

Lao People's Democratic Republic
Peace Independent Democratic Unity Prosperity

Village Forest Management Planning Guideline



Climate Protection through Avoided Deforestation Project
Technical Cooperation (GIZ/ CliPAD-TC)

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FOREWORD

The Climate Protection through Avoided Deforestation (CliPAD) program is a development project of the Lao Government supported by GIZ and German Development Bank (KfW). CliPAD supports the province of Houaphan to establish a provincial REDD+ program and provides incentives to local communities to participate in forest management and conservation efforts by engaging sub-national jurisdictions to develop and support strategies for reducing deforestation. The Village Forest Management Agreement (VilFoMA) scheme aims to regulate and promote sustainable management, protection and conservation of village forests. It intends to achieve this by establishing a legal basis and framework to link all village forest categories with international funding for climate change mitigation and channeling it down to the village-level through performance-based payments. Certain conditions need to be created and specific processes completed before VilFoMA can be enacted. “Participatory Land Use Planning (PLUP)” delineates forest and agricultural land while “the Free, Prior and Informed Consent (FPIC)” process involves awareness raising and the furnishing of consent to participate in the program are the initial preconditions. The village forest management planning process collects, collates and analyses data on forest resources, conditions and dynamics to create a Village Forest Management Plan which stipulates the specific management activities.

To clarify the process, these guidelines and attached annexes were developed as a tool to assist concerned government authorities and villagers to implement VilFoMA and describe all required working steps. They are also an example of the close cooperation between partner agencies from the Government of Lao PDR (GoL) - especially the Department of Forest Resource Management (DFRM) under the Ministry of Natural Resources and Environment (MoNRE), the Department of Forestry (DoF) under the Ministry of Agriculture and Forestry (MAF) as well as their provincial line agencies in Houaphan (Provincial Office of Natural Resources & Environment and Provincial Office of Agriculture & Forestry) – and CliPAD.

Although these guidelines are addressing especially the situation of the mountainous regions in northern Laos, with specific focus on Xamneua and Houamouang districts as the target district of Climate Protection through Avoided Deforestation Project, CliPAD, which is implementing REDD+ mitigation activities at sub-national level, they can also be adopted for the use in other parts of the country. They contain various information and consider practical experiences, which were gained during trainings and related pilots in villages of Houaphan.

Since the booklet is guiding through this approach, it supports sustainable use, protection and restoration of village forests and payments to incentivize participation and has therefore fulfilled its objective.

The signers would like to take this opportunity to thank everyone, who has contributed towards the preparation and production of this booklet. May it be used intensively!



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I. INTRODUCTION

1.1. Village Forest Management

Village Forest Management is a concept of participatory forest management firmly anchored in national policies, strategies and legal documents of the Lao PDR. It corresponds to what is defined as “Community Forestry” or “Community Forest Management” in other countries. As by law, the smallest administrative unit in Lao PDR is the village. Villages are essential units for planning and implementation and that’s why the term “Village Forest Management” was chosen in the Lao context.

In general, forests in Lao PDR are classified into three main categories: 1) Conservation Forest, 2) Protection Forest and 3) Production Forest in accordance with the Forest Law (2007). Any of these 3 categories can be declared at national, provincial, district or village level. At village level, the local production forest is referred to as “Village Use Forest”.

“Village Forest Management is the management, preservation, development and use in a sustainable manner of the forest areas inside the village jurisdictional area which the government has allocated to the village and which has been classified into village conservation forest, village protection forest, village use forest and other forests. The management of the forest areas has to follow a management plan” (Forest Law 2007).

“Forest and forestland owners are the organizations, households and individuals, to whom the State has allocated forest and forestland areas to manage, preserve, develop and use in accordance with laws and regulations” (Forest Law 2007). “The State encourages individuals, households, legal entities and organizations to carry out preservation and development of all forest types, in order to regenerate forest, and to plant trees and NTFPs in degraded and badly degraded forestland and barren forestland areas to become rich forests for environment and biodiversity protection in order to enhance forest carbon stock and ecosystem services, providing that there is a benefit sharing in a thorough and fair manner” (Draft Forest Law 2015).

Village use forests are production forests (including NTFPs) located within the village area, which the government allocated to the village to manage and to preserve and to people to use in a sustainable manner in accordance with the law and the regulations. Forest and forestland at the village level are approved by the district governor based on the proposal from DONRE and DAFO. The utilization of forestland at the village level has to be done according to a village forest management plan for the entire community, for household and individual uses; the plan has to be endorsed by the District Governor based on the proposal by DONRE and DAFO (Draft Forest Law 2015).

A list of the most important legal documents and regulations with regards to village forest management is presented in **Annex 1**.

In practice, the village authority (village administrative committee headed by the village chief) is supposed to allocate forest areas and forestland to “village forest units” to collaborate with other related units in preserving and developing the forest areas in accordance with a village forest management plan.

The institutional responsibilities to support village forest management in terms of production forests and NTFPs lies with the Department of Forestry (DoF) within the Ministry of Agriculture and Forestry (MAF) and in particular with the Division of Village Forestry and NTFP. At provincial level, a Village Forest and NTFP Management Unit exists in every Provincial Agriculture and Forestry Office (PAFO). At district level, it is the Forestry Unit within the District Agriculture and Forestry Office (DAFO) that provides direct implementation support to the villages.

On the other hand, the institutional responsibilities to strengthen forest preservation in conservation and protection forests are placed under the Department of Forest Resources Management (DFRM) within the Ministry of Natural Resources and Environment (MoNRE).

At provincial level, a Forest Resources Management Unit within every Provincial Office of Natural Resources and Environment (PONRE) is in charge of all conservation and protection forest areas in the province. Finally, at district level a number of foresters within the District Office of Natural Resources and Environment (DONRE) support villagers in their management of conservation and protection forests.

Since the early 1990s, a wealth of experience in the promotion of village forest management responsibilities and joint forest management in the context of larger production forest areas has been acquired particularly in the Central and Southern part of the country. Programmes like the Lao-Swedish Forestry Programme (LSFP), the Forest Management and Conservation Project (FOMACOP), the Sustainable Forestry and Rural Development Project (SUFORD) and lately the Scaling-up Participatory Sustainable Forest Management (SUPSFM) Programme have all gained substantial experiences in involving villagers in the management of larger production forest areas (mainly national production forests) for commercial use. Their experiences and work results have been well documented, particularly in numerous publications by LSFP and SUFORD, and the Village Forest Management Handbook by FOMACOP (2001).

Nevertheless, the situation in the large production forest areas in Central and Southern Lao PDR, namely Khammouane, Savannakhet and Salavane with their dry *Dipterocarp* forests provide only limited similarities with the village forests in the upland areas of Lao PDR. These upland areas are characterised by the presence of shifting cultivation practices in varying intensities, a higher fragmentation of the forest zones, the prevalence of steep slopes and consequently an orientation more towards preservation of forest zones e.g. for biodiversity conservation and watershed protection. The commercial use of forests for timber production plays a lesser role and village use forests are mainly designated for fulfilling the subsistence needs of wood products and NTFP's of the local population.

In terms of support to village forest management in upland areas of Lao PDR, there is far less experience available at present. Past project activities have focused mainly on the upland areas of Northern Lao PDR, e.g. in Xieng Khouang, Luang Prabang and lately within the Climate Protection through Avoided Deforestation (CliPAD) Project in Houaphan Province. It was through CliPAD that the elaboration of these guidelines has been facilitated.

Furthermore, the village forest management approach has in the past been also promoted by the Department of Forestry with limited funds provided by the Lao Government. Their main document of reference is the draft "Handbook on Village Forest Management" prepared by Mr. Khamphay Manivong (translation into English not yet available).

Overall, village forest management in upland areas of Lao PDR has seen only limited donor or Lao Government support in the past. With the emergence of REDD+ and increased opportunities for performance based payments for sustainable forest management, this situation is about to change. In 2014, the Department of Forestry estimated that operational village forest management systems on the basis of management plans exist in less than 10 upland villages countrywide. This illustrates that despite its high level of relevance according to policy and strategy documents (e.g. the National Socio-Economic Development Plan), operational village forest management systems in upland areas are still the exception. It is hoped that these guidelines will assist in providing more emphasis to the implementation of village forest management schemes in Lao PDR in general.

1.2. Objectives

This document was created to provide guidance regarding the main procedures and working steps in village forest management. It tries to establish a standard approach for replication in rural upland areas across all provinces of Lao PDR. The guidelines propose unified and standardised procedures based on current experiences in the country and on expert consultations which took place between November 2014 and January 2015. One main objective was to achieve more participation and ownership in forest management by the local population in rural Lao PDR. Eventually, the village forest management approach will lead to an increase in forest cover and improved forest conditions as well as contribute to an improvement of local livelihoods by a more sustainable and equitable use of forest products.

These Village Forest Management Guidelines try to describe the required working steps to implement village forest management activities in all 3 forest categories and is therefore designed as a working tool for both Ministries (MAF and MoNRE) and all concerned institutions and stakeholders.

Furthermore, the Village Forest Management Guidelines will assist existing and new donor funded projects and programmes as well as programmes of the Lao Government to improve the planning and implementation of their village forest management activities and outcomes.

1.3. How to use this guideline

1. These Village Forest Management Guidelines can be used for project planning and to guide implementation.
2. The guidelines can be used directly as a basis for training purposes and training events on village forest management.
3. The guidelines also constitute as a reference document or a manual for staff at national, provincial and district level in their work to support village forest management.
4. Finally, elements of these guidelines can be used for the refinement of policies, strategies and legal provisions in the context of village forest management.

1.4. Participatory land use planning (PLUP)

Participatory Land Use Planning (PLUP) should be conducted and finalised in every village before village forest management activities can start in that same village. The land use planning activities will include a general land use zoning exercise within the entire village area. This is a precondition for starting more detailed village forest management work. For example, during PLUP the zoning of the forest land into the three main forest categories (conservation forest, protection forest and village use forest) will already be discussed and decided, although the exact boundaries of each zone might not always have been confirmed on the ground. The future land use and forest map will show the location of the various forest categories in relation to agricultural use zones, livestock areas or settlement areas.

The PLUP approach for Lao PDR has been widely implemented over the past years. The methodology applied and all the relevant working steps are described in detail in two key documents: a) the “PLUP Manual of 2009 (Green Book)” and b) the “NAFRI Handbook PLUP and Toolbox” of 2012. Within the framework of these Village Forest Management Guidelines, it is not envisaged to describe the PLUP approach in great detail. For more detailed information on PLUP, the 2 mentioned publications should be consulted.

The village forest management approach builds up on the results and various outputs of PLUP. It can therefore not be dissociated from PLUP. The main purposes of conducting a PLUP exercise in a village are:

1. Strengthening the management of land and forest resources by the villagers themselves and to have clear and uncontested village boundaries.
2. PLUP provides valuable data on the socio-economic situation, current land use and natural resources management systems.
3. PLUP results can be used for more detailed agricultural land management and development planning and provide an entry point for agricultural extension work.
4. PLUP results provide a basis for more detailed village forest management planning.
5. PLUP provides the basis for land registration in rural areas; registration of individual, collective, communal and state land areas.

The following documents should be available after PLUP has been prepared in a village:

1. **Satellite images or aerial photos** of the village area, which can then also be used for village forest management planning.
2. A **Present Land Use Map** and a detailed analysis of current land uses in the village; sometimes even a present land cover map is available, based on the interpretation of the latest satellite images.
3. A **Future Land Use and Forest Map**; in this map the following categories of land use and forest areas are distinguished in general: conservation forest areas, protection forest areas, village use forest areas, agricultural use zones, paddy areas, gardens or orchards, settlement areas, future settlement expansion areas, areas reserved for future allocation, tree planting area, livestock area, infrastructures (social and physical) and others according to the specific situation of the village. Ideally, the legend of the map should be standardised, e.g. always showing the various land use zones in different colours! This map must follow the standards and degree of detail prescribed in the PLUP Manual (2009). In case parts of the village area fall into a National Protected Area or a Provincial or District Conservation Forest, or a Provincial or District Protection Forest or a higher level Production Forest, the boundaries of these areas must be clearly shown on the Future Land Use and Forest Map of the village. Within these higher level Conservation or Protection Forest zones, a core protection zone and a controlled use zone in accordance with the Forest Law should be distinguished on the map.

An example of satellite images, a present land use map and a future land use and forest map for one village in Houaphan is presented in **Annex 2**.

4. A **PLUP report**, which summarizes the important socio-economic data and general information gathered in the village during PLUP work.
5. Information on the new **Village Land Use and Forest Management Committee (VLUFMC)**, which has been set up during the PLUP process. The VLUFMC is in charge to assist the village authorities on all aspects of land use and forest management. It generally consists of 7-11 elected people from the village and is mostly chaired by the village head or one of his/her deputies. The VLUFMC consists of two units: a) the land use unit and b) the village forest and NTFP unit. This existing VLUFMC with its 2 units should also be the committee, which will continue to work with the district staff on all village forest management related activities. *For further details see Chapter 5 below.*

6. An **agreement to set up the VLUFMC**, which is signed by the District Administration (District Governor).
7. **Village Regulations** (sometimes also called: “Village Land Use and Forest Management Agreement” or “Village Land Use and Forest Use Regulations”); The village regulations are an extremely important document elaborated by the villagers themselves. The village regulations describe in detail all important rules and regulations which villagers have decided for the various land use and forest zones and the sanctions and fines imposed for any offence. The regulations are signed by village authorities and countersigned by the District Administration. This document is sometimes also used to transfer the formal rights of forest management to the village level and its committee in line with the stipulations in the Forestry Law (2007).

The village regulations are one of the most important results of the PLUP work. Well-prepared and comprehensive, village regulations are an essential basis for village forest management activities as they describe the existing rules and regulations with regard to the various forest areas. Very often these rules already exist in a village, but have not yet necessarily been put in writing. They show the traditions of the village in terms of forest management, but they also refer to the new forest categories as prescribed by the Law. Village regulations should ideally have a standardised structure (e.g. list of contents), but the document itself must be developed and written by the villagers. This will ensure that the final village regulations are adapted to the village situation and are socially acceptable, can be monitored and are enforceable. They must be site-specific, contain local traditional rules and regulations already in place, consider the particular forest ecology of the area and lead to clear, specific, practicable and easy-to-understand regulations. It is largely expected that community members will follow the regulations they have developed and agreed by themselves without pressure from outside. Obviously, the final version of the village regulations should always be available in several copies within the village (e.g. with the head of the village and the VLUFMC) and with the district authorities.

Due to the importance of this particular document for the village forest management activities described in these guidelines, a sample structure for village regulations is presented in **Annex 3**.

1.5. Funding for Village Forest Management

The village forest management requires financial support to implement various management activities. The government should consider providing sustainable funding which may come from existing funds such as: Forest and Forest Resources Development Fund, Poverty Reduction Fund or Environment Protection Fund etc..

The Climate Protection through Avoided Deforestation Project (CliPAD) is designed to pilot REDD initiatives and certain funds are reserved to support climate change mitigation activities including village forest management. During its implementation, the project supports the establishment of a Village Development Fund including a second account to finance the implementation of the village forest management plan/annual plan of operation.

II. PROCESS OF VILLAGE FOREST MANAGEMENT

Stage 1 Demarcation of forest areas and preparation of detailed village forest area maps

Step 1.1	Preparation of Field Work Decision on which demarcation technique to apply; purchase of required materials; preparation of GPS equipment
Step 1.2	Implementation of Village Forest Boundary Delineation and Demarcation Marking of the exact boundaries; identification of core protected zones and controlled use zones in conservation and protection forests
Step 1.3	Identification and Demarcation of Forest Areas in Need of Preservation within the Agricultural Zone or the Livestock Zone, if applicable
Step 1.4	Preparation of the Detailed Village Forest Map at 1:5.000 or 1:10.000 scale Download GPS data on exact forest boundaries; compare new boundaries with boundaries on PLUP map; prepare village forest map .
Remarks:	<i>- If the boundary of any type of forest is clear and accurate (no complaints from villagers), there is no need to do the demarcation again (step 1.2 and 1.3)</i> <i>- If the monitoring after 2 years shows that the forest border has changed from PLUP, then the forest map should be improved accordingly.</i>

In general, the land use zoning maps prepared during the PLUP exercise may not be sufficiently accurate for the purpose of planning village forest management activities. The PLUP maps provide a general overview on the zoning within the village boundaries, but may not provide the exact location of forest boundaries in terms of geographic coordinates. These maps are mostly prepared in the village during village meetings or are based on short reconnaissance walks in the village area.

