Preface

The Village Forestry Handbook was written to consolidate the systems and procedures developed for village forestry by the Forest Management Sub-Program of the Forest Management and Conservation Program (FOMACOP), which operated in 1995-2000 as a collaborative effort of the Government of Lao PDR, the Government of Finland, and the World Bank. The handbook was completed during the Village Forestry Sustaining Phase (2000-2001) after the regular phase of FOMACOP ended in September 2000.

Village forestry is a partnership between Lao villages and local government forestry offices for the sustainable management of forest resources. It was piloted in 1996-2000 in 41 villages in three districts within the Provinces of Savannakhet and Khammouane, which resulted in putting about 100,000 hectares of forest resources under sustainable management. During the Village Forestry Sustaining Phase (2000-2001), piloting was expanded to include more than 10 villages located mainly in two additional districts in Khammouane.

The handbook serves as a guide for the villages and local government forestry offices that are implementing village forestry. It may prove useful, as well, to assist other projects in Lao PDR in developing village-government partnerships in the management of forest resources. It also serves to provide information to interested parties in other countries, many of which have expressed their desire to learn about the form of community-based forest management that is being practiced in these parts of Lao PDR.

The English version of the Village Forestry Handbook was co-written by Dr. Manuel Bonita, Village Forestry Adviser (Village Forest Management) and Mr. Edwin Payuan, Village Forestry Adviser (Village Organizing). Some inputs were also provided by Dr. Marko Katila, Chief Technical Adviser of FOMACOP in 1996-2000 and Ms. Vaneska Litz, Village Forestry Adviser (Village Development). The Lao version was produced by Mr. Somsakoun Souvannasing, FOMACOP Provincial Coordinator of Savannakhet, and Mr. Bouahong Phanthanousy, National Project Director of FOMACOP.

Mr. Bouahong Phanthanousy
National Project Director
FOMACOP

Dr. Manuel Bonita
Chief Technical Adviser
Village Forestry Sustaining Phase
Acknowledgement

The Village Forestry Handbook is the result of more than five years of collaboration among villagers; DAFO extension workers; PAFO trainers; other officers and staff of FOMACOP; officials of the DAFO/PAFO/Provincial Governments involved with FOMACOP, as well as of MAF/DOF; and the FOMACOP international and local advisers. All of these parties have worked very hard to make the piloting of village forestry in Lao PDR a success.

We would like to express our most sincere gratitude to the PAFO trainers of the Savannakhet and Khammouane Provinces led by Mr. Somsakoun Souvannasing and Mr Lamphan Khommadam, respectively, for their invaluable contributions in the design and piloting of village forestry. Special thank is extended to PAFO of the Savannakhet and Khammouane Provinces for their tireless support to FOMACOP.

We would like to thank the DAFO extension workers of the Thapangthong and Songkhone Districts of Savannakhet and the Sebangfai District of Khammouane for facilitating work with and providing technical assistance to villagers. Special thank is extended to the district authorities and DAFO of the Thapangthong, Songkhone, and Sebangfai Districts for their interest and concern to make the piloting of village forestry in their districts a success.

We are most grateful to the thousands of villagers from 57 villages in the Thapangthong and Songkhone Districts and 13 villages in the Sebangfai District for the interest, enthusiasm, and commitment that they have shown in the piloting of village forestry, even after the piloting did not proceed in some of these villages for lack of suitable forest resources.

We would also like to thank the FOMACOP local advisers, Mr. Bouaphet Philaket, Mr. Thinakon Misaiphon, and Mr. Vanalack Sengsavan for their invaluable inputs in training FOMACOP staff and villagers, and coordinating the on-site implementation of village forestry. They also contributed heavily in the preparation of the handbook.

Special thank is extended to Mr. Mark A. Gordon for editing the English version of the handbook, to Mr. Arthur Africa for layout and formatting, to Mr. Somsakoun Souvannasing for translating the handbook to Lao, and to Mr. Bouahong Phanthanousy for editing the Lao version of the handbook.

We are very grateful to Dr. Marko Katila, Chief Technical Adviser, FOMACOP (1996-2000) for his invaluable contribution and support in the conceptualization and preparation of the handbook.

Finally, we would like to extend our gratitude and appreciation to the Ministry of Agriculture and Forestry and the Department of Forestry for their overall guidance and support in the piloting of village forestry. We appreciate also the backstopping support provided by the Jaakko Pöyry Consulting Group of Finland, CARE International, and Burapha Development Consulting. With gratitude we thank the Governments of Lao PDR and Finland, and the World Bank for their financial support and confidence in what we have been doing.

Dr. Manuel L. Bonita Mr. Edwin V. Payuan
Village Forestry Adviser Village Forestry Adviser
(Village Forest Management) (Village Organizing)
## Acronyms and abbreviations

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<tbody>
<tr>
<td>DAFO</td>
<td>District Agriculture and Forestry Office</td>
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<td>DOF</td>
<td>Department of Forestry</td>
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<tr>
<td>DVFC</td>
<td>District Village Forestry Committee</td>
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<tr>
<td>FOMACOP</td>
<td>Forest Management and Conservation Project</td>
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<tr>
<td>FMU</td>
<td>forest management unit</td>
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<tr>
<td>ha</td>
<td>hectare</td>
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<tr>
<td>LSFP</td>
<td>Lao-Sida Forestry Program</td>
</tr>
<tr>
<td>m</td>
<td>meter</td>
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<tr>
<td>m³</td>
<td>cubic meter</td>
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<tr>
<td>MAF</td>
<td>Ministry of Agriculture and Forests</td>
</tr>
<tr>
<td>NTFP</td>
<td>non-timber forest products</td>
</tr>
<tr>
<td>PAFO</td>
<td>Provincial Agriculture and Forestry Office</td>
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<td>PFS</td>
<td>Provincial Forestry Section</td>
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<td>VFA</td>
<td>Village Forestry Association</td>
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<tr>
<td>VFC</td>
<td>Village Forestry Committee</td>
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<td>VFCG</td>
<td>Village Forestry Core Group</td>
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<td>VFF</td>
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Introduction

Background

Definition of village forestry

Village forestry is a partnership between Lao villages and local government forestry offices for the sustainable management of forest resources. The financial benefits of forest management is shared as royalties and related taxes for the government, as funds for the participating PAFO and DAFO to able to provide technical and other related services to the villages, and as funds for the participating villages primarily to sustain forest management activities, and also to fuel village development.

