

# **Work Plan**

## **Village based Forest Rehabilitation in Lao PDR**

Under  
**AFoCo Landmark Program  
Restoration Component**

Executed by  
**Department of Forestry**

*(Revised as of 28 April 2016)*



*Project title:* Village-based Forest Rehabilitation in Lao PDR

*Project Sites:* Paksong District, Champasack Province  
Sangthong District, Vientiane Capital

*Project duration:* Ten year (2016-2025)

*Executing Agency:* Department of Forestry, Ministry of Agriculture and Forestry, Lao PDR

*Funding Agency:* Korea Forest Service, Republic of Korea

*Cooperating Agency:* ASEAN-Korea Forest Cooperation Secretariat

*Prepared by:* Department of Forestry, AFoCo Secretariat, a Korean Expert Team and a National Consultant.

## Abbreviation

AFoCo	ASEAN-ROK Forest Cooperation
AOA	Agreement on the Operational Arrangement
ANR	Assisted Natural Regeneration
CFs	Conservation Forests
DAFO	District Agriculture and Forestry Office
DFU	District Forestry Unit
DFRM	Department of Forest Resource Management, MoNRE
DOF	Department of Forestry, MAF
DD	Deforestation and Forest Degradation
DoNRE	District Office for Natural Resource and Environment
FAO	Food and Agriculture Organization of the United Nations
FoF	Faculty of Forestry, NUoL
FRC	Forest Research Center, NAFRI
FS 2020	Forest Strategy 2020
FAO	Food and Agriculture Organization
GoL	Government of Laos
GDP	Gross Domestic Product
Lao PDR	Lao Peoples Democratic Republic
MAF	Ministry of Agriculture and Forestry
MoU	Memorandum of Understanding
<i>MAI</i>	Mean Annual Increment
NAFRI	National Agriculture and Forestry Research Institute
NPFs	National Production Forests
NTFPs	Non-Timber Forest Products
NUoL	National University of Laos
PAFO	Provincial Agriculture and Forestry Office
PFs	Protection Forests
PM	Prime Minister's decrees
PoNRE	Provincial Office for Natural Resource and Environment
REDD	Reduce Emission from Deforestation and Forest Degradation
UXO	Un-exploded Ordinance
UNESCO	United Nation Educational, Scientific and Cultural Organization
SDGs	Sustainable Development Goals
TMF	Training and Modeling Forest area

## List of Figures

Figure 2.1: Location of Project Site in Paksong district.....	16
Figure 2.2: Forest Restoration Areas in Paksong district .....	17
Figure 2.3: Potential quality seed sources In Paksong district .....	19
Figure 2.4: Location of Project Site in Sangthong District .....	32
Figure 2.5: Project area in Sangthong district (3,000 ha).....	33
Figure 3.1: Project Management and Coordination Chart.....	52

## List of Tables

Table 1.1: Major project outputs be produced in two project sites.....	11
Table 2.1: Major project outputs be produced in Paksong site.....	17
Table 2.2: Indicative time schedules for the implementation in Paksong site.....	28
Table 2.3: Summary of budget, Paksong site.....	31
Table 2.4: Land use in Sangthong district.....	32
Table 2.5: Population of five villages in Sangthong site.....	34
Table 2.6: Land use of five villages in Sangthong site.....	34
Table 2.7: Livestock production in five villages.....	34
Table 2.8: Major project outputs be produced in Sangthong site.....	35
Table 2.9: Indicative time schedules for the implementation in Sangthong site.....	46
Table 2.10: Summary of budget, Sangthong site.....	49

## Table of contents

Abbreviation.....	3
CHAPTER I: INTRODUCTION.....	6
1.1 Rationale .....	6
1.2 Project objectives .....	10
1.3 Project Outputs.....	11
1.4 Project outcomes .....	12
1.5 Project beneficiaries .....	12
1.6 Institutional context.....	13
CHAPTER II: PROJECT DESCRIPTION.....	16
2.1 Project description, Paksong Site.....	16
2.1.1 Project site.....	16
2.1.2 Specific outputs for Paksong Rehabilitation Site.....	17
2.1.3 Expected outputs and associated activities .....	18
2.1.4 Project implementation schedules.....	27
2.1.5 Project budget.....	31
2.2 Project description, Sangthong Site.....	32
2.2.1 Project site.....	32
2.2.2 Specific outputs for Sangthong rehabilitation site.....	35
2.2.3 Expected outputs and associated activities .....	36
2.2.4 Project implement schedule .....	45
2.2. 5 Project budget .....	49
CAPTER III: PROJECT MANAGEMENT AND ARRANGEMENT.....	51
3.1 Project Management and Arrangement.....	51
3.2 Project Monitoring, Evaluation and Reporting .....	52
3.3 Risk and Risk Management.....	53
3.4 Project Sustainability.....	54
<i>Annex 1: Characteristics of the project in Paksong site and Sangthong site.....</i>	<i>55</i>
<i>Annex 2: Project Logical Framework of Paksong and Sangthong (2016-2025).....</i>	<i>57</i>
<i>Annex 3: Indicative training plan for Paksong and Sangthong site.....</i>	<i>64</i>
<i>Annex 4: List of required equipment, tools, and vehicles for Paksong and Sangthong site.....</i>	<i>66</i>
<i>Annex 5: Budget plan for Paksong site and Sangthong (2016-2025).....</i>	<i>68</i>

# CHAPTER I: INTRODUCTION

## 1.1 Rationale

The Lao People's Democratic Republic (Lao PDR) is one of the developing countries in South East Asia. The total land area of 23.68 million hectares can be divided into three regions (north, central, and south), 79% of which is mountainous. Forests play an important role not only as a vital economic resource, but also in contributing to nutrition and income of the rural population particularly the rural poor.

The Department of Forestry (DoF) of the Lao PDR conducts a national forest cover assessment every 10 years, starting in 1992, to assess forest cover changes. Forest is defined as 'land spanning more than 0.5 ha with trees higher than 5 m and a canopy cover of 20% and above.' According to this definition, forest cover was estimated at 70% (17 million ha) of the total land area of the country in 1992, decreasing to 40.3%<sup>1</sup> (9.5 million ha) in 2010.

The causes of the rapid decline in forest cover over the past few decades reported in many official documents are similar to that of other developing nations. People were largely dependent on the forests for their livelihoods, such as fuel wood collection, slash-and-burn shifting cultivation particularly in the uplands, and conversion of forestland to agriculture. The drivers of deforestation and forest degradation (DD) in Laos are numerous and different from region to region, and can be grouped under three main drivers: (1) shifting cultivation in the Northern Region, (2) unsustainable timber harvesting in the Central and Southern regions, and (3) the conversion of forestland for agriculture and infrastructure development in all regions<sup>2</sup>. Each driver has been dominant in different periods in the country's history.

*Between 1890s and 1940s (during the French colonial period), forests were excessively cut in some areas, particularly along the Mekong River and along roadsides of roads connecting provinces. Only valuable timber species were cut and exported to foreign countries. Forest management systems or silvicultural practices were not applied. As a result, each year over 10,000 ha of forests were deforested<sup>3</sup>.*

*Between 1950s and 1960s (during the Indochina War), forests were degraded not only by logging operations but also by the Vietnam War. Laos has been recorded as the most heavily bombed nation in the world. Over 2 million tons of bombs were dropped by American planes in the Northern and Southern Regions affecting about 87,300 square kilometers<sup>4</sup>. As a result, large areas of forest were*

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<sup>1</sup> DOF. *Report on the Assessment of Forest Cover and Land Use During 1992-2010*. Vientiane Capital, Lao PDR: Department of Forestry, 2012.

<sup>2</sup> DOF. *Readiness Preparation Proposal on Reduce Emission from Deforestation and Forest Degradation*. Vientiane Capital: Department of Forestry., 2011.

<sup>3</sup> MAF. "Forest Development Policy of the Laos' People Democratic Republic from 1981-2000." Vientiane Capital: Ministry of Agriculture and Forestry (in Laos), 1981.

<sup>4</sup> Bounpheng, Sisavath. *Uxo Lao, Fight against Unexploded Ordnance*. Available from: <http://maic.jmu.edu/journal/9.2/focus/sisavath/sisavath.htm>

burnt. Moreover, vast portions of agricultural land have been rendered unusable due to high levels of Un-exploded Ordinance (UXO) contamination that led to increased poverty in rural communities. At the same time, about 419,800 gallons of herbicide (Agent Orange) were sprayed over 66,000 ha of forest in Savannakhet and Attapue provinces to defoliate the vegetation surrounding the network of roads and trails used by the local army and make them more vulnerable to air strikes<sup>5</sup>.

*From 1975 to 1990 (during the economic recovering after the war in 1975), forest resources were used for the welfare and development of the population and for the creation of capital. Forest areas were destroyed at a rate of about 350,000 ha per year by slash-and-burn shifting cultivation, particularly in the Northern Region, and unsustainable timber harvesting in the Central and Southern regions<sup>6</sup>.*

*In the 1990s and 2000s (during a period of rapid economic development), the forest cover sharply decreased from 47.2% in 1992 to 41.5% in 2002, a reduction of about 1.3 million ha of forests. Unstocked forests and permanent agricultural land increased to 3.3 million ha and 350,000 ha, respectively. The main sources of DD were still shifting cultivation in the Northern Region and unsustainable wood extraction and conversion of forest to other uses in the Central and Southern Regions<sup>7</sup>*

Over the past decades, in order to recover the degraded forest and increase forest cover, the government together with local authorities and international organizations continued to make significant efforts in applying different measures to address the root causes of unsustainable wood extraction and shifting cultivation by improving timber harvesting systems, wood industries and associated trades, and the livelihood of people living in rural areas. The Forest Strategy 2020 (FS 2020), the amended Forest Law 2007, and Prime Minister's decrees (PM) related to forests and forestland resources management comprises the forest policy and legal framework of the country. The FS 2020 endorsed by the GoL in 2005 provides the guiding policy for the development of the forestry sector. It also provides the long-term forest development plan and sets major sector targets, which must be achieved by 2020 to contribute to poverty eradication. Addressing poverty in forest policy is important, since more than 80% of the population live in or near forested areas or previously forested areas. They comprise the majority of the poorest section of Lao society and include many ethnic groups.

FS 2020 also aims to take necessary measures to reduce DD and increase the forest cover to 70% of the total land area by managing current forests, rehabilitating degraded forests of up to 6 million ha, and promoting tree plantations on highly degraded forestland of up to 500,000 ha. In order to achieve the targets, FS 2020 also sets nine thematic policy areas plus crosscutting issues: (1) Land use and forests, (2) Production forests, (3) Non-Timber Forest Products (NTFPs) management, (4) Tree

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<sup>5</sup> William, M., and A. Buckingham. *Operation Ranch Hand: Herbicides in Southeast Asia*. Available from: [http://www.agenorangerecord.com/agen\\_orange\\_history/in\\_cambodia\\_La](http://www.agenorangerecord.com/agen_orange_history/in_cambodia_La)).

<sup>6</sup> MAF. *Report on Forest Resources Development to the 1st National Forestry Conference*. Vientiane Capital: Ministry of Agriculture and Forestry (in Laos), 1989.

<sup>7</sup> Maps, Mekong. *Analysis of Land Use and Forest Changes and Related Driving Forces in the Lao Pdr*. Vientiane Capital: Department of Forestry.

plantation development, (5) Harvest/logging plans and royalties, (6) Wood processing industry and export, (7) Biodiversity conservation, (8) Protection forests and watersheds management, and (9) Village land use and forest management. Each thematic policy area encompasses a series of proposed actions, 146 actions in total. The implementation of the proposed actions is far to accomplish, just above 60% of the total actions had been implemented with some of them completed within the suggested timeframe, other actions implemented beyond the suggested timeframe or still on-going, and some actions have not even started<sup>8</sup>.

The Implementation of forest policy and legal framework of the country towards attaining the goal of Sustainable Forest Management has faced many challenges. The major causes of DD from unsustainable timber harvesting and conversion of forest to other uses are not so much a result of policy failures, but rather a lack of: cooperation and coordination among economic sectors; trained and qualified workers; funding; and monitoring and enforcement of the law<sup>9</sup>.

Incomplete national land-use zoning based on land-use policy (forestland, agricultural land, industrial land, etc.) and detailed provincial, district, and village land-use planning lead to confusion over land use.

For management purposes, state forests have been classified into three categories, namely: Protection Forests (PFs), Conservation Forests (CFs) and National Production Forests (NPFs). There are about 120 state forest areas covering about 15 Million ha have been reported. Of which, 51 NPFs (3.1Million ha) and 24 CFs (4.4 Million ha) have been established by the Prime Minister of Lao PDR. But, most of state forest areas are not physically demarcated and more than half have not been covered by management plan. Moreover, nearly 30% of the total forest and forestland have not been classified as state forests or have yet to be classified into any forest category. The current forest policy and regulations are not clear regarding management of unclassified forests and forest land; therefore, these areas are at risk of being converted to other land uses.

Although the targets for restoration in each forest category and province are generally defined, limited progresses have been made in the implementation and so much work needs to be done, such as: identification and demarcation of degraded forest areas; formulation of forest rehabilitation plans or projects; provision of financial support and policy incentives to encourage individuals, households, and organizations to invest in forest rehabilitation. The country has high potential for tree plantation development and the Government and Local administrations gave approval to about 560 companies with a total land concession area of nearly 500,000 ha, but the key problem related to concessions is the inappropriate selection and allocation of forestland and the lack of data on the growth of selected species and matching species with site and the lack of well-trained and competent staff to carry out and manage the plantations and do research. There are many cases where conversion of forests has been reported, for example including village forests, national conservation forests, and protection forests<sup>10</sup> and many plantations have failed and have not shown

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<sup>8</sup> FSCAP. *Review Report: Forest Strategy to the Year 2020*. . Vientiane Capital: Forest Sector Capacity Development Project (FSCAP), 2014.

<sup>9</sup> Kim, Se Bin, and Oupakone Alounsavath. "Forest Policy Measures Influence on the Increase of Forest Cover in Northern Laos." *Forest Science and Technology* 1 (2015): 1-6.

<sup>10</sup> Mekong Map. 2010: Analysis of Land Use and Forest Changes and Related Driving Forces in the Lao PDR.

good performance. The mean annual increment (MAI) has been very poor, about 4.88 m<sup>3</sup> to 6.25 m<sup>3</sup> per ha for *E. Camaldulensis* and about 10.8 m<sup>3</sup> to 13.3 m<sup>3</sup> per ha for *A. mangium* over 5 and 4 years growth, respectively<sup>11</sup>.

There are some practical experiences from South Korea and Vietnam on successful reforestation of degraded forest areas. The South Korean Government overcame issues on DD and increased forest cover within a short time even with very low economic growth. After the Korean War ended in 1953, fuel wood collection, slash- and- burn cultivation, and illegal logging still continued as the main drivers of DD. At the same time, South Korea was faced with serious environmental problems, such as: frequent flooding, landslides, soil erosion, inadequate water supply, dust storms, etc. With very low economic growth (GDP USD 79 per capital in 1960), the South Korean Government implemented three policy measures: 1) production of coal briquettes to substitute for fuel wood, 2) establishment of fuel wood plantations in rural areas, and 3) employment of strong forest protection policies. In parallel with these policy measures, the government also implemented rural development plans and programs for long-term national socio-economic development to increase rural household incomes and reduced rural poverty.

To restore the denuded forests, Korean government set up 10-year National Forest Plans so-called "Forest Rehabilitation Project" and presented clear goals and objectives of forest rehabilitation, generated broad public support, provided incentives favorable to the reforestation efforts (i.e. the government paid fee to the people for conducting village nursery, planting, and afforestation to control erosion) in increasing rural household incomes and reducing rural poverty<sup>12</sup>, and integrated forest rehabilitation activities into village-driven development in the so-called the *Saemaul Undong movement "SU movement"*. Through this mechanism, the South Korean Government achieved reforestation in a relatively short period of time: forest cover increased from 35% (3.4 million ha) in 1995 to 59.7% (5.8 million ha) in 1970. About 2.1 million hectares of degraded forest were successfully reverted back to well-stocked forest, reaching an average of 126 m<sup>3</sup>/ha in 2010<sup>13</sup>.

In the case of Vietnam, between the 1990s and 2000s, Vietnam implemented two main programs: Greening the Barren Hills Program and the Five Million Hectare Reforestation Project. The programs focused among other aims on rehabilitating forest cover on barren land and hills, protecting existing forest and assisting natural regeneration and reforestation. The experience from Vietnam reveals that forest rehabilitation should be incorporated not only in projects at the national level and implemented through projects at the local level with well-defined goals and incentives, but

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Vientiane Capital: Department of Forestry., 2010.

<sup>11</sup> Alounsavath, Oupakone. "An Analysis of Forest Research Plots in the Central Part of Laos: A Case Study of Eucalyptus Camaldulensis (Petford) and Acacia Mangium in the Lao-Adb Plantation Forestry Project [M.Sc Dissertation]." 2003.

<sup>12</sup> Bae, Jae Soo, Rin Won Joo, and Yeon Su Kim. "Forest Transition in South Korea: Reality, Path and Drivers." *Land Use Policy*. 29: 198-207. (2012).

<sup>13</sup> ISTF. *Special Report on Korea Forest Service*: Available from: <http://www.istf-bethesda.org/specialreports/KFS/KFS-intl.pdf> ., 2012.

also integrated with other projects that aim to improve the socio-economic condition of local populations<sup>14</sup>.

The Republic of Korea's success in forest rehabilitation is well recognized worldwide. The experience of forest restoration and rehabilitation is expected to contribute in regional efforts toward sustainable development. The forest restoration project in degraded forests under Landmark Programme of ASEAN-ROK Forest Cooperation (AFoCo) has a long term vision to contribute to "Greener ASIA" and is highly consistent with national forest development policy. In this connection, Lao PDR has been selected to develop and demonstrate a village based forest rehabilitation model which is conceptualized to be linked to the other parallel projects operated in neighboring countries, Cambodia, Myanmar, and Vietnam.

The project developed by Department of Forestry (DoF) with a strong support from the AFoCo Secretariat and technical assistance from a Korean Expert Team and a national consultant, was designed to contribute to increase national forest cover, reduce rural poverty, enhance forest carbon stocks, and contribute to mitigating global climate change. To achieve these aims, different forest regeneration measures will be applied. In order to engage local villagers to implement rehabilitation activities, the project will provide incentives to local villagers through various means, *inter alia*, strengthening capacity of villagers to produce a good quality of seedlings, seedling production, enrichment planting, maintenance and protection of rehabilitated areas. To ensure sustainability and ownership, forest rehabilitation objectives will be integrated into a five-year plan of local social-economic development plan and village and clusters village development or three pillars development policy in the so-called "*Sam Sang*".

As agreed in the Agreement on the Operational Arrangement (AOA) between ASEAN-ROK Forest Cooperation Secretariat and Department of Forestry of Ministry of Agriculture and Forestry, Lao PDR, the project will be implemented in two project sites, Parksong District of Champasack Province southern part, and Sangthong District of Vientiane Capital, both in the degraded state protection forests. In addition, reforestation in private lands applying agro-forestry techniques is also encouraged and supported by the project.

The project will be implemented within a timeframe of 10 years with funding support on a grant basis from AFoCo in a total amount of 1.5 million US Dollars which is shared about a half for Paksong and the other half for Sangthong districts. Within 10 years from 2016 to 2025, the Village Based Forest Rehabilitation program module objective is specified in the following section.