Yet, in order to promote and support village forest management practices, the boundaries between the various forest categories and other land use types must be clearly defined. These boundaries must be identified by walking along the entire boundary of each classified forest zone and by on the ground demarcation of the various forest zones. To establish the exact location of the boundaries, GPS readings must be taken during the walk along the boundaries and at the same time trees and other landmarks, such as rock outcrops, are used for marking of the boundary or the placement of signboards.

Ideally, the boundaries of the various forest zones should follow existing landscape features, such as rivers, roads, footpaths or mountain ridges. The demarcation of the forest boundaries should be conducted in several teams, each consisting of villagers, mostly members of the village land use and forest management committee / village forestry unit, and at least one district technical staff per team.



The boundary line should be established in the exact location where the forest zone actually starts. It should be avoided to include larger shifting cultivation areas into the forest zone, unless these shifting cultivation activities will definitely be abandoned in future. The walk along the boundaries also provides a good opportunity for people to develop first ideas on possible forest management activities. Wherever possible, a distinction between the core zone and the controlled use zone can be made in conservation forest and protection forest areas. The accompanying district staff is encouraged to take notes on the demarcated forest zone, its current condition, special features and important observations. These notes can be useful for the elaboration of the Village Forest Management Plan at a later stage.

Depending on the number of the teams, the size and the topography of the various forest zones, it should take only 1-4 days of field work to demarcate all forest zones within the village boundaries. It is recommended to work in several teams, e.g. one team for the conservation forest areas, one team for the protection forest areas and one team for the village use forest.

Marking boundaries of forest zones:

Technique	Advantages	Disadvantages	Conclusions
Painting at trees, after cleaning the bark 	<ul style="list-style-type: none"> – Simple technique and quick to apply – Paint and brushes are relatively cheap and even in remote areas easily available – Different colours can be used for different forest categories (conservation, protection or use forest) 	<ul style="list-style-type: none"> – Does not last very long and must be replaced at least every 2 years – It is awkward to carry pots of liquid paint in difficult terrain and on steep slopes – Paint dries out and brushes can only be used once, without proper care 	Only suitable for fairly flat and easy terrain or when forest zones are located close to the village.
Use of paint spray 	<ul style="list-style-type: none"> – Simple technique and very quick to apply – Easy to carry even in difficult terrain – Different colours can be used for different forest categories (conservation, protection or use forest) – Usually bright colours available, which last well – Spray paint can be used for a long time, does not dry out 	<ul style="list-style-type: none"> – Paint spray is relatively expensive – Paint spray is not regularly available in rural areas of Lao PDR – Difficult to purchase for villagers in future 	Well suited for very difficult terrain and where the paint spray can be purchased from Vientiane or a Provincial capital.
Use of bright nylon ribbons and ropes 	<ul style="list-style-type: none"> – Orange cloth is used by monks for marking spiritual sites and objects – Cloth can be easily fixed around a tree – Cloth lasts quite long without losing its colour – Different colours can be used for different forest categories – Easy to bring on site, even in difficult terrain – Bright coloured cloth is available throughout the rural areas of Lao PDR 	<ul style="list-style-type: none"> – Cloth and ribbon can be stolen easily – People must climb the trees on site to fix the cloth at some height 	Well suited for very difficult terrain.
Small metal signs to be fixed on trees 	<ul style="list-style-type: none"> – Simple technique and quick to apply on site – Relatively easy to carry on site – Different colours can be used for different forest categories (conservation, protection or use forest) – Last very long 	<ul style="list-style-type: none"> – Requires metal sheets to be cut into small signs, but also paint, brushes, nails and hammers are needed – Small metal signs must be prepared and painted in the village before taking them to the field; a lot of work and not cheap! – Can be removed and stolen easily 	Small metal signs are suited for remote areas where replacement cannot be made regularly or where metal sheets are already available from other larger signboards.
Larger signboards at strategic points	<ul style="list-style-type: none"> – Larger signboards provide space for more information e.g. rules 	<ul style="list-style-type: none"> – Require a lot of work to be prepared in the village, transported on site and erected – Larger signboards are very costly – Signboards cannot show the exact boundary – Can be removed and destroyed 	Only suitable at strategic points e.g. along the road; not very efficient in providing forest protection

One other aspect that must be considered at this stage is the situation of smaller forest stands located within agricultural use zones, livestock areas or others. Sometimes these forests are considered to be too small, too unimportant or too inaccessible to be classified as a forest zone during the PLUP exercise. But by classifying these forest areas as part of the agricultural or the livestock zone, their preservation and maintenance as forests cannot be ensured. Many of these smaller forest areas would gradually disappear and might be converted into agricultural use.

It is therefore important that the teams conducting the forest demarcation work look at the present land use map, the satellite images and the future land use map again, in order to identify which forest areas are currently located in the agricultural or livestock zones and are in need of protection and preservation. The selection of the additional forest zones to be protected should follow the ideas and priorities of the villagers. Important questions to be asked are: Which of the identified additional forest areas has the best forest condition, the richest biodiversity? Which of these areas has the highest priority to be preserved as forest? Where is protection realistically feasible? The Forest Law (2007) allows for forest areas as small as 0.5 ha a classification as protection forest!

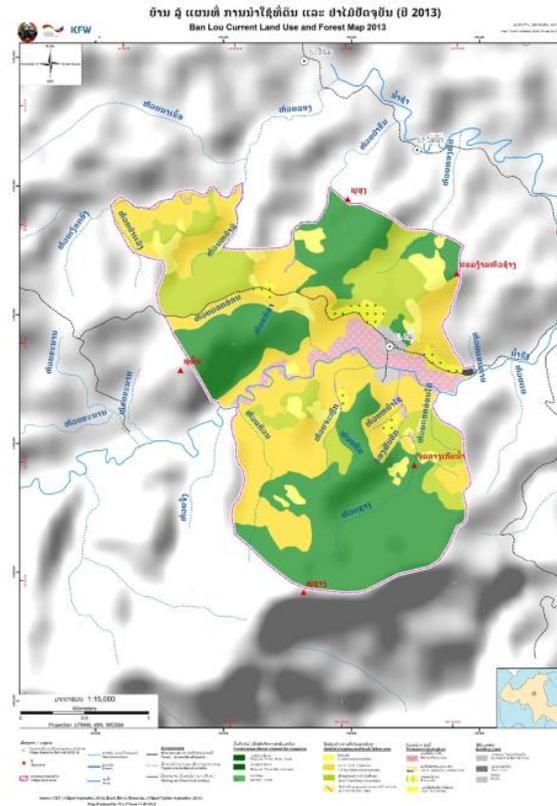
In case additional forest zones are identified by this detailed review of the PLUP map and the satellite image, the exact boundaries of these forest zones should also be demarcated on the ground. After the fieldwork of demarcating the boundaries of all classified forest zones and the demarcation of the newly added forest zones within the agricultural or livestock area has been concluded, all the new boundaries must be transferred into a detailed village forest map. By downloading the GPS readings onto the computer, the new data of the forest boundaries can be compared with the old boundaries based on PLUP maps. Nevertheless, PLUP maps will not be modified as these have been approved as the general land use zoning maps of the villages. Instead, a new village forest map has to be prepared at a 1:5.000 or 1:20.000 scale. This map is the basis for all village forest management activities, such as conducting the forest survey and the forest resources assessment, the preparation of the Village Forest Management Plan and for all monitoring and evaluation purposes.

The work of preparing the new village forest map needs to be done either at district or provincial level and depends, where GIS expertise and the necessary equipment are available. In many cases this step is still a major challenge as generally only limited GIS and map preparation capacities are available at PAFO or PONRE.

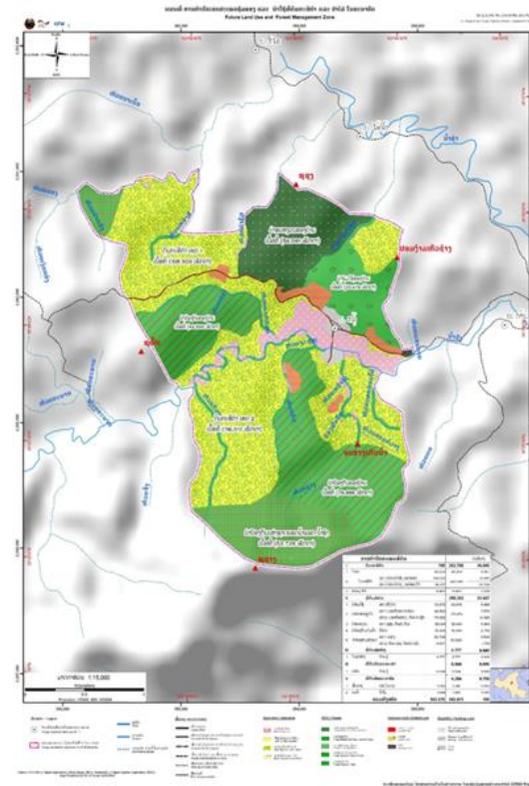
Satellite Image



Present Land Use Map



Future Land Use/Forest Map



Stage 2 Participatory Forest Resources Assessment (PFRA) and Basic Forest Inventory

Step 2.1	Selection of PFRA Observation/Sampling Points (Hotspots) based on Interpretation of Satellite Images Project the selected observation/sampling points on the village forest map; enter the coordinates of the observation/sampling points as waypoints into one GPS receiver; prepare equipment (3-4 GPS receivers, 2-3 cameras) and materials (printed forms, notebook) for field work; print updated village forest map
Step 2.2	Conduct PFRA and Transect Walks in Village Conservation and Protection Forests Fill one form for PFRA transect walks at each observation point (Annex 4.1) Fill one form for each observation point (Annex 4.2)
Step 2.3	Conduct Basic Forest Inventory in Village Use Forest if Forest Products are <u>NOT</u> used for Commercial Purpose Fill one form for PFRA transect walks at each observation point (Annex 5.1) Establish sampling plots according to Annex 7; fill the required forms (Annex 5.2); prepare calculation of standing volume and sustainable extraction rates
Step 2.4	Review and Completion of all PFRA and Forest Inventory Documents in the Village Compile additional notes on possible forest management activities
Step 2.5	Updating of the village forest map Include details on total protection zones and controlled use zones in conservation and protection forest areas
Step 2.6	Prepare copies of the PFRA Data and the Village Forest Map and hand-over to village authorities

Once, clear boundaries for the various village forest areas have been identified and demarcated and a detailed village forest map has been created, the next step is to identify the conditions of existing forest resources in the village area. The purpose of the survey and assessment of the forest areas is to describe the current situation of the forest, its composition, its integrity and its potentials.

When choosing the appropriate method and approach to the assessment of the existing forest resources in upland villages of Lao PDR, it must be kept in mind that for the vast majority of these forests the main management objectives will be forest protection, regeneration and improvement of the stands (not primarily commercial production or use intensification). In terms of the forest assessment, it is therefore necessary to gain a quick overall impression of the forest condition and to define general criteria to describe the quality of the forest resources instead of trying to establish quantitative data by conducting a systematic, but costly and time-consuming forest inventory.

In view of this general situation, it is suggested to conduct a "Participatory Forest Resources Assessment (PFRA)" in conservation forests, in protection forests and in all village use forests, which are used by villagers to satisfy their own subsistence needs. Only if the entire village use forest or certain zones might be used for an increased commercialisation of forest products, such as timber, firewood, charcoal or bamboo poles, intensive measurements in permanent sampling plots and more accurate calculations of sustainable extraction rates should be prepared.

PFRA is a methodology based on observations and the collection of local knowledge only. In village protection and conservation forests, PFRA does not include a basic inventory or further

calculations respectively quantitative extrapolation. However, observation points are selected and transect walks are conducted between these observation points.

In village use forests a very basic “Horizontal Point Sampling” is carried out at observation/sampling points (measurement of basal area/ha, tree heights etc. to quickly estimate the standing volume/ha as well as annual allowable cut for three main purposes i.e. construction timber, fire wood and fencing poles for customary uses).

This provides both, information on timber volume/ha and extraction rates in village use forests as well as a more general overview on the forest condition in village conservation and protection forests. Finally, this could serve as a basis for a community forest monitoring system.

The following working steps in PFRA can be distinguished:

In the office: Based on an interpretation of the latest satellite images or aerial photos available for the village area and the existing village forest map with the clear forest boundaries, disturbed or degraded areas will be identified as ‘hotspots’ (so called observation/sampling points). These “hotspots” can be former shifting cultivations, logging areas, zones with recent forest fires or other damaged parts of the forest.

The following tables gives the number of “observation points/sampling points” to be selected according to the size of the forest type:

- ❖ for Village Protection and Conservation Forests

Forest Zone in ha	Number of Observation Points*
0.5 - 20	1-3
20 – 50	4-5
50 – 100	5-7
100 - 200	6-8
≥ 200	7-10

**REMARK: In selecting the observation points, it might be possible that there are more ‘hotspots’ in the area. However, the respective number of observation points should not exceed the given numbers but should represent the overall forest condition.*

❖ for Village Use Forests

Forest Zone in ha	Number of Sample Points*	
	Degraded area	Dense area
0.5 - 20	1-3	1-3
20 – 50	4-5	4-5
50 – 100	5-7	5-7
100 - 200	6-8	6-8
≥ 200	7-10	7-10

**REMARK: In selecting the sampling points, it might be possible that there are more 'hotspots' in the area. However, the respective number of sampling points should not exceed the given numbers but should represent the overall forest condition.*

The selected observation/sampling points are marked on the village forest map and the geographic coordinates of the observation/sampling points are entered as waypoints into a GPS receiver.

PFRA form sheets for filling at observation/sampling points (*Annex 4.2 for Village Conservation & Protection Forests and Annex 5.2 in Village Use Forests*) and form sheets for filling after transect walks (*Annex 4.1 for Village Conservation & Protection Forests and Annex 5.1 in Village Use Forests*) have to be printed in sufficient quantity for the field work.

In the field: Villagers participating in the PFRA work (members of the VLUFMC and other selected village representatives) and technical staff from the district or province split into teams. In practice, the number of teams will depend on the availability of people, the required equipment, especially GPS receivers and cameras. The forest categories are distributed among the teams, for example one team works in the conservation forest, one team in the protection forest and one team in the village use forest and other forests. If this leads to a very unequal workload, the teams can also split the tasks differently.

Based on the actual situation in the field, the team walks or drives to the boundary of the forest zone. From the boundary, the team heads towards the first observation/sampling point. The GPS will indicate the direction to follow and the remaining distance to this waypoint. A PFRA sketch map presenting a typical village situation is shown in **Annex 6**. Due to the topography or existing streams and rivers, the team will not be able to walk in a straight line, which does not matter. The entire distance from the forest boundary to the first observation/sampling point is considered as a part of the transect walk, irrespective of whether this is in a direct line or with many detours. Once the team arrives at the first observation/sampling point, they fill one copy of each form, one for the information gathered during the transect walk (**Annex 4.1 for Village Conservation & Protection Forest and Annex 5.1 in Village Use Forest**) and one for the observation at the selected observation point (**Annex 4.2 for Village Conservation & Protection Forest and Annex 5.2 in Village Use Forests**).

Then they take photos in all four directions from the observation/sampling point (360° photo documentation). After filling the forms, which should not take more than 30 minutes and taking the photos, the team continues to the second observation point and so on. From the last observation/sampling point, the team returns to the village following the shortest way possible.

Back in the village: The team checks once again that all form sheets have been filled for the exact number of pre-selected observation/sampling points and the transect walks in between. Any changes made in the selection of observation/sampling points must be noted on the village forest map. In addition, the team makes sure that the required photos have been taken and that the location and direction of each photo has been clearly documented. All the collected data and information must be analysed together with the villagers. Any additional observations from the transect walks should be discussed and documented as well. Notes should be taken on any possible forest management activities, which have already been identified during the transect walks. All this information will help to prepare the Village Forest Management Plan later on.