As a form of community-based forest management, village forestry is appropriate in the Lao context. This is because most rural villages are small (less than 100 households) and compact (village settlements are generally located in a single place), although the extent of customary use of forests by villagers may cover a few thousand hectares. A strong positive factor for sustainable forest management through village forestry is the important role that the forest plays in the daily life of the village as a source of many products. Forest foods are especially important when the rice crop fails or is inadequate for a year’s supply. Because of this, villagers value the forest and appreciate the need to manage and protect the resource. Thus they are most willing as partners of the government in sustainable forest management.

Levels of partnership in village forestry

The partnership in village forestry between villages and local forestry offices may vary in a spectrum. What FOMACOP has piloted is a form of partnership that may be considered to be at the top part of the spectrum. Here, villages do the day-to-day forest management activities with the local forestry offices providing guidance and technical support. At the opposite part of the spectrum, the local forestry offices do the day-to-day forest management with the villages participating in the management by organizing the work force to do the activities. At present, many forestry officials are more comfortable with the latter form of partnership. It is hoped, however, that in due time it would be realized that the greater the roles given to villages are, the stronger would be the partnership, and the more successful would be the endeavor.

The existence of a partnership between the village (or a group of villages) and the local forestry office is essential for village forestry to happen in a given site. The village, in particular the village administration or its sub-organization, has to be involved by the local forestry office in the decision-making processes. The situation where villagers are only hired as labor in forestry work by the local forestry staff is not village forestry, even if the village chief is personally involved in the recruitment of villagers. It may be aptly considered as state forestry. In many countries and even here in Lao PDR, forest management by means of state forestry has generally not experienced long-term success.
Rationale for village forestry

Lao PDR is among the most heavily forested country in Asia. Its 47% forest cover in 1989 ranks among the top in Asian countries. Because of its abundance in forests, forestry is a very important sector in the Lao economy, producing for example 28% of exports and 20% of government revenues in 1996. However, the commercial exploitation of timber resources in Lao PDR is probably already past the productive peak of its forests. In Southern Laos where logging is concentrated, signs of timber resources drying up are already becoming apparent. Sawmills with logging quota are finding it more and more difficult to find trees to cut. Even national biodiversity conservation areas are under threat from timber poaching.

Actually logging, as practiced in the southern part of the country, does not cause deforestation, but the results of uncontrolled logging and lack of forest management are just as bad. Logged-over forests are so heavily degraded, because of the high grading and over-cutting practices that occur during logging, that the productive potential of the forest is drastically impaired, and the forest itself loses its commercial value to the detriment of the national and local economies in the long run.

Indeed Lao PDR would face dire consequences if its harvestable timber resources and their contribution to the economy are exhausted before the other economic sectors have had the time to develop adequately to fill the void. Because of the current strong forward linkages between forestry and the industrial and services sectors of the economy, the exhaustion of the harvestable timber resources would wreak havoc in the economy. Wood-based industries, commerce, trade, restaurant, hotel, entertainment, and government services, which rely on the substantial annual inflows of forestry revenues, would be heavily affected.

Top policy makers in government have realized the path that the Lao economy has been taking and the significance of the forest resources. From its forest policy pronouncements, e.g. Forest Law of 1996, PMO 13 in 1999, and PMO 11 in 2000, it is evident that the national government wants to see the forest resources of the country managed on a sustainable basis. In spite of the immediate need for high forest revenues and the pressure from the logging business sector, the national government has recently shown its determination to allow logging only in places where sustainable forest management is being practiced and in no other places, except in infrastructure development areas where the timber would be lost anyway be if not is recovered. For example, in Savannakhet and Khammouane, two of the country’s most active logging provinces, logging quotas were given for the 2001 operations only to those areas with forest management plans. These are the village forestry pilot areas of the Forest Management and Conservation Project (FOMACOP) and the Lao-SIDA Forestry Program (LSFP).

Village forestry is a very promising system for putting the country’s production forests under sustainable management because:

• It has been piloted successfully on a large scale in two provinces (100,000 hectares of production forests in Dong Sithouane in Savannakhet and Dong Phosoi in Khammouane) by FOMACOP, as well as by LSFP (9,000 hectares in Savannakhet).

• Village forestry as practiced in FOMACOP sites has been found to result in sustainable forest management by three different independent evaluators, namely: (1) an SGS pre-certification assessment that was based on international standards, i.e. the policy and
criteria for sustainable forest management adopted by the Forest Stewardship Council, (2) an INDUFOR/DOF assessment that was based on national criteria and indicators for sustainable forest management, and (3) a MAF village forestry evaluation team. The MAF team also did a similar evaluation of the LSFP village forestry (or better known as joint forest management) sites.

- Training and field implementation strategies for spreading village forestry quickly have been tested by FOMACOP for four years and can be put in place in a short time.

- In actual implementation, village forestry would rely less from government resources and more from the resources available in the villages.

**Roles and responsibilities of the main partners and the other participants in village forestry**

**Roles and responsibilities of local forestry offices**

Local forestry offices include PAFO and DAFO. PAFO takes the initiative in organizing village forestry in a district and provides the staff to train DAFO staff in the different aspects, tasks, and activities of village forestry. DAFO in turn conducts extension work to disseminate village forestry, encourage village participation, train village teams, organize forestry work, collaboratively prepare the different plans, and initiate and lead in plan implementation. During implementation PAFO takes another role, as that of controller to ensure that the plans are properly carried out and that government regulations are followed. To be able to perform these roles, PAFO and DAFO must organize appropriate forest management units in their respective offices.

