through the corridor between Nam Ha East and West. From Luang Namtha to the north, there is a major road to Muang Sing district which passes through the corridor between the Nam Ha West and the Nam Kong area. From Muang Sing to Muang Long there is a major new paved road which parallels the northwestern border of the NBCA to the Myanmar border. From Luang Namtha to the northeast, there is a major road to Oudomxay province and the town of Boten on the China border which parallels the NBCA boundary. From these major roads, there some small roads leading to the NBCA borders which are mostly accessed by taktak. These include roads to Ban Nam Ngen and Ban Nam Mai on the east side of Nam Ha West and Suen Ya village on the east border of the Nam Kong area. The local government also has plans to make roads which would connect Nale district with Vieng Phouka on the south border of Nam Ha East and from Vieng Phoukha to Long district on the south west border of Nam Ha West.

Stakeholder Villages and Population

District	No. of Villages	No. of Villages by type				Population
		I	II	III	IV	
Luang Namtha	33 (+10 Sub-villages)	14	18	1	0	
Vieng Phoukha	24	0	10	2	12	
Nale	10	0	3	2	5	
Muang Long	14	0	9	5	?	
Muang Sing	23	0	14	6	3	
TOTAL	104	14	54	16	20	

Principal Local Resource Uses

An estimated 90% of the shifting cultivation activity in the NBCA is conducted by villages living in or near the area and 10% by people from outside of the immediate area. NTFPs, primarily cardamom, rattan, bamboo, jewel orchid, eaglewood, and ginger, are harvested from the NBCA. They are used for food and sold. It is estimated that 70% of the sale of NTFPs is conducted by residents inside the NBCA and 30% by people who enter from outside of the National Biodiversity Conservation Area. Of the NTFPs harvested for food, it is estimated that 80% is used by villages in the NBCA and 20% by people from outside of the area. A wide range of wildlife is harvested for food and sale. It is estimated that 40% of the collection of wildlife for sale from the NBCA is conducted by residents and 60% by people from outside of the area. It is thought that 70% of the collection of wildlife for food is done by residents and 30% by outsiders. Some timber is harvested from the NBCA for use by people both in and outside of the area. Both local and provincial residents use lands inside the NBCA for grazing of livestock. Because livestock are free-ranging, there have been cases of tiger predation of domestic buffalo.

Ethnic Composition

Nam Ha NBCA includes a variety of ethnic groups including Lao Leu, Thai Dam, Lao Thueng, Ikor, Lao Hoi, Kui, Hmong and Etong. In Nam Ha East the Lao Thueng live along the main road, the Lao Hoi live along the rivers, and there is one Hmong village (Ban Nam Vang). Some Lao Lum (sub-ethnic Leu) live along the Namtha river. In Nam Ha West, there are mostly Ikor (ethnic group: Lao Sung) in the highland areas. In Finho and Nam Bo, there are Lao Hmong, Etong sub-ethnic group in Etong village, and Lao Lum (Leu) in Tinthat village. The Nam Kong area is dominated by Ikor, except for Lao Lum (Thai dam) in Nam Kong village, Kui in Kui Soung village and Hmong in Suen Ya village. Other village which are classified to class III or IV are Lao Lum.

2. Brief History

1975	Before the war (prior 1975) of which the southern part of Nam Ha area were settled and then they most moved down after
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1980	Nam Ha area identified for Provincial protected area Nam Ha area declared by decree 164/PM was to be NBCA
1995	Nam Ha NBCA approved by local and national authorities and funding agency to launch a project for management
1996	Field work implemented for socio-economic survey with cooperation between DFRC, province and WCS
1997	9 Pilot villages were selected and the wildlife habitat inventory was conducted. Initial discussion for trekking trail in Nam Ha West done
1998	First village (Ban Nalan) established the local community rule
1999	Land allocation is being completed and the trekking trail project is proposed for starting
1999-2002	Plans to complete land demarcation and land allocation, set up sign board with boundaries and rules. Local community rules will be created by local people whom live in and near its boundaries, where possible. Most monitoring and management work in the areas will be shifted to villagers, as village volunteers will be identified and trained for monitoring and extension with support from local government staff.