Back in the office: Update the village forest map, which shows the conservation, protection and village use forest areas. Include all the selected observation/sampling points with their geographic coordinates. Project the transects walked in the field onto the map by downloading the GPS data. Include information on “total protection zones” and “controlled use zones” for conservation and protection forest areas, if these could be distinguished.

Overall, the following equipment and materials are required for the PFRA work: at least 3 GPS receivers, at least 2-3 digital cameras (ideally with an in-built compass and the possibility to enter notes on the photos taken), sufficient form sheets for the transect information and the observation/sampling points, a printed village forest map, a notebook for the additional information, pens etc.

In case no obvious disturbances, no degraded areas or anything similar can be identified on the satellite image, e.g. in the case of a well protected and preserved conservation forest area, no PFRA work in this area will be necessary. Overall, it is estimated that PFRA including the basic forest inventory (HPS) will take between 2 and 8 days of work to be completed per village, depending on the area to be covered, the number of teams available and the general topography of the village area.

All the collected PFRA data should be copied in the office and copies should be returned to the village. This data will be important for villagers to monitor the Village Forest Management Plan implementation later on.

For village use forests without commercial use, it is recommended to carry out only a basic inventory to approximately estimate the standing volume per ha. In such cases, observation/sampling points have to be identified in both degraded and dense areas (see **Annex 7**).

In special cases, where parts or the total area of the village use forest is designated for commercial production of timber, firewood, charcoal or other forest products (e.g. NTFPs such as bamboo) etc., it is necessary to conduct a more detailed forest inventory. The methodology is described in the Guidelines for Participatory Forest Inventory of DOF, No. 2155/DoF, 2006.

Stage 3 Preparation of 5-year Village Forest Management Plan (VFMP)

Step 3.1	Organize meeting of VLUFMC and district staff to jointly prepare first draft of the VFMP based on the standard format (Annex 8) Make use of the decision chains for identification of suitable activities for village forest management (Annex 9)
Step 3.2	Conduct a general village meeting to discuss and approve the VFMP Sign minutes of meeting (Annex 10)
Step 3.3	Signing and official approval of the VFMP document
Remarks:	<i>-The meetings with villagers at stage 3.1 and 4.1 can be organized in one meeting</i> <i>-The meetings with villagers at stage 3.2 and 4.2 can be organized in one meeting</i>

The 5-Year Village Forest Management Plan (VFMP) is a document which summarizes all the activities to be undertaken by the villagers to improve the management of their forest areas. The document must be as short and precise as possible and should not include too much text, in order to facilitate the preparation for the villagers. Overall the plan must focus on the planning of activities and what is supposed to happen within the planning period of 5 years. It should be less descriptive of the current situation or general data and information about the village itself.

The VFMP covers all forest zones within the village boundaries and is elaborated by all villagers with support by the district technical staff. A sample document for a VFMP is presented in **Annex 8**. The VFMP is the core document that serves as a basis for the official agreement to be signed between the village and the district authorities in order to officially conclude the management responsibilities of the village for all their forest areas, in line with the Forest Law and other relevant legal documents.

During the stage of forest demarcation and establishment of clear forest boundaries, first information about the forest zones have been collected. In the subsequent stage of conducting the Participatory Forest Resources Assessment (PFRA), transect walks were undertaken and observation/sampling points established. When reaching the stage of preparing the VFMP, the villagers as well as the supporting district staff should be in a position to understand the general condition of all forest zones within the village area. Now it will be important to take the step from making observations and collecting information to planned activities of improved forest management. To support this process an example of decision making chains for the identification of suitable activities for VFM (see **Annex 9**). Based on the observations made in the various forest zones, the users of the decision chain document are presented with a variety of possible activities from which they can choose.

The preparation of the VFMP document must take place in the village. A first draft of the VFMP document should be prepared by the VLUFMC and village forestry unit in collaboration with district staff (see **Annex 8**). Once, this draft document is ready, it is presented to all villagers in a general village meeting. When the document has been discussed and reviewed, villagers sign and express their agreement or disagreement with the VFMP in the Minutes of Meeting (see **Annex 10**).

The content of VFMP starts with a brief information about the socio-economic aspects of the village and its various land-use and forest categories. The validity period of the document is five years;

starting from the date of signing. A summary of the PFRA, the basic forest inventory and the management objectives for the various forest categories are given.

In the following parts, the various protection and reforestation activities which have been identified based on the decision chain document are elaborated (see **Annex 9**). For each activity, it is clearly stated what has to be done, how much, how often, where, when, by whom, who controls the implementation etc.

The following key activity packages can be considered by villagers: fire prevention activities, patrolling, promotion of natural regeneration, enrichment plantings, direct seeding, identification and marking of trees to be protected as mother trees for seed production, partial or temporary protection of selected parts of the village use forest, selective cutting, marking of trees to be cut per year, NTFP management and development activities, building of small dams and water reservoirs, planting on national tree planting day and replacement of demarcation pegs along the forest boundaries after 2-3 years.

The implementation of the various activities in the VFMP can be either undertaken by groups, by families or by individuals. It is important to share the responsibilities among the villagers and to involve as many villagers as possible in the various activities. Any payments made by donor projects or the Lao Government in support of VFM activities will then be distributed directly to the group, families or individuals, who actually implemented forest management related work.

The monitoring and evaluation on the implementation of VFMP activities is crucially important to accurately know, what has been done and achieved (by whom or which groups, where, what time, how much and who controls and follows up). Those information are needed as the basis for accurately calculating the exact incentive payments. Beside this, the monitoring and assessment on the positive and negative change in forest condition after a certain period e.g. 1 to 2 years, of the implementation of VFMP, the outcome will be used for estimating future performance based payments.

The existing conflict mediation mechanism at village level is used in the case, conflicts might occur regarding the use of forest resource or the violation of regulations and laws or forest management agreements following the guidelines on conflict mediation at village level. In cases, where violations were resolved through this mechanism, the village authorities and the VLUFMC shall prepare the minutes of resolution (see **Annex 11**).

The 5-year VFMP does not contain a budget and after the signing and formal endorsement, its copies will be kept at village and district administration office.

In view of practically implementing the 5 year VFMP, it requires to prepare the village forestry operational plan which specifies the amount of tasks based on the tasks identified in the 5 year VFMP. The annual budget is also used to implement the annual operation plan activities.



Stage 4 Preparation of Annual Plan of Operation

- | | |
|----------|--|
| Step 4.1 | Organise meeting of VLUFMC and district staff to prepare first draft of the Annual Plan of Operation based on standard format (Annex 12) |
| Step 4.2 | Conduct general village meeting to discuss and approve the Annual Plan of Operation; sign minutes of meeting (Annex 10) |
| Step 4.3 | Signing and official approval of the Annual Plan of Operation document |

Remarks: - The meetings with villagers at stage 3.1 and 4.1 can be organized in one meeting
- The meetings with villagers at stage 3.2 and 4.2 can be organized in one meeting

The Annual Plan of Operation (see **Annex 12**) presents all planned activities by the villagers to conduct improved village forest management over a period of 12 months. It is obviously based on the 5-year VFMP and breaks it down to what is realistically feasible on a yearly basis. The Annual Plan of Operation also includes budget items for each planned activity and an overall budget.

The following information are presented in the Annual Plan of Operation: in which forest zone, what activities are to be implemented, by whom and when exactly (month and year), how much of the output is planned (e.g. number of seedlings planted), who supervises and controls the actual implementation (who guarantees that the actual planned work was fully achieved!) and how much this will cost.

The Annual Plan of Operation is elaborated in a village meeting by members of the VLUFMC and technical district staff (DAFO and DONRE) by systematically going through the planned activities in the VFMP. Each activity that is supposed to be implemented during the next 12 months is selected and all the details are discussed and entered into the planning table. In case additional activities are identified during this discussion, it is also possible to integrate these into Annual Plan of Operation and to make a footnote in the table, that this is an additional activity not foreseen in the 5 year VFMP.

Once a draft Annual Plan of Operation is finalized, this document is presented to and discussed with all villagers. In the case of the first Annual Plan of Operation, this happens at the same time as the discussion of the overall 5 year VFMP. At the end of this general village meeting, the villagers are requested to sign the minutes of meeting to either show their approval or disapproval of the Annual Plan of Operation (see **Annex 10**). This exercise is then repeated once a year. After the first year, this annual work planning session is also used for a review and assessment of the achievements and failures of the year before.

After the general discussion and amendment of the Annual Plan of Operation, the planning document is signed and approved by the head of the village, a representative of the VLUFMC, the Head of DAFO and the Head of DONRE. This approval is valid for one year. Budget transfers to the special forest account of the village by supporting agencies (e.g. a donor-funded project or the Lao Government) are then made based on the plan.

Copies of the Annual Plan of Operation shall be kept with village authority for implementation and DONRE and DAFO for monitoring.

Stage 5: Village Forest Management Agreement

Step 5.1	Prepare Village Forest Management Agreement in the village based on standard document (Annex 13)
Step 5.2	Present, discuss and agree on the Village Forest Management Agreement in a village meeting facilitated by FPIC team (FPIC 2)
Step 5.3	Sign the Village Forest Management Agreement in the village facilitated by FPIC team (FPIC 3)

Once the 5-year VFMP and the first Annual Plan of Operation have been elaborated and signed, a Village Forest Management Agreement (see **Annex 13**) is signed between the village authorities and the district authorities which formally and officially concludes the process of establishment of village forest management in a particular village. The overall objective of signing the agreement is to promote and strengthen sustainable management and protection of village forest areas. The agreement provides the overall regulatory framework for the village forest management activities to be undertaken by the villagers with technical support and training by district staff of DAFO and DONRE. The document presented as **Annex 13** serves as a standard document which is generally applied, but can be modified according to local conditions.

The scope of the agreement covers all designated and classified forest areas within the village boundaries as specified in the PLUP maps and the detailed village forest map. The agreement is valid for 5 years, in line with the validity period of the 5-year VFMP and can be renewed after this period. The agreement is based on the contents of the following documents: the PLUP results and in particular the village regulations, the signed and approved 5-year VFMP and the Annual Plan of Operation as well as the signed minutes of meeting documenting the overall approval of the villagers.

The rights and responsibilities of the two contractual partners, the village and the district are clearly specified in the Village Forest Management Agreement. This part describes the rights of withdrawal and the rights to modify the agreement under certain circumstances. It also allows the modification of the VFMP and the Annual Plan of Operation if this is desired. On the other hand, the village authorities agree to enforce the village regulations and implement the forest management and protection activities as planned in the VFMP and the Annual Plan of Operation. They also have the responsibility to control and monitor the results of the implementation, the timely and correct payments from respective accounts under the management of village VDF committee and to cooperate closely with the technical staff from the district level (DAFO and DONRE).

From the district level, DAFO and DONRE have the right to conduct monitoring and control activities in the village. If these monitoring and control activities show that villagers have not implemented the forest management and protection activities as specified in the agreement, DAFO and DONRE have the right to discuss with village authorities to jointly solve problems in a constructive and fair manner. On the other hand, DAFO and DONRE have the responsibility to provide training and technical advice to the Village Land Use and Forest Management Committee on all relevant forest management and protection activities and to assist the village authorities in the enforcement of their village regulations.

In addition to these rights and responsibilities, the agreement provides details on the arrangement for payments to the villagers and the monitoring and inspection activities required. Finally, the procedures for amending the agreement are explained and the applicable grievance mechanism or dispute settlement mechanism is described. The agreement is signed at the village and copies are

distributed to all concerned agencies as specified in the document. Once the agreement has been signed by the head of the village, DAFO, DONRE and endorsed by the District Governor, it becomes immediately effective.

Stage 6 Implementation of the village forest management activities

The Implementation of the Village Forest Management Activities should be based on the approved Annual Plan of Operation and the 5 year VFMP.

Stage 7 Monitoring and Evaluation

Step 7.1	Quarterly monitoring of progress made in implementation, making of payments to villagers, illegal activity reporting and conflict situations
Step 7.2	Annual monitoring of overall achievement of VFM Work Plan and preparation of new Annual VFM Work Plan
Step 7.3	Every 2 years: Monitoring of Forest Condition and Forest Cover by using PFRA techniques and Transect Walks
Step 7.4	After 5 years: Monitoring of overall achievement of past 5 year VFMP and preparation of new VFMP and new VFM Agreement

Monitoring activities in village forest management happen at different levels:

1. Monitoring of the implementation of VFM activities based on the Annual Plan of Operation and the VFMP – this should take place on a quarterly basis for the implementation monitoring of the Annual Plan of Operation and once per year for the 5-year VFMP.
2. Monitoring of payments made to individuals and groups in the village for carrying out VFM activities – should take place on a quarterly basis together with the implementation monitoring.
3. Monitoring of illegal activities and patrolling in the forest zones by enforcement of the village regulations and the use of the violation case report (**Annex 11**) – this should take place on a quarterly basis and the VLUFMC should report on incidences of illegal activities in breach of the village regulations and the VFMP.
4. Monitoring of conflicts within the village and with outsiders over natural resources use and forest management – this should be monitored and discussed by the VLUFMC at least quarterly.
5. Monitoring of the forest condition and forest cover by forest monitoring at the selected observation/sampling points for PFRA and interpretation of satellite images; for longer term monitoring and evaluation of the forest condition essential criteria, indicators and verifiers have been selected in order to prove that village forest management achieves the intended results. This forest cover monitoring and reporting against the overall indicators in the VFMP should take place every 2 years.

All monitoring activities should be listed and specified in the VFMP and the Annual VFM work plan. For example, it is important to provide detailed information on how the monitoring activities will take place and by whom. Monitoring costs can be extremely high.

This should be prevented by simplifying and reducing monitoring to the extent possible, i.e. measuring performance only to the extent that is needed.

Monitoring activities should ideally be carried out:

- a) by the community or forest user groups itself,
- b) by the government support team from DoNRE/DAFO (e.g. initially, once ever 3 months but decreasing to once a year over time)
- c) finally through an external expert (e.g. every 4 years)

The following overall indicators for sustainable management of village forest areas play an overarching role in order to assess the longer term achievements of all the VFM activities:

Indicator	Unit	Means of Verification
1. Disturbed or degraded areas within forest zones (clearings)	ha	Satellite images PFRA every 2 years; Transect walks
2. Occurrence of forest fires	ha	MODIS; Satellite images PFRA every 2 years; Transect walks
3. Forest regeneration areas	ha	Satellite images PFRA every 2 years; Transect walks
4. Dense forest areas	ha	Satellite images PFRA every 2 years; Transect walks
5. Dense undergrowth in the forest areas	ha	PFRA every 2 years; Transect walks
6. Diversity in species composition in the forest areas	No. of species per ha	PFRA every 2 years; Transect walks
7. Occurrence of seed (mother) trees	No. of species per ha	PFRA every 2 years; Transect walks
8. Timber and fuelwood volume sustainably used from the Village Use Forest	m ³ or kg	Household interviews PFRA every 2 years; Transect walks
9. Income generation from forest products	KIP/No. of Fam.	Household interviews
10. Abundance of NTFPs	No. of species used; kg harvested	Household interviews PFRA every 2 years; Transect walks
11. Adapted harvesting techniques in Village Use Forest	ha	Household interviews PFRA every 2 years; Transect walks

III. VILLAGE FOREST TENURE

Based on the “Land Law” (No.04/NA, 2003), the Decree on the “Implementation of the Land Law” (No. 88/PM, 2008) and the Ministerial Instructions on “Adjudications Pertaining to Land Use and Occupation for Land Registration and Titling” (No. 564/NLMA, 2007), long-term use rights in Lao PDR can be issued to individuals, organisations, collectives, communities for communal use and to the state and its organisations.

For village forest management the most important options for formalised land tenure are the issuing of communal land use rights for village use forests to the entire village and the issuing of individual use rights for the establishment of private tree plantations. Yet, the surveying, adjudication and registration (titling) of land use rights in rural areas of Lao PDR has not yet covered large areas. Nevertheless, land registration in rural villages is piloted in a number of provinces across the country. Some first promising examples of registration of village use forests are known from Khammouane and first steps to officially register bamboo forests in the name of the village have been undertaken in Houaphan Province.