## **1.2 Project objectives**

The overall objective of the project is to increase forest cover by the restoration of degraded forest areas, strengthen capability of government agencies and local authority including villagers in implementing national forest rehabilitation policy, and contribute to poverty reduction by providing direct income to local people, particularly, the poor. The specific objectives of the project are as follows:

Objective 1: To demonstrate village based forest rehabilitation concepts in degraded forests through the application of different forest regeneration measures: (1) establishment of ex-situ

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<sup>14</sup> CIFOR. *Forest Rehabilitation in Vietnam*: Available from:  
[http://www.cifor.org/publications/pdf\\_files/Books/BDeJong0601.pdf](http://www.cifor.org/publications/pdf_files/Books/BDeJong0601.pdf).

conservation plantation; (2) enrichment planting in degraded forest areas where natural regeneration cannot secure; (3) assisted natural regeneration where degraded forests can naturally generate;

Objective 2: To generate broad public support on the implementation of national forest rehabilitation policy in general, village based forest rehabilitation program in particular;

Objective 3: To provide incentives to local villagers through various means, *inter alia*, strengthening capacity of villagers to produce a good quality of seedlings, seedling production, enrichment planting, maintenance and protection of rehabilitated areas.

Objective 4: To strengthen capability of stakeholders at all levels for successful implementation and replication of the project.

To achieve the above overall and specified objectives, the project's outputs are specified in the following section.

### 1.3 Project Outputs

The table 1.1 shows major project outputs expected to be produced in two project sites, Paksong and Sangthong districts:

Table 1.1 Major project outputs be produced in two project sites

Objective 1	<p>Output 1.1: Sufficient quality seedlings are produced for ex-situ conservation plantation and enrichment planting for both rehabilitation areas in Paksong and Sangthong districts;</p> <p>Output 1.2: About 60 ha of ex-situ conservation plantation have been established and maintained, which, in turn, produces future quality seed sources of valuable native tree species;</p> <p>Output 1.3: Nearly 790 ha of enrichment planting in Paksong and Sangthong districts have been successfully established and maintained;</p> <p>Output 1.4: About 2,770 ha of Protection Forest in Sangthong and Paksong districts have been protected by local villagers.</p> <p>Output 1.5: Barren land of individual landowners have been supported through agroforestry extension services</p>
Objective 2	Output 2.1: Public and private sectors are aware and promote village based forest rehabilitation program;
Objective 3	Output 3.1: Local villagers both men and women, particularly, the poor have additional incomes from sale of seedlings, enrichment planting, maintenance and protection of rehabilitated areas.
Objective 4	<p>Output 4.1: Forestry sectors and local authority have knowledge and capacity on how to implement national forest rehabilitation policy at district and village level with an active participation of local villagers;</p> <p>Output 4.2: Villagers have capacity to produce a good quality of</p>

	<p style="text-align: center;">seedlings and implement forest rehabilitation activities;</p> <p>Output 4.3: Necessary materials and facilities for implementation and replication of village based forest rehabilitation have been sufficiently developed and made in place.</p> <p>Output 4.4 Financial and Project Management</p>
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The specific outputs and activities for each rehabilitation site (Paksong and Sangthong district) are specified in chapter II.

### 1.4 Project outcomes

The outcomes from the implementation of this project will include, among other, increased forest cover and improved forest structure in the project sites which further result in enhanced forest ecosystem services in the locations, availability of seeds of valuable tree species for forest restoration programmes in the country, generated broad public awareness and support on village based forest rehabilitation nationwide, and thus could lead the country towards attaining the goal of Sustainable Forest Management.

In addition, since the project intends to engage local villagers to implement forest rehabilitation activities, the outcomes in this regard will also include enhanced capacity of local community in implementing national forest rehabilitation policy and local community would feel of having ownership and could lead to changing attitudes to forest as their own resources.

Furthermore, this project provides additional incomes to local villagers, particularly to the poor, outcome will include improved livelihoods of the poor and thus contributing to national poverty eradication target and zero hunger of the Sustainable Development Goals (SDGs).

### 1.5 Project beneficiaries

The project will benefit at regional, national, and grassroots level. At regional level would include the participating ASEAN states in terms of exchanging project related information experiences. The AFoCo as cooperating agency could gain benefits related to achieving its environmental policy in Asian countries that contribute to mitigating global climate change.

At national level, particularly benefits that the project helps implementing its forest policy, as well as contributing to poverty reduction in the project sites. The project will, in general, benefit the forestry sector as a whole and Agriculture and Forestry Office/Natural Resource and Environment Office at district level and participated villages in particular in forms of strengthened capacity in forest restoration at landscape level. Specifically, the main beneficiaries will be the forestry staff and local villagers in terms of new knowledge in nursery techniques, ANR methods, higher awareness on the importance of forest restoration at landscape level as well as other direct and indirect benefits they may obtain through their participation in the project programmes which will eventually facilitates and speeds up expansion of coverage of forest over the country.

At grassroots, villagers could gain, a part from capacity building, both direct and indirect benefits. As the direct benefit would be in monetary form received from the implementation of forest restoration and protection contracts with the project, while indirect benefits could gain from ecosystem services provided by increased forest areas and improved forest structure.

## 1.6 Institutional context

In order to ensure that project design and implementation are suitable to the real situations and thereby achieve the expected results in line with the project objectives, it is important to understand institutional context.

Previously the management of all forest categories (Conservation forest, protection forest, and production forest) was put under jurisdiction of the Ministry of Agriculture and Forestry (MAF), where DoF, is delegated to play executing roles performing through its provincial and district offices, PAFO and DAFO. However, the roles have been spited with the constitution of the Ministry of Natural Resources and Environment (MONRE), where the management of two forest categories, conservation and protection forests, have been put under jurisdiction of MoNRE, performed by its Department of Forest Resource Management (DFMR) through its respective provincial and district offices, PoNRE and DoNRE, while DoF remains to be responsible for the management of the production only.

While the project is designed to be executed, but implemented in protection forests with involvement of local authority and community, the following institutions should be involved in the project implementation.

### *1.6.1 Ministry of Agriculture and Forestry (MAF) and its forestry related line agencies*

With regard to forestry management, MAF delegates DOF, as a line department under its jurisdiction, to perform on its behalf. By law, DOF is responsible for the management of the State Production Forest, forest plantation and uncategorized forest lands located outside three state forest categories including village forests (through village forestry). Related to the project, DoF was authorized to represent MAF signing Memorandum of Understanding (MoU) and AOA with AFoCo as the project executing agency.

In terms of organization, DOF functions through 7 divisions, 2 offices and 1 training center. Amongst the others, 5 divisions are closely related to the management and implementation. The Planning and Cooperation Division is responsible for project coordination, the Village Forest Management and NTFP Division will be assigned to manage the project with technical supports from the Forest Regeneration Division. The Administration Division is in this case will look after financial management and accounting, and Training and Demonstration Center will provide training services.

At field level, DoF works through the Provincial Forestry Section in close consultation with the Provincial Agriculture and Forestry Office (PAFO) and the subordinated District Forestry Section under District Agriculture and Forestry Office (DAFO).

At provincial level, PAFO is a strategic unit with the main function to develop, oversee and implement forestry strategies and forestry development activities at provincial level. Related to forestry, PAFO works through its subordinating Provincial Forestry Section and District Forestry Unit. Based on national forestry strategy and provincial socio-economic development plan, PAFO develops its 5-year and annual forestry development plans and implement them in line with related laws and regulation.

Actual implementation, including budget is decentralized to DAFO/DFU, while PAFO/PFS is responsible for facilitation, capacity building and monitoring. In case there is insufficient human resource at the district level, staff from the PFS is allocated to perform the given duties. This will apply also to the implementation of this project.

### *1.6.2 Ministry of Natural Resources and its forestry related line agencies*

Having responsibility for the management of conservation and protection forests, MONRE authorizes and supervise its subordinating Department of Forest Resource Management (DFRM) on its behalf. It is accorded overall responsibility for management and protection of protection forests, conservation forests, including corridor zones and specific conservation areas.

To perform its mandates, DFRM is structured into nine (9) divisions : (1) Administration Division; (2) Planning and Cooperation Division; (3) Protection Forest Management Division; (4) Conservation Forest Management Division; (5) Wildlife Management Division; (6) Emission from Deforestation Management Division; (7) Protection Forest and Conservation Forest Inventory Service; (8) Protection Forest and Conservation Forest Inspection Service; and, (9) Forest Regeneration Service. Amongst these divisions, the Protection Forest Management Division will be involved in the implementation of the project.

Similar, to DOF, DFRM functions through its subordinating Provincial Office for Natural Resource and Environment (PONRE) which is a strategic unit with the main function to develop, oversee Protection Forest and Conservation Forest development activities at province level and acts as coordination body between concerned central and local organizations. It has its Forest Resource Management Section, which plays a crucial role in overseeing and giving guidance for all forest protection and conservation activities implementation at provincial level. In terms of actual implementation, PONRE decentralized activities and budget to DONRE to implement, while playing roles to monitoring and capacity building.

DoNRE is implementing unit with communities relating to natural resource uses within the district. This unit develops annual operation plan together with communities and lead communities in implementing the annual operation plan and then report the result of implementation to PoNRE on regular basis.

### *1.6.3 Village*

Village is the lowest administration unit in the Lao governance system which is governed by a Village Administration Committee (VAC), led by a village headman/Woman. The VAC has the roles for overall village administration and management, including the protection and management of natural resources and environment in the village. At village level, normally the management and protection of natural resources falls under leadership and supervision of the deputy village headman and implemented through village police. For these purpose, the youth organization and women union are also active at.

In Lao policy, village authority and villagers are encouraged to participate in forest management, including forest rehabilitation and protection and this the implementation of this project was also designed to involve community participation as much as possible.

For forest protection, Village Forest Protection Groups will be formed and equipped with necessary equipment, tool and uniforms. These VFPGs will be mobilized to conduct regular forest patrols, while project provide Daily Subsistent Allowances (DSA).

Other project activities such as seedling production, establishment plantation, enrichment planting and all other related activities will also be contracted out to villagers, either to organized groups and individuals. Depending on interest, to build ownership, performance based contracts maybe signed with village authority who will manage and regulate subcontracts to villagers.

#### *1.6.4 Faculty of Forestry (FOF), National University of Laos (NUoL)*

Faculty of Forestry (FoF), National University of Laos (NUoL) is highest forestry education center in Laos. The main function is to provide education, research and technical services relating to forestry, land, environment, wood science, REDD and etc. FoF has a forest in Sangthong district as Training and Modeling Forest area (TMF) and field station at Napo village, which is about 8 km away from project site, for research and practicum of forestry students.

## CHAPTER II: PROJECT DESCRIPTION

### 2.1 Project description, Paksong Site

#### 2.1.1 Project site

The project site is a part of Kongtoune Village which is situated in Paksong district of Champasak province, southern part of Lao PDR (Fig. 2.1). The area is located within the territory of Bolaven Plateau on elevations ranging between 750-1,350 m above sea level. The weather in this area is relatively cool and humid, with daily mean temperature between 6.2-27.2 °C and rainfall ranging between 5.2-967.4 mm per year<sup>15</sup>. The dry season is occurs between November-May, while rainy season between June-October.

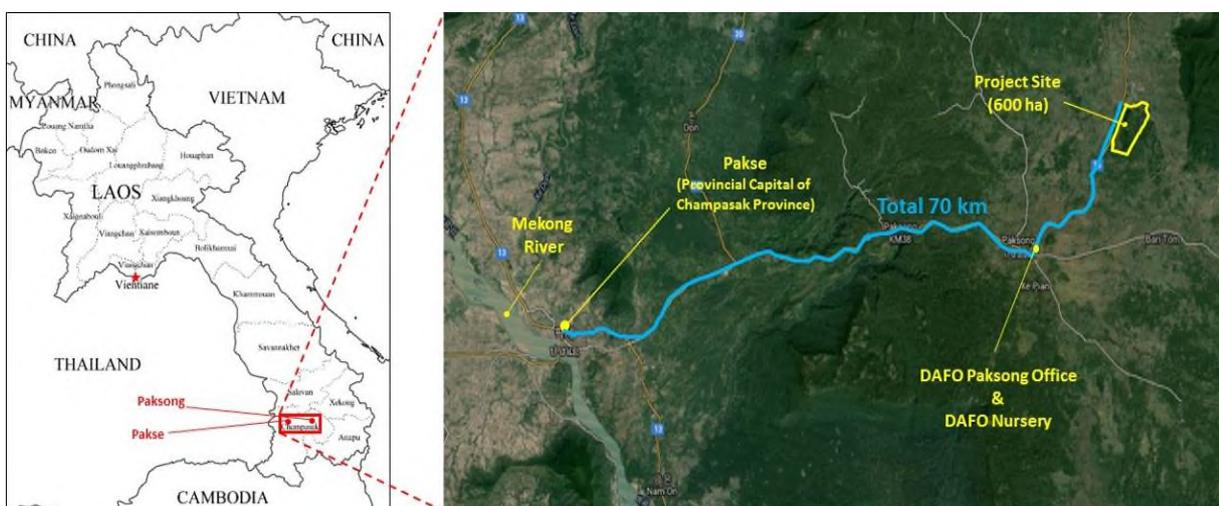


Figure 2.1: Location of Project Site in Paksong district

The major proportion of the area consists of flat to moderate sloping areas, ranging between 10-20° in south eastern parts, while a higher sloping areas (up to 40°) are found at the north western corner. In this area, similar to other areas in Bolaven Plateau, the soil is relatively fertile, belonging to the group of Acrisols, characterized by good drainage and slightly acid to neutral of soil reaction. In conclusion, climatically local conditions are in favor of vegetative growth.

The project site has a total area of 600 ha which falls under state forest land and is currently managed under protection forest. The area is characterized by degraded forests which are to be generated, out of which 40 ha will be allocated for forest plantation, 160 ha for enrichment planting and the rest

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<sup>15</sup> Source: DAFO Paksong (Oct 2015), National Statistics Bureau (Oct 2015)

(400 ha) will be protected for natural regeneration. More details of the project areas are illustrated in Figure 2.2 hereunder.

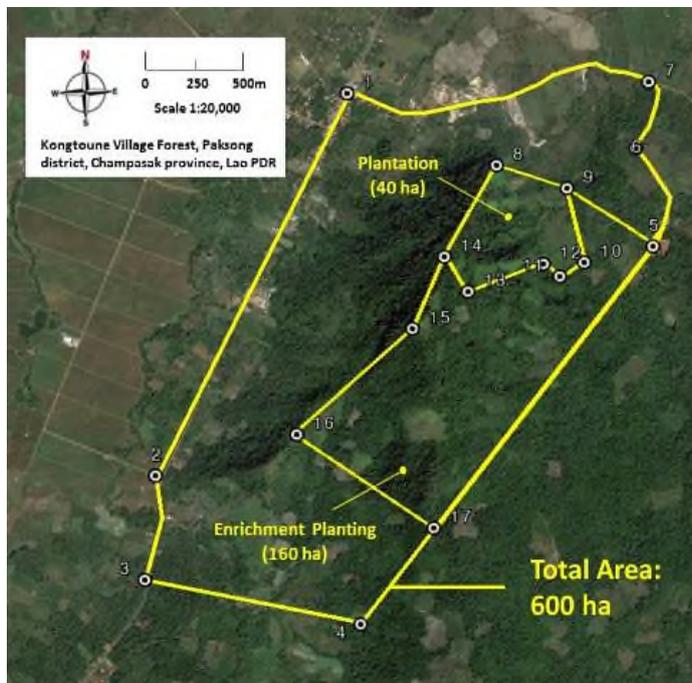


Figure 2.2: Forest Restoration Areas in Paksong district

In terms of vegetation, the area is characterized by degraded mixed deciduous forest in type, predominated by following vegetative species: *Paramichelia baillonii*, *Persea kurzii*, *Acacia sp.*, rattan, banana, Poaceae (bamboo etc.), ferns (*Diplazium esculentum* etc.), *Vatica cinerea*, *Magnolia sp.*, *Pterocarpus macrocarpus*. It appears that heavy shifting cultivation must have been recurrently practiced in this area for long period and thereby caused the forest to degrade.

In spite of being state protection forests, development activities such as brick production and stone milling appear to have been practiced illegally in the area. More details about the characteristics of

the project site are illustrated by pictures in Annex 1A.

As far as demographic features are concerned, the project site is located within the territory of Ban Kongtoun which is surrounded by five other villages. Most of villagers are relatively poor with average monthly income USD 25-35 and thus is heavily dependent on forest resources for survival.

Amongst the six villages Kongtoun village, where the project site is located, has a total population of 1,478 out of which 21% can serve as laborers. This village has indicated interests to participate in the project implementation, particularly in forest restoration and forest protection.

### 2.1.2 Specific outputs for Paksong Rehabilitation Site

In order to achieve the overall project objectives and outputs, Paksong rehabilitation site is expected to be produced as follows (Table 2.1):

Table 2.1: Major project outputs be produced in Paksong site

Objective 1	<p>Output 1.1: Sufficient quality seedlings of 170,000 seedlings are produced for ex-situ conservation plantation and enrichment planting.</p> <p>Output 1.2: About 40 ha of ex-situ conservation plantation have been established and maintained, which, in turn, produces future</p>
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	<p>quality seed sources of valuable native tree species;</p> <p>Output 1.3: About 160 ha of enrichment planting in Paksong have been successfully established and maintained;</p> <p>Output 1.4: About 400 ha of degraded forest land in the project site have been successfully regenerated through natural forest regeneration facilitated by village driven forest protection</p>
Objective 2	Output 2.1: Public and private sectors are aware and promote village based forest rehabilitation program;
Objective 3	Output 3.1: Local villagers both men and women, particularly, the poor have additional incomes from sale of seedlings, enrichment planting, maintenance and protection of rehabilitated areas.
Objective 4	<p>Output 4.1: Forestry sectors and local authority have knowledge and capacity on how to implement national forest rehabilitation policy at district and village level with an active participation of local villagers;</p> <p>Output 4.2: Villagers have capacity to produce a good quality of seedlings and implement forest rehabilitation activities;</p> <p>Output 4.3: Necessary materials and facilities for implementation and replication of village based forest rehabilitation have been sufficiently developed and made in place.</p> <p>Output 4.4 Financial and Project Management</p>

### 2.1.3 Expected outputs and associated activities

**Objective 1: To demonstrate village based forest rehabilitation concepts in degraded forests through the application of different forest regeneration measures: (1) establishment of ex-situ conservation plantation; (2) enrichment planting in degraded forest areas where natural regeneration cannot secure; (3) assisted natural regeneration where degraded forests can naturally generate;**

Four expected outputs are identified to produce the project objective 1, which include production of seedlings, ex-situ conservation plantation, enrichment planting in degraded forest areas, and assisted natural regeneration. Each output and associated activities are elaborated as follows:

**Output1.1: Sufficient quality seedlings of 170,000 seedlings are produced for ex-situ conservation plantation and enrichment planting in 200 ha.**

To fulfill the rehabilitation targets in Paksong, it was estimated that around 170,000 seedlings be required for the restoration of 200 ha in the project site. Out of this total amount, 80,000 seedlings will be applied for the establishment of 40 ha sized ex-situ conservation plantation; the other 80,000 for enrichment planting in 160 ha in degraded forests, and finally 10,000 are reserved seedlings. This total amount of seedlings will be produced within four years by contracted community/individual households, starting in 2017. In order to produce this output, two activities are to be implemented.

### Activity 1.1.1 Seeds collection

According to project design, these seedlings should be produced from quality seeds of three (3) native tree species which are commonly available in nearby areas, namely *Paramichelia baillonii*, *Persea kurzii* and *Spondias axillaris*. To meet the total demand on seedlings, it was estimated that in total around 65 kg of quality seeds shall be made available in 2016, out of which *Paramichelia baillonii* (50kg), *Persea kurzii* (10kg) and *Spondias axillaris* (5kg). Ideally the seeds should be collected by project staff or villagers; otherwise they should be purchased from trusted seed sources. Potential quality seed sources are illustrated in Figure 2.3.