3. Ecology

Physical Features

Most of the area is covered by mixed deciduous forest, in particular in Nam Ha East with few mountain peaks. In the Nam Ha West, a range of mountains runs from “Phou 2094” to the China/Lao border on the northeast. Along the top of this range is mainly dry evergreen forest and some grasslands. Three large rivers drain southward to Mekhong: the Nam Tha, Nam Fa, and Nam Long.

Elevation: 540-2094 m, most areas among 1000-1500m

Climate

The rainy season runs from May to September. Average annual rainfall is 1,256 cm, and the maximum rainfall about 1,990. During the colder months of the dry season, from December to February, temperatures can reach as low as 5°C. In the mornings, heavy fog is common, usually clearing and becoming warm and sunny by mid-day. The average annual temperature 23.75°C.

Main Forest Types

The majority of the NBCA is mixed secondary deciduous forest and includes secondary evergreen forest particularly semi-evergreen forest and moist evergreen forest (Bermuller, *et al.* 1995, Tizard *et al.* WCS 1997). Tizard, *et al.* Identified four vegetation zones in the NBCA. They are the Luang Namtha plain from 540-1000 m with a “mosaic of human-modified habitats” made up of bamboo, secondary evergreen forest and scrub. The Northern Highlands zone goes from 1000-2094 m with patches of primary evergreen forest mixed with secondary forest and large patches of *Imperata* grass. The Southern

Highlands range from 1000-1572 m with both evergreen forest and scrub. The Nam Kong area along the China border ranges from 600-1556 m. It is characterised by secondary evergreen forest and scrub.

4. Recorded Vertebrates

MAMMALS

Common Name	Scientific Name	National Priority	Global Threat Category	Lao Risk Status
Assamese Macaque	<i>Macaca assamensis</i>	-	VU	PARL
Back-striped Weasel	<i>Mustela strigidorsa</i>	-	VU	LKL
Otter species	<i>Species not identified</i>	-	-	-
Marbled Cat	<i>Pardofelis marmorata</i>	INP	DD	LKL
Tiger	<i>Panthera tigris</i>	ANP	EN	ARL
Asian Elephant ¹	<i>Elephas maximus</i>	HNP	EN	ARL
Pig species	<i>Species not identified</i>	-	-	-
Sambar	<i>Cervus unicolor</i>	-	0	PARL
Gaur	<i>Bos gaurus</i>	HNP	VU	ARL
Southern Serow	<i>Naemorhedus sumatraensis</i>	-	VU	PARL
Black Giant Squirrel	<i>Ratufa bicolor</i>	-	0	PARL
Small Flying Squirrel Species	<i>Species not identified</i>	-	-	-
East Asian Porcupine	<i>Hystrix brachyura</i>	-	Vu	0

BIRDS

Common Name	Scientific Name	National Priority	Global Threat Category	Lao Risk Status
Blyth's Kingfisher	<i>Alcedo hercules</i>	-	VU	PARL
Grey-headed Lapwing	<i>Vanellus cinereus</i>	-	GNT	PARL
Pied falconet	<i>Microhierax melanoleucos</i>	-	GNT	LKL
Green Cochoa	<i>Cochoa viridis</i>	-	GNT	0
Yellow-vented Warbler	<i>Phylloscopus cantator</i>	-	GNT	0
Rufous-throated Fulvetta	<i>Alcippe rufogularis</i>	-	GNT	0
Short-tailed Parrotbill	<i>Paradoxornis</i>	-	VU	0

¹ Only in Nam Kong Provincial Protected Area; not recorded recently in Nam Ha NBCA

	<i>dauidianus</i>			
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CLASSIFICATION KEY (from Duckworth *et al.*, 1999)

