Asia-Pacific Network for Sustainable Forest Management

and Rehabilitation

PROJECT PROPOSAL

Demonstration on Integrated Planning and Management of Forest Ecosystem in Greater Mekong Sub-region – Lao PDR project site

Demonstration on Forest Fire Prevention and Control in Luang Namtha Province, Lao PDR.

Department of Forestry, Ministry of Agriculture and Forestry, Lao PDR

Project title	**Demonstration on Forest Fire Prevention and Control in Luang Namtha Province, Lao PDR.**	
Executing agency	**Department of Forestry, Ministry of Agriculture and Forestry, Lao PDR**	
Implementing agency	**Luang Namtha Forestry Section**	
Expected project duration: May 2017 to April 2018, 12 months**.**		
Target area: Luang Namtha Province, Lao PDR.		
Total budget (USD 352,173)	**Expected APFNet grant(USD 337,173)**	**Conouterpart contribution (USD15,000)**

Project summary:

During the past few decades until now, forests in Lao PDR have been experiencing high pressures from forest fire. To deal with the current forest fire related issues and problems in Lao PDR and respond to its Forest Strategic Vision for 2020, improving facilities, techniques and capacity of forest fire prevention and control will be necessary. The proposed project will assist Lao PDR in improving facilities, techniques and capacity of forest fire prevention and control by construction of a forest fire monitoring and alarming system for the Luang Namtha Province, Lao PDR to serve as a reliable high-tech platform that supports a series of fire prevention works as well as enhancing the capacity of forestry officers in forest fire prevention and control.

The project will be implemented by Luang Namtha Forestry Section with supports from Ministry of Agriculture and Forestry and local community concerned. Department of Forestry will be supervisory agency of the project.

Project Proponent(s):
Contact…Mr. Oupakone Alounsavath, Director for Village Forestry Division, Department of Forestry, Ministry of Agriculture and Forestry, Lao PDR
Tel ……Email… dofadm@gmail.com …Fax ……

1. Background

During the past few decades until now, forests in Lao PDR have been experiencing high pressures from forest fire. Among numbers of driving forces either anthropogenic or natural, shifting cultivation practice of the rural populations is the most crucial one that lead to forest fire. It is estimated that 90% of forest fires in Lao PDR are due to shifting cultivation (Bouaket, 1999), which makes more than 100,000 ha forests burnt per year (Department of Forestry of Lao PDR, 2000). Stated by the Department of Forestry (DoF) of Lao PDR (2000), fires that escape from shifting cultivation to nearby forest were recognized to cause more damage than the shifting cultivation fires themselves, especially in the Northern provinces.

Nowadays, forest fire has affected Lao PDR's timber production and export which brings important revenue income. Facing the threats of forest fire, DoF has been paying attention to forest fire prevention and control. In its Forest Strategic Vision for 2020, several statements have been made regarding to forest fire control:

- Village forests: a land allocation process is now under way that will give villagers more access and rights to use their land and that will include discussions about forest fire prevention.
- Legal framework: except Order 2094/MAF, the only law directly related to forest fires, more comprehensive laws and regulations to deal with forest fire are being prepared to better guide officials from the district and provincial level Agriculture and Forestry Office to implement forest fire prevention and control activities and supports the involvement of local communities in this regard.
- Capacity of local forest officers: staff capacity is limited and needs to be improved, particularly in terms of forest fire management.

To deal with the current forest fire related issues and problems in Lao PDR and respond to its Forest Strategic Vision for 2020, improving facilities, techniques and capacity of forest fire prevention and control will be necessary. Introducing forest fire monitoring system into Lao PDR's forest management activities will be one of the feasible solutions. The emergence of forest fire monitoring system could effectively improve the protection of forest resources, especially forest fire monitoring capability, and successfully propel modern forestry management towards intelligence, refining and high efficiency. Forest fire monitoring system, which is integrated with advanced information technology, is characterized as short cruise period, fast image recognition, high positioning accuracy, real-time data transmission and all-weather monitoring. It could serve as a reliable high-tech platform that supports a series of forest fire prevention and control works in Lao PDR.

2 Goal of project

The goal of the project is to assist Lao PDR in improving facilities, techniques and capacity of forest fire prevention and control thus contribute to promoting sustainable forest management and enhancing ecosystem security of forests in Greater Mekong Sub-region

3 Objectives of the project

- Construct a forest fire monitoring and alarming system for the Luang Namtha Province, Lao PDR to serve as a reliable high-tech platform that supports a series of fire prevention works;
- Enhance the capacity of forestry officers in forest fire prevention and control.