Figure 2.3: Potential quality seed sources In Paksong district

### Activity 1.1.2 Seedlings production of 170,000 seedlings

To encourage community participation and ownership, seedling production will be contracted out to community, either to groups or individual households from the participating villages. To enable this, the project will provide quality seeds, loan for investment, trainings and all other relevant technical assistances. In this concept, contracted community/households will set up their own (temporary) nurseries and produce seedlings on their own investment in accordance to technical instructions from project staff, while the project will buy seedlings according to the terms and conditions agreed in the agreements.

Depending on the agreement, the cost of tree seeds and loan provided by the project shall be paid back to the project by deducting from the payment of seedlings. For budgeting purpose, the cost for seedling production was estimated at USD 0.6-0.8/seedling that has quality meeting minimum technical requirements.

**Output 1.2: About 40 ha of degraded forest land have been reforested through the establishment of ex-situ conservation plantation, which, in turn, produces future quality seed sources of valuable native tree species**

This output is to be produced through one of the three forest restoration measures that are designed to be applied in project concept, the forest plantation for ex-situ conservation. In order to produce this output, three main activities are to be implemented.

#### Activity 1.2.1: Survey and demarcation of project areas

As the first step of forest restoration, it is necessary to conduct a reconnaissance forest survey

throughout the project site. From the survey, all relevant information from the project site that are needed for detailed designing and planning each forest restoration measure will be produced.

To do this, at the first step, satellite images should be applied to form a basis for the division and delineation of the project site into specific forest restoration areas e.g. areas for the establishment of ex-situ conservation plantation, for enrichment planting, and protection forest for natural regeneration. Based on these satellite images the project site should be divided and boundaries delineated. In addition, these images should be also used for developing plans for enrichment planting.

This step should be followed by boundary demarcation to define project areas on the ground. In reality, the project boundary should be demarcated by 2 m wide of vegetative-free lines on the ground, additionally marked with indicative small sign boards and fixed with cement posts along the boundary line at a distance of 200 m.

For the preparation of detailed planting designs, a rapid ground survey should be conducted in order to double-check with information obtained from satellite images. The information could then be also used for designing and planning for both the establishment of the ex-situ conservation plantation and the enrichment planting. Detail technical instructions for these activities will be incorporated in training designs and introduced in the respective training sessions.

#### *Activity 1.2.2 Establishment of 40 ha of ex-situ conservation plantation*

In fact, this activity involves numerous sub-activities, including land clearing, fencing, establishing fire prevention lines, digging planting wholes, and planting seedlings. However, at this place, these sub-activities will be described in a combination.

In practice, the establishment and management of the plantation should be contracted out to community under comprehensive technical support, supervision and monitoring by government staff. To do that project staff should carefully design the ex-situ conservation plantation and develop management plan, define management protocols, including technical guidelines to be followed. In addition, all relevant management rules, including benefit sharing procedures that form contract terms and conditions should be developed.

Based on the provided designs, management plan, and regulations, negotiations should be made with interested community for signing contracts and engage them into the establishment and management of the plantations.

Once the contracts have been entered, it is to ensure that concerned communities have necessary skills to implement activities at every step. Otherwise, trainings, including on-the-job trainings, should be provided. In addition, regular follow up should be arranged to ensure quality of works.

Technically the plantation will be established on clear cut degraded forestlands, fenced with 4-lines of barbed wires, protected by surrounded 3 meters-wide fire protection lines, planted with tree native tree species in separated suitably sized blocks in spacing of 2 m x 3 m. For this spacing around 1,700 seedlings are required for one ha of land. Other specific technical specifications will be provided through trainings and technical handbooks.

#### *Activity 1.2.3 Maintenance and protection of the ex-situ conservation plantation*

In order to ensure successful forest regeneration, the project area need to be well maintained and protected where five (5) main activities are concerned, mortality survey, replanting, weeding,

thinning/pruning and fire protection.

Mortality survey should be conducted 1 year after tree planting. Based on the results, replanting should be conducted to replace dead planted seedlings. This is easier to be conducted after the first weeding which should take place in the same year. Weeding should also be conducted in second year, when planted seedlings are still young. After two years, seedlings are already competitive to weeds. The next tree care is thinning and pruning which are to be conducted when tree canopy is getting close, normally year 7. For these activities detail technical instruction will be given in the related training courses and field supervision.

Finally the most important measure for the maintenance and protection of a plantation is fire protection. This could be practiced by placing fire prevention lines surrounding the plantation which are normally placed while preparing the lands for the plantation and these lines should be cleared from vegetation every year.

After three or four year, this plantation shall be registered in accordance with the forest law and regulations related to plantation development.

**Output 1.3: 160 ha of degraded forest land have been regenerated through enrichment planting with native tree species**

Enrichment planting is one of reforestation measures for improving quality of degraded forests which could be done by planting seeds or seedlings. For successful forest restoration through this reforestation technique, a number of activities are involved, including preparation of planting areas, transplanting seedlings, weeding, mortality survey, replanting, and fire controls. These specific activities are grouped and discussed under 2 main activities.

*Activity 1.3.1 Conducting enrichment planting*

In terms of technical design, enrichment planting can be done by line plating or planting in patches depending on site conditions. Whatever method is used, planting areas must be prepared manually before actual plantings take place. For any planting method around 500-550 seedlings of native species are required per ha of land. To ensure survival, these seedlings must be kept at least 1 year in the nursery and they should reach at least 50 cm of height. Like any other reforestation activities, the enrichment planting work should be contracted out to villagers.

*Activity 1.3.2 Maintenance and protection of the ex-situ conservation plantation*

For successful reforestation, the planted areas must be well-maintained and protected. Similar silvicultural treatments as applied for forest plantation will be used. It includes two weeding in Year 1 and Year 2, and mortality survey and replanting in Year 1. No thinning and pruning is needed, but fire protection should be practiced through public consultations and forest patrols, which already discussed earlier. More detailed technical specifications will be provided through training and technical instruction handbooks.

According to Article 31 of the forest law, this area shall be registered as a state forest regeneration area.

**Output 1.4: About 400 ha of degraded forest land in the project site have been successfully regenerated through natural forest regeneration facilitated by village driven forest protection**

By nature degraded forests, assuming if there is no disturbance, can regenerate naturally by itself. However, the given assumption is, in the reality, is not true in the case of Laos. Thus, to assure an effective natural regeneration, Village Driven Forest Protection (VDFP) will be applied through the mobilization of the Village Forest Protection Groups (VFPGs).

#### *Activity 1.4.1 Establishment of VFPGs*

To apply the VDFP initiative, at least two VFPGs should be organized, trained and mobilized to assist government/village authority in forest protection and also in law enforcement. The main task of the VFPG is to conduct forest patrols to protect forests from offenders. The VFPG will also act as local key informants who work with and feed information to official forest inspectors.

It is important that the VFPGs have sufficient necessary skills and methodology to practice their roles. Thus, they should be provided with sufficient trainings, equipment and budget. Ideally, forest patrols should be traceable and planned in a systematic manner, using tools such as GIS, GPS combined with free satellite imageries from google earth. More technical details will be provided through in training courses.

#### *Activity 1.4.2 Conducting Village Driven Forest Patrolling (VDFP)*

In practice, the VFPGs are tasked to conduct a regularly traceable forest patrols at least once in a month. The patrols should be conducted in a systematic manner, covering the whole project site, including the areas covered by forest plantation and enrichment plantation. More frequently, the patrols should be conducted during dry season where forest fire normally occurs. It was estimated that 15 patrols should be conducted annually.

### **Objective 2: To generate broad public support on the implementation of national forest rehabilitation policy in general, village based forest rehabilitation program in particular;**

A broad public support on the implementation of national forest rehabilitation policy in is very important for successful implementation of forest rehabilitation program. To achieve the objective, at least, one output is identified as follows:

#### **Output 2.1: Public and private sectors are aware and promote village based forest rehabilitation program;**

There are numbers of awareness raising activities e.g. participatory local rules development, fire protection, development of posters, pamphlets and extension materials, etc. Three activities are proposed during the whole project period:

##### *Activity 2.1.1: Organizing inception workshop*

The inception workshop will be organized in Vientiane by the end of May 2016. The main objective of the workshop is to introduce the project concept, framework and implementation arrangement to Forestry sectors, local authority and stakeholders concerned, while announcing the official start of the project implementation. In addition, participants will be exposed to AFoCo forest restoration initiatives and future plan in Asia. This workshop will be shared by Director General of Department of Forestry and attended by 50 participants from concerned agencies at national, province and district concerned. Representative from AFoCo as well as representatives from the embassy of Republic of Korean will be invited to participate as well.

### *Activity 2.1.2: Signboard*

At least one signboard of 3m x 2m will be posted at the entry point to the project site, and at ex-situ conservation plot site to show important information.

At least two signboards will be placed at vantage points around the project site to show important information on enrichment planting site and its boundary.

### *Activity 2.1.3 Organize Arbor Day Events*

In order to raise awareness about preservation, development of forest, forestland and the natural environment of the multi-ethnic people, with the special inclusion of young generations, the State determines 1<sup>st</sup> June as National Arbor Day with the aim of creating abundant and sustainable use of forest resources. The project should to organize Arbor Day event yearly in the project site. A representative from government agencies, civil society organizations (CSOs), private sectors, Non-Government Organizations (NGOs) including International Non-Governmental Organizations (INGOs), etc., would be invited to join the events.

***Objective 3: To provide incentives to local villagers through various means, inter alia, strengthening capacity of villagers to produce a good quality of seedlings, seedling production, enrichment planting, maintenance and protection of rehabilitated areas.***

**Output 3.1: Local villagers both men and women, particularly, the poor have additional incomes from sale of seedlings, enrichment planting, maintenance and protection of rehabilitated areas**

Since the project intends to provide additional incomes to local villagers, particularly the poor from sale of seedlings, enrichment planting, maintenance and protection of rehabilitated areas, building the trust and believe of villagers is one of other important issues. In order to achieve this output, a number of community consultation meetings and contract developments between the project and villagers are required.

### *Activity 3.1.1: Conducting community consultation on seedlings production and sale, enrichment planting, maintenance and protection of rehabilitated areas*

Bearing in mind that the project is designed to be implemented with active participation from local authorities and villagers, intensive public consultations are therefore necessary and must be done at the earliest stage of the project implementation. The village consultation should be conducted at two different levels, at district and village or village cluster levels. For both levels, topics and issues related to villagers' benefits from seedlings production and sale, enrichment planting, maintenance and protection of rehabilitated areas would be informed. In addition, relevant modalities as well as conditions for them to implement rehabilitation activities would be discussed and agreed. It is also important that meeting minutes are prepared and signed with concerned village and cluster village authorities.

For effective consultation, it is important to involve concerned district authorities in leading the process. In practice, this could be done by organizing district and village consultation meetings, one at district and one in each concerned villages. In addition, project promotion should be publicized through different public media such as newspapers, radio and television.

### *Activity 3.1.2: Establishment of Village Forest Development Groups*

Based on villagers' willingness and decisions to implement what activities, interest local villagers may form a different *Village Forest Development Group* i.e. seedlings production group, enrichment planting group, and a group for managing plantation or enrichment sites. Each group should have clear roles, mandates, working systems, and have enough capacity to perform their given tasks.

#### *Activity 3.1.3: Contract Development*

Since the project intends to buy the seedlings from villagers with market price about USD 0.6-0.8/seedling. The estimated amount of seedlings is about 170,000 seedlings for both ex-situ and enrichment planting requirement. For this purpose, a contract agreement between project and producers shall be developed and registered in accordance with the Contract Law.

The wage implementing other activities i.e. enrichment planting and management of plantation or enrichment sites should be discussed and developed a contract with villagers in order to build the trust and believe of villagers.

#### **Objective 4: To strengthen capability of forestry sectors and local authority including villagers in implementing national forest rehabilitation policy, particularly village based forest rehabilitation program;**

Three expected outputs are identified to produce the project objective 2, which include improvement of (1) capacity of forestry sectors and local authority to implement national forest rehabilitation policy, (2) capacity of villagers to establish village nursery to produce a good quality seedlings, and (3) materials and facilities for village based forest rehabilitation. Each output and associated activities are elaborated as follows:

#### ***Output 4.1: Forestry sectors and local authority have knowledge and capacity on how to implement national forest rehabilitation policy at district and village level with an active participation of local villagers;***

As mentioned above, the GOL aims to rehabilitate degraded forests of up to 6 million ha and the targets for restoration in each forest category and province are generally defined. However, limited progresses have been made in the implementation due to many reasons. One of other reasons is that knowledge and capacity of Forestry sectors and local authority to implement national forest rehabilitation policy at district and village level with an active participation of local villagers is limited. This output is expected to achieve through the successful implementation of the following activities:

##### *Activity 4.1.1 Organizing study tours for stakeholders at policy and managerial levels*

Before starting the project implementation it is important that stakeholders at policy and managerial levels have clearly understanding the project concept and methodologies and are convinced by successful cases. For the purpose, the project plans to organize two study tours to two successful forest restoration cases in Asia, one to Korea and the other one to Vietnam.

The study tour to Korea will be organized for stakeholders at policy and managerial levels, including Chairman of PSC, concerned district governors, heads of PAFO, heads of PONRE, the NPD, and a senior staff from DoF who will be responsible for project monitoring. The study tour is planned for a week and will concentrate on learning from the practical experiences related the successful forest restoration of Korea.

The study tour to Vietnam on the other hand, will be organized for stakeholders at field managers and village authority, such as heads of DAFO, heads of DONRE, village headmen, and some senior district staff. The study tour will focus on methodological, organizational and technical experiences and will be organized for a week as well. More details on the study tours are shown in Annex 3A.

#### *Activity 4.1.2 Organizing training courses for forestry sectors at implementation level*

For forestry sectors or stakeholders who will be directly involved in the project implementation such as project staff, various technical trainings will be organized in country, ideally at the DoF Training Center in Vientiane Province. Based on training needs and designs, formal trainings in all related subject matter will be organized for project staff at the earlier stage of the project implementation, while later on these trained staff should provide trainings, mainly on-the-job trainings, to participating villagers. Trainings are foreseen to be delivered throughout the project life, but mainly concentrated in Year 1 and Year 2 where the majority of project activities start. In addition, refreshment trainings will be also organized as needed. More details could be seen in the indicative training plan as illustrated in Annex 3A.

### **Output 4.2: Villagers have capacity to produce a good quality of seedlings and implement forest rehabilitation activities;**

Since this project intends to engage local villagers to implement various forest rehabilitation activities, development of local villagers' capacity in these regards are very important. In order to achieve this output, a number of on the job-trainings including village consultation are required.

#### *Activity 4.2.1 Conducting village consultation for villagers' engagement in project implementation*

The main objective of this consultation is to obtain information what, how and under what conditions village authority and villagers are willing and decide to participate in project implementation.

At this stage it is important that village authorities and villagers clearly understand the project work plan, activities, villagers' benefits, and relevant modalities, as well as conditions for them to participate. This will help them to decide what activities they will participate as village authority, as the whole community or as individual engagement.

At the end of the consultation, the project team would have had sufficient information to work on what, whom, when, and how to involve village authorities and villagers in the project implantation. Information would also include what kinds of incentives maybe required to motivate active and effective participation of local community and authorities. It is also important that meeting minutes are prepared and signed with concerned village authorities.

#### *Activity 4.2.2 Organize various training modules for villagers*

Based on the village consultation and village trainings need, various training modules should be conducted. These include village temporally nursery establishment and management, seeds collection, seedlings production, enrichment planting, maintenance of rehabilitated areas including other important issues like patrolling, reporting, map reading and firefighting shall be provided to members of village groups. Skilled personnel from DoF Training Center in Vientiane Province or Faculty of Forestry (NUoL) or the Forestry Research Center of the National Agriculture and Forestry Research Institute (NAFRI) would be hired for short term to provide the service. The training will be organized at Houay Pamom Training center, which belongs to DoF. This training center has demonstration site related to forest restoration and will help participants getting insight on forest restoration work.

### **Output 4.3: Necessary materials and facilities for implementation and replication of village based forest rehabilitation have been sufficiently developed and made in place.**

To reach this expected output, two main activities are to be implemented which are discussed hereunder.

#### *Activity 4.3.1 Development of reforestation concept and related methodologies, procedures, and technical guidelines*

Institutional capacity, herein, is related to making in place forest restoration concept, relevant methodologies, procedures, and technical guidelines at earliest stage of project implementation. These will be used as referencing and guiding documents for designing and implementing the project details. Based on these information, project results will be recorded, reflected and rectified overtimes. This information will finally be used for concluding project implementation and lessons learnt for replication.

In reality, this activity will be conducted by one or a group of resource persons, who have knowledge and experiences in the related fields. The process of activities would include literature reviews against real social and environmental situations, consultations, and drafting, and printing the documents and implementation of activities should be started as soon as possible and will be concentrated in 2016.

#### *Activity 4.3.2 Recording, storing, synthesizing, updating and documenting all related concept, methodologies, procedures, technical guidelines and experiences.*

This activity will deal with Records keeping, synthesizing, updating and documenting all related concept, methodologies, procedures, technical guidelines and experiences based on protocols developed earlier. Since information will be collected and kept for a very long time, it is important to develop a simple records keeping database and should be handled on a regular basis by well trained staff.

At the end of the project, based on the recorded information, plus comments from stakeholders, experts will conclude everything, updating things that have been prescribed before, and document the new experiences and lessons learnt for further replication.

#### *Activity 4.3.3 Arrangement and procurement of materials*

The availability of all kinds of material resources those are necessary for the project implementation. These include, for instance, making available office space, furniture, office equipment, field equipment, vehicles, etc. Detailed list of required material related to equipment, tools, vehicles are illustrated in Annex 4A.

#### *Activity 4.3.4 Renovating/expanding field office and improvement of access roads*

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### *Output 4.4 Financial and Project Management*

To fulfill project objectives, financial and project management are also essential. The following activities are required:

1. Consultation fee for the technical experts, including honorarium
2. Project monitoring/field follow up
3. Annual meeting for the Project Steering Committee
4. Annual review and planning meeting for project team
5. Project performance assessments (Interim/Final)
6. Financial Audits (Interim / Final), and
7. Closing workshop

More details are defined in the budget plan.

#### **2.1.4 Project implementation schedules**

The table 2.2 depicts indicative time schedules for the implementation of all planned project activities which have been aligned under its respective objectives and outputs.