The fact that villages cooperating with the district authorities on village forest management is characterised by an undertaken PLUP exercises, a detailed village forest maps, village regulations as well as the VFMP and a signed Village Forest Management Agreement. This should also help to prepare the ground for the official registration of land use rights in these villages. It is the task of PONRE and DONRE to undertake land surveying, adjudication and registration activities in the villages. The issuing of formal use rights for communally managed areas, such as the village use forest or bamboo forests or important NTFP areas would further strengthen the responsibilities of the villages to use these areas sustainably. The titling of these communal areas should be pursued as soon as possible, once the village forest management process has been concluded and the VFM Agreement is signed.

IV. TRAINING NEEDS

The following training needs for technical staff have been identified in connection with the village forest management approach as described in these guidelines (this list does not include training needs for PLUP!):

1. A general introductory training on VFM based on these guidelines will be required for all DAFO and DONRE staff as well as for selected staff members of PAFO and PONRE and for representatives of DFRM and DoF to support these activities from the provincial and national level. This training would require approximately 3 days and covers all aspects described in these VFM Guidelines in detail. This training will include exercises on filling all the forms presented in the Annexes to these guidelines.
2. All DAFO and DONRE staff have to be familiar with the use of GPS, camera and relascope. The GPS receivers will be used for mapping purposes by taking regular interval GPS measurements e.g. when walking along the forest boundaries or along the transect walks and for directing the teams working on Participatory Forest Resources Assessment (PFRA) to the pre-selected observation/sampling points as waypoints.
3. Selected PAFO or PONRE staff need to be trained in the preparation of simple maps, for example to download GPS data, update the PLUP maps and to prepare the detailed village forest map. This requires intermediate knowledge levels on data management and GIS applications and would be the subject of a specialised training course for suitable candidates.

In addition, there is substantial need for on-the-job training and advice to the Village Land Use and Forest Management Committee and in particular for members of the village forest unit within this committee. Villagers need to be trained and assisted by DAFO and DONRE staff on all steps of village forest management as described in these guidelines, starting with the demarcation of all forest areas, PFRA implementation or forest inventory, the preparation of the village forest map as well as the elaboration of the long term VFMP and the Annual VFM Work Plan. Villagers will also require regular training and advice on the various forest management techniques.

V. ANNEXES AND FORM SHEETS

- Annex 1: Legal Documents and Regulations relevant to Village Forest Management**
- Annex 2: Sample PLUP maps (present and future), satellite image, example from Houaphan**
- Annex 3: Sample Village Regulations**
- Annex 4: Form Sheet for Village Conservation and Protection Forest**
 - Annex 4.1: Form Sheet for filling during PFRA transect walks for Village Conservation and Protection Forest
 - Annex 4.2: Form Sheet for filling at PFRA observation points for Village Conservation and Protection Forest
- Annex 5: Form Sheet for Village Use Forest**
 - Annex 5.1: Form Sheet for filling during PFRA transect walks for Village Use Forest
 - Annex 5.2: Form Sheet for filling at PFRA observation/sampling points for Village Use Forest
- Annex 6: PFRA Sketch map**
- Annex 7: Guidelines for a basic “Horizontal point sampling (HPS)” in Village Use Forests**
- Annex 8: Sample VFMP Format**
- Annex 9: Example of decision chains for identification of suitable activities for VFM**
- Annex 10: Sample Minutes of Meeting at village level to approve VFMP or Annual Plan of Operation**
- Annex 11: Sample Violation Case Report**
- Annex 12: Sample Annual Plan of Operation**
- Annex 13: Sample VFM Agreement**
- ANNEX 14: Summary Diagram of all Stages and Working Steps of VFM Approach**

ANNEX 1: Legal Documents and Regulations relevant to Village Forest Management

Guidelines and procedures in forming a village forestry committee (VFC), SUFORD 04, 2004

Guidelines and Procedures for Tree Marking and vine cutting, No ____/3802 LA.04, 2004

Decree on the Forest and Forest Resource Development Fund, No. 38/PM, 2005

Regulation of the Ministry of Agriculture and Forestry on Forest Inventory, No. 0108/MAF, 2005

Guidelines on Participatory Forest Inventory, No. 2155 /DoF, 2006

Guidelines of the Department of Forestry on Sustainable Production Forest Management Planning, No. 2156/DoF, 2006

Forest Law, No. 6/NA, 2007

Village Forest Management Regulation, No. 0535/MAF. 2001, Dec. 2007

MAF Minister's Order regarding the Enhancement of Forest Regeneration in the Country Wide, No. 0111/MAF, 2008

Order of the Prime Minister on Strengthening the Forest Management, Protection and the Coordination of Management Forest and Forestry Business, No. 17/PM, 2008

Decree on the Protection Forest, No. 333/PM, 2010

ANNEX 3: Sample Village Regulations

Sample Contents of

(this is only an example, non-applicable parts can be deleted)

Village Regulations

(sometimes also referred to as: Village Land Use and Forest Management Agreement or Village Land Use and Forest Use Regulations)

Lao People's Democratic Republic

Peace Independence Democracy Unity Prosperity

Province:

District:

Name of Village:

Preamble

These village regulations describe the rules and regulations applied to the use of all land and forest areas within the boundaries ofvillage. These regulations have been drafted and approved by the villagers themselves with support from District staff from

The objective of these regulations is to manage the village forest and other land use areas in line with the laws and regulations of Lao PDR in order to achieve better forest protection and management as well as a reduction of poverty, peace and stability.

The Village Administrative Committee assisted by the Village Land Use and Forest Management Committee will control the enforcement of these regulations and can charge fines and impose sanctions in line with the set rules in this document.

1 Location of the Village

The village is located in the Kum Ban of..... and shares its village boundaries with the following villages:

To the North:

To the East:

To the South:

To the West:

2 Village statistics

Number of households? Number of families? Men, women? Etc.

3 Short description how these regulations have been written and approved

By whom? When? Did they take existing traditional rules and regulations into account? Who approved the regulations? When?

4 Overview of land use and forest zones according to the PLUP map

Land Use or Forest Zone	ha
Paddy land	
Agricultural Use Zone	
Gardens or Orchards	
Livestock Zone	
Village Use Forest	
Village Protection Forest	
Village Conservation Forest	
Cemetery or Spirit Forest	
Reserved land for future allocation	

5 Village Conservation Forest Area

- a) Rules and regulations
- b) Fines/Sanctions

6 Village Protection Forest Area

- a) Rules and regulations
- b) Fines/Sanctions

- 7 Village Use Forest Area
 - a) Rules and regulations
 - b) Fines/Sanctions

- 8 Other Village Forest Area
 - a) Rules and regulations
 - b) Fines/Sanctions

- 9 Village Agricultural Use Area
 - a) Rules and regulations
 - b) Fines/Sanctions

- 10 Village Livestock Area
 - a) Rules and regulations
 - b) Fines/Sanctions

- 11 Gardens or Orchards
 - a) Rules and regulations
 - b) Fines/Sanctions

- 12 Reserved Land for Future Allocation
 - a) Rules and regulations
 - b) Fines/Sanctions

- 13 Management of Paddy Fields
 - a) Rules and regulations
 - b) Fines/Sanctions

- 14 Management of Water Bodies (Ponds, Rivers, Streams, Wells)
- a) Rules and regulations
 - b) Fines/Sanctions
- 15 Management of Domestic Livestock
- a) Rules and regulations
 - b) Fines/Sanctions
- 16 What happens with the fines collected?
- 17 Is there a reward system for those who detect violations and those who took part in the arrests of violators?
- 18 Modifications or Additions to these Village Regulations

Under what circumstances? By whom? Who approves the changes?

- 19 Approval of these Village Regulations
Date of effectiveness? Approval by villagers and district authorities.

Signatures:

Head of Village

Representative of the Village Land Use and Forest Management Committee

District Governor

Representative of DAFO

Representative of DONRE

ANNEX 4: Form sheet for filling during PFRA transect walks and Observation Point for Village Conservation and Protection Forest

ANNEX 4.1: Form Sheet for transect walk

Name of Village: _____ Date:...../...../.....

No of transect walk :

Forest Category:

Local Name of the Area:

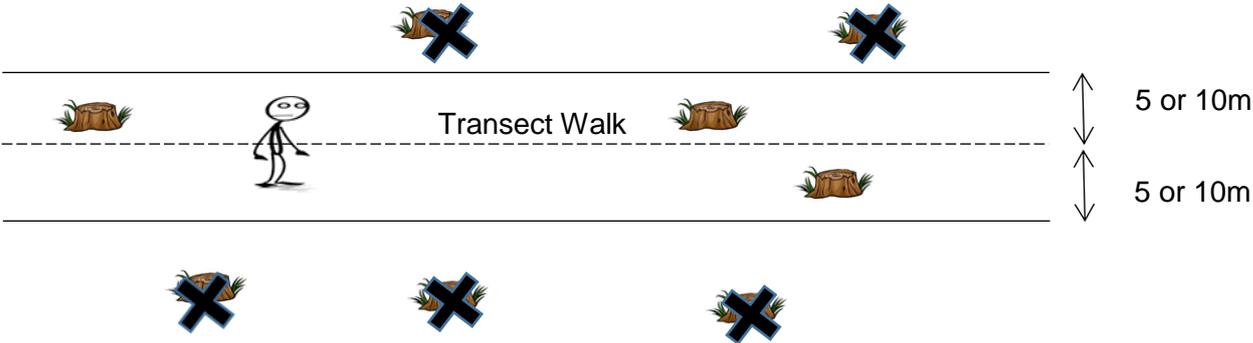
Names of participants in the PFRA work:

When the participants in the PFRA work (villagers and district staff) walk along a transect line within the forest zone from one observation point to the next, please fill this form sheet when you arrive at your next observation point! (This means that you should fill one of these forms for each transect walk between two observation points!). The information for filling this sheet is gathered by looking around you along the way and is a summary or average of what you have observed during your transect walk. This sheet should be filled based on the views of all participants together (and not individually!). You need to find a common agreement on the classification in the table below!

1. What are the main vegetation types you could observe along your transect walk? Describe the vegetation in your own words.

.....

2. Example for observation area along the transect walk:



Example:
 Criteria 2. "Any type of cutting" → Count No. of stumps
 Result: 3 stumps

3. Fill the following table **and read before starting the transect walk!**

Criteria	A Picture No. (optional)	B Counting tool (ha, stumps, species)	C Summary	Description
1. Shifting cultivation and other disturbances Are there new traces of disturbances from ~ the past 5 years regarding shifting cultivation, infrastructure, mining etc. along the transect (10m on both sides of the track)? → Estimate the area in ha and the year of disturbances		1.ha 2.ha 3.ha 4.ha	Total:ha	Note down your observations (try to estimate the date): 1..... 2. 3. 4.
2. Any type of cuttings for timber use Are there new traces of new cuttings from ~ the past 3 years with a stump diameter of >20cm visible (5m on both sides of the track)? → Count No. of stumps			Total: ..No./stumps	Try to estimate the date of cutting: 1. Within 1 year:% (last 12 months) 2. Within 2.-3. year:% (13 – 36 months)
3. NTFP species Count the number of different NTFPs, which you can use for yourself or for sale (5m on both sides of the track)? → Count No. of species			Total:species	Note down most commonly used species:
4. Forest Fire Are there new traces of forest fire from ~ the past 3 years (10m on both sides of the track)? → Estimate affected area in ha		1.ha 2.ha 3.ha	Total:ha	Try to estimate the date of forest fire and probably reason: 1..... 2. 3.
5. Streams → Describe the streams and rivers you crossed or saw during the transect walk				1. Name:..... Water running (yes or no): Water condition: 2. Name:..... Water running (yes or no): Water condition:
6. Livestock Are there traces of grazing by livestock, like buffaloes, cows, goats (5m on both sides of the track)? → note down visual observations				<input type="checkbox"/> observed <input type="checkbox"/> not observed If observed, kind of Livestock:
7. Hunting/Fishing Were there traces of hunting/fishing activities (10m on both sides of the track)? → note down visual observations				<input type="checkbox"/> observed <input type="checkbox"/> not observed If observed, means and ~date of hunting/fishing:

ANNEX 4.2: Form Sheet for Observation Point

Name of Village:

Date:...../...../.....

No of Observation Point:

Forest Category:

Local Name of the Area:

Names of participants in the PFRA work:

When the participants in the PFRA work (villagers and district staff) arrive at an observation point selected for forest resources assessment, please look around you and fill the following table based on your direct observation and local knowledge of the villagers!

1. What are the main vegetation types you can observe around you? Describe the vegetation in your own words.

.....
.....

2. Fill the following table and tick the fields which describe the current situation.

GPS Coordinates at the observation point:

GPS	X	
Coordinates:	Y	

No. of photos taken with GPS camera at the observation point:

Photo	North	East	South	West
Photo No./code				

Do not forget to take photos in all directions around you from the centre of the observation point! Make sure that you note the location and the direction (North, East, South, West) as well as the code of photos you have taken!

Criteria	A Very high, very rich or very many	B High or rich or many	C Medium	D Low or few	E Very low or very few	F None	Remarks
1. Trees of the size \geq 50 cm DBH Count number of trees within a radius of 25 m → Count No. of trees	≥ 20 <input type="checkbox"/>	11-19 <input type="checkbox"/>	10 <input type="checkbox"/>	5 – 9 <input type="checkbox"/>	< 5 <input type="checkbox"/>	0 <input type="checkbox"/>	
2. Trees of the size between \geq 20 to 49 cm DBH Count number of trees within a radius of 25 m → Count No. of trees	≥ 30 <input type="checkbox"/>	21-29 <input type="checkbox"/>	11 -20 <input type="checkbox"/>	5 -10 <input type="checkbox"/>	< 5 <input type="checkbox"/>	0 <input type="checkbox"/>	
3. Richness of biodiversity: Count the number of different tree and shrub species within a radius of 10m. → Count No. of Species	≥ 20 <input type="checkbox"/>	15-19 <input type="checkbox"/>	10 – 14 <input type="checkbox"/>	5 – 9 <input type="checkbox"/>	< 5 <input type="checkbox"/>	0 <input type="checkbox"/>	
4. Crown cover and canopy How much land is covered by shade from trees and large shrubs, when the sun stands vertical within a radius of 25m? → Estimate in area in %	≥ 80 <input type="checkbox"/>	60 – 79 <input type="checkbox"/>	50 <input type="checkbox"/>	20 – 49 <input type="checkbox"/>	< 20 <input type="checkbox"/>	0 <input type="checkbox"/>	
5. Density of undergrowth How much of the soil is covered by low vegetation less than 2m high within a radius of 10m? → Estimate the area in %	≥ 80 <input type="checkbox"/>	60 – 79 <input type="checkbox"/>	50 <input type="checkbox"/>	20 – 49 <input type="checkbox"/>	< 20 <input type="checkbox"/>	0 <input type="checkbox"/>	
6. Tree seedlings Count how many young trees from seeds are growing with a diameter $<$ 10cm and within a radius of 10m. → Count No. of seedlings	≥ 50 <input type="checkbox"/>	40-49 <input type="checkbox"/>	20 – 39 <input type="checkbox"/>	5 – 19 <input type="checkbox"/>	< 5 <input type="checkbox"/>	0 <input type="checkbox"/>	
7. Young coppices or saplings Count how many young coppices or saplings are growing from cut or burnt trees with a diameter $>$ 10cm and within a radius of 10m. → Count No. of stems	≥ 50 <input type="checkbox"/>	40-49 <input type="checkbox"/>	20 – 39 <input type="checkbox"/>	5 – 19 <input type="checkbox"/>	< 5 <input type="checkbox"/>	0 <input type="checkbox"/>	
8. NTFP species Count the number of different NTFPs, which you can use for yourself or for sale within a radius of 10m. → Count No. of species	≥ 20 <input type="checkbox"/>	15-19 <input type="checkbox"/>	10 – 14 <input type="checkbox"/>	5 – 9 <input type="checkbox"/>	< 5 <input type="checkbox"/>	0 <input type="checkbox"/>	
9. Coarse woody debris How much old wood and dead branches with a diameter $>$ 10cm cover the soil within a radius of 10m? → Count No. of old wood and dead branches	≥ 50 <input type="checkbox"/>	40 – 49 <input type="checkbox"/>	30 – 39 <input type="checkbox"/>	10 – 29 <input type="checkbox"/>	<10 <input type="checkbox"/>	0 <input type="checkbox"/>	