Specifically, it is the responsibility of DAFO, as the main partner of the villages, to:

- Discuss with the villagers the benefits of village forestry and encourage them to take up the work of managing forests.

- Prepare practical and easy-to-implement guidelines for villagers to do forestry activities.

- Train villagers on the different aspects and activities of village forestry.

- Provide assistance in generating and assessing the different options in planning and conducting forest management operations.

- Take the initiative and collaborate with the villages in preparing land-use plans, forest management plans, and annual operations plans, and follow through the approval of the plans by the authorities.

- Take the initiative in organizing work to implement the different plans.

- Provide supervision and management controls to ensure that the management of the forest is sustainable and beneficial to all concerned.

It is PAFO’s responsibility to:

- Introduce village forestry to a district.
Train DAFO staff in the conduct of village forestry activities.

Provide technical support to DAFO when needed in the implementation of village forestry activities.

Review, assess, and approve forest management plans and annual operations plans.

Propose annual harvesting quotas to MAF/DOF based on the annual operations plans.

In collaboration with DAFO and representatives of the villages, organize open and competitive annual sales of forest products (specifically timber) and take charge of contracting with buyers and product transport firms as provided by existing regulations.

Monitor forest harvesting, facilitate the completion of the sale of forest products, and control their transport to prevent and apprehend any illegal activities.

Assess the conduct of forest harvesting and other forest management operations.

**Roles and responsibilities of villages**

Villages are represented by the village administration or its sub-organization, e.g. village forestry committee or association. Their main role in the village forestry partnership is to provide on-ground information and human resources needed for planning and day-to-day management of the forest resources. The importance of the timely delivery of accurate information inputs to management cannot be over-emphasized. If the participating villages do not appreciate this, then information would be haphazardly collected and/or delivered late. For this reason, it is important that the villages are made part of the management decision-making processes. As important partners and since they are also expected to protect the forest from fire, poaching, and other illegal activities, the villages should share substantially in the benefit from forest management. To reassure them of their importance in the partnership and what benefits they could sustainably get from it, as well as to make them aware of their responsibilities, the government must sign a long-term forest management contract with them.

Specifically, the responsibilities of the participating villages are to:

- Get themselves organized for village forestry work.
- Form teams to do the different village forestry tasks and activities.
- Coordinate with DAFO in the training of the village teams and the conduct of the different village forestry tasks and activities.
- Ensure that the forestry operations and the other activities of the villagers are conducted according to the provisions of the different plans.
- Ensure that the forest is protected from fire, poachers, and other destructive agents throughout the year.
- Report to DAFO all matters concerning village forestry and the use of forest resources.

**Roles of other participants**

There are other stakeholders in village forestry. The forest industry needs a reliable and steady supply of raw materials. The rest of the national community needs the revenues that come from forest management for the country’s social and economic development. In turn, the forest industry is expected to develop markets and provide competitive prices for village forestry products. The state is expected to provide the enabling policies, legislation, and regulations for promoting village forestry, as well as other support such as information from research, effective technologies and systems that have been proven to
work in pilot and demonstration sites, better infrastructures, and a predictable working environment.

**Objectives and limitations of the handbook**

This handbook on village forestry is a culmination of a five-year effort of FOMACOP to design and pilot sustainable forest management systems. Intended initially for production forests, it is primarily written with the following objectives and for the following readers:

- **Policy and decision makers**, to inform them about village forestry and its potential for widespread use as a system for sustainably managing the country’s production forests.

- **Project managers**, who are interested in initiating village forestry in their respective projects, to assist them in designing specific strategies and systems that would suit the conditions obtaining in their project sites.

- **Forestry staff and village teams**, to guide them in planning, organizing, and implementing village forestry tasks and activities.

- **Village leaders**, especially those from villages outside the coverage of existing forestry projects, to assist them in initiating village forestry with the assistance of local forestry staff.

- **Other professionals**, who would like to learn about a kind of community-based forest management that is being applied in Lao PDR.

The handbook covers primarily the village forestry activities for forests with potential for commercial timber production, but it also covers the non-production aspects and activities that occur in production forests, such as the collection of non-timber forest products, biodiversity conservation, forest protection, water conservation, and others. Village forestry models specific to other kinds of forests, e.g. conservation forests, protection forests, regenerating forests, and forest plantations, have not yet been developed or piloted. Expanding village forestry to cover these kinds of forest is a task for the future.

In the practice of village forestry, there is no need to follow all the tasks and activities that are presented in the handbook. The practitioner has to decide which of the tasks and activities are relevant to the given site and conditions. For example, in village organizing it is not necessary to use the village forestry association as the means to represent and involve the village in the partnership. The village may instead be represented by a committee, although the use of a village forestry association has been found to be workable and to solicit the active participation of the villagers.

**Village forestry tasks and activities**

**Aspects of village forestry**

Village forestry is not only about managing forests, it has other facets. For one, a considerable degree of extension and organizational development is needed to undertake village forestry or any other development work in the village. The villagers have to be convinced of the importance of managing the forest as a means to help themselves and develop the village, and that organized cooperation is the best way to do it. Then they
have to be assisted in organizing themselves and their activities. It is only after they are properly organized that they can go about with the different village forestry tasks in partnership with the local forestry staff.

It is not enough, however, that the villagers are organized for village forestry work. Most villagers have a very low standard of living. Inadequate food supply, lack of water, poor health, and poor infrastructure are among the villagers’ foremost problems. In the face of poverty and increasing population pressure, the forest can be protected only if forestry contributes to meeting the basic needs of the villagers and to overall social and economic development. Sustainable forest management in itself would not improve the villagers’ well-being, unless they share substantially in the benefits of management and they invest their share into developing the village itself, their means of livelihood, and small businesses. Moreover, village forestry can be seen as a business in itself, which must be run efficiently to generate a surplus. This requires from the partners an adequate level of entrepreneurial skills and the investment of labor, capital, and other resources.