4 Outputs and Strategic Activities

Output 1 Forest fire monitoring and alarming system constructed in Luang Namtha Province, Lao PDR

Activity 1.1. Construction survey and design of the forest fire monitoring system

A comprehensive survey for designing the construction of the forest fire monitoring system will be conducted. Preliminary design for the construction will take the actualities of Luang Namtha in consideration such as its forest vegetation distribution, topography of the site and the area of key monitoring region for fire prevention. Meanwhile, the location of the construction will be selected on the basis of optimizing the coverage radius of the monitoring equipment and minimizing blind zones.

Activity 1.2. Construction of the forest fire monitoring system

A set of front-end intelligent monitoring terminals and a watchtower have been constructed through the APFNet funded project "Sustainable Forest Management in Northern Provinces of Lao PDR". On the basis of the existing terminals and watchtower, the forest fire monitoring system will be completely constructed at the selected location in line with blue print of the construction design.

A command center, several new monitoring terminals, a new watchtower with lightning protection devices and a power supply system will be constructed in this project.

1) The command center will serve as a multifunctional center to operate the monitoring system, conduct data collection and analyses as well as act as the supporting facility for other field activities of relevant stakeholders.
2) The new watchtower will be constructed in 24m high, as the height of the watchtower shall be at least three meters higher than the forest canopy. The new watchtower will be equipped with a device working platform. The girder of the platform shall be connected with the girder of the tower. Besides, the tower will be topped with a lightning rod, the down lead of which will be connected with grounding wire on the foundation.
3) An Intelligent Solar Power Supply System will be introduced into the project. It is consisted of the following three parts:
    1. Solar cell module: use monocrystalline silicon solar cell module with service life of 25 years and design peak power of 3000Wp, 250W;
    2. Solar-specific intelligent controller for charge and discharge control: install one universal PV controller designed for 48V 60A power station with one year warranty;

3. Storage battery for storing the generated electricity: use 24 sets of 2V1000AH valve regulated maintenance-free lead-acid (VRLA) batteries with unit rated capacity of 1000Ah and rated voltage of 2V DC.

4) Signal transmission of the system will use wireless bridge. The signals sent out by new monitoring terminals will be transmitted firstly to the existing terminals using wireless bridge technique and then transmitted again to the command center using optical fiber.

Output 2 Capacity of forestry staff in Luang Namtha Province improved

Activity 2.1. Trainings for forestry staff on monitoring system operation and maintenance

To guarantee the daily operation and the lifespan of the monitoring system, training courses will be organized for local forestry staff on operating and maintaining the system. The following two types of training courses will be conducted twice when all the construction works finished and when the system passed the validation:

No.	Training course	Target participants	Expected outcomes
1	Monitoring System operating	Front-line staff	Front-line staff are able to operate the monitoring system and identify the system errors
2	Monitoring system maintaining	Engineers and technicians	Engineers and technicians are able to maintain the monitoring system and make modification when errors happen

5 Project management

The project management and implementation is directed by the Project Steering Committee (PSC), which is chaired by the Director General of DoF, seconded by head of Luang Namtha Provincial Agriculture and Forestry (PAFO), with membership from director\deputy director of Village Forest and NTFP Management Division of DoF, head or deputy head of Luang Namtha Forestry Section, head or deputy head of Namtha District Agriculture and forestry Office (DAFO), a representative from local authority of Namtha District and APFNe secretariat. The PSC shall meet to discuss and solve issues related to the construction of the forest fire monitoring system. The PSC shall also secure the coordination amongst relevant sectors and institutions, and the sustainability of the project operation. Under the supervision from PSC, Luang Namtha Forestry Section is a leading agency for the implementation of this project.
Considering the construction of forest fire monitoring system and related trainings is on the basis of the existing terminals and watchtower built through the APFNet funded project “Sustainable Forest Management in Northern Provinces of Lao PDR”, the same company - China Forestry Star (Beijing) Technology Information Co. Ltd – will be entrusted to conduct relevant works.

6 Monitoring, construction validation and external evaluation

Project monitoring, evaluation and reporting are the main tasks of the implementing agency and these must be conducted on a regular basis. The internal monitoring and evaluation (M&E) should be conducted against the set of performance indicators for each project output and strategic activity.

Based on the national public procurement system and regulations, the construction work shall be validated by appointed technical committee. The PSC, should discuss members of the technical committee including its mandate and issue official nomination letter.

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, APFNet will organize external evaluation of the project by the end the project execution period to evaluate the performance of the project. Relevant expenses will be retained by APFNet.