Criteria	A Very high, very rich or very many	B High or rich or many	C Medium	D Low or few	E Very low or very few	F None	Remarks
10. Fine litter and small branches How much leaf litter and small branches with less than 10cm diameter <u>cover</u> the soil within a radius of 10m? → Estimate the concerned area in %	≥ 80 <input type="checkbox"/>	60 – 79 <input type="checkbox"/>	50-59 <input type="checkbox"/>	20 – 49 <input type="checkbox"/>	< 20 <input type="checkbox"/>	0 <input type="checkbox"/>	
11. Shifting cultivation etc. Are there new traces of disturbances from ~ the past 3 years regarding shifting cultivation, infrastructure, mining etc. within a radius of 50m visible? → Estimate the area in %	≥ 80 <input type="checkbox"/>	60 – 79 <input type="checkbox"/>	50- 59 <input type="checkbox"/>	20 – 49 <input type="checkbox"/>	< 20 <input type="checkbox"/>	0 <input type="checkbox"/>	
12. Logging Are there new traces of logging from ~ the past 3 years with a stump diameter of >20cm and within a radius of 50m visible? → Count No. of stumps	≥ 10 <input type="checkbox"/>	5 – 9 <input type="checkbox"/>	3 – 4 <input type="checkbox"/>	2 <input type="checkbox"/>	≤1 <input type="checkbox"/>	0 <input type="checkbox"/>	
13. Biomass removal Are there new traces of any biomass removal from ~ the past 3 years within a radius of 50m visible? → Estimate the affected area in %	≥ 80 <input type="checkbox"/>	60 – 79 <input type="checkbox"/>	50- 59 <input type="checkbox"/>	20 – 49 <input type="checkbox"/>	< 20 <input type="checkbox"/>	0 <input type="checkbox"/>	
14. Forest Fire Are there new traces of disturbances from ~ the past 3 years regarding forest fire. within a radius of 50m? → Estimate the affected area in %	≥ 80 <input type="checkbox"/>	60 – 79 <input type="checkbox"/>	50- 59 <input type="checkbox"/>	20 – 49 <input type="checkbox"/>	< 20 <input type="checkbox"/>	0 <input type="checkbox"/>	
15. Large livestock Are there traces of grazing by large livestock (buffaloes, cows) around you? → Estimate the affected area in %	≥ 80 <input type="checkbox"/>	60 – 79 <input type="checkbox"/>	50- 59 <input type="checkbox"/>	20 – 49 <input type="checkbox"/>	< 20 <input type="checkbox"/>	0 <input type="checkbox"/>	

ANNEX 5: Form Sheet for filling during PFRA transect walks and Observation Points for Village Use Forest

ANNEX 5.1: Form Sheet for transect walks

Name of Village:

Date:../../.....

Transect Walk No.:

Local Name of the Area:

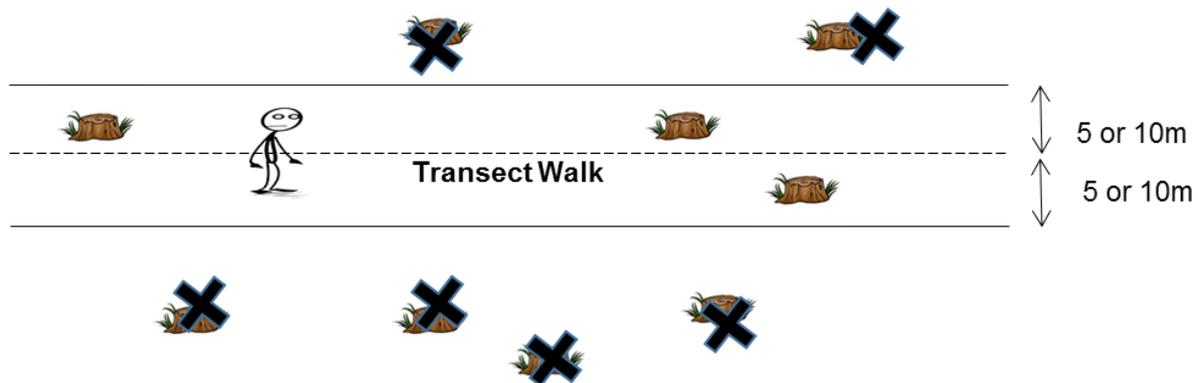
Names of participants in the PFRA work:

When the participants in the PFRA work (villagers and district staff) walk along a transect line within the forest zone from one observation point to the next, please fill this form sheet when you are walking and arrive at your next observation point! (This means that you should fill one of these forms for each transect walk between two observation points!). The information for filling this sheet is gathered by looking around you along the way and is a summary or average of what you have observed during your transect walk. This sheet should be filled based on the views of all participants together (and not individually!). You need to find a common agreement on the classification in the table below!

4. What are the main vegetation types you could observe along your transect walk? Describe the vegetation in your own words.

.....

5. Example for observation area along the transect walk:



Example:

Criteria 2. "Any type of cutting" → Count No. of stumps

Result: 3 stumps

3. Fill the following table, **read and understand before starting the transect walk!**

Criteria	A	B		C
	Picture No. (optional)	Counting tool (ha, stumps, species)	Summary	Description
1. Shifting cultivation and other disturbances Are there new traces of disturbances from ~ the past 5 years regarding shifting cultivation, infrastructure, mining etc. along the transect (10m on both sides of the track)? → Estimate the area in ha and the year of disturbances		1.ha 2.ha 3.ha 4.ha	Total:ha	Note down your observations (try to estimate the date): 1..... 2. 3. 4.
2. Any type of cuttings for timber use Are there new traces of new cuttings from ~ the past 3 years with a stump diameter of >20cm visible (5m on both sides of the track)? → Count No. of stumps			Total: ..No./stumps	Try to estimate the date of cutting: 1. Within 1 year:% (last 12 months) 2. Within 2-3. year:% (13 – 36 months)
3. NTFP species Count the number of different NTFPs, which you can use for yourself or for sale (5m on both sides of the track)? → Count No. of species			Total:species	Note down most commonly used species:
4. Forest Fire Are there new traces of forest fire from ~ the past 3 years (10m on both sides of the track)? → Estimate affected area in ha		1.ha 2.ha 3.ha	Total:ha	Try to estimate the date of forest fire and probably reason: 1..... 2. 3.
5. Streams → Describe the streams and rivers you crossed or saw during the transect walk				1. Name:..... Water running (yes or no): Water condition: 2. Name:..... Water running (yes or no): Water condition:
6. Livestock Are there traces of grazing by livestock, like buffaloes, cows, goats (5m on both sides of the track)? → note down visual observations				<input type="checkbox"/> observed <input type="checkbox"/> not observed If observed, kind of Livestock:
7. Hunting/Fishing Were there traces of hunting/fishing activities (10m on both sides of the track)? → note down visual observations				<input type="checkbox"/> observed <input type="checkbox"/> not observed If observed, means and ~date of hunting/fishing:

ANNEX 5.2: Form Sheet for Observation Point

Name of Village:

Date:...../...../.....

Observation Point No.:

Type of forest area: Degraded Area Dense Area

Local Name of the Area:

Names of participants in the PFRA work:

When the participants in the PFRA work (villagers and district staff) arrive at an observation point selected for forest resources assessment, please look around you and fill the following table based on your direct observation and local knowledge of the villagers!

3. What are the main vegetation types you can observe around you? Describe the vegetation in your own words:

.....
.....

2. Fill the following tables and tick the fields which describe the current situation.

GPS Coordinates at the observation point:

GPS	X	
Coordinates:	Y	

No. of photos taken with GPS camera at the observation point:

Photo	North	East	South	West
Photo No./code				

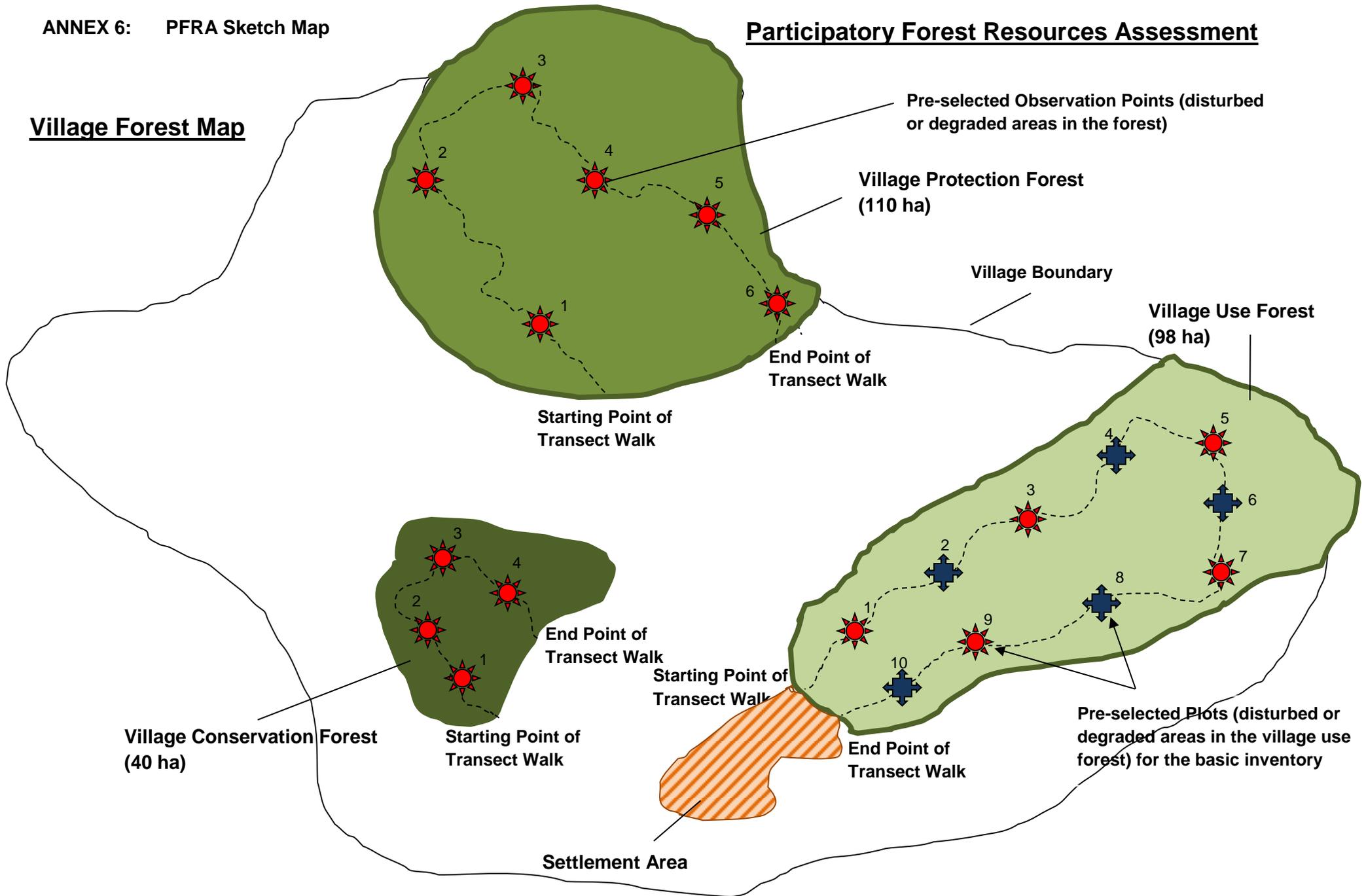
Take photos in all directions around you from the centre of the observation point! Make sure that you note the location and the direction (North, East, South, West) as well as the code of photos you have taken!

A) General conditions

Criteria	A Very high, very rich or very many	B High or rich or many	C Medium	D Low or few	E Very low or very few	F None	Remarks
1. Richness of biodiversity: Count the number of different tree and shrub species within a radius of 10m. → Count No. of Species	≥ 20 <input type="checkbox"/>	15-19 <input type="checkbox"/>	10 – 14 <input type="checkbox"/>	5 – 9 <input type="checkbox"/>	< 5 <input type="checkbox"/>	0 <input type="checkbox"/>	
2. Crown cover and canopy How much land is covered by shade from trees and large shrubs, when the sun stands vertical within a radius of 25m? → Estimate in area in %	≥ 80 <input type="checkbox"/>	60 – 79 <input type="checkbox"/>	50 <input type="checkbox"/>	20 – 49 <input type="checkbox"/>	< 20 <input type="checkbox"/>	0 <input type="checkbox"/>	
3. Density of undergrowth How much of the soil is covered by low vegetation less than 2m high within a radius of 10m? → Estimate the area in %	≥ 80 <input type="checkbox"/>	60 – 79 <input type="checkbox"/>	50 <input type="checkbox"/>	20 – 49 <input type="checkbox"/>	< 20 <input type="checkbox"/>	0 <input type="checkbox"/>	
4. Tree seedlings Count how many young trees from seeds are growing with a diameter < 10cm and within a radius of 10m. → Count No. of seedlings	≥ 50 <input type="checkbox"/>	40-49 <input type="checkbox"/>	20 – 39 <input type="checkbox"/>	5 – 19 <input type="checkbox"/>	< 5 <input type="checkbox"/>	0 <input type="checkbox"/>	
5. Young coppices or saplings Count how many young coppices or saplings are growing from cut or burnt trees with a diameter > 10cm and within a radius of 10m. → Count No. of stems	≥ 50 <input type="checkbox"/>	40-49 <input type="checkbox"/>	20 – 39 <input type="checkbox"/>	5 – 19 <input type="checkbox"/>	< 5 <input type="checkbox"/>	0 <input type="checkbox"/>	
6. NTFP species Count the number of different NTFPs, which you can use for yourself or for sale within a radius of 10m. → Count No. of species	≥ 20 <input type="checkbox"/>	15-19 <input type="checkbox"/>	10 – 14 <input type="checkbox"/>	5 – 9 <input type="checkbox"/>	< 5 <input type="checkbox"/>	0 <input type="checkbox"/>	
7. Course woody debris How much old wood and dead branches with a diameter > 10cm cover the soil within a radius of 10m? → Count No. of old wood and dead branches	≥ 50 <input type="checkbox"/>	40 – 49 <input type="checkbox"/>	30 – 39 <input type="checkbox"/>	10 – 29 <input type="checkbox"/>	<10 <input type="checkbox"/>	0 <input type="checkbox"/>	
8. Fine litter and small branches How much leaf litter and small branches with less than 10cm diameter <u>cover</u> the soil within a radius of 10m? → Estimate the concerned area in %	≥ 80 <input type="checkbox"/>	60 – 79 <input type="checkbox"/>	50-59 <input type="checkbox"/>	20 – 49 <input type="checkbox"/>	< 20 <input type="checkbox"/>	0 <input type="checkbox"/>	
9. Shifting cultivation etc. Are there new traces of disturbances from ~ the past 3 years regarding shifting cultivation, infrastructure, mining etc. within a radius of 50m visible? → Estimate the area in %	≥ 80 <input type="checkbox"/>	60 – 79 <input type="checkbox"/>	50- 59 <input type="checkbox"/>	20 – 49 <input type="checkbox"/>	< 20 <input type="checkbox"/>	0 <input type="checkbox"/>	
10. Logging Are there new traces of logging from ~ the past 3 years with a stump diameter of >20cm and within a radius of 50m visible? → Count No. of stumps	≥ 10 <input type="checkbox"/>	5 – 9 <input type="checkbox"/>	3 – 4 <input type="checkbox"/>	2 <input type="checkbox"/>	1 <input type="checkbox"/>	0 <input type="checkbox"/>	

Participatory Forest Resources Assessment

Village Forest Map



ANNEX 7:

Guidelines for a basic “Horizontal Point Sampling (HPS)” in Village Use Forests or Estimation of Timber Volume

When doing a forest inventory, a decision has to be made about the type of sampling method. Only in extraordinary cases and very small forest areas, it is worthwhile to do an inventory by measuring every tree. Therefore, mainly Plot Sampling (PS) with a fixed radius (every tree within the radius is measured) and Horizontal Plot Sampling (HPS) with a variable radius are used (only certain trees are measured).