If village forestry is to succeed, it is clear from the above that villages must be organized, their teams able to undertake technical forest management activities, and their constituents able to benefit substantially from forest management. Therefore, three aspects have been incorporated as integral parts of village forestry as follows:

- **Village organizing.** Village organizing is an evolutionary process of organization building and further development that can take years before the organization matures. The village organization itself should be of a form that can take off from an existing village structure and develop into one from a number of options, which should be able to perform effectively and efficiently the different tasks and activities of forest management. Taking the Savannakhet pilot project as an example, after forming a simple group structure within the village administration, called the village forestry core group, for the purpose of doing cooperative, voluntary forestry work, organization building proceeded to the establishment of a more capable and stable structure, i.e. the village forestry association (VFA) with goals and objectives, roles and responsibilities, and basic systems and procedures. Organizational development then proceeded from the formed associations towards their strengthening and, later on when the need arose, their participation in a district committee for village forestry to look after common problems and concerns.

- **Village forest management.** Developing the villagers’ forest management knowledge and skills goes hand-in-hand with village organizing. Again, taking the Savannakhet pilot project as an example, the forestry core groups learned to organize and supervise their village work teams to do the first few forest management activities, such as village boundary demarcation, land-use mapping, and forest inventory. By the time when the VFAs were formed and took over from the core group, each village planning teams had formulated a village forest management plan together with forestry staff. With their village forest management plan, the VFAs were able to enter into an agreement with the government for the long-term management of the forests within their village territories. Different village teams, which were organized and supervised by the VFAs, continued on to do the subsequent forest management activities, such as pre-harvest inventory and annual operations planning. Then upon reaching the stage when timber harvesting could be undertaken, the VFAs discovered that they must work together in a district committee to undertake jointly such activities as securing a logging quota, participating in timber sales, and contracting out logging. At the same time, individual VFAs continued to take care of activities...
that occur in their own territories, such as tree marking, clearing of access tracks, post-harvest assessment, and the different forest regeneration, stand improvement, protection, and conservation activities.

- **Village development.** Village development provides a strong incentive for villagers to organize themselves for the purpose of undertaking sustainable forest management. The villages’ share of forest revenues goes to a village fund that can be used to finance forest management activities, self-help village development projects, emergency welfare support, and small rural business ventures. In the process of pursuing these activities, people with the potential to develop into entrepreneurs are discovered from among the villagers and are given the opportunity to develop their managerial skills. In this manner they are able to expand the range of their activities from farming to the development and management of rural enterprises.

**Village organizing tasks and activities**

Village organizing is a process of enhancing the capabilities and mobilizing the resources of villagers to achieve their common aspirations and goals by working together, based on a clear understanding of their existing problems and the situation in the village. It encourages villagers to work collectively to undertake village forestry activities that would be difficult or even impossible to accomplish individually. It also helps to ensure the participation of villagers in planning, implementing, and managing village forestry activities.

The traditional practice in village organizing is for an external village organizer (i.e. forestry staff) to prescribe how the villagers should be organized, what the roles and responsibilities of the officers and members should be, what the organization should do, and others. In village forestry, the village organizer assists the villagers in organizing themselves to implement village forestry activities. He/she starts working with the existing organizations in the village. He/she then enhances the technical and organizational skills of the villagers to identify, evaluate, and decide on the best organizational option, and to mobilize available resources to develop the chosen option.

One of the concerns of village organizing is the formation and strengthening of a viable and self-sustaining village organization to plan, implement, and manage village forestry activities. Most villages are already organized, i.e. they have a village administration, village committees, or tribal structures. Key villagers, with the assistance of the village organizer, assess the existing village structures to determine if they are responsive to their needs and to the requirements of village forestry. The decision to form an organization for village forestry comes from the villagers themselves based on their need to organize to effectively achieve specific goals. The village administration oversees the operations of any form of organization for village forestry that the villagers choose.

Organization building and development is an evolving process. It begins when villagers address a common problem or to accomplish a common goal. The village organizer encourages the villagers to start with problem or goal that can be easily solved or attained, rather than dealing with difficult ones where the possibility of success is not guaranteed or where the benefits are not immediately felt. The organization gradually develops teamwork among its members and capabilities and confidence in solving problems. The organization is given the opportunity to gradually develop its policies, rules, structure, membership, financial management system, records, management systems, and other operational procedures. As the organization tackles increasing number of activities,
operations become more complex. As the organization grows, its membership expands and its operating procedures become standardized.

There are a number of routes to organization building and development in village forestry. The FOMACOP model may be considered as an appropriate although elaborate route for the specific situation where it has been applied. This particular route started from the formation of an informal village forestry core group composed of 5-10 villagers, proceeding to a formal village forestry association consisting of qualified villagers, then to an informal inter-VFA committee composed of VFA representatives, and finally to a formal Group of VFAs consisting of officially recognized VFAs (see Figure 1). The transition from one stage to another depends on the villagers’ needs to organize and meet the requirements for organizing the forestry activities that they are currently working on. In other situations, the route and transition from one stage to another may take on a different form.

Figure 1 - An example of organization building and development in village forestry

- Small informal group of 5-10 villagers
- Village wide coverage
- Simple rules of operations
- Responsible for forming a village forestry association
- Short-term action plan
- Temporary and short-term organizational arrangement

- Formal organization of qualified villagers
- Village wide coverage
- Officially recognized by provincial authorities
- VFA articles of associations, by-laws, village forest management plan and contract approved by provincial authorities
- Standardized operating procedures
- Long-term plans
- Permanent and long-term organizational arrangement

- Small informal group of inter-VFA officers
- Multiple village coverage
- Responsible for forming a Group of VFAs
- Short-term action plan
- Temporary and short-term organizational arrangement

- Formal organization of officially recognized VFAs
- Multiple village coverage
- Officially recognized by the provincial authorities
- Group articles of association and by-laws approved by provincial authorities
- Standardized operating procedures
- Long-term work plan
- Permanent and long-term organizational arrangement
Following the FOMACOP route requires the completion of a number of tasks and activities, including:

1. **Preparatory task to strengthen the capabilities of forestry staff to train villagers and do extension work in the village.** A training needs assessment of the staff is conducted to find what skills need to be reinforced, and the staff undergo training to acquire or strengthen their skills in (a) preparing for and conducting participatory training, (b) using selected participatory training methods, (c) planning and conducting cross village visits, and (d) planning and conducting participatory extension work in the village.