Table 2.2: Indicative time schedules for the implementation in Paksong site

No	Activities	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>Objective 1</b>	<b>To demonstrate village based forest rehabilitation concepts in degraded forests through the application of different forest regeneration measures: (1) establishment of ex-situ conservation plantation; (2) enrichment planting in degraded forest areas where natural regeneration cannot secure; (3) assisted natural regeneration where degraded forests can naturally generate;</b>										
Output 1.1	Sufficient quality seedlings of 170,000 seedlings are produced for ex-situ conservation plantation and enrichment planting in 200 ha										
Activity 1.1.1	Seeds collection										
Activity 1.1.2	Seedlings production of 170,000 seedlings										
Output 1.2	About 40 ha of degraded forest land have been reforested through the establishment of ex-situ conservation plantation, which, in turn, produces future quality seed sources of valuable native tree species										
Activity 1.2.1	Survey and demarcation of project areas										
Activity 1.2.2	Establishment of 40 ha of ex-situ conservation plantation										
Activity 1.2.3	Maintenance and protection of the ex-situ conservation plantation (Weeding, Mortality survey and replanting, Pruning and thinning)										
Output 1.3	160 ha of degraded forest land have been regenerated through enrichment planting with native tree species										
Activity 1.3.1	Conducting enrichment planting										
Activity 1.3.2	Maintenance and protection of the ex-situ conservation plantation (Weeding, Mortality survey and replanting, Pruning and thinning)										
Output 1.4	About 400 ha of degraded forest land in the project site have been successfully regenerated through natural forest regeneration facilitated by village driven forest protection										
Activity 1.4.1	Establishing and equipping Village Forest Protection Groups (VFPGs)										
Activity 1.4.2	Conducting Village Driven Forest Patrolling (VDFP) covering the whole project site										
<b>Objective 2</b>	<b>To generate broad public support on the implementation of national forest rehabilitation policy in general, village based forest rehabilitation program in particular</b>										
Output 2.1	Public and private sectors are aware and promote village based forest rehabilitation program										
Activity 2.1.1	Organizing inception workshop										
Activity 2.1.2	Signboard										

Activity 2.1.3	Organize Arbor Day Events																			
<b>Objective 3</b>	<b>To provide incentives to local villagers through various means, <i>inter alia</i>, strengthening capacity of villagers to produce a good quality of seedlings, seedling production, enrichment planting, maintenance and protection of rehabilitated areas</b>																			
Output 3.1	Local villagers both men and women, particularly, the poor have additional incomes from sale of seedlings, enrichment planting, maintenance and protection of rehabilitated areas																			
Activity 3.1.1	<i>Conducting community consultation on seedlings production and sale, enrichment planting, maintenance and protection of rehabilitated areas</i>																			
Activity 3.1.2	<i>Establishment of Village Forest Development Groups</i>																			
Activity 3.1.3	<i>Contract Development</i>																			
<b>Objective 4</b>	<b>To strengthen capability of forestry sectors and local authority including villagers in implementing national forest rehabilitation policy, particularly village based forest rehabilitation program</b>																			
Output 4.1	Forestry sectors and local authority have knowledge and capacity on how to implement national forest rehabilitation policy at district and village level with an active participation of local villagers																			
Activity 4.1.1	<i>Organizing study tours for stakeholders at policy and managerial levels</i>																			
Activity 4.1.2	<i>Organizing training courses for forestry sectors at implementation level</i>																			
Output 4.2	Villagers have capacity to produce a good quality of seedlings and implement forest rehabilitation activities																			
Activity 4.2.1	<i>Conducting village consultation for villagers' engagement in project implementation</i>																			
Activity 4.2.2	<i>Organize various training modules for villagers (on seedlings production, enrichment planting, etc.)</i>																			
Output 4.3	Necessary materials and facilities for implementation and replication of village based forest rehabilitation have been sufficiently developed and made in place																			
Activity 4.3.1	<i>Development of reforestation concept and related methodologies, procedures, and technical guidelines</i>																			
Activity 4.3.2	<i>Recording, storing, synthesizing, updating and documenting all related concept, methodologies, procedures, technical guidelines and experiences</i>																			
Activity 4.3.3	<i>Arrangement and procurement of materials (Procurement of vehicles, office and field equipment)</i>																			



## 2.1.5 Project budget

In order to achieve the project objectives as indicated in the expected outputs, a total budget of USD750, 000 is required within 10 years. The table 2.3 provides summary of budget that have been broken down to main project activities in line with outputs and objectives, while the detailed budget plan is illustrated in [Annex 5](#).

Table 2.3: Summary of budget, Paksong site

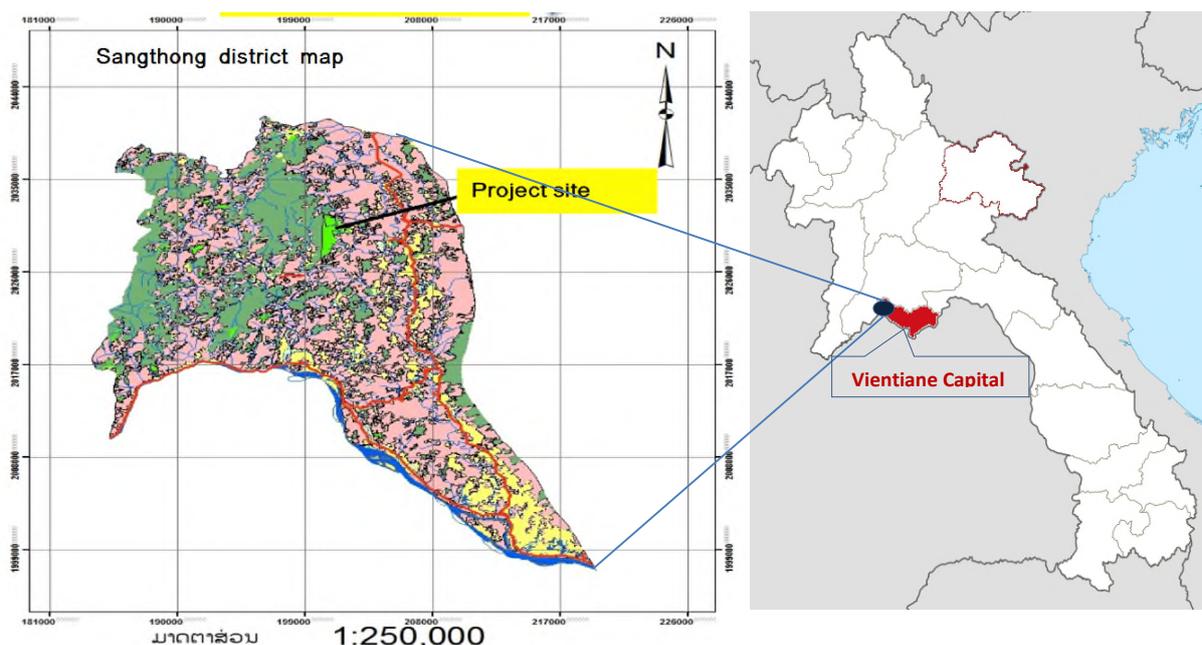
No	Description	Budget (USD)
<b>Objective 1</b>	<b>To demonstrate village based forest rehabilitation concepts in degraded forests through the application of different forest regeneration measures: (1) establishment of ex-situ conservation plantation; (2) enrichment planting in degraded forest areas where natural regeneration cannot secure; (3) assisted natural regeneration where degraded forests can naturally generate;</b>	<b>302,000</b>
Output 1.1	Sufficient quality seedlings of 170,000 seedlings are produced for ex-situ conservation plantation and enrichment planting in 200 ha	136,000
Output 1.2	About 40 ha of degraded forest land have been reforested through the establishment of ex-situ conservation plantation, which, in turn, produces future quality seed sources of valuable native tree species	58,000
Output 1.3	160 ha of degraded forest land have been regenerated through enrichment planting with native tree species	70,000
Output 1.4	About 400 ha of degraded forest land in the project site have been successfully regenerated through natural forest regeneration facilitated by village driven forest protection	38,000
<b>Objective 2</b>	<b>To generate broad public support on the implementation of national forest rehabilitation policy in general, village based forest rehabilitation program in particular</b>	<b>44,500</b>
Output 2.1	Public and private sectors are aware and promote village based forest rehabilitation program	44,500
<b>Objective 3</b>	<b>To provide incentives to local villagers through various means, <i>inter alia</i>, strengthening capacity of villagers to produce a good quality of seedlings, seedling production, enrichment planting, maintenance and protection of rehabilitated areas</b>	<b>12,000</b>
Output 3.1	Local villagers both men and women, particularly, the poor have additional incomes from sale of seedlings, enrichment planting, maintenance and protection of rehabilitated areas	12,000
<b>Objective 4</b>	<b>To strengthen capability of forestry sectors and local authority including villagers in implementing national forest rehabilitation policy, particularly village based forest rehabilitation program</b>	<b>354,000</b>
Output 4.1	Forestry sectors and local authority have knowledge and capacity on how to implement national forest rehabilitation policy at district and village level with an active participation of local villagers	35,000
Output 4.2	Villagers have capacity to produce a good quality of seedlings and implement forest rehabilitation activities	21,000
Output 4.3	Necessary materials and facilities for implementation and replication of village based forest rehabilitation have been sufficiently developed and made in place	105,000
Output 4.4	<i>Financial and Project Management</i>	183,000

## 2.2 Project description, Sangthong Site

### 2.2.1 Project site

The project site is situated in Sangthong District of Vientiane Capital, central part of Lao PDR, which is about 60 km to the north of Vientiane Capital (Fig. 2.4).

Sangthong District is one of the poorest districts in Vientiane capital. The district has a total area of 75,980 ha, of which forest area accounts for 55%, agriculture land 33%, wetland and other land use 10% of the total land areas (Table 2.4). Existing forestlands are highly fragmented with high degree of degradation.



Land Use	Area (ha)	Percent (%)
Forest land	42,365.00	55.76
Agriculture land	25,567.00	33.65
Wetland	4,238.00	5.58
Other land uses	3,810.00	5.01
<b>Total</b>	<b>75,982</b>	<b>100.00</b>

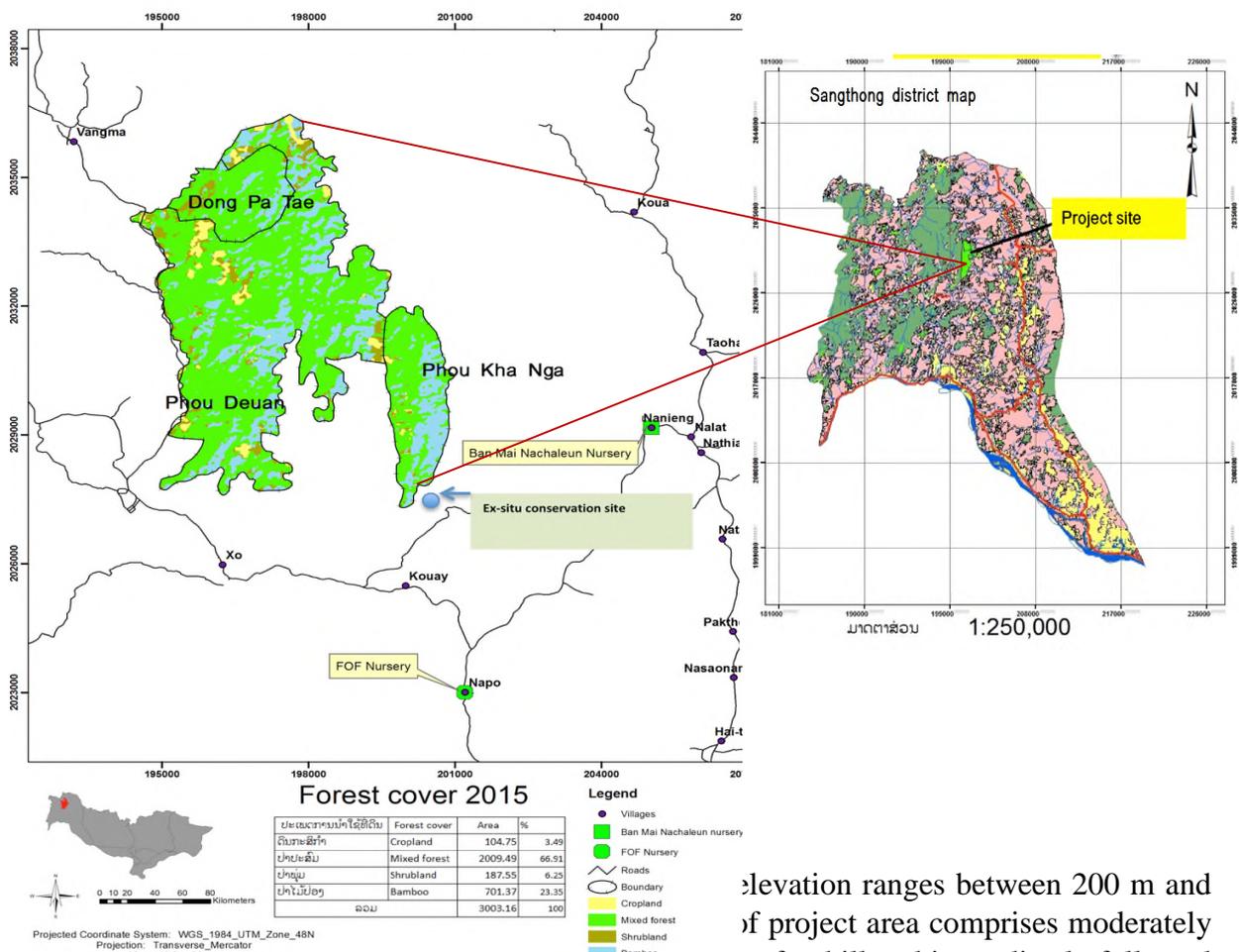
(Source: Sangthong DAFO, 2015)

Four main soil groups (FAO/UNESCO Classification) are formed in the Sangthong district, namely: *Alisols*, *Acrisols*, *Luvisols* and *Regosols*. Acrisols and Alisols are dominant with about 80% of the total area. The climate of the project area is monsoonal, with a rainy season lasting from May to September and a pronounced dry season during the rest of the year. However, in some years rain also falls in January and February. The average rainfall is 1,558.02 mm/year. The rainfall will be high during June to October in each year. The average mean temperature of the site is 31.9°C and maximum mean temperature of 35.9°C was recorded in April. The project area has received the sunlight of 6.5 hours/day in average.

The project site covers about 3000 ha plus ex-situ conservation plantation 20 ha which falls under state forest. The area has been classified as Protection Forest Areas, namely Dong Pa

Tae, Phou Douan and Phou Kha Nya. Fig 2.5 shows the project area which is divided into three zones for management by this project:

- (1) The state land of 20 ha is proposed for establishment of ex-situ conservation plantation.
- (2) Phou Kha Nya Mountain is state land of about 630 ha. This area is proposed for enrichment planting for forest restoration.
- (3) Dong Pa Tae and Phou Deaun Protection Forest of about 2,370 ha is proposed for protection.



elevation ranges between 200 m and of project area comprises moderately to foothill and immediately followed by flatland. Most parts of the hills are still covered by natural vegetation characterized by degraded mixed deciduous forest and secondary forests with sizable mixture of bamboo; while major proportion of foothill with relatively flat topography is mostly occupied with different types of agriculture production. Most of the degraded forest is characterized by secondary forest, fallow forest and out-cropped area. More details about the characteristics of the project site are illustrated by pictures in Annex 1B.

There are five villages, which are surrounding the project site, comprise of 1,135 households and have a total population of 4,754 inhabitants, of which 2,217 inhabitants are women (Table 2.5). Their main occupation is farmer covering about 80% of total population, who rely on paddy cultivation, shifting cultivation, gardening, livestock raising and collection of Non-

timber forest products.

Table 2.5: Population of five villages in Sangthong site

Population	Name of Village				
	Nong Boua	Nachaleun+Namiang	Taohai	Khouay	Xo
Total population	377	1,098	737	653	1,889
Women	177	467	352	306	915
Household	83	272	174	179	427
Main occupation	Farmer	Farmer	Farmer	Farmer	Farmer

(Source: Nong Boua, Namiang and Tauhai villages, 2015)

Land area of five villages is totally 16,646.60 ha, of which forest area covers 7,021.14 ha and agricultural land covers 8,109.29 ha (Table 2.6). Current land use data is based on data collected at five villages and at district level. Each village has its own boundary and forest area in the village in which community forest clearly identified for the village use. There are three major land use types including forest, agriculture and settlement. The detail of each land use is described below:

Table 2.6: Land use of five villages in Sangthong site

S.N	Land use types	Villages (ha)				
		Nong Boua	Namiang	Tau Hai	Khouay	Xo
<b>I</b>	<b>Forest area</b>	<b>504.40</b>	<b>592.28</b>	<b>1,751.46</b>	<b>977.00</b>	<b>3,196.00</b>
1.1	Village conservation forest	80.00	192.65	1,074.90	342.00	320.00
1.2	Village protection forest	345.00	20.00	0.00	268.00	326.00
1.3	Village Utility forest	43.00	102.11	623.49	162.00	2,550.00
1.4	Sacred forest	18.00	16.98	53.00		
1.5	Tree plantation	18.40	260.54	1,112	205.00	
<b>II</b>	<b>Agricultural land</b>	<b>599.52</b>	<b>747.17</b>	<b>1,434.60</b>	<b>1,398.00</b>	<b>3,930.00</b>
2.1	Paddy field	378.00	295.96	388.00	575.00	400.00
2.2	Shifting cultivation	24.30	40.55	30.00	592.00	3,420.00
2.3	Garden and other uses	16.50	21.90	620.00		70.00
2.4	Rangeland	180.72	388.76	396.60	231.00	40.00
<b>III</b>	<b>Settlement area</b>	<b>32.00</b>	<b>15.68</b>	<b>15.40</b>	<b>14.33</b>	<b>27.00</b>
<b>IV</b>	<b>Other land use</b>				<b>38.76</b>	<b>1,373.00</b>
	<b>Total</b>	<b>1,135.92</b>	<b>1,355.13</b>	<b>3,201.46</b>	<b>2,428.09</b>	<b>8,526.00</b>

(Source: Five villages, 2015)

Livestock raising of five villages is by free grazing during dry season and tethering during cultivation season. Total number of livestock is 3,396 heads (Table 2.7). Free ranching livestock and fire are reported to be major injuries to existing forests of the area during dry season.

Table 2.7 Livestock production in five villages

S.N	Livestock	Name of Villages
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		Nong Boua	Nachaleun+ Namiang	Tau Hai	Khouay	Xo
1	Buffalo	67	79	100	468	95
2	Cattle	234	350	900	235	520
3	Goat	46	45	80	27	150
	<b>Total</b>	<b>347</b>	<b>474</b>	<b>1,080</b>	<b>730</b>	<b>765</b>

(Source: Nong Boua, Namiang and Tauhai, Khouay and Xo villages, 2015)

## 2.2.2 Specific outputs for Sangthong rehabilitation site

In order to achieve the overall project objectives and outputs, Sangthong rehabilitation site is expected to be produced (Table 2.8) as follows:

Table 2.8: Major project outputs be produced in Sangthong site

Objective 1	<p>Output 1.1: Sufficient quality seedlings of 285,000 seedlings are produced for ex-situ conservation plantation and enrichment planting.</p> <p>Output 1.2: About 20 ha of ex-situ conservation plantation have been established and maintained, which, in turn, produces future quality seed sources of valuable native tree species;</p> <p>Output 1.3: About 630 ha of enrichment planting in Paksong have been successfully established and maintained;</p> <p>Output 1.4: About 2,370 ha of Dong Pa Tae and Phou Deaun Protection Forest in Sangthong districts have been protected by local villagers.</p> <p>Output 1.5: Barren land of individual landowners have been supported through agroforestry extension services</p>
Objective 2	Output 2.1: Public and private sectors are aware and promote village based forest rehabilitation program;
Objective 3	Output 3.1: Local villagers both men and women, particularly, the poor have additional incomes from sale of seedlings, enrichment planting, maintenance and protection of rehabilitated areas.
Objective 4	<p>Output 4.1: Forestry sectors and local authority have knowledge and capacity on how to implement national forest rehabilitation policy at district and village level with an active participation of local villagers;</p> <p>Output 4.2: Villagers have capacity to produce a good quality of seedlings and implement forest rehabilitation activities;</p> <p>Output 4.3: Necessary materials and facilities for implementation and replication of village based forest rehabilitation have been sufficiently developed and made in place.</p> <p>Output 4.4 Financial and Project Management</p>

### 2.2.3 Expected outputs and associated activities

**Objective 1: To demonstrate village based forest rehabilitation concepts in degraded forests through the application of different forest regeneration measures: (1) establishment of ex-situ conservation plantation; (2) enrichment planting in degraded forest areas where natural regeneration cannot secure; (3) assisted natural regeneration where degraded forests can naturally generate;**

Four expected outputs are identified to produce the project objective 1, which include production of seedlings, ex-situ conservation plantation, enrichment planting in degraded forest areas, and assisted natural regeneration. Each output and associated activities are elaborated as follows:

**Output1.1: Sufficient quality seedlings of 285,000 seedlings are produced for ex-situ conservation plantation and enrichment planting.**

To fulfill the rehabilitation targets in Sangthong, it was estimated that about 285,000 seedlings be needed, of which 24,000 seedling for ex-situ conservation plantation in 20 ha and 261,000 seedlings for enrichment planting in 630 ha. This total amount of seedlings will be produced within four years by contracted community/individual households and other agencies, starting in 2017. The following activities are related to the output 1.1

*Activity 1.1.1: Seedling production for ex-situ conservation plantation in 20 ha*

The six commercial species species, namely *Tectona grandis*, *Pterocarpus macrocarpus*, *Azelia xylocarpa*, *Sindora cochinchinensis*, *Hopea odorata* and *Dipterocarpus alatus*, have been identified. To ensure the quality of seedlings, seeds of these species shall be collected from the known and trusted sources and seedlings productions are carried out in a nursery of Faculty of Forestry or Ban Mai-Nachaleun under close supervision of field staff, which is located away from ex-situ conservation plot about 7-8 km. Seedling production will be in the form of contract base. The price of seedling varies from USD 0.6-0.8/seedling based on species including transport from nursery to temporary shed near planting site. The price of seedlings for ex-situ conservation may be higher than those of enrichment planting, because the seeds shall come from trust sources to ensure that these plantations will be good seed source for forest rehabilitation in the future.