Because of various advantages and due to **limited financial and human resources** regarding the field implementation, only a **quick, basic and cost effectively** HPS is used and described in the following guidelines, which is still providing useful findings respectively an estimated volume.

However, the described techniques are **not** replacing an accurate inventory, but are giving sufficient figures for further planning. But if forest products – especially timber – from Village Use Forests are harvested for commercial production, a more detailed inventory with permanent indicator plots and much more samples is recommended, to achieve an acceptable accuracy.

1. Recommended Equipment

- Relascope
- Clinometer
- Caliper or diameter tape
- Calculator
- Measuring tape (30m) or laser range finder
- Field form, pencil, clipboard

2. Determination and recording of sample trees

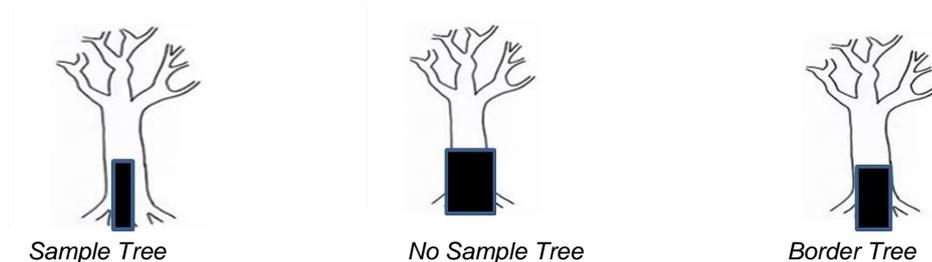
HPS is done with the help of a Relascope. A Relascope is a simple and useful gauge consisting of a string with 50cm length, a metal plate with an irregular formed gap, which provides three different Relascope Factors (1, 2 and 4).

As a result of the HPS, the basal area per hectare can be calculated with the following formula:

Basal area/ha = Number of trees counted x Relascope factor



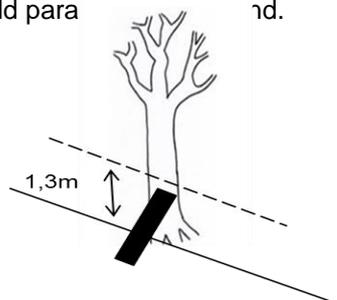
- To determine the sample trees by using HPS no demarcation of an area is needed, because the selection of the sample trees is not based on a fixed area. The “plot” of a HPS may be described as an ideal circle whose radius is varying due to the respective basal area of the trees surrounding the center of the “plot”. HPS is done with the help of the mentioned Relascope that works with different “Relascope factors (RF)”. Recommended to use in inventory work are the factors 1, 2 and 4. Usually **RF 2** is used in medium size timber and recommended for most cases ($\sim 20 - 40\text{m}^2$), **RF 1** in pole and small sized timber ($< 20\text{m}^2$) and **RF 4** in large sized timber stands ($> 40\text{m}^2$).
- The sample trees are selected by holding the knot of the string next to the eye and aiming through the gap respective the selected RF of the plate at every stem **at breast height (1.3m)** around the center of the plot.
- In that way the surveyor makes a full circle (360° sweep from the standpoint) and all stems which are wider than the plate of the selected Relascope Factor are sample trees.



- The diameter at breast height (DBH) of each sample tree should be estimated by experienced foresters (or better measured with a caliper). Finally, each sample tree has to be recorded under the respective diameter class in the attached table (see tables 1 and 2).
- When a Relascope factor of 1, 2 or 4 is used, the resulting basal area (number of trees counted) must be multiplied by the corresponding factor (1, 2 or 4) in order to obtain estimates of basal area per hectare.

Example: 20 sample trees \times RF 4 = 80m²/ha Basal Area

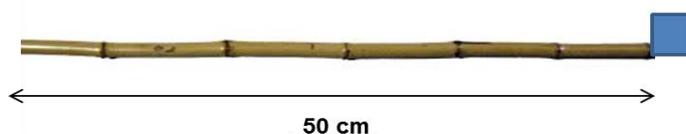
- **Border Trees:** Sometimes trees seem to have about the same width as the plate of the Relascope factor, so it might be not clear, if it is a sample tree or not. To avoid time consuming control measurements, it is recommended to tally **only every second border tree as one sample tree**.
- **Sloppy area:** In sloppy area a slope correction is not necessary, if the top edge of the instrument is hold para



- **Hidden Trees:** Sometimes trees are fully or partly hidden behind other trees. In such cases the surveyor should move one step aside from the center of the plot to be able to aim at breast height of these trees and afterwards moving back to the center.
- Before starting the HPS, find a suitable position, where you can observe the surrounding area easily (position is marked with GPS).

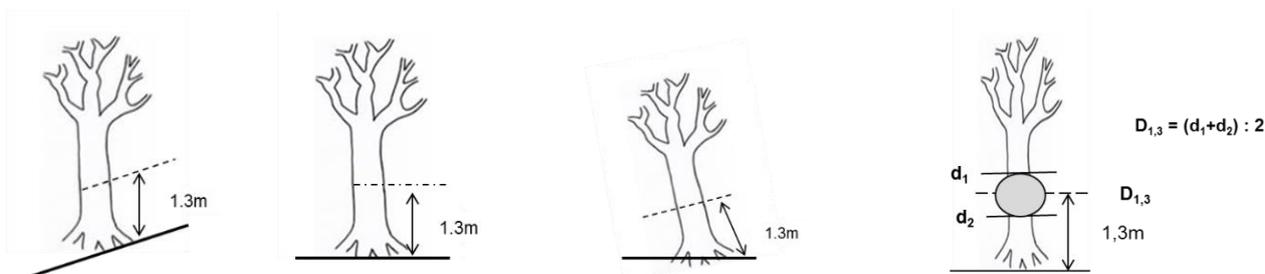
- If there is no Relascope available, it is also possible to prepare a home made one. Take a rod (for example a bamboo stick) with 50cm in length and attach a bright cardboard square with any of the 3 side lengths (1, 1.5 and 2 cm) as desired at one end of the rod with a small pin. If a aimed stem is at breast height wider than the cardboard length, it is a sample tree. After doing a full circle and counting all sample trees, the number has to be multiplied with the Relascope factor - in this case with 4 (see table below).

Rod length	50 cm
Cardboard square Relascope Factor 1	1 x 1 cm
Cardboard square Relascope Factor 2	1,5 x 1,5 cm
Cardboard square Relascope Factor 4	2 x 2 cm



3. Diameter measurement:

For the measurement of the diameter a caliper (or diameter tape) is needed. The diameter always has to be measured at **breast height (1,3m)** or in special cases of abnormality above and below.



4. Height measurement

Before the measurement begins, select according to the attached table a certain number of representative trees of average height for each diameter class to calculate the average height. The table below is used to determine the number of trees.

Number of sample trees	Number of representative trees to be measured
1-5	1
6-10	2
11-15	3
16-20	4
21-25	5
26-30	6
31-35	7
36-40	8

The height of a tree is defined as the difference between the top of the tree and the base of the tree. The measurement of a tree with a clinometer (a clinometer is a gauge to measure the slope of the

terrain with a built in scale of 2 different measures i.e. degree on the left hand and percent on the right hand side) is based on the measurement of the height angles (α_1 /degree, top reading and α_2 /degree, ground reading) between a fixed point (eye of the surveyor) and the top respectively the base of a tree from a certain distance “d”.

The distance (d) from the surveyor to the tree should be approximately equal to the height of the tree and the top and ground of the tree should be visible.

The total height of a tree (“H”) is the height from the top reading (h_1) plus the base reading (h_2): **$H = h_1 + h_2$**

By measuring the height, the sign of angles have to be taken into account.

On slopes, the height should be always be measured slope downwards or sideward to avoid a slope correction. If not possible, a slope correction of the distance (d) is necessary to do (see table 3).

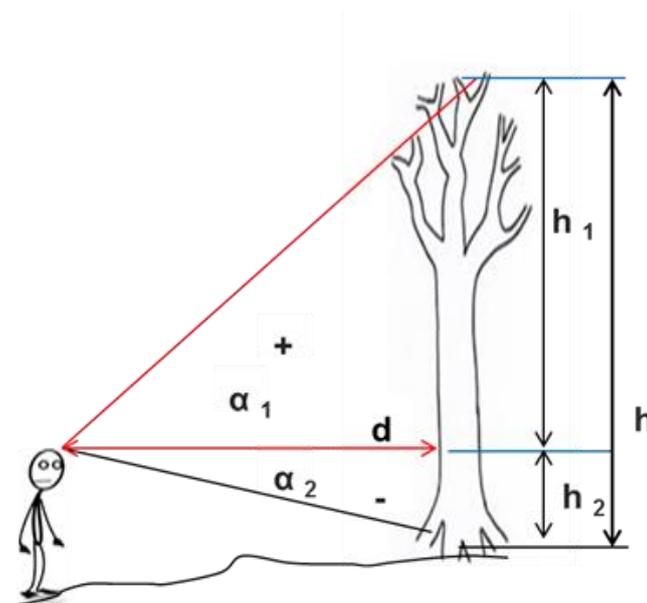
By measuring the height, the sign of angles has to be taken into account:

- If the **eye level lies above the ground level**, the angle α_2 (ground reading) is **negative** and the total height (m) is calculated as follows:

H (Tree height) =	α in degree (°)	$(\tan \alpha_1 + \tan \alpha_2) \times d$ (m)
	α in per cent (%)	$(\alpha_1 + \alpha_2) \times d$ (m) / 100

Example for degree (°) and a distance of 30m to the tree:

Top reading	$h_1 = d$ (m) $\times \tan \alpha_1$	$30\text{m} \times \tan 40^\circ = 25,2\text{m}$
Ground reading	$h_2 = d$ (m) $\times \tan \alpha_2$	$30\text{m} \times \tan -4,38^\circ = - 2,3\text{m}$
Tree height	$H = h_1 - h_2$	$25,2\text{m} - (-2,3\text{m}) = 27,5\text{m}$

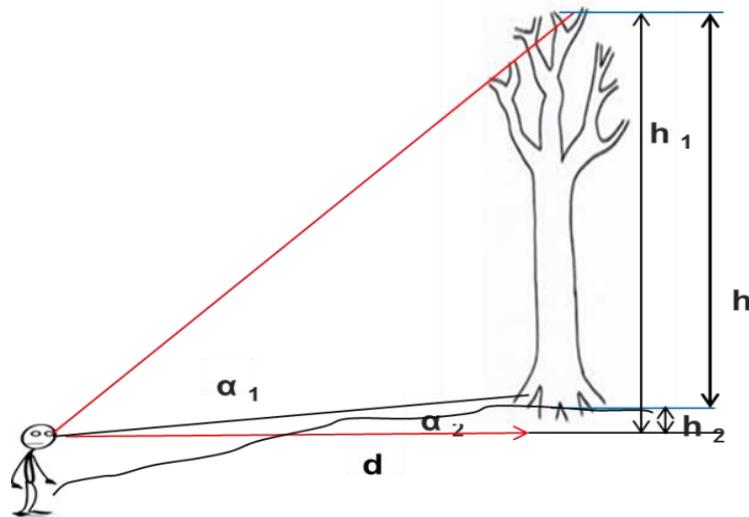


- If the **eye level lies under the ground level**, the angle α_2 (ground reading) is **positive** and the total height (m) is calculated as follows:

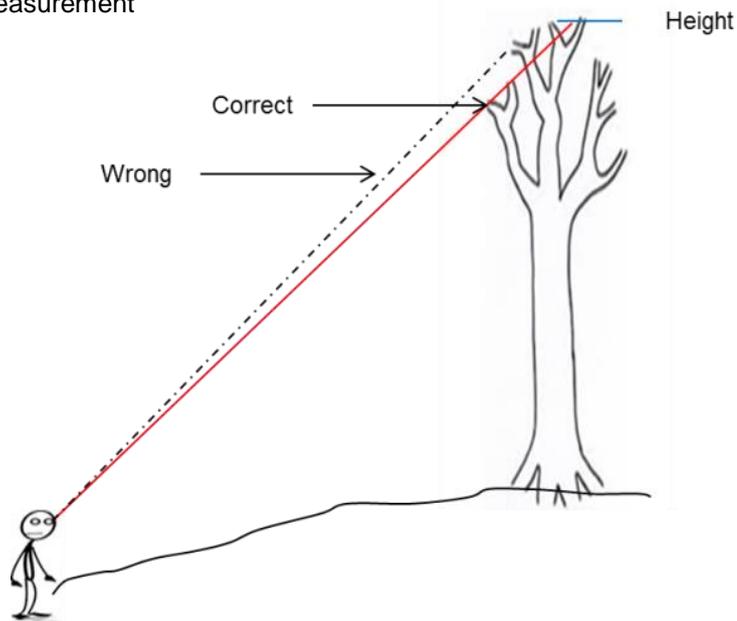
H (Tree height) =	α in degree (°)	$(\tan \alpha_1 - \tan \alpha_2) \times d$ (m)
	α in per cent (%)	$(\alpha_1 - \alpha_2) \times d$ (m) / 100

Example for degree (°) and a distance of 30m to the tree:

Top reading	$h_1 = d$ (m) $\times \tan \alpha_1$	$30\text{m} \times \tan 44,8^\circ = 29,8\text{m}$
Ground reading	$h_2 = d$ (m) $\times \tan \alpha_2$	$30\text{m} \times \tan 4,38^\circ = +2,3\text{m}$
Tree height	$H = h_1 - h_2$	$29,8\text{m} - (+2,3\text{m}) = 27,5\text{m}$



- Correct height measurement



5. Estimation of the Volume per hectare

After the basal area m^2/ha and tree heights per diameter class are estimated/measured, the volume per hectare can be calculated with a certain **Form Factor** (in average conditions, FF 0,5 is recommended to use).

$$\text{Basal Area } m^2/ha \times \text{Form Factor} \times \text{Tree Height} = \text{Volume } m^3/ha \text{ (stem volume with bark)}$$

Volume of timber with and without bark and tree volume:

To obtain the volume of timber without bark, the calculated volume (stem volume) should be converted by multiplying with the factor 0.7

Example:

Stem volume with bark/ha	→	250 m^3/ha
Timber volume without bark/ha	→	250 $m^3/ha \times 0.7 = 175 m^3/ha$

To obtain the tree volume (volume of stem and branches with bark), the calculated volume (stem volume) should be converted by multiplying with the factor 1.3

Example:

Stem volume with bark/ha	→	250 m^3/ha
Tree volume (stem and branches with bark)/ha	→	250 $m^3/ha \times 1.3 = 325 m^3/ha$

6. Conversion factors for the estimation of fuelwood and fodder

Fuelwood: Wood and bark of stem and branches

Fodder: Foliage/Leaves

Stem biomass (kg)* $\approx 900 \times$ Stem volume with bark (m^3)

Branch biomass (kg) $\approx 0.7 \times$ Stem biomass (broadleaf)

$\approx 0.2 \times$ Stem biomass (conifers)

Foliage biomass (kg) $\approx 0.2 \times$ Stem biomass (broadleaf)

$\approx 0.1 \times$ Stem biomass (conifers)

* given in kg fresh biomass, assuming an average dry biomass of $650 \text{ kg}/m^3$

7. Estimation of annual increment

The annual increment may be estimated with the help of the following table. The latter may be used in absence of further data and uncertainty about the sustainability of the planned utilization. Only follow-up inventories respectively repeated measurements taken on indicator plots can provide reliable data of growing rate and yield of a simple stand or block.