2. **Extension work to initiate village forestry.** Using illustrations, e.g. in a series of flipcharts, the forestry staff and the villagers discuss the importance of the forest and the consequences of uncontrolled forest exploitation, and then explore the potential benefits of managing the forest to assist the villagers in meeting their needs and aspirations. The interest of villagers to go into forest management is cultivated.

3. **Learning together about the village.** Forestry staff and villagers together learn about the social and economic conditions of the village, making use of participatory rural appraisal (PRA) tools. A village forestry core group is formed to lead the village in initiating village forestry activities.

4. **Operating a village forestry core group.** The forestry staff work together with the core group to strengthen the group’s capability to look after the organizing and supervising of initial village forestry activities. Core group rules, operating procedures, and action plan are formulated. As village forestry activities outgrow the capacity of the core group, other options for organizing are explored, e.g. VFA.

5. **Forming a village forestry association.** If and when the village decides to form a village forestry association, the structure and by-laws of the VFA are formulated by the villagers with the help of the forestry staff. A membership campaign is done and members are registered. In its first general assembly, the VFA ratifies its by-laws and forms an election committee, which subsequently supervises the election of officers. The new set of officers organize the different VFA committees.

6. **Officially recognizing the village forestry association.** The VFA, with the help of the forestry staff, prepares the requirements for and seeks official recognition by the government.

7. **Operating the village forestry association.** The VFA pursues its organizational strengthening by (a) formulating and adopting its own rules and operating procedures, (b) preparing and approving an annual work plan and budget, (c) learning to manage records, (d) establishing its own fund, (e) learning to conduct and control financial transactions, and (f) learning to report and audit its operations.

8. **Forming and operating a district committee for village forestry and/or a group of village forestry associations.** In due course, the VFA learns that there are activities that it must do together with other VFAs, e.g. timber harvesting, timber sales, and forest protection. With the help of the forestry staff, the VFAs may organize themselves together with the district administration into a district village forestry committee, which is then run jointly by them and the district administration, or proceed to form a Group of VFAs initially by forming an inter-VFA committee.
Village forest management tasks and activities

In many countries, community-based management of forest resources was introduced as a last resort, when governments finally realized (unfortunately too late in most cases) that, after only a few decades, forest exploitation by means of annual logging permits, large-scale concessions, or state enterprises had resulted in large-scale deforestation and forest degradation. But then as governments adopted community-based forest management, they initially used the same systems, rules, and regulations previously employed to regulate forest exploitation and were too slow to adopt ones that are more applicable to forest management involving local people’s participation.

In the case of the FOMACOP model of village forestry, forest management systems that fit the condition obtaining in the village have been formulated, tested in a large scale, and found to result in sustainable forest management. The system is based on low-intensity timber harvesting that imitates the natural death and regeneration of trees in a normal forest situation. The main characteristics of the village forest management system are:

- **Light cutting intensity.** Only one tree per hectare is cut on average; more may be cut in dense compartments (e.g. two to four trees per hectare) but less in light compartments (e.g. one tree in two, three, or more hectares). The light cut maintains the normal tree-size structure of the forest and prevents bamboos and weeds from invading the openings and changing the species composition of the forest. It also allows logged-over forests to recover and further increase their stand density, rather than suffer the shock from another heavy cut.

- **Short cutting cycle.** Since the cut is light, the forest takes a much shorter time to recuperate and be ready to sustain another cut. A cutting cycle of between 5 to 10 years has been tried and found to be workable. In both theory and practice, long cutting cycles have been found to result in heavy cuts per hectare and, consequently, in heavy damage to the residual forest and in lengthened period to regenerate and recover the original forest stand composition and structure.

- **Low-impact logging.** Trees are felled directionally to minimize damage to other trees. Log transport is limited to the dry season when the forest floor is better able to absorb the weight of logging trucks. Road-building, which is usually the most significant source of erosion of forest soils, is not required since logging is limited to flat to rolling terrain. Forests with moderate slopes are opened for harvesting only if trees can be cost-effectively hauled above-ground by cable to an accessible landing. Forests with steep slopes are left as biodiversity conservation sites.

- **Sustainable forest management given priority over profits.** While it is desired to generate revenue from the forest, the maximization of logging profits is not the main objective. It is enough that forest revenues are able to pay for logging costs, royalties, and taxes, while leaving a modest margin to finance forest management operations and village development projects. If logging can be done only by violating sustainable forest management principles, it is not done at all.

- **Villagers undertake timber harvesting and other forest management operations themselves.** Villagers take control to ensure that logging contractors and their own operators follow sustainable forest management and low-impact logging guidelines. Social sustainability is a common product of community-operated management, unlike concession-based forestry where the concession holders almost invariably
ignore the needs of the local people whose livelihood depends on the forest. The villagers are better able to resolve conflicting interests among themselves, such as when resin-tapped trees are cut.

The especially designed system is implemented along with other village forestry tasks and activities in a participatory manner. The village forest management tasks and activities are described below:

1. **Planning village land uses and allocating land for the village forest management unit.** The first activity is the demarcation of village boundaries and mapping of village land uses by a village survey and mapping team assisted by forestry staff. Another team, the village planning team, then proceeds with village land-use planning and land allocation resulting in the specification of the extent and boundaries of the village forest management unit (VFMU).

2. **Conducting forest inventory for village forest management planning.** Designing of a forest inventory is done by forestry staff together with the village forest inventory team, which actually conducts the forest inventory, calculates the results, and writes the report. Records of the forest inventory are kept in the village for subsequent use.