The temporary shed with size of 6 m x 10 m will be establish near planting site to keep the seedlings before planting. About two villagers (1 man and 1 woman) will be temporarily hired for maintenance. The total number of seedling required for ex-situ conservation is about 24,000 seedlings including replanting.

*Activity 1.1.2: Seedling production for enrichment planting in 630 ha in Phou kha Ya*

Seedling production will be in the form of contract-base with villagers. The project will support villagers from five villages, who have knowledge about nursery, to produce seedlings for enrichment planting. The project will buy the seedlings from villagers with market price about USD 0.6/seedling. This is to support villagers to generate their income from the project and to build up corporate responsibility to protect enrichment-planting site. To ensure the

quality of seedlings, the project will also provide quality seeds, loan for investment, trainings and all other relevant technical assistances. In this concept, contracted community/households will set up their own (temporary) nurseries and produce seedlings on their own investment in accordance to technical instructions from project staff.

In each year, the project has to fix the amount of seedling and required species to be planted and then develop a contract with villagers to produce seedlings. The amount of seedlings will be based on the area to be planted in each year and capacity of villagers to plant. However, the project has to determine on project period, capacity of villagers to produce seedlings and planting and then fix the area by year.

The enrichment planting will be completed within five years; the planting area will be 126 ha/year with 52,333 seedlings needed. For line planting requires 261,664 seedlings in 629 ha (416 seedlings/ha). For gap planting requires 235,875 seedlings in 629 ha (375 seedlings/ha).

**Output 1.2: About 20 ha of ex-situ conservation plantation have been established and maintained, which, in turn, produces future quality seed sources of valuable native tree species;**

The development of ex-situ conservation plantation includes a number of activities. Since the area for planting in Sangthong site has been identified and has a clear boundary, the main activities need to be done is a land clearance, establishment, and protection and maintenance.

*Activity 1.2.1: Land clearance*

Planting site of ex-situ conservation plot of 20 ha will be cleared cut and divided into 18 blocks of one ha each. Each tree species selected will be planted in three blocks separately. As a result, there will be 18 ha for 6 tree species. Planting site preparation will involve clear cutting and burning of the planting block at least one and half month before planting time.

*Activity 1.2.2: Establishment of Planting 20 ha of ex-situ conservation plantation*

A block of twenty hectares state land located at the southernmost part of and easiest accessible to the project site will be made available for ex-situ conservation of the 6 tree species. The plantation is expected to use as seed source to supply seeds for forest restoration programme in the province as well as in the country in the future.

Planting will be done, as far as possible, in separate blocks for each of the six species to minimize risk from fire and livestock, which is an important threat in the project site. However, certain species would be planted in split or fragmented plots due to its specific characteristics and light and soil conditions requirements. In such case, gradient survey to locate suitable site will be conducted before land preparation. *Dipterocarpus alatus* and *Hopea odorata* will be planted in wetter spots with deeper soil. *Tectona grandis* will be planted in areas with alluvial soil while the remaining species will be planted in three blocks separately depending on site condition.

Planting space may vary for different species to be planted. For *Tectona grandis* (teak), closer spacing would be applied. Around 4,000 seedlings would be required for each of the species including replacement planting. Actual planting will be carried out from the first year of the project and might be delayed till the third year depending on the starting time of the project, seed availability of certain species and appropriate age and size of seedlings of each species

for planting.

Staking and pit digging have to be completed three weeks prior to planting time to let the soil dry and to kill soil pests. Pit size should be 30cm x 30cm x 30cm along the contour with planting space of 3 m x 3m. Planting should be done immediately during the onset of monsoon and should not, in any case, be delayed beyond the second rain.

*Activity 1.2.3: Protection and maintenance of ex-situ conservation plots*

Planting blocks will be fenced with barbwire in three lines and fire lines of 6m width will be provided around plantation blocks.

Mortality survey followed by replacement planting will be carried out from the third up to sixth year to ensure that all the planted seedlings reach survival stage. After one year planting, the staff shall perform mortality survey to investigate the number of dead seedlings.

Three weeding operations will be done during first year, twice during second year and once in the third year. Other tending operations including pruning and cleaning will be carried out regularly every year from year 4 onwards until the plantation is fully established. In some cases, if the planted seedlings are not well grown, the suitable fertilizer will be appropriately applied.

Thinning would be required for certain species like teak. If no mechanical thinning were not planned for, one silvicultural thinning<sup>16</sup> and pruning would be required when the plantation reaches 9-10 years old.

Clearing of vegetation along the fire lines will be carried out every year before the dry season to protect the plantation from fire. Soft burning will be done inside the plantation to reduce fuel materials as well as fire hazards. To reduce cost of maintenance and protection; agreements might be signed with interested local villagers to grow suitable agriculture crops along the fire lines.

Plantation journal will be developed for each planting block/plot to keep records of every operations and information.

After three or four year, this plantation shall be registered in accordance with the forest law and regulations related to plantation development.

**Output 1.3: About 630 ha of enrichment planting in Phou Kha Ya have been successfully established and maintained;**

Enrichment planting is undertaken in fallow forests and degraded natural forest areas in Phou Kha Ya. Although the area of about 630 ha has been identified, other important activities need to be done as follows:

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<sup>16</sup> Thinning is a silvicultural operation where the main objective is to reduce the density of trees in a stand, improve the quality and growth of the remaining trees and produce a saleable product. Thinning can also achieve other objectives such as altering the species composition of a stand, improving the health of the remaining trees or disturbing an established ground flora to enhance opportunities for natural regeneration (Gary Kerr and Jens Haufe, 2011)

### *Activity 1.3.1: Forest survey and Boundary demarcation*

The total area of protection forest proposed is about 3,000 ha including whole protection forest area. However, enrichment planting will be applied mainly at Phou Kha Nya with the total area of 630 ha. Phou Kha Nya shall be surveyed in detail and mapped at appropriate scale to design enrichment planting at an initial stage of the project implementation. The map of appropriate scale is very useful to facilitate the enrichment planting, monitoring and for protection as well.

After survey, the demarcation of boundary of Phou Kha Nya shall be carried out to protect from encroachment and for monitoring. The cement posts of suitable height will be fixed along the boundary. The total periphery of Phou Kha Nya is about 12.8 km and about 128 cement posts are required to fix at every 100 m distance. The cement posts will be visibly colored to show people about the boundary of reforestation site to avoid undesired activities from villagers.

### *Activity 1.3.2 Conducting enrichment planting*

As the implementation of project relies on people 'participation, the project has to define enrichment planting area for each village and organize villager's group in each villages to perform enrichment planting through contract with villager's group. The villager's groups have to be officially approved by village administrative committee, DAFO/DoNRE and District Governor. They will receive wage by planting cost/ha.

The villager's groups will carry out project activities such as land clearance, transporting of seedlings, planting, weeding, firefighting and etc. The direct profit that villagers can gain from the project is wage of enrichment planting and other works related to their labor. The labor force requirement is 8,554.4 man/day for line planting and 8,051.2 man/day for gap planting. The enrichment planting activity includes transport seedlings from nursery to planting site, clearance of planting site, staking, planting.

The wage for enrichment planting will be calculated based on labour force input in each enrichment planting approach. For example: labour force for line planting is 13.6 man-day/ha multiplying by current wage cost (13.6 man-day/ha x USD 8/day = USD 108/ha) and for gap planting is 12.8 man-day (12.8x USD 8/day=USD 102/ha). For approaches of enrichment planting technique, please see annex 5 as example.

### *Activity 1.3.3 Maintenance and protection of the enrichment site*

For successful reforestation, the planted areas must be well-maintained and protected. Similar silvicultural treatments as applied for forest plantation will be used. It includes two weeding in Year 1 and Year 2, and mortality survey and replanting in Year 1. No thinning and pruning is needed, but fire protection should be practiced through public consultations and forest patrols. More detailed technical specifications will be provided through training and technical instruction handbooks.

According to Article 31 of the forest law, this area shall be registered as a state forest regeneration area.

***Output 1.4: About 2,370 ha of Dong Pa Tae and Phou Deaun Protection Forest in Sangthong districts have been protected by local villagers.***

The Government of Lao PDR places much importance on villages. The village is a local administrative territory at the grassroots level. The role and functions of each village administration are, among other, to protect and preserve natural resources and the environment within the village. Each village, a village forestry unit shall be established. The unit shall take a leading role in monitoring and preventing adverse activities that may cause harmful effect to the forest, NTFPs, water resources in forests and the environment, such as illegal cutting of trees, forest burning and any actions that caused damage and destroy the forest on time<sup>17</sup>. Under this unit, Village Forest Protection Groups (VFPGs) should be established.

*Activity 1.4.1: Organize Village Forest Protection Groups (VFPGs)*

Six villages surrounding the project site such as Nong Boua, Namiang, Taohai, Khouay, Xo and Vangma villages shall be formed VFPGs to work in the forest relating to whole forest protection activity. In each village will have one group and the member will be five at minimum depending on free consent. These groups will be officially endorsed and the members will get incentive from the project during work in the forest. However, these patrolling groups are likely volunteer at village level.

*Activity 1.4.2: Conducting Village Driven Forest Patrolling (VDFP)*

The project must develop patrolling schedule and report format with villagers groups. Patrolling will observe encroachment, illicit felling and forest fire. The whole 2,300 ha Protection Forest (Dong Pa Ate and Phou Deuan) must be divided into zones and each village group will be responsible for each zone, which is close to their villages. Whatever occurs in their zone, they will be responsible and take prompt action to tackle with and also report to project field assistant and project managers immediately.

***Output 1.5: Barren land of individual landowners have been supported through agroforestry extension services***

To build up the public and private partnership, the project will support private landowners around the project site. The agroforestry will be promoted in the form of provision of technical assistance and seedling providing support to landowners. This approach will not only increase forest cover but also provide other direct and indirect benefits to people in the project area. The following activities are required:

*Activity 1.5.1: Consultation meeting*

Keeping in mind that, the private land to be provided seedlings for agroforestry shall be around the foothill of Phou Kha Nya where enrichment planting will be carried out. These land plots along Phou Kha Nya shall be highly prioritized.

Before distribution of seedlings, the project shall organize consultation meeting with private landowners who are interested in agroforestry in the form of contract-base. Those who want to join the project shall inform the project staff to register and then the project staff have to develop contract with them to ensure that those villagers conforming to the goal of the project.

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<sup>17</sup> Forest Law, article 108 “Rights and duties of Village Forestry Units”

#### *Activity 1.5.2: Contract development*

After registering, the landowners shall enter into the contract with obligations given by the project in accordance with the Contract Law.

#### *Activity 1.5.3: Seedling distribution*

The landowners, who have entered into contract, will get free seedlings from project. The amount of seedlings will be calculated based on land area size. Species to be planted will be decided by landowners. Suitable agroforestry will be applied and technical training will be provided interested households. For paddy field, live fencing and line planting will be introduced. Around 25,000 seedlings would be provided by the project, based on budget, which is allocated for USD 15,000.

#### *Activity 1.5.4 Monitoring and mapping*

After distribution of seedlings to private landowners, the project staffs have to monitor and survey the planted area and then use GPS marking the coordinates of the land area for mapping. All registered land plots have to be appeared in the map to facilitate the monitoring work. This is to ensure that all seedlings provided to private landowners are traceable.

**Objective 2: To generate broad public support on the implementation of national forest rehabilitation policy in general, village based forest rehabilitation program in particular;**

A broad public support on the implementation of national forest rehabilitation policy in is very important for successful implementation of forest rehabilitation program. To achieve the objective, at least, one output is identified as follows:

***Output 2.1: Public and private sectors are aware and promote village based forest rehabilitation program;***

There are numbers of awareness raising activities e.g. participatory local rules development, fire protection, development of posters, pamphlets and extension materials, etc. Three activities are proposed during the whole project period:

#### *Activity 2.1.1: Organizing inception workshop*

This activity will be jointly implemented with Paksong activities. The detail description of the activity is similar to Paksong site as described in activities 3.1.1 above.

#### *Activity 2.1.2: Signboard*

At least one signboard of 3m x 2m will be posted at the entry point to the project site, and at ex-situ conservation plot site to show important information.

At least two signboards will be placed at vantage points around the project site to show important information on enrichment planting site and its boundary.

#### *Activity 2.1.3 Organize Arbor Day Events*

The project should to organize Arbor Day event yearly in the project site. A representative

from government agencies, civil society organizations (CSOs), private sectors, Non-Government Organizations (NGOs) including International Non-Governmental Organizations (INGOs), etc., would be invited to join the events.

**Objective 3: To provide incentives to local villagers through various means, inter alia, strengthening capacity of villagers to produce a good quality of seedlings, seedling production, enrichment planting, maintenance and protection of rehabilitated areas.**

***Output 3.1: Local villagers both men and women, particularly, the poor have additional incomes from sale of seedlings, enrichment planting, maintenance and protection of rehabilitated areas***

Since the project intends to provide additional incomes to local villagers, particularly the poor from sale of seedlings, enrichment planting, maintenance and protection of rehabilitated areas, building the trust and believe of villagers is one of other important issues. In order to achieve this output, a number of community consultation meetings and contract developments between the project and villagers are required.

*Activity 3.1.1: Conducting community consultation on seedlings production and sale, enrichment planting, maintenance and protection of rehabilitated areas*

The village consultation should be conducted at two different levels, at district and village or village cluster levels. For both levels, topics and issues related to villagers' benefits from seedlings production and sale, enrichment planting, maintenance and protection of rehabilitated areas would be informed. In addition, relevant modalities, as well as conditions for them to participate would be discussed and agreed. It is also important that meeting minutes are prepared and signed with concerned village and cluster village authorities.

*Activity 3.1.2: Establishment of Village Forest Development Groups*

Based on villagers' willingness and decisions to implement what activities, interest local villagers may form a different groups i.e. seedlings production group, enrichment planting group, and a group for managing plantation or enrichment sites. Each group should have clear roles, mandates, working systems, and have enough capacity to perform their given tasks.

*Activity 3.1.3: Contract Development*

Since the project intends to buy the seedlings from villagers with market price about USD 0.6-0.8/seedling. The estimated amount of seedlings is about 285,000 seedlings both ex-situ and enrichment planting requirement. For this purpose, a contract agreement between project and producers shall be developed and registered in accordance with the Contract Law.

The wage implementing other activities i.e. enrichment planting and management of plantation or enrichment sites should be discussed and developed a contract with villagers in order to build the trust and believe of villagers.

**Objective 4: To strengthen capability of forestry sectors and local authority including villagers in implementing national forest rehabilitation policy, particularly village based forest rehabilitation program;**

Three expected outputs are identified to produce the project objective 2, which

include improvement of (1) capacity of forestry sectors and local authority to implement national forest rehabilitation policy, (2) capacity of villagers to establish village nursery to produce a good quality seedlings, and (3) provision of materials and facilities for village based forest rehabilitation. Each output and associated activities are elaborated as follows:

***Output 4.1: Forestry sectors and local authority have knowledge and capacity on how to implement national forest rehabilitation policy at district and village level with an active participation of local villagers;***

Three expected outputs are identified to produce the project objective 2, which include improvement of (1) capacity of forestry sectors and local authority to implement national forest rehabilitation policy, (2) capacity of villagers to establish village nursery to produce a good quality seedlings, and (3) materials for village based forest rehabilitation. Each output and associated activities are elaborated as follows:

This output is expected to achieve through the successful implementation of the following two activities.

*Activity 4.1.1 Organizing study tours for stakeholders at policy and managerial levels*

The study tour to Korea and Vietnam will be organized. These activities will be jointly implemented with Paksong activities, but target participants will focus on stakeholders at policy and managerial levels from Vientiane Capital and Sangthong District. The detail description of the activity is similar to Paksong site as described in activities 2.1.1 above. More details on the study tours are shown in Annex 3B.

*Activity 4.1.2 Organizing training courses for forestry sectors at implementation level*

For forestry sectors or stakeholders who will be directly involved in the project implementation such as project staff, various technical trainings will be organized in country, ideally at the DoF Training Center in Vientiane Province. The detail description of the activity is similar to Paksong site as described in activities 2.1.2 above. More details on the training modules are shown in Annex 3B.

***Output 4.2: Villagers have capacity to produce a good quality of seedlings and implement forest rehabilitation activities;***

Since the project intends to engage local villagers to implement various forests rehabilitation activities the same with Paksong case, development of local villagers' capacity in these regards are very important. In order to achieve this output, a number of on the job-trainings including village consultation are required.

*Activity 4.2.1 Conducting village consultation for villagers' engagement in project implementation*

The main objective of this consultation is to obtain information what, how and under what conditions village authority and villagers are willing and decide to participate in project implementation.

At this stage it is important that village authorities and villagers clearly understand the project work plan, activities, villagers' benefits, and relevant modalities, as well as conditions for them to participate. This will help them to decide what activities they will participate as

village authority, as the whole community or as individual engagement.

At the end of the consultation, the project team would have had sufficient information to work on what, whom, when, and how to involve village authorities and villagers in the project implantation. Information would also include what kinds of incentives maybe required to motivate active and effective participation of local community and authorities. It is also important that meeting minutes are prepared and signed with concerned village authorities.

#### *Activity 4.2.2 Organize various training modules for villagers*

Based on the village consultation and village trainings need, various training modules should be conducted. These include village temporally nursery establishment and management, seeds collection, seedlings production, enrichment planting, maintenance of rehabilitated areas including other important issues like patrolling, reporting, map reading and firefighting shall be provided to members of village groups. Skilled personnel from DoF Training Center in Vientiane Province or Faculty of Forestry (NUoL) or the Forestry Research Center of the National Agriculture and Forestry Research Institute (NAFRI) would be hired for short term to provide the service. The training will be organized at Houay Pamom Training center, which belongs to DoF. This training center has demonstration site related to forest restoration and will help participants getting insight on forest restoration work.

#### ***Output 4.3: Necessary materials for implementation and replication of village based forest rehabilitation have been sufficiently developed and made in place.***

To reach this expected output, two main activities are to be implemented which are discussed hereunder.

##### *Activity 4.3.1 Development of reforestation concept and related methodologies, procedures, and technical guidelines*

This activity shall be conducted as same as Pkasong. The detail description of the activity is similar to Paksong site as described in activities 4.3.1 above.

##### *Activity 4.3.2 Recording, storing, synthesizing, updating and documenting all related concept, methodologies, procedures, technical guidelines and experiences.*

This activity shall be conducted as same as Pkasong. The detail description of the activity is similar to Paksong site as described in activities 4.3.2 above.