Annual stand growth and mortality as a function of stand density and forest type (m³/ha)

Source: Forest Inventory and Planning Department (FIPD) / Department of Forestry (DoF)

Stand Density		Mixed deciduous Forest (MDF)/ Dry Ever Green Forest (DEF)			
Stand Volume	Basal Area	Gross Growth	In-growth	Mortality	Net Growth
30	6.2	2.32	0.04	0.00	2.36
40	7.8	2.55	0.06	0.00	2.60
50	9.4	2.74	0.07	0.01	2.80
60	10.9	2.91	0.09	0.04	2.96
70	12.3	3.06	0.10	0.09	3.07
80	13.8	3.19	0.11	0.16	3.14
90	15.1	3.32	0.12	0.27	3.16
100	16.5	3.43	0.12	0.42	3.14
110	17.8	3.54	0.13	0.59	3.08
120	19.1	3.64	0.13	0.79	2.98
130	20.4	3.74	0.13	1.02	2.85
140	21.7	3.83	0.13	1.26	2.71
150	22.9	3.92	0.13	1.50	2.54
160	24.2	4.00	0.12	1.76	2.37
170	25.4	4.08	0.12	2.01	2.19

Reference:

Kosemund, W.: Technical Guidelines for Forest Inventory in Community Forests in Nepal (with special reference to mid hill conditions) 1999, German Development Service Nepal

Table 1 (Basic Horizontal Point Sampling):

The following computation form for HPS can be used to calculate the basal area/ha and the volume/ha per tree species respectively in total (**recommended, if no forest products from Village Use Forests are used for commercial production and financial and human resources are limited**).

Example with Relascope Factor 2 and only three diameter classes

Village:				Date:	
No. Observation Point:				Block area (A)/ha: 2	
Tree Species:				Relascope Factor (RF): <input type="checkbox"/> 1x <input checked="" type="checkbox"/> 2x <input type="checkbox"/> 4x	
I Diameter classes (cm)	II Stems (number)	III Height (m)	IV Form Factor	V Basal area/ha (m ²)	VI Volume/ha (m ³)
				II x RF = V	III x IV x V = VI
7 – 19	5	10	0.5	10	50
20 – 49	10	20	0.5	20	200
≥ 50	2	25	0.5	4	50
Total/ha (sum):				34	300
Total/area (A x sum):				68	600

Table 2 (advanced Horizontal Point Sampling):

The following computation form for HPS can be used to calculate the number of stems, basal area/ha and the volume/ha **per tree species** respectively in total and has diameter classes in 4cm steps (**recommended, if forest products from Village Use Forests are used for commercial production**) :

Village:					Date:		
No. Observation Point:					Block area (A):		
Tree Species:					Relascope Factor (RF): <input type="checkbox"/> 1x <input type="checkbox"/> 2x <input type="checkbox"/> 4x		
I Diameter classes (4 cm)	II Stems (number)	III Height (m)	IV Volume/ stem (m ³)	V Basal area/stem (m ²)	VI Basal area/ha (m ²)	VII Stems/ha (number)	VI Volume/ha (m ³)
					II x RF	VI / V	IV x VII
8.5 (7.0 – 9.9)							
12 (10.0 – 13.9)							
16 (14.0 – 17.9)							
20 (18.0 – 21.9)							
...							
Total/ha:							
Total/area (A x sum):							

Explanation:

II: according to field observation (No. of sample trees)

III: according to field observation

IV: from volume tables or: $d^2 \times \text{height (h)} \times 0.5$ (Form Factor)

V: $d^2 \times \pi/4$ (3 decimal places)

VI: number of stems multiplied with RF divided $\rightarrow \text{II} \times \text{RF}$ (1 decimal place)

VII: basal area/ha divided with basal area per stem $\rightarrow \text{VI} / \text{V}$ (1 decimal place)

VIII: volume per stem multiplied with number of stems per ha $\rightarrow \text{IV} / \text{VII}$ (1 decimal place)

Table 3:**Slope correction table for distance measurements**

Slope per cent (%)	Correction Factor	Slope degree (°)	Correction Factor
5	0.999	2	0.999
10	0.995	4	0.998
15	0.989	6	0.995
20	0.981	8	0.990
25	0.970	10	0.985
30	0.958	12	0.978
35	0.944	14	0.970
40	0.928	16	0.961
45	0.912	18	0.951
50	0.894	20	0.940
55	0.876	22	0.927
60	0.857	24	0.914
65	0.838	26	0.899
70	0.819	28	0.883
75	0.800	30	0.866
80	0.781	32	0.848
85	0.762	34	0.829
90	0.743	36	0.809
95	0.725	38	0.788
100	0.707	40	0.766
105	0.690	42	0.743
110	0.673	44	0.719
115	0.656	46	0.695
120	0.640	48	0.669
125	0.625	50	0.643
130	0.610	52	0.616
135	0.595	54	0.588
140	0.581	56	0.559
145	0.568	58	0.530
150	0.555	60	0.500
155	0.542		
160	0.530		
165	0.518		
170	0.507		
175	0.496		

Examples (per cent and degree):

Measured distance → 15m
 Slope measured % → 60%
 Correction Factor → 0.857
 Corrected distance → $15m \times 0.857 = 12,9m$ (12,855m)

Measured distance → 15m
 Slope measured ° → 20°
 Correction Factor → 0.940
 Corrected distance → $15m \times 0.940 = 14,1m$

ANNEX 8: Sample of Draft Village Forest Management Plan

5-Year VILLAGE FOREST MANAGEMENT PLAN

This Village Forest Management Plan is valid for 5 years from .../.../.....to .../.../.....

Province	
District	
Village Cluster	
Village	

1 Land and forest Use based on the participatory land use planning (PLUP) and the Village Forest management plan (VFMP):

Land and Forest Use Zones	(PLUP) Ha	VFMP (Ha)			Remarks
		All	Dense forest	Degraded forest	
Paddy land					
Agricultural production Zone (For the slope and Mountain)					
Gardens or Orchards					
Livestock Zone					
Village Use Forest					
Village Protection Forest					
Village Conservation Forest					
Cemetery or sacred Forest					
Other forest categories					
Total areas of village					

2. Short Summary of the Results from Participatory Forest Resources Assessment/ Forest Inventory

Participatory Forest Assessment:

Forest Zones	No. of Observation Points	Summary data on Observation Points	Information collected from Transect Walks	General Observations
Conservation Forest				
Protection Forest				
Village Use Forest				
Other Forest Areas				

Forest Inventory Results in case of Commercialisation of Forest Resources/Forest Products from the Village Use Forest:

Village Zone	No. of Sampling Plots (Observation point)	Summary of Quantitative Data collected from Sampling Plots	Sustainable Production Rates
			Timber: Fencing material: Fuelwood/charcoal:

3. Management Objectives

Forest Zones	Present Constraints	Potential in Future	Management Objectives
Conservation Forest			
Protection Forest			
Village Use Forest			
Other Forest Areas			

4.2 Utilisation Plan for Village Use Forest & Controlled Use Zones within Protection Forest or Conservation Forest Areas

Use objectives		Forest zone/area	User group	Time	Quantity / Unit	Harvesting Technique	supervises and instruct	Benefit Sharing Village/District
1	Construction Wood							
2	Fencing Material							
3	Fuelwood							
4	Charcoal Making							
5	Resin Collection							
6	Seeds and Fruit Collection							
7	Bamboo (poles)							
8	Other Uses							

5. Mechanisms for Conflict Resolution

How will you resolve any conflicts resulting from this village forest management plan?

Type of Conflict	Who will be in charge of resolving this conflict?	What happens if conflict cannot be resolved?
1. Conflict among villagers		
2. Conflict between villagers and the village committee		
3. Conflict between village and neighbouring villages		
4. Conflict between village and private company		

6. Monitoring and Evaluation

There are different levels of monitoring activities planned:

Type of monitoring	When?	How?	By whom?
Monitoring of forest zones against encroachment, fire, logging activities etc.	As described in the annual work plan	As described in the annual work plan	As described in the annual work plan
Monitoring of activities implemented according to annual work plan			
Monitoring of violations against Village Regulations and VFM Plan			

Monitoring of conflicts resulting from this VFM Plan			
Monitoring of forest condition by PFRA/Forest Inventory and Transect walks	Every 2 years	According to PFRA or FI methodology (see VFM guidelines) and Transect walks	Members of Village Land Use and Forest Management Committee

7. Overall Indicators for Sustainable Management of Village Forest Areas

(select suitable indicators for your specific situation from the list below!)

Indicator	Unit	Means of Verification	Current status Year	Target Year
1. Disturbed or degraded areas within forest zones (clearings)	ha	Satellite images PFRA every 2 years; Transect walks		
2. Occurrence of forest fires	ha	MODIS; Satellite images PFRA every 2 years; Transect walks		
3. Forest regeneration areas	ha	Satellite images PFRA every 2 years; Transect walks		
4. Dense forest areas	ha	Satellite images PFRA every 2 years; Transect walks		
5. Dense undergrowth in the forest areas	ha	PFRA every 2 years; Transect walks		
6. Diversity in species composition in the forest areas	No. of species per ha	PFRA every 2 years; Transect walks		

7. Occurrence of seed (mother) trees	No. of species per ha	PFRA every 2 years; Transect walks		
8. Timber and fuelwood volume sustainably used from the Village Use Forest	m ³ or kg	Household interviews PFRA every 2 years; Transect walks		
9. Income generation from forest products	Kip/No. of Fam.	Household interviews		
10. Abundance of NTFPs	No. of species used/kg	Household interviews PFRA every 2 years; Transect walks		
11. Adapted harvesting techniques in Village Use Forest	ha	Household interviews PFRA every 2 years; Transect walks		

8. Signatures

Representative of Village Land Use and Forest Management Committee:

Village Forest Unit:

Head of Village:

Head of District Office of Natural Resources and Environment (DONRE):

Head of District Agriculture and Forestry Office (DAFO):

Annexes

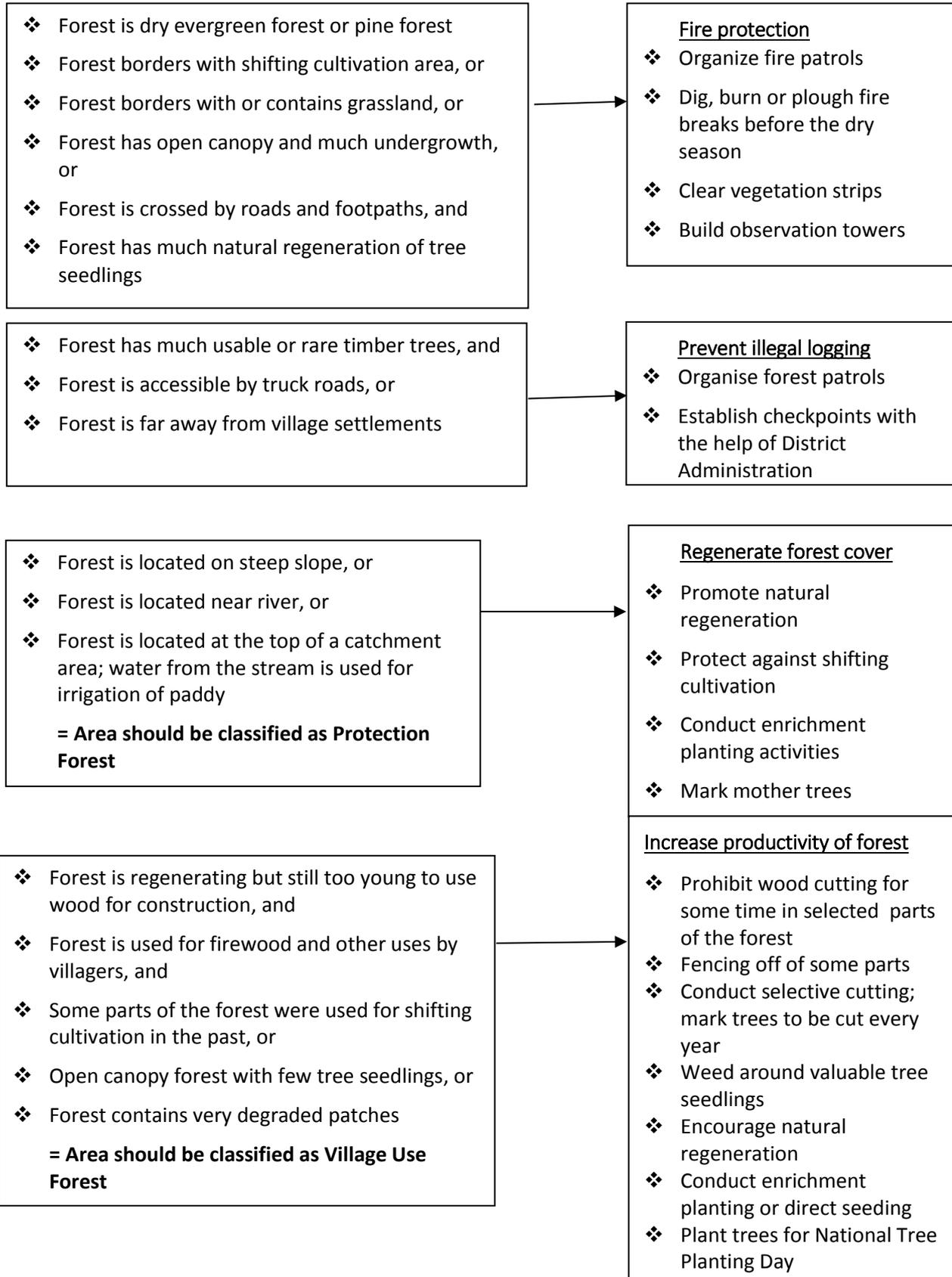
1. Village Forest Map 1:5.000 or 1:10.000
2. Minute of Meeting from the consultation on the identification of forest management Activities
3. Minute of Meeting from the consultation on the five-year village forest management plan
4. Form for Monitoring the activities Implementation
5. Record Sheet for Forest Products Use.
6. Forest Resource Assessment form

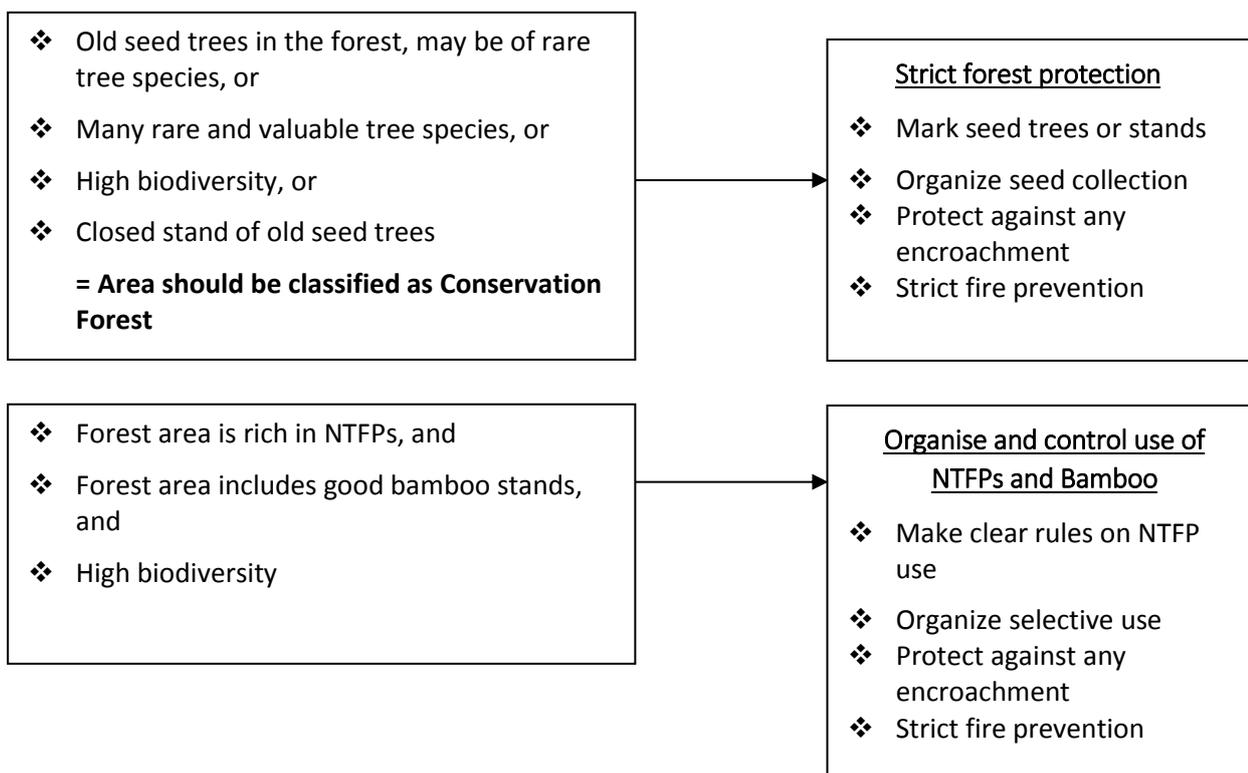
ANNEX 9: Example of decision chains for identification of suitable activities for VFM