3. **Assessing village forest growth and mortality.** Available forest growth and mortality information are adapted for the local forest by the forestry staff and handed over to the village planning team to be used in planning the management of the VFMU.

4. **Village forest management planning.** Under the guidance of forestry staff, the village planning team completely specifies the different components of the village forest management system. They also prepare the maps, charts, and tables that illustrate the village forest management plan. Finally, using a model plan, they proceed with the writing of the village forest management plan.

5. **Securing the village forest management contract.** Having prepared their village forest management plan, the VFA is now ready to enter into and sign a village forest management contract with the government.

6. **Conducting forest inventory for annual harvest planning.** Design of the pre-harvest inventory is done by forestry staff together with the village forest inventory team, which actually conducts the pre-harvest inventory, calculates the results, and keeps them for subsequent use.

7. **Annual village forestry operations planning.** More detailed application of the forest management system using data from the pre-harvest inventory is done, such as in selecting trees for cutting and laying out access tracks. The annual village forestry operations plan is then written and submitted as the basis for securing a logging quota. Planning work is done by the village planning team under the guidance of forestry staff.

8. **Conducting pre-harvest operations.** Pre-harvest operations such as timber marketing, re-allocation of the logging quota, and securing of a logging permit is done together by the VFAs as a group, while tree marking and pre-harvest activities to help ensure forest regeneration are done by individual VFAs in their respective VFMUs.
9. *Conducting timber harvesting operations.* Preparation of access tracks, supervision of logging operations, and conducting activities to help ensure forest regeneration are the concern of each VFA, but the preparation of second landings and transport routes to and from them, as well as logging contracting and second landing operations are the responsibility of the Group.

10. *Conducting post-harvest forest management operations.* Post-harvest assessment and post-harvest activities to ensure forest regeneration and improve the timber stand are done by each VFA in their respective VFMUs.

11. *Customary uses of the forest.* National policies and laws allow for the exercise of customary rights by villagers to use the forest. Included are the right to cut trees for household and community use and to collect non-timber forest products.

12. *Forest protection and conservation.* As an important integral part of sustainable forest management, forest protection activities, such as from fire, conversion to unplanned land uses, and over-grazing, as well as conservation of soil, water, and biodiversity, are practiced by the VFAs in their respective VFMUs.

### Village development tasks and activities

As with any other activity that deals with the village, village forestry addresses village development and the welfare of villagers. This is done in a number of ways, such as by:

1. Ensuring the sustainability of customary use by villagers of the forest resource.
2. Providing gainful employment to villagers involved in village forestry activities.
3. Contributing part of the net revenue from village forestry directly to village development and welfare projects.
4. Developing human resources and their capability to contribute to village development.

These are carried out by means of the following tasks and activities:

1. *Sharing the benefits of village forestry for village development.* The benefits, specifically the revenues, of village forestry are first shared between the State and the VFAs as a Group. The VFAs in the Group then share the net revenue among themselves, and finally the VFA shares its financial resources with the village for common development and welfare.

2. *Initiating village development.* Village forestry contributes to initiating the process of village development in two ways:
   a. By involving trained and motivated human resources in village development planning.
   b. By assisting in sourcing resources and other means of support for village development.

3. *Supporting village development projects.* Key villagers, whose potentials as entrepreneurs have been discovered and enhanced in the course of undertaking village forestry, are better able than before to help in identifying, selecting, formulating, and implementing village development projects.

4. *Monitoring and evaluation of the progress and impacts of village forestry.* Village forestry impacts not only the forest resources, but also the village in general,
particularly the social changes and economic development that result from the heightened involvement of villagers and the availability of financial and other resources generated in forest management. The villagers are the main actors in participative monitoring and evaluation with their direct involvement in determining objectives and indicators of monitoring and evaluation and in using monitoring and evaluation tools to gather information and use the results.

Options for village forestry

There are a number of ways for village forestry to proceed in a particular village. For example, in Savannakhet two basic forms have emerged, i.e. village forestry as piloted by the Forest Management and Conservation Program (FOMACOP) with the support of the World Bank and the Government of Finland, and joint forest management as piloted by the Laol-SIDA Forestry Program. Both are applied in villages with commercially viable forests. Other forms are also emerging in other provinces, e.g. in Vientiane Province NAWACOP is doing forestry work with villagers with watershed management and forest conservation as primary objectives.

The FOMACOP model is the most elaborate and well-documented among the village forestry pilot projects. It has also the largest coverage, having been tried in two sites with a total area of about 145,000 hectares of which 100,000 hectares are production forests. These sites comprise 41 villages in three districts of two provinces, Savannakhet and Khammouane. Sustainable forest management has taken root in these two FOMACOP sites as confirmed by the three independent assessments mentioned earlier. In addition, the FOMACOP pilot villages are turning into a popular study tour destination for students and professionals from here and abroad, who are interested to learn about community-based forest management, and have been featured in the World Expo 2000 in Hanover, Germany and in international conferences.

This handbook is based on the FOMACOP experience. It describes an elaborate way of conducting community-based forest management, but one which has been tried to work in practice at a considerably large scale. It is applicable mainly in production forests with commercially viable timber resources that can provide benefit for both national and village social and economic development, but its approaches and procedures can be adapted in other forests of different types and with different management objectives. In consideration of its possible adaptation elsewhere, the village forestry tasks and activities as described in this handbook have been organized to be as broadly covering as possible to make it easy for practitioners to pick the relevant activities when introducing village forestry in their sites.

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**Strengthening the capabilities of PAFO trainers and DAFO extension workers**

**Objectives**

*Main Objective*

- To strengthen the capabilities of PAFO trainers and DAFO extension workers by means of training, so that they can in turn provide the villagers with adequate training and technical assistance in planning, implementing, and managing village forestry activities.

*Specific objectives*

- To provide PAFO trainers with adequate knowledge and skills in: (a) conducting training needs assessment; (b) preparing and conducting participatory training; and (c) using participatory training methods.