<p><i>National Priority Categories</i></p> <p>ANP: Acute National Priority; HNP: High National Priority; INP: Intermediate National Priority</p>
<p><i>Global Threat Categories</i></p> <p>0: not listed as of concern; DD: data deficient; GNT: globally near-threatened; GT-CR: globally threatened - critical; GT-EN: globally threatened - endangered; GT-VU: globally threatened - vulnerable; n/a: not applicable.</p>
<p><i>Lao Risk Status</i></p> <p>0: not at risk in Lao PDR; ARL: at risk in Lao PDR; CARL: conditionally at risk in Lao PDR; LKL: little known in Lao PDR; n/a: not applicable; PARL: potentially at risk in Lao PDR.</p>

5. PRINCIPAL CONTRIBUTIONS TO THE NBCA SYSTEM

Biodiversity Values

Tizard, et. al. (1997) identified the Southern Highlands zone, the Nam Kuaylong river valley and the spine of the Northern Highlands to contain relatively undisturbed evergreen forest and grasslands. Mammals of significance are clouded leopard, leopard, and tiger. There is a small population of gaur, Asian elephant, and a possibly unique muntjac species. The bird fauna is diverse, although contains only a few species of global significance. The area is thought to be botanically unique and diverse, although no thorough surveys have been conducted. There are a wide variety of non-timber forest products, especially *Aquilaria sp.* which can still be found in the area.

Watershed Values

The Nam Tha watershed is the first major tributary of the Mekong River after it enters Lao PDR. It is an especially important watershed, used to support agricultural production and electricity generation along the Luang Namtha plain.

Cultural Values

The area contains a diverse array of ethnic groups who are still highly dependent on the forest and NTFPs, and living relatively traditional lifestyles.

Recreation and Tourism Values

The area has been identified by the National Tourism Authority of Lao as having high potential for both

culture and nature tourism. A pilot project for an eco-trekking trail is planned for Nam Ha West, which is supported by a larger Luang Namtha province eco-tourism project. Boating on the Namtha river and hiking in the hills are currently being developed.

Principal Threats

Use a threat assessment methodology (Salafsky and Margolius 1999), in August 1999, the Unit identified and ranked the following direct threats to the NBCA:

- Slash and burn agriculture. 90% conducted by residents and 10% by outsiders.
- Harvest of NTFPs for sale. 70% conducted by residents and 30% by outsiders.
- Hunting of wildlife for sale. 40% conducted by residents and 60% by outsiders.
- Harvest of NTFPs for food. 80% conducted by residents and 20% by outsiders.
- Hunting of wildlife for food. 70% conducted by residents and 30% by outsiders.
- Road building which is reducing habitat and improving access for hunting and harvesting by outsiders. 100% conducted by outsiders.
- Harvest of timber resources. 50% conducted by residents and 50% by outsiders.
- Free ranging domestic animals, which disturb wildlife populations, compete for habitat, spread diseases, and increase probabilities of depredation of livestock by wildlife. 40% conducted by insiders and 60% by outsiders.

6. CURRENT MANAGEMENT

Staff

Seven staff including:

4 PAFO forestry staff

3 part-time DAFO staff from Luang Namtha, Vieng Phukka, and Nale districts.

The Unit receives technical and financial assistance from the German Development Service (DED) and the Wildlife Conservation Society (WCS).

There are 2 Lao project support staff, provided by the WCS

2 DED technical advisors based in Luang Namtha

one technical advisor from the WCS in Vientiane.

Management Structure

NBCA head is based at PFO, while the Deputy head is a DAFO staff. NBCA staff at each DAFO are then organised into functional units according to management themes.

Buildings

Rented office space for the Nam Ha Management Unit is provided by the WCS and located in Luang Namtha town.

Financial Support & Training

Provided by the Wildlife Conservation Society and the German Development Service since 1996.

Training has included a wide range of basic skills in protected area design, management, monitoring and evaluation. Also basic job skills in English language, computers, and motor vehicle driving.

Other Projects Active in the Area

- EC Integrated Rural Development Project, Luang Namtha