##### *Activity 4.3.3 Procurement and infra-structure development*

The availability of all kinds of material resources those are necessary for the project implementation. These include, for instance, making available office space, furniture, office equipment, field equipment, vehicles, etc. Detailed list of required material related to equipment, tools, vehicles are illustrated in Annex 4B.

##### *Activity 4.3.4 Renovating/expanding field office and improvement of access roads, fencing materials for ex-situ plantation*

Improvement of existing access roads about 4 km from Nongbua village to the project site (ex-situ conservation plot) would also be required to facilitate transportation of seedlings and patrolling.

#### ***Output 4.4 Financial and Project Management***

To fulfill project objectives, financial and project management are also essential. The following activities are required:

1. Consultation fee for the technical experts, including honorarium
2. Project monitoring/field follow up
3. Annual meeting for the Project Steering Committee
4. Annual review and planning meeting for project team
5. Project performance assessments (Interim/Final)
6. Financial Audits (Interim / Final), and
7. Closing workshop

More details are defined in the budget plan.

#### **2.2.4 Project implement schedule**

The table 2.9 depicts time schedules for the implementation of all planned project activities, which have been aligned under its respective objectives and outputs.

Table 2.9: Indicative time schedules for the implementation in Sangthong site

No	Activities	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Objective 1	To demonstrate village based forest rehabilitation concepts in degraded forests through the application of different forest regeneration measures: (1) establishment of ex-situ conservation plantation; (2) enrichment planting in degraded forest areas where natural regeneration cannot secure; (3) assisted natural regeneration where degraded forests can naturally generate;										
Output 1.1	Sufficient quality seedlings of 285,000 seedlings are produced for ex-situ conservation plantation and enrichment planting										
Activity 1.1.1	Seedlings production for ex-situ plantation										
Activity 1.1.2	Seedlings production for enrichment planting										
Output 1.2	About 20 ha of degraded forest land have been reforested through the establishment of ex-situ conservation plantation, which, in turn, produces future quality seed sources of valuable native tree species										
Activity 1.2.1	Land clearance										
Activity 1.2.2	Establishment of 20 ha of ex-situ conservation plantation										
Activity 1.2.3	Maintenance and protection of the ex-situ conservation plantation (Weeding, Mortality survey and replanting, Pruning and thinning)										
Output 1.3	About 630 ha of degraded forest land have been regenerated through enrichment planting with native tree species										
Activity 1.3.1	Forest survey and Boundary demarcation										
Activity 1.3.2	Conducting enrichment planting										
Activity 1.3.3	Maintenance and protection of the ex-situ conservation plantation (Weeding, Mortality survey and replanting, Pruning and thinning)										
Output 1.4	About 2,370 ha of degraded forest land in the project site have been successfully regenerated through natural forest regeneration facilitated by village driven forest protection										
Activity 1.4.1	Establishing and equipping Village Forest Protection Groups (VFPGs)										
Activity 1.4.2	Conducting Village Driven Forest Patrolling (VDFP) covering the whole project site										

Output 1.5	Barren land of individual landowners have been supported through agroforestry extension services										
Activity 1.5.1	Consultation meeting										
Activity 1.5.2	Contract development										
Activity 1.5.3	Seedling distribution										
Activity 1.5.4	Monitoring and mapping										
Objective 2	To generate broad public support on the implementation of national forest rehabilitation policy in general, village based forest rehabilitation program in particular										
Output 2.1	Public and private sectors are aware and promote village based forest rehabilitation program										
Activity 2.1.1	Organizing inception workshop										
Activity 2.1.2	Signboard										
Activity 2.1.3	Organize Arbor Day Events										
Objective 3	To provide incentives to local villagers through various means, inter alia, strengthening capacity of villagers to produce a good quality of seedlings, seedling production, enrichment planting, maintenance and protection of rehabilitated areas										
Output 3.1	Local villagers both men and women, particularly, the poor have additional incomes from sale of seedlings, enrichment planting, maintenance and protection of rehabilitated areas										
Activity 3.1.1	Conducting community consultation on seedlings production and sale, enrichment planting, maintenance and protection of rehabilitated areas										
Activity 3.1.2	Establishment of Village Forest Development Groups										
Activity 3.1.3	Contract Development										
Objective 4	To strengthen capability of forestry sectors and local authority including villagers in implementing national forest rehabilitation policy, particularly village based forest rehabilitation program										
Output 4.1	Forestry sectors and local authority have knowledge and capacity on how to implement national forest rehabilitation policy at district and village level with an active participation of local villagers										
Activity 4.1.1	Organizing study tours for stakeholders at policy and managerial levels										
Activity 4.1.2	Organizing training courses for forestry sectors at implementation level										
Output 4.2	Villagers have capacity to produce a good quality of seedlings and implement forest rehabilitation activities										
Activity 4.2.1	Conducting village consultation for										

	<i>villagers' engagement in project implementation</i>												
Activity 4.2.2	<i>Organize various training modules for villagers (on seedlings production, enrichment planting, etc.)</i>												
Output 4.3	Necessary materials and facilities for implementation and replication of village based forest rehabilitation have been sufficiently developed and made in place												
Activity 4.3.1	<i>Development of reforestation concept and related methodologies, procedures, and technical guidelines</i>												
Activity 4.3.2	<i>Recording, storing, synthesizing, updating and documenting all related concept, methodologies, procedures, technical guidelines and experiences</i>												
Activity 4.3.3	<i>Procurement and infra-structure development</i>												
Activity 4.3.4	<i>Renovating/expanding field office and improvement of access roads</i>												
Output 4.4	Financial and Project Management												
Activity 4.4.1	<i>Annual Work plan development</i>												
Activity 4.4.2	<i>Fee for technical services, including honorarium</i>												
Activity 4.4.3	<i>Running costs for the project management at field office</i>												
Activity 4.4.4	<i>Running costs for the project management at Central Office (DoF)</i>												
Activity 4.4.5	<i>Project monitoring/field follow up</i>												
Activity 4.4.6	<i>Annual meeting for the Project Steering Committee</i>												
Activity 4.4.7	<i>Annual review and planning meeting for project team</i>												
Activity 4.4.8	<i>Project performance assessments (Interim/Final)</i>												
Activity 4.4.9	<i>Financial Audits (Interim / Final)</i>												
Activity 4.4.10	<i>Closing workshop</i>												

## 2.2. 5 Project budget

In order to achieve the project objectives as indicated in the expected outputs, a total budget of USD750, 000 is required within 10 years. The table 2.10 provides summary of budget that have been broken down to main project activities in line with outputs and objectives, while the detailed budget plan is illustrated in [annex 5B](#).

Table 2.10: Summary of budget, Sangthong site

No	Description	Budget
Objective 1	To demonstrate village based forest rehabilitation concepts in degraded forests through the application of different forest regeneration measures: (1) establishment of ex-situ conservation plantation; (2) enrichment planting in degraded forest areas where natural regeneration cannot secure; (3) assisted natural regeneration where degraded forests can naturally generate;	388,700
Output 1.1	Sufficient quality seedlings of 285,000 seedlings are produced for ex-situ conservation plantation and enrichment planting	176,200
Output 1.2	About 20 ha of degraded forest land have been reforested through the establishment of ex-situ conservation plantation, which, in turn, produces future quality seed sources of valuable native tree species	29,000
Output 1.3	About 630 ha of degraded forest land have been regenerated through enrichment planting with native tree species	113,500
Output 1.4	About 2,370 ha of degraded forest land in the project site have been successfully regenerated through natural forest regeneration facilitated by village driven forest protection	53,000
Output 1.5	Barren land of individual landowners have been supported through agroforestry extension services	17,000
Objective 2	To generate broad public support on the implementation of national forest rehabilitation policy in general, village based forest rehabilitation program in particular	40,500
Output 2.1	Public and private sectors are aware and promote village based forest rehabilitation program	40,500
Objective 3	To provide incentives to local villagers through various means, inter alia, strengthening capacity of villagers to produce a good quality of seedlings, seedling production, enrichment planting, maintenance and protection of rehabilitated areas	12,000
Output 3.1	Local villagers both men and women, particularly, the poor have additional incomes from sale of seedlings, enrichment planting, maintenance and protection of rehabilitated areas	12,000
Objective 4	To strengthen capability of forestry sectors and local authority including villagers in implementing national forest rehabilitation policy, particularly village based forest rehabilitation program	271,300
Output 4.1	Forestry sectors and local authority have knowledge and capacity on how to implement national forest rehabilitation policy at district and village level with	35,000

	an active participation of local villagers	
Output 4.2	Villagers have capacity to produce a good quality of seedlings and implement forest rehabilitation activities	36,000
Output 4.3	Necessary materials and facilities for implementation and replication of village based forest rehabilitation have been sufficiently developed and made in place	82,000
Output 4.4	Financial and Project Management	118,300

## **CAPTER III: PROJECT MANAGEMENT AND ARRANGEMENT**

### **3.1 Project Management and Arrangement**

The project management and implementation is directed by the Project Steering Committee (PSC), which is chaired by the Director General of DoF, seconded by District Governor(s), with membership from the DDG of DFRM, DDG of NAFRI, Vice Dean of FoF, Heads concerned PAFOs and PONREs, a representative from AFoCo Secretariat, and the Project Director who serves as PSC' secretary. The PSC will meet annually to discuss and endorse Annual Progresses Report (APR) and Annual Work Plan and Budget (AWPB).

Under the supervision from PSC, DOF, representing by a National Project Director (NPD), is a leading organization for the implementation of this project. The NPD is responsible for overseeing the overall project implementation and management, including monitoring, while regularly communicate with AFoCo Project Manager/Secretariat. Apart from overall project management, the NPD is responsible for the preparation of progress reports and AWPB to PSC, DG of DoF, and AFoCo Secretariat.

With endorsement from PSC, the NPD approves AWPB, and the respective Quarterly Work Plans and Budgets (QWPB) prepared and proposed by the Provincial Project Coordination Team (PPCT). His/her tasks are also to advise as well as provide guidance on various aspects related to the project management and implementation at provincial and district levels.

The PPCT, appointed by concerned Head of PAFO, is directly responsible to the NPD to manage, supervise, monitor, and report the project implantation, including financial management, within the province. In particular, he/she is responsible for elaborating the AWPB into QWPB, supervise, monitor its implementation and report back progresses and financial statement to the NPD in accordance to the provided M&E framework.

At district level, Site Coordinator Team (SCT) appointed by respective District Governor will responsible for supervising and leading field operations based on the supervision from NPD and the approved QWPB. In particular, the team will be working closely with concerned local authorities, including village authorities to materialize the project objectives as conceptualized and planned. Under a team of qualified technical staff who will be tasked to work (advising and guiding) with village authority, community and villagers to implement specific project activities.

Based on the interests, under leadership of village authority, villagers will be organized into specific groups to enter into reforestation contracts with the project, e.g. seedling production groups, forest plantation groups, enrichment planting groups, forest protection groups, etc. These groups will engaged in the implementation of project activities against payments as agreed in the respective reforestation contracts they entered. Basically it should be performance based contracts.

To ensure a smooth corroboration and fruitful results, regular consultations should be made amongst stakeholders at different levels, especially at district and village levels. Knowing that the concept of involvement of local community in the forest restoration is new to the areas, frequent internal reviews and lessons withdrawals for regular adaptations would be a valuable compass indicating at successes. It is also important that every report be shared with local authorities and all levels. For more details, please see also Figure 4.

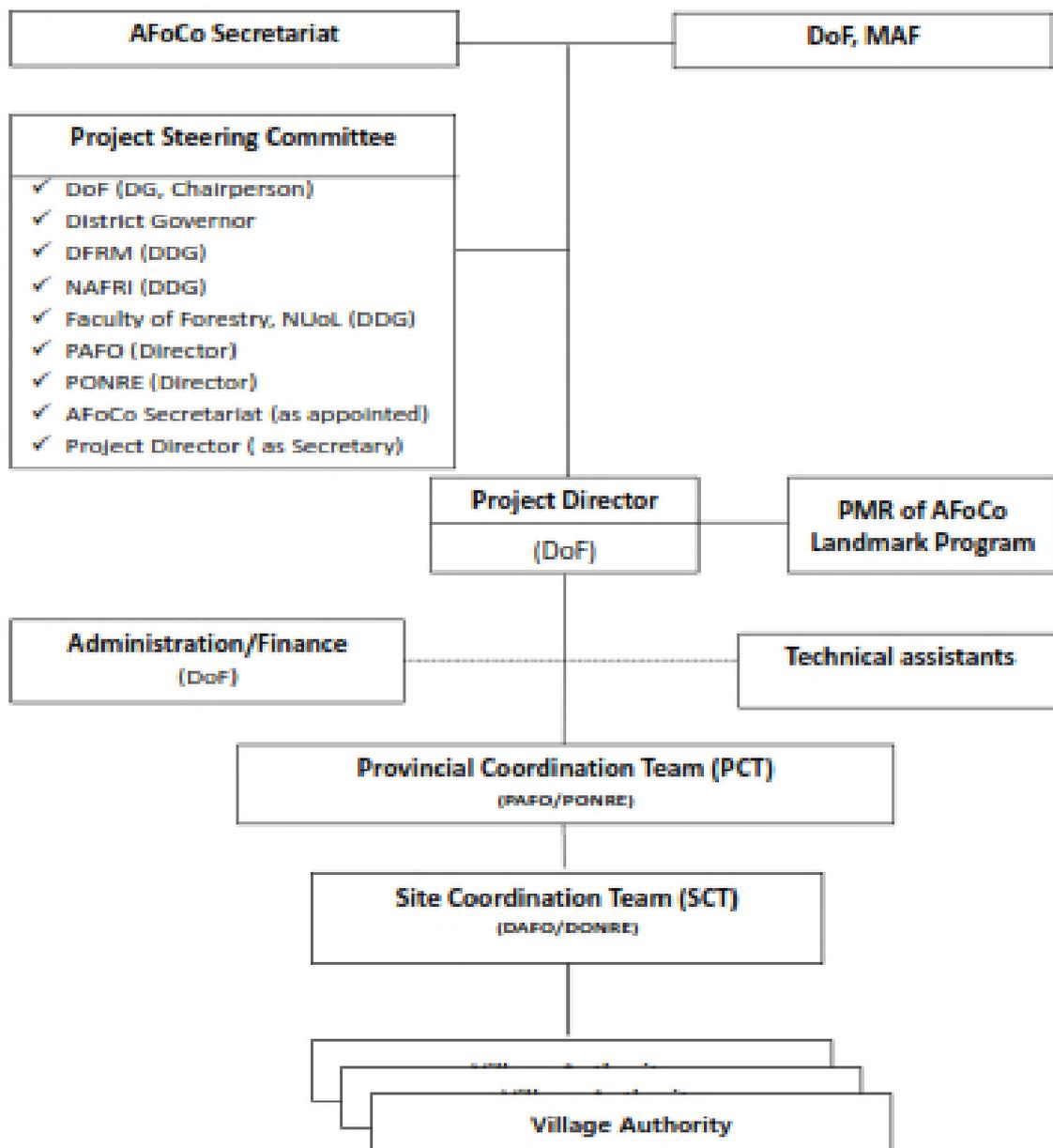


Figure 1.1: Project Management and Coordination Chart

### 3.2 Project Monitoring, Evaluation and Reporting

Project monitoring, evaluation and reporting are the main tasks of NPD, PPM, and DPC and these must be conducted on a regular basis based on the project M&E guideline and the project local framework as defined in Annex 2A and 2B.

In fact, there are internal and external project monitoring and evaluation (M&E). The internal M&E should be conducted regularly at each management level by the appointed managers based on the M&E framework on a quarterly basis and conducted against the set of performance indicators for each project output as specified in the project logical framework.

To allow M&E to take place, project managers at all levels must record progresses and expenses from the implementation of all project activities on a regular basis. These information must then be synthesized and summarized at the end of each quarter. This is to be used for the progress evaluation against the given indicators of each expected output at each timeline. At the end comments about influencing factors should be also provided to each of evaluation results, especially for the failure to meet the expected targets. These information should then be discussed in quarterly progress reports. Based on this, the superiors will consider performance and supervise improvements or doing together.

An informal way of monitoring and evaluation is to follow up progress in the field in a mission, where responsible persons report progresses and constrains encountered, if any. These progresses will be participatory evaluated and based up on advises are provided on spots.

External M&E is mainly required by donors and conducted by expert team. It normally happen twice in a project life, midterm and final evaluation. For this project one midterm review and final evaluation were planned for 2020 and 2025 respectively.

Another kind of M&E is financial audit which is to be conducted by external auditors. The main objective of the audit is to ensure that budget is used in accordance to budget plans, the relevant procedures and regulations. The frequency of the audit depends on decision of donor. For this project two financial audits are required with will be conducted at midterm and at the end of project life.

Reporting is an important part of project management which must be conducted on a regular basis by concerned project managers at each management level to its superior, e.g. Site Coordinator reporting to Provincial Manager, Provincial Project Manager to Project Director, and Project Director to PSC, DG of DOF and AFoCo Secretariat.

Reports must be prepared and submitted on quarterly and annual basis containing progresses made in each reporting period. In addition the progresses should be also discussed against expected outputs under each project objective and reported by activities. Discussion should also made to reflect reasons why progress failed to meet the respective expected targets. At the end, recommendations should made on how to improve performance in the coming periods.

Attached to each progress report, it is essential to prepare financial report indicating actual expenditures against the estimated budget of each activities, output and objective respectively. While project financial management is agreed to follow the Lao financial procedures, thus financial management guideline and procedures of DOF will be applied.

### **3.3 Risk and Risk Management**

To achieve project objectives, number of risks could be anticipated. Some of the risks could influenced by internal factors, the other by external factors. The most important risk at this place would be related to forest fire which often occur in the dry season. However, the risk could be managed through comprehensive public consultations, setting fire prevention lines, regular

forest patrols by well-trained VFPGs, firefighting if occurring.

The other important risk rests with the capacity of project management and implementation, especially when engaging community in the project implementation. The risk could be addressed through sufficient trainings and coaching, regular monitoring, attractive incentives scheme.

### **3.4 Project Sustainability**

Under project sustainability one expects to create and successfully launch a project that is capable of continuing to generate benefits for an extended period of time. In the same way the project is intended. To serve this purpose, from the earliest step, the project puts high effort to encourage local community to participate in the implementation, while also sharing benefits to them as much as possible. By doing so, local community will not only be happy from direct benefits they have gained from the project, but certainly they will also feel as having ownership on the project and careful to what they have contributed. The second driving force that might lead towards sustainability is the project concentration on local capacity building and consultation. Assuming if local capacity deeply understand project roles, benefits, and they have capacity they would continue supporting project efforts. Final attempt of the project is to develop project implementation manuals and other documentation containing project successful methodologies and experiences which can be used for replication elsewhere. Having these in place, the project is confident to lead towards sustainability.