Example of decision chains for identification of suitable activities for Village Forest Management

Conditions

Possible activities





Selection of appropriate VFM activities according to the Forest Category

FOREST CATEGORY	POSSIBLE ACTIVITIES (need to be selected during village forest management planning in the village)
1. Conservation Forest	Forest patrolling for protection against encroachment
	Patrolling against fire and intervention in case of forest fire
	Fire prevention (digging firebreaks, ploughing firebreaks, controlled burning of firebreaks, clear vegetation strips, building of fire observation towers)
	Identification and marking of trees to be left as mother trees for seed production; clearing of grass cover around mother trees
	Seed collection for direct seeding in other areas
	Promotion of natural regeneration, in case there was shifting cultivation or logging in parts of the forest areas
	NTFP management and development
2. Protection Forest	Forest patrolling for protection against encroachment
	Patrolling against fire and intervention in case of forest fire
	Fire prevention (digging firebreaks, ploughing firebreaks, controlled burning of firebreaks, clear vegetation strips, building of fire observation towers)
	Build check dams or small water reservoirs to have water for

	firefighting and water for watering planted tree seedlings
	Identification and marking of trees to be left as mother trees for seed production; clearing of grass cover around mother trees
	Seed collection for direct seeding in other areas
	Promotion of natural regeneration, in case there was shifting cultivation or logging in parts of the forest areas
	Enrichment planting (Forest enrichment by planting more valuable trees in poor forest with little natural regeneration)
	NTFP management and development
3. Village Use Forest	Forest patrolling for protection against encroachment
	Fire prevention (digging firebreaks, ploughing firebreaks, controlled burning of firebreaks, clear vegetation strips, building of fire observation towers)
	Build check dams or small water reservoirs to have water for firefighting and water for watering planted tree seedlings
	Identification and marking of trees to be left as mother trees for seed production; clearing of grass cover around mother trees
	Selective cutting (Selective cutting in small quantities in different diameter classes in accordance with the sustainable forest model to improve forest structure and to provide timber and fuelwood for village)
	Close parts of the forest temporarily and protect young regeneration trees; fencing off of some parts to encourage regeneration
	Conduct weeding around valuable tree seedlings
	Marking of trees to be cut every year
	Enrichment planting (Forest enrichment by planting more valuable trees in areas of poor forest with little natural regeneration)
	Promotion of natural regeneration, in case there was fire damage, shifting cultivation, excessive tree cutting for firewood or charcoal making or logging in parts of the forest areas
	Conduct direct seeding in areas completely barren
	NTFP management and development
	Tree planting on National Tree Planting Day

ANNEX 10: Sample Minutes of Meeting at village level to approve VFMP or Annual VFM Work Plan

MINUTES OF MEETING

For Village Meetings to discuss and approve Village Forest Management Activities

At the ... /... /..... (Date) a village meeting was organised in the village of,
..... District, Province, to discuss and approve Village Forest Management Activities.

The meeting chaired by the head of village ofand of and joined by participants of the Village Forest Management Planning teams from District of Natural Resource and Environment Office and District of Agriculture and Forestry Office, Village Authorities, Village Land Use and Forest Management Committee, Village Security, Village Lao Front for National Construction, Village Lao Women Union, Village Lao Youth and villagers.

A list of the participants is attached.

During the meeting, the Village Forest Management Planning team and the Village Forest Unit presented the process of VFMP and asked the participants for recommendations regarding the drafted VFMP - especially regarding planned forestry activities, which will be implemented by villagers. The villagers were able to discuss and ask questions about the Village Forest Management Plan.

After discussions, the meeting has the following conclusion:

1. The villagers understand that they work jointly on forest boundary demarcation in each type of forest according to PLUP.
2. The villagers know about the Village Forest Management Plan, which was written in close cooperation with the Village Land Use & Forest Management Committee and Village Forest Unit.
3. The purpose of the management plan is clear to the villagers and they understand, how to use the forest resources in a sustainable manner to improve their own livelihood.
4. The Villagers understand and know that they have responsibilities regarding the implementation of all planned activities within the management plan, which is supported by DoNRE and DAFO.
5. The villagers agree on the Village Forest Management Plan and would like to continue to discuss the Village Forest Management Agreement.

This MoM comprises 6 original copies and is distributed to: Village Administrative Committee, Village Land Use & Forest Management Committee, Village Forest Unit, DoNRE, DAFO, PPCU for reference in the future.

Representative of Villagers

Village Forest Management
Planning Team

1.
2.
3.
4.
5.
6.
7.

Certified by Village Administrative Committee:

Recorded by:

ANNEX 11: Sample Violation Case Report

Violation Case Report

Village Land Use and Forest Management Committee of :.....

MINUTES OF VIOLATING THE VILLAGE LAND AND FOREST REGULATIONS

Today at .../.../..... (date) in (location where the violation took place)

.....

Representatives of Village Land Use and Forest Management Committee including:

Mr.:.....

Mr.:.....

Mr.:.....

and the detector (or the witness):.....

make this minutes of violation of forest protection and management regulation to the following persons:

Name	Age	Occupation	Current residence

for.....

.....

Violation exhibits/Proof of illegal activity:

.....

..... Means of action (e.g. sanctions, fines) are:

.....

.....

This is to proclaim that all the violation exhibits and means of action are provided to the village forest management board as basic for settlement of the case as per village forest protection and management regulation.

The minutes compromise three copies, were read in plenum and jointly signed.

Violator:

Detector (witness):

For the VLUFMC:

Date .../.../.....

ANNEX 12: Sample Annual Plan of Operation

- I. Objectives**
- II. Duration and Scope of use for the Operation Plan**
- III. Activities of the plan**
- IV. Payment for the labours implementing forest activities**
- V. Person who is responsible for making a plan**
- VI. Person who is responsible for implementing the the Plan**
- VII. Reporting**
- VIII. Detailed Annual Forest Operation Plan (see tables below)**

Annual Village Forest Management Work Plan

Planning Period:/...../..... until/...../.....

Province:	Province:	Village Cluster:	Village:
Forest Type:	Forest Zone:	Area (ha):	
Dense Forest areas (ha):	Degraded forest areas (ha):	Length of Forest Boundary (km):	

No.	Planned activities	Implementer	Supervisor	Implementation time	Quantity		Price per unit	Grand total
					(Ha, Km and other units...)	Ha, Km and other units...)	Ha, Km and other units...)	
1								
2								
3								
4								

Approved and signed by:

at, Date:/...../.....

Head of Village:

Village Land Use and Forest Management Committee:

Village Forest Unit:

District of Agriculture and Forestry:

District of Natural Resource & Environment Office:

ANNEX 13: Sample VFM Agreement



Lao People's Democratic Republic
Peace Independence Democracy Unity Prosperity

District Office of Natural Resource and Environment
District
Province

No. /
Date: / /

**Agreement
on Village Forest Management**

Between
District Office of Natural Resources & Environment (DONRE) of, hereafter called as "Party A"
and
Village Authorities of, hereafter called as "Party B".

This Agreement is based on laws and regulations related to the Climate Protection through Avoided Deforestation (CliPAD):

- Based on the Forestry Law No.6/NA dated 24 December 2007;
- Based on the Land Law No.4/NA, dated 21 October 2003;
- Based on the Future Forest and Land Use Map of the Village of, dated .../.../.....;
- Based on the approved 5-year Village Forest Management Plan for the Village of..., dated .../.../.....;
- Based on the approved Annual Forestry Operational Plan for the Village of..., dated .../.../.....;

Objectives

- To support and strengthen the sustainable management and protection of village forest areas, such as conservation forest, protection forest, use forest and other forests within the village boundary.
- To encourage and support villagers to use forest resources and forest land within the village area productively and sustainable.
- To efficiently implement activities and to increase the abundance and coverage of forest in the future. This is to contribute to reduced emissions from deforestation and forest degradation.

Both parties agree to follow the agreement according to the contents mentioned below:

Article 1: Scope of the Agreement

This agreement will be used in the village of..... district.....province.....

Article 2: Activities

The forest management activities to be undertaken under this agreement are specified in the 5-year village forest management plan, the 2 –years forest activity & budget plan and the annual forest operational plan, which include the following activities:

- 1) Demarcation of forest border
- 2) Forest patrolling
- 3) Fire prevention and control
- 4) Assisted natural regeneration(enrichment planting, thinning and maintenance...)
- 5) Development and implementation of regulations, laws and related legislations.

Article 3: Rights and duties of contractual Parties

3.1. Rights and Duties of “Party A”

- 1) Provide support to the implementation of the 5-year village forest management plan, the 2-year forestry activity & budget plan and the annual forest operational plan,
- 2) Monitor and encourage the implementation of the plan,
- 3) Propose to superior to amend the agreement if the implementation is not appropriate to circumstances,
- 4) Organize trainings and provide technical advices for the village land and forest use management committee and village forestry unit to be able to implement the plans,
- 5) Facilitate village authorities and relevant parties in the village to enforce village rules and other relevant legislations of the government during the implementation of village forest management plan and do additionally monitoring, evaluation and reporting.

3.2. Rights and Duties of “Party B”

- Implement the 5-year village forest management plan, the 2 year forestry activity & budget plan and the annual forest operational plan, which were already approved,
- Collaborate with village land and forest use management committee and village forestry unit in implementing the plans,
- Use forest resources in accordance to village forest management plan and villages rules and related state laws,
- Monitor and enforce villages rules and related state laws,
- Propose the amendment of village forest management plan, if its implementation does not suit to the realities,
- Request Party A for technical support, for monitoring and verification on the implementation of forest management activities, which would be used as reference for the calculation of actual labour input of villagers (group of people or individuals),
- As required, participate in monitoring of activities regularly with Party A.

Article 4: Payment Arrangements

Villagers receive two types of payments:

1) Payment through implementing the annual forestry operational plan

- After the signing and approval of the annual forestry operational plan, CliPAD project (FC component) will transfer the money into an account opened for implementing village forestry management activities, which is under the management of the Village Development Fund Management Committee.
- For the payment from this village forest management account, the Village Development Fund Management Committee must ensure that the money is paid to villagers who actually carried out the activities in accordance to the annual forestry operation plan, either for groups or individuals. Payments will be done after the commitment is proofed and certified by village forestry units and concerned district technical office.

2) Payment based on Performance

- After the signing of the village forest management agreement and after forest management activities were implemented for one to two, there will be a monitoring and assessment on the forest border, overall forest condition including and the forest cover.
- If the monitoring certifies the management achievements, the project will transfer performance based payment into either the village development fund or the forest activity account, which should be decided before. This fund will be used for village activities such as: forestry activities, small scale infrastructure development and the village development fund.

ClIPAD project will make both types of above mentioned payments until its completion.

Article 5: Monitoring

The monitoring will be implemented as specified in the 5-year village management plan, the 2-year activity & budget plans and the annual forestry operational plan.

Article 6: Conditions of the Amendment and extension of the Agreement

6.1 The amendment of the Agreement

- Actual implementation does not follow the plan and is not suitable to actual situation,
- It is requested for amendment by either side with necessary reasons.

6.2 The extension of the Agreement

After 5-years implementation with mutual consent of both sides.

Article 7: Dispute Resolution at village level

In case of any conflict relating to this Agreement, the conflict should be resolved at village level - based on the guidelines on conflict mediation at village level.

Article 8: Effectiveness of this Agreement

This Agreement comprises eight articles and 4 original copies. The two parties agree to implement the agreement strictly, which becomes into legitimacy from the date of signing.

District Office of Natural Resources and Environment:

District Agriculture and Forestry Office:

Certified by the District Governor:

Head of Village:

Attachments:

- The decision concerning the establishment of village land and forest use management committee
- The minute concerning the meeting of villagers to consult on FPIC 1 and FPIC 2
- Minutes of village meeting on the drafting of village forest management plan
- The 5-year village forest management plan
- The 2-year forest activity and budget plan
- The annual forest operational plan
- Guideline on conflict mediation at village level

ANNEX 14: Summary Diagram of all Stages and Working Steps of VFM Approach

PARTICIPATORY LAND USE PLANNING (PLUP)

Results of PLUP:

- Satellite Images and Aerial Photos
- Present Land Use Map
- Approved Future Land Use and Forest Map (PLUP Map)
- PLUP Report, Socio-Economic Data
- Creation of the Village Land Use and Forest Management Committee (VLUFMC), including the Village Forest and NTFP Unit; Committee formally approved by the District Authorities
- Approved Village Regulations

PROCESS OF VILLAGE FOREST MANAGEMENT (VFM)

Stage 1: Demarcation of Forest Areas and Preparation of Detailed Village Forest Map

Step 1.1 Preparation of Field Work

Step 1.2 Implementation of Village Forest Boundary Delineation and Demarcation

Step 1.3 Identification and Demarcation of Forest Areas in Need of Preservation within the Agricultural or the Livestock Zone, if applicable

Step 1.4 Preparation of the Detailed Village Forest Map at 1:5.000 or 1:10.000 scale

Stage 2: Participatory Forest Resources Assessment (PFRA) and Basic Forest Inventory

Step 2.1 Selection of PFRA Observation Points (Hotspots) based on Interpretation of Satellite Images

Step 2.2 Conduct PFRA and Transect Walks in Village Conservation and Protection Forests (Annex 4)

Step 2.3 Conduct Basic Forest Inventory in Village Use Forest if Forest Products are NOT used for Commercial Purpose (Annex 5 & 7) A detailed Inventory is necessary if Forest Products are used for Commercial Production

Step 2.4 Review and Completion of all PFRA and Forest Inventory Documents in the Village

Step 2.5 Updating of the village forest map

Step 2.6 Preparation of copies of the PFRA Data and the Village Forest Map and hand-over to the village

Stage 3: Preparation of the 5-Year Village Forest Management Plan (VFMP)

Step 3.1 Organise meeting of VLUFMC and district staff to jointly prepare first draft of the VFMP based on the standard format (Annex 8)

Step 3.2 Conduct general village meeting to discuss and approve the VFMP; sign minutes of meeting (Annex 10)

Step 3.3 Signing and official approval of the VFMP document

Stage 4: Preparation of Annual Forestry Operation Plan

Step 4.1 Organise meeting of VLUFMC and district staff to prepare first draft of the Annual Forestry Operation Plan based on standard format (Annex 12)

Step 4.2 Conduct general village meeting to discuss and approve the Annual Forestry Operation Plan; sign minutes of meeting (Annex 10)

Step 4.3 Signing and official approval of the Annual Forestry Operation Plan document

Stage 5: Village Forest Management Agreement

Step 5.1 Prepare Village Forest Management Agreement in the village based on standard document (Annex 13)

Step 5.2 Present, discuss and agree on the Village Forest Management Agreement in a village meeting

Step 5.3 Sign the Village Forest Management Agreement in the village and certify by District

Stage 6: Implementation of the Village Forest Management Activities

Step 6.1 Follow the Annual Plan of Operation

Stage 7: Monitoring and Evaluation

Step 7.1 Quarterly monitoring of progress made in implementation, making of payments to villagers, illegal activity reporting and conflict situations

Step 7.2 Annual monitoring of overall achievement of Annual Plan of Operation and preparation of new Annual Plan of Operation Plan

Step 7.3 Every 2 years: Monitoring of Forest Condition and Forest Cover by using PFRA techniques and Transect Walks

Step 7.4 After 5 years: Monitoring of overall achievement of VFMP and preparation of new VFMP and new VFM Agreement