- To provide DAFO extension workers with adequate knowledge and skills in (a) planning and conducting participatory training and extension work in the villages; (b) using participatory rural appraisal (PRA) tools; and (c) planning and conducting cross-village visits.

**Rationale**

The concept and practice of village forestry is new to both the forestry staff and villagers. Village forestry brought about new roles and tasks for both groups and resulted in a new working relationship between them. To carry out their new roles and tasks, both the forestry staff and villagers need to be trained on all aspects of village forestry (e.g. organizational, technical, and entrepreneurial aspects). This may be undertaken by first organizing and training a number of trainers, who in turn train other staff and villagers.

For optimum staff utilization, it may be necessary to centralize the training function to a core of trainers at PAFO, whose responsibility would be to train DAFO staff from the different districts of the province. The DAFO staff would be at the frontline of village forestry, working hand-in-hand with villagers. Their primary work is extension; however, they need to acquire not only participatory extension skills, but also skills in training villagers to do specific village forestry tasks and activities.

Training and extension are continuing activities in village forestry. The design and conduct of a set of training courses should be tailored to the existing knowledge and skills of the target group as determined through a training needs assessment. Since new village forestry activities are introduced, both the forestry staff and villagers need to be trained to undertake these activities effectively. After the training, the village teams can proceed to do the work together with the DAFO extension workers.
Activities

Activity 1.1.1 Conducting training needs assessment. The capability of the staff is assessed to find out what further training is needed so that the staff can carry out village forestry work.

Activity 1.1.2 Training of trainers. Trainers, mainly PAFO staff, acquire the knowledge and skills necessary to prepare for and conduct participatory training, including the use of participatory training methods.

Activity 1.1.3 Training of extension workers. Extension workers, e.g. DAFO staff, acquire the knowledge and skills necessary to do participatory extension work in the village, including the use of PRA tools.

Activity 1.1.4 Planning and conducting cross-village visits. Extension workers learn how to plan and conduct cross-village visits that allow villagers from one locality to learn from other, more experienced, villagers in another locality.
Activity 1.1.1
Conducting a training needs assessment

Expected outcomes

- Information on the level of knowledge and skills of the forestry staff related to the village forestry tasks and activities.
- List of training needs of forestry staff for later use in designing future training sessions.

Requirements

- Description of roles, responsibilities and tasks of forestry staff in village forestry.
- Clear understanding of the knowledge and skills required to undertake village forestry tasks and activities.
- Materials, such as training needs assessment forms.

How to conduct the activity

Discuss with the staff the procedure for conducting a training needs assessment and follow the steps to actually conduct a training needs assessment of the staff.

Step 1. Explain the rationale and importance of a training needs assessment and how the results are used.

Step 2. Identify and discuss the roles, responsibilities, and tasks in village forestry that the forestry staff should assume. Enter the information in the training needs assessment form (Annex 1.1.1.1).

Step 3. Identify and discuss the knowledge and skills required to undertake village forestry tasks and activities.

Step 4. List and assess the knowledge and skills already possessed by the forestry staff.

Step 5. Identify the gaps between the knowledge and skills required and those that the forestry staff already possess, and on this basis identify the kinds and contents of future training sessions needed.
Activity 1.1.2
Training of trainers

Expected outcomes

- A corps of trainers (mainly PAFO staff) are provided with adequate knowledge and skills in planning and conducting participatory training. They are able to use different participatory training methods.

Requirements

- Training needs assessment is completed.
- Training resources such as venue, adequate funds to take care of the needs of the participants, and materials (note books, pens, large brown paper, markers, masking tape, handouts, etc.).

How to conduct the activity

Training of trainers is undertaken as a course, which is described in more detail in the Village Forestry Training Manual prepared by FOMACOP. The following summarizes two aspects of training of trainers, i.e. (1) planning and conducting participatory training and (2) using participatory training methods.

Step 1. Planning and conducting participatory training. Train the staff on the following steps in planning and conducting participatory training:

1. Review the results of the training needs assessment.
2. Based on the results of the training needs assessment, prepare a training design and lesson plans for a specific village forestry activity. The training design should include (a) training rationale and objectives, (b) contents (i.e. modules and lessons), (c) schedule (dates and time), (d) list of participants, resource persons, and facilitators, (e) list of training resources needed and their estimated budget, e.g. venue, food, equipment and tools, materials, transport, accommodation, and other arrangements, (f) procedure for evaluating the training.

   The lesson plan should include the (a) expected output of the lesson, (b) training methods and aids to be used, (c) time and materials needed to do the lesson, (d) steps and guide questions, and (e) learning notes, if any.

3. Conduct the training according to the training design. Select and use a combination of participatory training methods, experiential learning techniques, and adult learning tools.

4. Conduct a simple evaluation of the training (see sample format in Annex 1.1.2.1). The evaluation can be written or verbal. It can be done individually or by groups (e.g. illiterate participants) and facilitated by the trainer. In addition, surfacing of participants’ expectations may be undertaken. This is done by asking the participants at the beginning of the training course to discuss and determine what are the knowledge and skills they expect to learn from the course, and then at the end of the
course they are asked to discuss and assess if their learning expectations were achieved.

5. Summarize the training evaluation results and write a brief report.

6. Based on the evaluation results, revise or improve the design and conduct of subsequent training.

**Step 2. Participatory training methods.** Train the PAFO trainers and other participants on the conduct of different participatory training methods listed below.

1. Group discussion
2. Role play
3. Demonstration and practicum
4. Group process exercises and games
5. Field visit and study tour
6. Group or individual exercises
7. Peer teaching or tutoring

A detailed explanation of these methods is given in the sections that follow, which are denoted as sub-activities.
Sub-activity 1.1.2.1  
Participatory training method 1 – *Group discussion*

**Expected outcomes**

- Problems and solutions are identified.
- Decisions and actions are agreed upon.
- Leadership skills and interpersonal relations are developed.
- Misunderstanding is minimized or avoided.
- Desire to learn and share knowledge and experiences is stimulated.
- Every participant is given a chance to participate.