*Annex 1: Characteristics of the project in Paksong site and Sangthong site*

A. Characteristics of the project in Paksong site



Example of area for forest plantation



Example of area for forest plantation



Example of area for enrichment planting



Example of area for natural regeneration

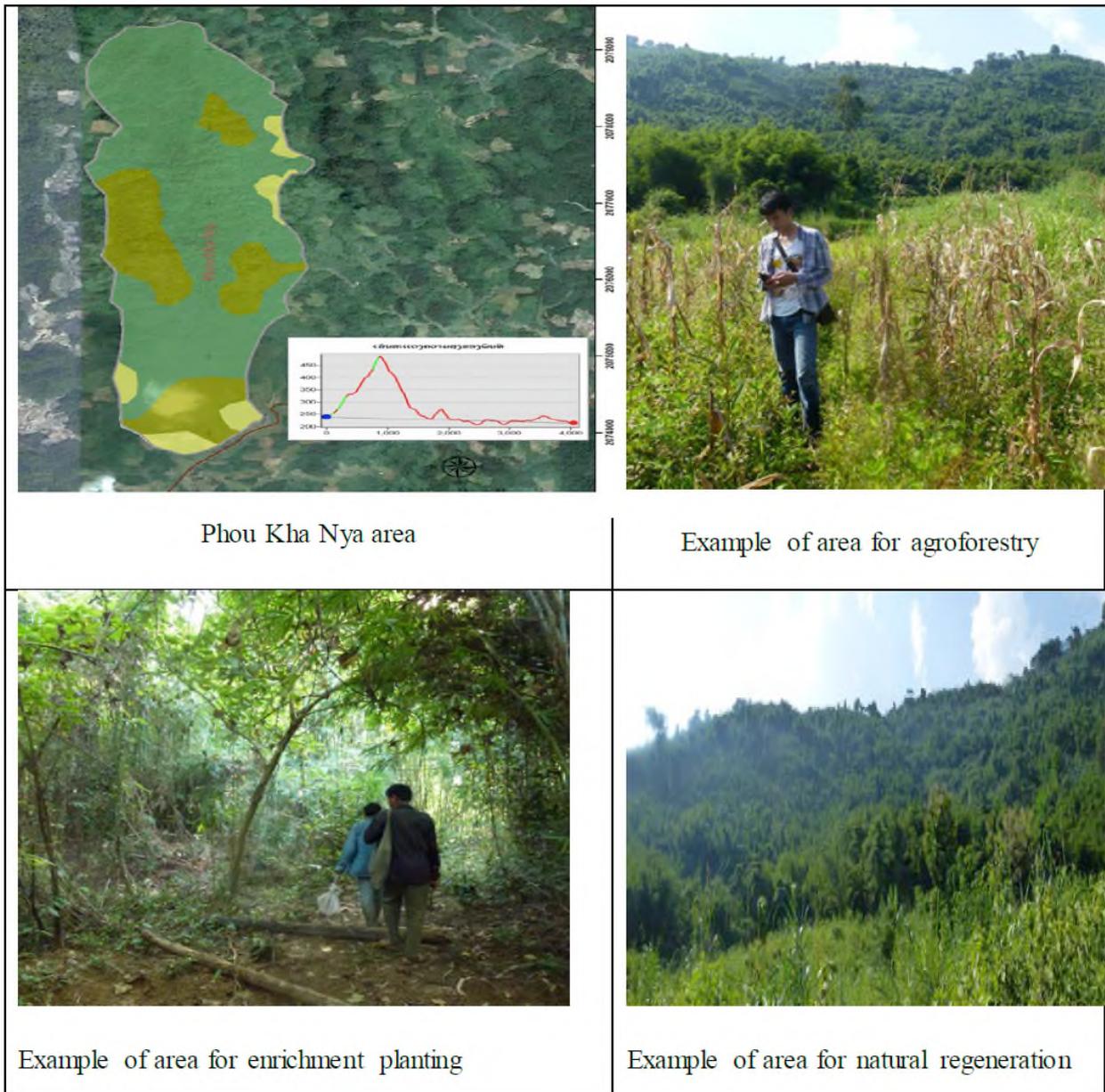


Example of development activities practiced in the project site



Example of development activities practiced in the project site

**B. Characteristics of the project in Sangthong site**



**Annex 2: Project Logical Framework of Paksong and Sangthong (2016-2025)**

A. Project Logical Framework of Paksong

No	Activities	Verifiable Performance Indicators	Responsible party	2016	2017	2018	2019	2020	2021	2022	2023	2,024	2,025
<b>Objective 1</b>	<b>To demonstrate village based forest rehabilitation concepts in degraded forests through the application of different forest regeneration measures: (1) establishment of ex-situ conservation plantation; (2) enrichment planting in degraded forest areas where natural regeneration cannot secure; (3) assisted natural regeneration where degraded forests can naturally generate;</b>												
Output 1.1	Sufficient quality seedlings of 170,000 seedlings are produced for ex-situ conservation plantation and enrichment planting in 200 ha												
Activity 1.1.1	<i>Seeds collection</i>	Sufficient tree seeds (~70 kg) of tree native tree species from trusted mother trees collected/procured and made available for seedling production	Project staff and supplier in the contract										
Activity 1.1.2	<i>Seedlings production of 170,000 seedlings</i>	170,000 quality seedlings of three native tree species produced at the project nursery	Project staff and villagers related										
Output 1.2	About 40 ha of degraded forest land have been reforested through the establishment of ex-situ conservation plantation, which, in turn, produces future quality seed sources of valuable native tree species												
Activity 1.2.1	<i>Survey and demarcation of project areas and preparation of ex-situ and enrichment plan</i>	Report and map	Project staff and villager's group										
Activity 1.2.2	<i>Establishment of 40 ha of ex-situ conservation plantation</i>	40 ha planted with three native valuable species	Project staff and villager group										
Activity 1.2.3	<i>Maintenance and protection of the ex-situ conservation plantation (Weeding, Mortality survey and replanting, Pruning and thinning)</i>	Weeding schedule, mortality survey report and number of replanting seedlings	Project staff and villager's group										
Output 1.3	160 ha of degraded forest land have been regenerated through enrichment planting with native tree species												
Activity 1.3.1	<i>Preparation and Conducting enrichment planting</i>	Annual work plan, number of seedling	Project staff and villager'group										
Activity 1.3.2	<i>Maintenance and protection of the ex-situ conservation plantation (Weeding, Mortality survey and replanting, Pruning and thinning)</i>	Schedule and report of each activity	Project staff										
Output 1.4	About 400 ha of degraded forest land in the project site have been successfully regenerated through natural forest regeneration facilitated by village driven forest protection												

Activity 1.4.1	Establishing and equipping Village Forest Protection Groups (VFPGs)	List of villager's group approved by DAFO and district governor	Project staff															
Activity 1.4.2	Conducting Village Driven Forest Patrolling (VDFP) covering the whole project site	Schedule and report of each villager's group	Villager's group of each village															
<b>Objective 2</b>	To generate broad public support on the implementation of national forest rehabilitation policy in general, village based forest rehabilitation program in particular																	
Output 2.1	Public and private sectors are aware and promote village based forest rehabilitation program																	
Activity 2.1.1	Organizing inception workshop	Report	Project manager															
Activity 2.1.2	Signboard	Signboard with information of project are in place	Project staff															
Activity 2.1.3	Organize Arbor Day Events and fire protection campaign	Report, poster or pamphlet	Project manager and project staff															
<b>Objective 3</b>	To provide incentives to local villagers through various means, inter alia, strengthening capacity of villagers to produce a good quality of seedlings, seedling production, enrichment planting, maintenance and protection of rehabilitated areas																	
Output 3.1	Local villagers both men and women, particularly, the poor have additional incomes from sale of seedlings, enrichment planting, maintenance and protection of rehabilitated areas																	
Activity 3.1.1	<i>Conducting community consultation on seedlings production and sale, enrichment planting, maintenance and protection of rehabilitated areas</i>	Village authorities and villagers near the project site regularly consulted by project staff, report	Project manager and project staff															
Activity 3.1.2	<i>Establishment of Village Forest Development Groups</i>	List of village forest development groups approved by DAFO and district governor	Project staff															
Activity 3.1.3	<i>Contract Development</i>	Contract with villager's group	Project staff															
<b>Objective 4</b>	To strengthen capability of forestry sectors and local authority including villagers in implementing national forest rehabilitation policy, particularly village based forest rehabilitation program																	
Output 4.1	Forestry sectors and local authority have knowledge and capacity on how to implement national forest rehabilitation policy at district and village level with an active participation of local villagers																	
Activity 4.1.1	<i>Organizing study tours for stakeholders at policy and managerial levels</i>	5 pax to Korea and 7 pax to Vietnam, x 5 days	Project manager															
Activity 4.1.2	<i>Organizing training courses for forestry sectors at implementation level</i>	Two-week x 1 training x 10 pax., including honorarium)	project manager															
Output 4.2	Villagers have capacity to produce a good quality of seedlings and implement forest rehabilitation activities																	
Activity 4.2.1	<i>Conducting village consultation for villagers' engagement in project implementation</i>	Village authorities and villagers near the project site regularly consulted by project staff	Project staff and project manager															

Activity 4.2.2	<i>Organize various training modules for villagers (on seedlings production, enrichment planting, etc.)</i>	Five-day training x 15 pax x 3 times	Project staff and project manager																
Output 4.3	Necessary materials and facilities for implementation and replication of village based forest rehabilitation have been sufficiently developed and made in place																		
Activity 4.3.1	<i>Development of reforestation concept and related methodologies, procedures, and technical guidelines</i>	Complete manual on forest restoration	Local expert and project staff																
Activity 4.3.2	<i>Recording, storing, synthesizing, updating and documenting all related concept, methodologies, procedures, technical guidelines and experiences</i>	Recording and documentation in place	Project staff																
Activity 4.3.3	<i>Arrangement and procurement of materials (Procurement of vehicles, office and field equipment)</i>	All materials and equipment in places	Project staff and project manager																
Activity 4.3.4	<i>Renovating/expanding field office and improvement of access roads, fencing materials for ex-situ plantation</i>	Field office, road are approved and fencing of ex-situ site	Project staff and villager/contract person																
Output 4.4	Financial and Project Management																		
Activity 4.4.1	<i>Work plan and Annual workplan development</i>	Work plan in place	Local consultant																
Activity 4.4.2	<i>Fee for technical services, including honorarium</i>	Receipt and report	Project manager																
Activity 4.4.3	<i>Running costs for the project management at field office</i>	Monthly, quarterly and annual reports	Project manager																
Activity 4.4.4	<i>Running costs for the project management at Central Office (DoF)</i>	Monthly, quarterly and annual reports (Use Paksong budget)	Field staff																
Activity 4.4.5	<i>Project monitoring/field follow up</i>	Reports	Project manager																
Activity 4.4.6	<i>Annual meeting for the Project Steering Committee</i>	Report (Use Paksong budget)	Project manager																
Activity 4.4.7	<i>Annual review and planning meeting for project team</i>	Report	Project manager																
Activity 4.4.8	<i>Project performance assessments (Interim/Final)</i>	Reports (Use Paksong budget)	Expert/consulting company																
Activity 4.4.9	<i>Financial Audits (Interim / Final)</i>	Report (Use Paksong budget)	Expert/consulting company																
Activity 4.10	<i>Closing workshop</i>	Report	Project manager																

B. Project Logical Framework of Sangthong

No	Activities	Verifiable Performance Indicators	Responsible party	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>Objective 1</b>	<b>To demonstrate village based forest rehabilitation concepts in degraded forests through the application of different forest regeneration measures: (1) establishment of ex-situ conservation plantation; (2) enrichment planting in degraded forest areas where natural regeneration cannot secure; (3) assisted natural regeneration where degraded forests can naturally generate;</b>												
Output 1.1	Sufficient quality seedlings of 285,000 seedlings are produced for ex-situ conservation plantation and enrichment planting in 250 ha												
Activity 1.1.1	<i>Seedlings production for ex-situ plantation</i>	Contract with seedling supplier and 24,000 seedlings	Project staff and supplier in the contract										
Activity 1.1.2	<i>Seedlings production for enrichment planting</i>	Contract with villagers and 261,664 seedlings	Project staff and villagers related										
Output 1.2	About 20 ha of degraded forest land have been reforested through the establishment of ex-situ conservation plantation, which, in turn, produces future quality seed sources of valuable native tree species												
Activity 1.2.1	<i>Land clearance</i>	20 ha are clear cut, burning and divided into 18 blocks of 1 ha each	Project staff and villager's group										
Activity 1.2.2	<i>Establishment of 20 ha of ex-situ conservation plantation</i>	18 ha planted with six native valuable species	Project staff and villager group										
Activity 1.2.3	<i>Maintenance and protection of the ex-situ conservation plantation (Weeding, Mortality survey and replanting, Pruning and thinning)</i>	Weeding schedule, mortality survey report and number of replanting seedlings	Project staff and villager's group										
Output 1.3	630 ha of degraded forest land have been regenerated through enrichment planting with native tree species												
Activity 1.3.1	<i>Forest survey and Boundary demarcation</i>	Report and map	Project staff and local expert										
Activity 1.3.2	<i>Conducting enrichment planting</i>	Annual work plan, number of seedling	Project staff and villager'group										
Activity 1.3.3	<i>Maintenance and protection of the ex-situ conservation plantation (Weeding, Mortality survey and replanting, Pruning and thinning)</i>	Schedule and report of each activity	Project staff										
Output 1.4	About 2,370 ha of degraded forest land in the project site have been successfully regenerated through natural forest regeneration facilitated by village driven forest protection												
Activity 1.4.1	Establishing and equipping Village Forest Protection Groups (VFPGs)	List of villager's group approved by DAFO and district governor	Project staff										

Activity 1.4.2	Conducting Village Driven Forest Patrolling (VDFP) covering the whole project site	Schedule and report of each villager's group	Villager's group of each village																
Output 1.5	Barren land of individual landowners have been supported through agroforestry extension services																		
Activity 1.5.1	Consultation meeting	Report and registered list of interesting persons	Project staff																
Activity 1.5.2	Contract development	Contract with interested persons approved by DAFO and District governor	Project staff																
Activity 1.5.3	Seedling distribution	Report	Project staff																
Activity 1.5.4	Monitoring and mapping	Map with location of each land plot	Project staff																
<b>Objective 2</b>	To generate broad public support on the implementation of national forest rehabilitation policy in general, village based forest rehabilitation program in particular																		
Output 2.1	Public and private sectors are aware and promote village based forest rehabilitation program																		
Activity 2.1.1	Organizing inception workshop	Report	Project manager																
Activity 2.1.2	Signboard	Signboard with information of project are in place	Project staff																
Activity 2.1.3	Organize Arbor Day Events and fire protection campaign	Report, poster or pamphlet	Project manager and project staff																
<b>Objective 3</b>	To provide incentives to local villagers through various means, inter alia, strengthening capacity of villagers to produce a good quality of seedlings, seedling production, enrichment planting, maintenance and protection of rehabilitated areas																		
Output 3.1	Local villagers both men and women, particularly, the poor have additional incomes from sale of seedlings, enrichment planting, maintenance and protection of rehabilitated areas																		
Activity 3.1.1	Conducting community consultation on seedlings production and sale, enrichment planting, maintenance and protection of rehabilitated areas	Village authorities and villagers near the project site regularly consulted by project staff, report	Project manager and project staff																
Activity 3.1.2	Establishment of Village Forest Development Groups	List of village forest development groups approved by DAFO and district governor	Project staff																
Activity 3.1.3	Contract Development	Contract with villager's group	Project staff																
<b>Objective 4</b>	To strengthen capability of forestry sectors and local authority including villagers in implementing national forest rehabilitation policy, particularly village based forest rehabilitation program																		
Output 4.1	Forestry sectors and local authority have knowledge and capacity on how to implement national forest rehabilitation policy at district and village level with an active participation of local villagers																		
Activity 4.1.1	Organizing study tours for stakeholders at policy and managerial levels	5 pax to Korea and 7 pax to Vietnam, x 5 days	Project manager																

Activity 4.1.2	<i>Organizing training courses for forestry sectors at implementation level</i>	Two-week x 1 training x 10 pax., including honorarium)	project manager																
Output 4.2	Villagers have capacity to produce a good quality of seedlings and implement forest rehabilitation activities																		
Activity 4.2.1	<i>Conducting village consultation for villagers' engagement in project implementation</i>	Village authorities and villagers near the project site regularly consulted by project staff	Project staff and project manager																
Activity 4.2.2	<i>Organize various training modules for villagers (on seedlings production, enrichment planting, etc.)</i>	Five-day training x 15 pax x 3 times	Project staff and project manager																
Output 4.3	Necessary materials and facilities for implementation and replication of village based forest rehabilitation have been sufficiently developed and made in place																		
Activity 4.3.1	<i>Development of reforestation concept and related methodologies, procedures, and technical guidelines</i>	Complete manual on forest restoration	Local expert and project staff																
Activity 4.3.2	<i>Recording, storing, synthesizing, updating and documenting all related concept, methodologies, procedures, technical guidelines and experiences</i>	Recording and documentation in place	Project staff																
Activity 4.3.3	<i>Arrangement and procurement of materials (Procurement of vehicles, office and field equipment)</i>	All materials and equipment in places	Project staff and project manager																
Activity 4.3.4	<i>Renovating/expanding field office and improvement of access roads, fencing materials for ex-situ plantation</i>	Field office, road are approved and fencing of ex-situ site	Project staff and villager/contract person																
Output 4.4	Financial and Project Management																		
Activity 4.4.1	<i>Work plan and Annual workplan development</i>	Work plan in place	Local consultant																
Activity 4.4.2	<i>Fee for technical services, including honorarium</i>	Receipt and report	Project manager																
Activity 4.4.3	<i>Running costs for the project management at field office</i>	Monthly, quarterly and annual reports	Project manager																
Activity 4.4.4	<i>Running costs for the project management at Central Office (DoF)</i>	Monthly, quarterly and annual reports (Use Paksong budget)	Field staff																
Activity 4.4.5	<i>Project monitoring/field follow up</i>	Reports	Project manager																
Activity 4.4.6	<i>Annual meeting for the Project Steering Committee</i>	Report (Use Paksong budget)	Project manager																

Activity 4.4.7	<i>Annual review and planning meeting for project team</i>	Report	Project manager																
Activity 4.4.8	<i>Project performance assessments (Interim/Final)</i>	Reports (Use Paksong budget)	Expert/consulting company																
Activity 4.4.9	<i>Financial Audits (Interim / Final)</i>	Report (Use Paksong budget)	Expert/consulting company																
Activity 4.10	<i>Closing workshop</i>	Report	Project manager																

**Annex 3: Indicative training plan for Paksong and Sangthong site**

A. Indicative training plan for Paksong

No.	Training course	Participants	Location	Timeline
1	Study tour to learning from successful forest restoration in Korea	Involved policy makers at different levels (5)	Republic of Korea	June 2016
2	Study tour to learning from successful forest restoration from Vietnam	Field coordinators, heads of involved villages (7)	SR Vietnam	July 2016
3	VDFR concept and associated subject matters for Project Staff (PS)	Project staff	DoF Training Center	August 2016
4	Seed collection and seedling production	Involved staff and villagers (15)	DoF Training Center	September 2016
5	Ex-situ conservation plantation establishment and maintenance	Involved staff and villagers (15)	DoF Training Center	January 2017
6	Enrichment planting and maintenance	Involved staff and villagers (20)	DoF Training Center	By the end 2016
7	Forest patrolling and forest fire management	Involved staff and villagers (15)	DoF Training Center	By the end 2016

B. Indicative training plan for Sangthong site

No.	Training course	Participants	Location	Timeline
1	Study tour to learning from successful forest restoration in Korea	Involved policy makers at different levels (5)	Republic of Korea	June 2016
2	Study tour to learning from successful forest restoration from Vietnam	Field coordinators, heads of involved villages (7)	SR Vietnam	July 2016
3	Training on seedling production	Villagers (20)	DoF Training Center	August 2016
4	Ex-situ conservation plantation establishment and	Involved staff and villagers (20)	DoF Training Center	September 2016

	maintenance			
<b>5</b>	Enrichment planting and maintenance	Involved staff and villagers (20)	DoF Training Center	January 2017
<b>6</b>	Forest patrolling and forest fire management	Involved staff and villagers (20)	DoF Training Center	By the end 2016

**Annex 4: List of required equipment, tools, and vehicles for Paksong and Sangthong site**

**A. List of required equipment, tools, and vehicles for Paksong**

No	Description	Specification	Quantity	Users
<b>1</b>	<b>Office equipment and furniture</b>			
1.1	Desktop computer	♦ Model: Samsung DM301S3B-B12S (+ LED 24' Monitor)	4 unit	DOF (2); PO (1); FO (1)
1.2	Laptop computer	♦ Model: Samsung NT500R5S-LD5S	4 unit	DOF (2); PO (1); FO (1)
1.3	Multifunction Copier (A4 + cartridge)	♦ Model: Samsung SL-X4220RX (Color Laser Print, Copy, Scan, Fax; multi tray)	2 set	DOF (1); FO (1)
1.4	Individual working desks with arm chair	A set: 1 desk with 1 arm chair; 2 set at DoF Office; and 1 set at Champasak and 1 at Paksong offices	4 sets	DOF (2); PO (1); FO (1)
1.5	Meeting tables with normal chairs	A set: 1 table with 6 normal chairs; a set at each office	3 sets	DOF (1); PO (1); FO (1)
<b>2</b>	<b>Field equipment and tools</b>			
2.1	GPS	♦ Model: Garmin Oregon 550	2 Unit	DO (2)
2.2	Telescope (Binocular)	♦ Model: Pentax PF-65ED	1 Unit	DO (1)
2.3	Photo camera	♦ Model: Samsung Smart NX1	1 Unit	DO (1)
2.4	Measuring tapes	• 50 meter long,	3 Unit	DO (3)
2.5	Firefighting extinguishers	• Medium sized	5 Unit	DO (1), VFPGs (4)
<b>3</b>	<b>Vehicles</b>			
3.1	Car (SUV)	♦ Model: KIA 2016 Sorento	1 UNit	For project monitoring in Vientiane

**Remark:** DOF = Department of Forestry; PO = Provincial Office; DO = District Office; VFPG = Village Forest Protection Group

**B. List of required equipment, tools, and vehicles for Sangthong site**

No	Description	Specification	Quantity	Users
<b>1</b>	<b>Office equipment and furniture</b>			
1.1	Laptop computer	♦ Model: Samsung NT500R5S-LD5S	3 unit	DoF 1, PAFO 1 and FO 1
1.2	Printer	Samsung	3 unit	DoF 1, PAFO 1 and FO 1
1.3	LCD projector	♦ Model: Samsung SL-X4220RX (Color Laser Print, Copy, Scan, Fax; multi tray)	3 set	DoF 1, PAFO 1 and FO 1

1.4	Individual working desks with arm chair	▪ A set: 1 desk with 1 arm chair;	3 sets	DoF 1, PAFO 1 and FO 1
1.5	Meeting tables with normal chairs	▪ A set: 1 table with 6 normal chairs; a set at each office	3 sets	DoF 1, PAFO 1 and FO 1
<b>2</b>	<b>Field equipment and tools</b>			
2.1	GPS	♦ Model: Garmin Oregon 550	2 Unit	FO (2)
2.2	Telescope (Binocular)	♦ Model: Pentax PF-65ED	1 Unit	FO (1)
2.3	Photo camera	♦ Model: Samsung Smart NX1	1 Unit	FO (1)
2.4	Measuring tapes	• 50 meter long,	3 Unit	FO (3)
2.5	Firefighting extinguishers	• Medium sized	5 Unit	FO (1), VFPGs (4)
2.6	Motorbikes	♦ Kolao	2 Unit	FO

**Remark:** Village Forest Protection Group (VFPG), Field Office (FO)

**Annex 5: Budget plan for Paksong site and Sangthong (2016-2025)**

A. Budget plan for Paksong

No	Activities	Calculation	2,016	2,017	2,018	2,019	2,020	2,021	2,022	2,023	2,024	2,025	Budget (USD)
<b>Objective 1</b>	<b>To demonstrate village based forest rehabilitation concepts in degraded forests through the application of different forest regeneration measures: (1) establishment of ex-situ conservation plantation; (2) enrichment planting in degraded forest areas where natural regeneration cannot secure; (3) assisted natural regeneration where degraded forests can naturally generate;</b>												302,000
Output 1.1	Sufficient quality seedlings of 170,000 seedlings are produced for ex-situ conservation plantation and enrichment planting in 200 ha												136,000
Activity 1.1.1	Seeds collection	cost included in activity 1.1.2											
Activity 1.1.2	Seedlings production of 170,000 seedlings	170,00 seedlings x USD 0.8		34,000	34,000	34,000	34,000						136,000
Output 1.2	About 40 ha of degraded forest land have been reforested through the establishment of ex-situ conservation plantation, which, in turn, produces future quality seed sources of valuable native tree species												58,000
Activity 1.2.1	Survey and demarcation of project areas and preparation of ex-situ and enrichment plan	Estimated lump sum	8,000										8,000
Activity 1.2.2	Establishment of 40 ha of ex-situ conservation plantation	40 ha x USD 800/ha		8,000	8,000	8,000	8,000						32,000
Activity 1.2.3	Maintenance and protection of the ex-situ conservation plantation (Weeding, Mortality survey and replanting, Pruning and thinning)	40 ha x USD 450/ha			3,000	3,000	3,000	3,000			3,000	3,000	18,000
Output 1.3	160 ha of degraded forest land have been regenerated through enrichment planting with native tree species												70,000
Activity 1.3.1	Preparation and Conducting enrichment planting	160 ha x 350/ha, including clearance of planting lines/patches)			14,000	14,000	14,000	14,000					56,000
Activity 1.3.2	Maintenance and protection of the ex-situ conservation plantation (Weeding, Mortality survey and replanting, Pruning and thinning)	160ha x USD350 x 25%				3,500	3,500	3,500	3,500				14,000
Output 1.4	About 400 ha of degraded forest land in the project site have been successfully regenerated through natural forest regeneration facilitated by village driven forest protection												38,000

Activity 1.4.1	Establishing and equipping Village Forest Protection Groups (VFPGs)	Lump sum, including uniforms	4,000					4,000						8,000
Activity 1.4.2	Conducting Village Driven Forest Patrolling (VDFP) covering the whole project site	USD200/1 patrol x 15 patrols/year x 10 years	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	30,000
<b>Objective 2</b>	To generate broad public support on the implementation of national forest rehabilitation policy in general, village based forest rehabilitation program in particular													29,500
Output 2.1	Public and private sectors are aware and promote village based forest rehabilitation program													29,500
Activity 2.1.1	Organizing inception workshop	A one-day meeting x 35 pax	8,500											8,500
Activity 2.1.2	Signboard	USD 500 x 2 (EX-situ + Enrichment site)	1000											1000
Activity 2.1.3	Organize Arbor Day Events and fire protection campaign including awareness raising materials and engagement of media specialist	Estimated Lump sum	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	35,000
<b>Objective 3</b>	To provide incentives to local villagers through various means, inter alia, strengthening capacity of villagers to produce a good quality of seedlings, production, enrichment planting, maintenance and protection of rehabilitated areas													12,000
Output 3.1	Local villagers both men and women, particularly, the poor have additional incomes from sale of seedlings, enrichment planting, maintenance and protection of rehabilitated areas													12,000
Activity 3.1.1	Conducting community consultation on seedlings production and sale, enrichment planting, maintenance and protection of rehabilitated areas	Village authorities and villagers near the project site regularly consulted by project staff	3,000	3,000										6,000
Activity 3.1.2	Establishment of Village Forest Development Groups	Estimated Lump sum	1,000	1,000	1,000									3,000
Activity 3.1.3	Contract Development	Estimated Lump sum	1,000	1,000	1,000									3,000
<b>Objective 4</b>	To strengthen capability of forestry sectors and local authority including villagers in implementing national forest rehabilitation policy, particularly village based forest rehabilitation program													369,000
Output 4.1	Forestry sectors and local authority have knowledge and capacity on how to implement national forest rehabilitation policy at district and village level with an active participation of local villagers													35,000

Activity 4.1.1	<i>Organizing study tours for stakeholders at policy and managerial levels</i>	5 pax to Korea and 7 pax to Vietnam, x 5 days	23,000											23,000
Activity 4.1.2	<i>Organizing training courses for forestry sectors at implementation level</i>	Two-week x 1 training x 10 pax., including honorarium)	12,000											12,000
Output 4.2	Villagers have capacity to produce a good quality of seedlings and implement forest rehabilitation activities													21,000
Activity 4.2.1	<i>Conducting village consultation for villagers' engagement in project implementation</i>	Village authorities and villagers near the project site regularly consulted by project staff	3,000	3,000										6,000
Activity 4.2.2	<i>Organize various training modules for villagers (on seedlings production, enrichment planting, etc.)</i>	Five-day training x 15 pax	15,000											15,000
Output 4.3	Necessary materials and facilities for implementation and replication of village based forest rehabilitation have been sufficiently developed and made in place													105,000
Activity 4.3.1	<i>Development of reforestation concept and related methodologies, procedures, and technical guidelines</i>	Estimated lump sum, including translation fee	8,000	4,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	20,000
Activity 4.3.2	<i>Recording, storing, synthesizing, updating and documenting all related concept, methodologies, procedures, technical guidelines and experiences</i>	Estimated lump sum, including translation fee										4,000	6,000	10,000
Activity 4.3.3	<i>Arrangement and procurement of materials (Procurement of vehicles, office and field equipment)</i>	(Details are listed in Annex 4)	55,000											55,000
Activity 4.3.4	<i>Renovating/expanding field office and improvement of access roads</i>	Estimated lump-sum	20,000											20,000
Output 4.4	Financial and Project Management													208,000
Activity 4.4.1	<i>Annual Work plan development</i>	Technical meeting with Village Forest Development Groups and VFPGs include printing and distribution	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	9,000

Activity 4.4.2	Fee for technical services, including honorarium	Reserved USD 3,000/year in maximum 10 years	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	30,000
Activity 4.4.3	Running costs for the project management at field office	USD 200/month x 12months x 10 years	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2,400	24,000
Activity 4.4.4	Running costs for the project management at Central Office (DoF)	USD 250/month x 12months x 10 years	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	30,000
Activity 4.4.5	Project monitoring/field follow up	USD 2,000 x 10 years	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	30,000
Activity 4.4.6	Annual meeting for the Project Steering Committee	One-day meeting attended by ~10 persons	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	10,000
Activity 4.4.7	Annual review and planning meeting for project team	Two-day meeting with 30 pax @ USD2000/year	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	20,000
Activity 4.4.8	Project performance assessments (Interim/Final)	Two external project assessments conducted at midterm and at the end of the project					7,500					7,500	15,000
Activity 4.4.9	Financial Audits (Interim / Final)	Two financial audits (midterm and final audits) conducted					7,500					7,500	15,000
Activity 4.10	Closing workshop	A one-day workshop attended by ~35 participants										10,000	10,000
	<b>Contingency (5%)</b>		<b>3,750</b>	<b>3,750</b>	<b>3,750</b>	<b>3,750</b>	<b>3,750</b>	<b>3,750</b>	<b>3,750</b>	<b>3,750</b>	<b>3,750</b>	<b>3,750</b>	<b>37,500</b>
<b>Total</b>			<b>188,150</b>	<b>79,650</b>	<b>87,650</b>	<b>89,150</b>	<b>108,150</b>	<b>47,150</b>	<b>30,150</b>	<b>26,650</b>	<b>33,650</b>	<b>59,650</b>	<b>750,000</b>

B. Budget plan for Sangthong

No	Activities	Calculation	2,016	2,017	2,018	2,019	2,020	2,021	2,022	2,023	2,024	2,025	Budget (USD)
<b>Objective 1</b>	<b>To demonstrate village based forest rehabilitation concepts in degraded forests through the application of different forest regeneration measures: (1) establishment of ex-situ conservation plantation; (2) enrichment planting in degraded forest areas where natural regeneration cannot secure; (3) assisted natural regeneration where degraded forests can naturally generate;</b>												<b>388,700</b>
Output 1.1	Sufficient quality seedlings of 285,000 seedlings are produced for ex-situ conservation plantation and enrichment planting in 250 ha												176,200
Activity 1.1.1	Seedlings production for ex-situ plantation	24,000 seedlings x USD 0.8	9,600	9,600									19,200
Activity 1.1.2	Seedlings production for enrichment planting	261,000 seedlings x USD 0.6		31,400	31,400	31,400	31,400	31,400					157,000
Output 1.2	About 20 ha of degraded forest land have been reforested through the establishment of ex-situ conservation plantation, which, in turn, produces future quality seed sources of valuable native tree species												29,000
Activity 1.2.1	Land clearance	USD 20/ha x 20 ha	2,000	2,000									4,000
Activity 1.2.2	Establishment of 20 ha of ex-situ conservation plantation	20 ha x USD 800/ha		4,000	4,000	4,000	4,000						16,000
Activity 1.2.3	Maintenance and protection of the ex-situ conservation plantation (Weeding, Mortality survey and replanting, Pruning and thinning)	20 ha x USD 450/ha			1,500	1,500	1,500	1,500			1,500	1,500	9,000
Output 1.3	630 ha of degraded forest land have been regenerated through enrichment planting with native tree species												113,500
Activity 1.3.1	Forest survey and Boundary demarcation	Estimated Lump sum	13,000										13,000
Activity 1.3.2	Conducting enrichment planting	630 ha, including clearance of planting lines/patches)		16,100	16,100	16,100	16,100	16,100					80,500
Activity 1.3.3	Maintenance and protection of the ex-situ conservation plantation (Weeding, Mortality survey and replanting, Pruning and thinning)	630ha			4,000	4,000	4,000	4,000	4,000				20,000
Output 1.4	About 2,370 ha of degraded forest land in the project site have been successfully regenerated through natural forest regeneration facilitated by village driven forest protection												53,000
Activity 1.4.1	Establishing and equipping Village Forest Protection Groups (VFPGs)	Lump sum, including uniforms	4,000				4,000						8,000
Activity 1.4.2	Conducting Village Driven Forest Patrolling (VDFP) covering the whole project site	USD300/1 patrol x 15 patrols/year x 10 years	4,500	4,500	4,500	4,500	4,500	4,500	4,500	4,500	4,500	4,500	45,000

<b>Output 1.5</b>	Barren land of individual landowners have been supported through agroforestry extension services												17,000
Activity 1.5.1	Consultation meeting	Estimated Lump sum		2,000									2,000
Activity 1.5.2	Contract development	\$ 500/yr x 2 yrs		500	500								1,000
Activity 1.5.3	Seedling distribution	Estimated Lump sum		5,000	5,000								10,000
Activity 1.5.4	Monitoring and mapping	\$ 2,000/yr x 3 y yrs		2,000	2,000								4,000
<b>Objective 2</b>	To generate broad public support on the implementation of national forest rehabilitation policy in general, village based forest rehabilitation program in particular												40,500
<b>Output 2.1</b>	Public and private sectors are aware and promote village based forest rehabilitation program												40,500
Activity 2.1.1	Organizing inception workshop	Use Paksong budget											
Activity 2.1.2	Signboard	USD 500 x 6 (EX-situ + Enrichment site)	1,000	1,000	1,000								3,000
Activity 2.1.3	Organize Arbor Day Events and fire protection campaign including awareness raising materials and engagement of media specialist	Estimated Lump sum	3,800	3,800	3,800	3,800	3,800	3,800	3,800	3,800	3,800	3,300	37,500
<b>Objective 3</b>	To provide incentives to local villagers through various means, inter alia, strengthening capacity of villagers to produce a good quality of seedlings, seedling production, enrichment planting, maintenance and protection of rehabilitated areas												12,000
<b>Output 3.1</b>	Local villagers both men and women, particularly, the poor have additional incomes from sale of seedlings, enrichment planting, maintenance and protection of rehabilitated areas												12,000
Activity 3.1.1	Conducting community consultation on seedlings production and sale, enrichment planting, maintenance and protection of rehabilitated areas	Village authorities and villagers near the project site regularly consulted by project staff	2,000	2,000	2,000								6,000
Activity 3.1.2	Establishment of Village Forest Development Groups	Estimated Lump sum	1,000	1,000	1,000								3,000
Activity 3.1.3	Contract Development	Estimated Lump sum	1,000	1,000	1,000								3,000
<b>Objective 4</b>	To strengthen capability of forestry sectors and local authority including villagers in implementing national forest rehabilitation policy, particularly village based forest rehabilitation program												271,300
<b>Output 4.1</b>	Forestry sectors and local authority have knowledge and capacity on how to implement national forest rehabilitation policy at district and village level with an active participation of local villagers												35,000
Activity 4.1.1	Organizing study tours for stakeholders at policy and managerial levels	5 pax to Korea and 7 pax to Vietnam, x 5 days	23,000										23,000

Activity 4.1.2	<i>Organizing training courses for forestry sectors at implementation level</i>	Two-week x 1 training x 10 pax., including honorarium)	12,000											12,000
Output 4.2	Villagers have capacity to produce a good quality of seedlings and implement forest rehabilitation activities												36,000	
Activity 4.2.1	<i>Conducting village consultation for villagers' engagement in project implementation</i>	Village authorities and villagers near the project site regularly consulted by project staff	2,000	2,000	2,000									6,000
Activity 4.2.2	<i>Organize various training modules for villagers (on seedlings production, enrichment planting, etc.)</i>	Five-day training x 15 pax x 3 times	10,000	10,000	10,000									30,000
Output 4.3	Necessary materials and facilities for implementation and replication of village based forest rehabilitation have been sufficiently developed and made in place												82,000	
Activity 4.3.1	<i>Development of reforestation concept and related methodologies, procedures, and technical guidelines</i>	Estimated Lump sum	5,000											5,000
Activity 4.3.2	<i>Recording, storing, synthesizing, updating and documenting all related concept, methodologies, procedures, technical guidelines and experiences</i>	Estimated Lump-sum	200	200	200	200	200	200	200	200	200	200	200	2,000
Activity 4.3.3	<i>Arrangement and procurement of materials (Procurement of vehicles, office and field equipment)</i>	(Details are listed in Annex 4B)	60,000											60,000
Activity 4.3.4	<i>Renovating/expanding field office and improvement of access roads, fencing materials for ex-situ plantation</i>	Estimated lump-sum	15,000											15,000
Output 4.4	Financial and Project Management												118,300	
Activity 4.4.1	<i>Work plan and Annual work-plan development</i>	18,000 for consultant and technical meeting with Village Forest Development Groups and VFPGs include printing and distribution	18,000	500	500	500	500	500	500	500	500	500	500	22,000
Activity 4.4.2	<i>Fee for technical services, including honorarium</i>	Reserved USD 3,000/year in maximum 10 years?	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	30,000
Activity 4.4.3	<i>Running costs for the project management at field office</i>	USD 200/month x 12months x 10 years	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2,400	24,000

Activity 4.4.4	<i>Running costs for the project management at Central Office (DoF)</i>	Use Paksong budget												
Activity 4.4.5	<i>Project monitoring/field follow up</i>	USD 2,000 x 10 years	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	20,000
Activity 4.4.6	<i>Annual meeting for the Project Steering Committee</i>	Use paksong budget												
Activity 4.4.7	<i>Annual review and planning meeting for project team</i>	Two-day meeting with 30 pax @ USD2000/year	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000			18,000
Activity 4.4.8	<i>Project performance assessments (Interim/Final)</i>	Use paksong budget												
Activity 4.4.9	<i>Financial Audits (Interim / Final)</i>	Use paksong budget												
Activity 4.10	<i>Closing workshop</i>	Contribute to Paksong budget											4,300	4,300
	<b>Contingency (5%)</b>		<b>3,750</b>	<b>3,750</b>	<b>3,750</b>	<b>3,750</b>	<b>3,750</b>	<b>3,750</b>	<b>3,750</b>	<b>3,750</b>	<b>3,750</b>	<b>3,750</b>	<b>3,750</b>	<b>37,500</b>
<b>Total</b>			<b>200,250</b>	<b>111,750</b>	<b>103,650</b>	<b>79,150</b>	<b>83,150</b>	<b>75,150</b>	<b>26,150</b>	<b>22,150</b>	<b>23,650</b>	<b>24,950</b>	<b>750,000</b>	