**Requirements**

- A good group leader or facilitator is needed to avoid the more dominant members from taking over the group discussion. A recorder (reporter) should also be selected.
- Participants should be in a relaxed atmosphere that is free from noise and other disturbances.
- Face-to-face discussion is essential.

**How to conduct the activity**

A group discussion involves two or more people coming together to talk informally and to discuss a topic of mutual concern, so that experiences are shared, opinions expressed, alternatives discussed, and actions are planned. Discussion is more effective when a group is small. The effectiveness of group discussion may decline when there are more than 7 persons in a group.

**Step 1.** Start with warm-up exercises that are interesting, topical, and appropriate for the group.

**Step 2.** Be sure your instructions to the groups are clear, precise, and preferably in written form for reference purposes.

**Step 3.** Select a group leader and recorder (reporter) to report the results of the group activities.

**Step 4.** Discuss topics and draw recommendations or actions to resolve the issues at hand. Take note that:
- Group cooperation should be stressed at an early stage.
- No member should be allowed to dominate the group discussion.
- Every member should be encouraged to participate.
- Private conversations hinder group discussion and should be discouraged.

**Step 5.** Set deadline and time limit for the group discussion.
Sub-activity 1.1.2.2
Participatory training method 2 – Role play

Expected outcomes

- A problem or approach relating to human relations, e.g. an extension worker who is required to deal with a villager or group of villagers, is examined.
- An effective way of discussion that is aimed at problem solving is stimulated.
- The “actor” is given a chance to assume the personality of (to think and act like) another person, which should lead to a better understanding of the other person’s point of view.
- Real-life dangers of the “trial and error” approach are avoided.
- Variety and fun is added to a formal training course.

Requirements

- Audience should not be too large (so that the effects of role playing are not lost).
- Each member of the audience must be able to see the role play.
- “Actors” should concentrate on the purpose of the role play and not worry about their performance.

How to conduct the activity

A role play is an exercise wherein a “real life” situation (but with no prepared script and set of dialogue) is improvised and acted out in front of a group, which then discusses the meaning and implications of the performance for the situation under consideration. Role playing is generally spontaneous. Role playing in the early stages of a training course will help break down communication barriers.

Select “actors” carefully. Where possible, allow them enough time to improvise their “props” and attire. Encourage a light-hearted approach for the role play. If time permits, arrange several role playing sessions and try making the groups competitive.

**Step 1.** The trainer must clearly define the situation (set the scene) before the role play begins.

**Step 2.** Role playing can be introduced without any warning but it is better to give the “actors” a little time to understand the idea; they will sometimes produce an excellent performance based on their own creativity.

**Step 3.** The trainer should set a time limit for the role play. After the role play, process the lessons and experience generated. Always acknowledge the efforts of those involved in the role play.
Sub-activity 1.1.2.3
Participatory training method 3 – *Demonstration and practicum*

**Expected outcomes**

- A particular task is taught and tried by the participants.
- A new procedure or technique is introduced.
- A point or an idea is illustrated and reinforced.

**Requirements**

- The provision of adequate facilities, tools, and materials is important. Everyone must be able to see and to practice with the demonstration equipment or tools (if any). For large-scale demonstration, a barrier may be required to keep people from crowding and to provide more people a good view of the demonstration. If time permits, it may also be useful to arrange the participants in small batches to view the demonstration.

**How to conduct the activity**

A demonstration or practicum involves the performance of an action (or the explanation of a procedure or technique, or use of new equipment or tools), before the participants, to enable them to perform the same action (under guidance, as needed).

**Step 1.** Collect the necessary materials, equipment, and / or tools. Select a suitable site for demonstration. To demonstrate effectively, the trainer must be familiar with the equipment or procedure and the skills in using it.

**Step 2.** Practice the procedure or technique beforehand. Practice is the rule for mastering a complicated procedure or technique. The easiest way to conduct a successful demonstration is to build on individual experiences.

**Step 3.** Explain the purpose and objective of the exercise, then carry out the demonstration. Make sure the participants fully appreciate the purpose of the demonstration.

**Step 4.** Ask participants to practice the techniques or procedures under guidance (practicum). Participants practice best in their own time without many observers; some get nervous while others are watching or criticizing.

**Step 5.** Volunteer participants are tested to see whether they have acquired the demonstrated skills.
Sub-activity 1.1.2.4
Participatory training method 4 – *Group process exercises and games*

**Expected outcomes**

- The participants are relaxed and energized.
- The flow of communication among the participants is stimulated.
- Everyone is encouraged to participate and learn (experiential learning).
- The participants are exposed to new ways of judging their own actions in relation to the impact on group work.
- Group cohesion and openness is enhanced.

**Requirements**

- Trainer-facilitator with good organizing skills and experience.
- Relaxed environment.
- Adequate space.
- Materials required by specific group dynamic exercise or game.
- Sufficient time for processing and discussion.

**How to conduct the activity**

Group process exercises and games emphasize the creation of a training environment in which individuals and groups feel free to experience, reflect, share, and change. Each exercise or game emphasizes a message, oftentimes discussed with the participants at the end of the exercise or game. Each exercise or game has specific objectives, procedures, and material, time, space, and physical arrangement requirements.

**Step 1.** The exercise or game should be explained carefully, especially its purpose and objective.

**Step 2.** Relate the exercise or game to other parts of the training course and to the participants’ “real” situations.

**Step 3.** Draw attention to the relevance of the exercise to the participants’ work or to the overall training objectives.

**Step 4.** Familiarize and practice the exercise or game beforehand. One should start the exercise or game oneself by giving the first example or demonstration.

**Step 5.** Exercises should be balanced with sufficient time for discussion. Use guide questions during processing and reflection sessions.

**Step 6.** If working with limited time, it is better to completely and properly carry out one or two exercises or games than to do many exercises quickly.
Sub-activity 1.1.2.5  
Participatory training method 5 – *Field visit and study tour*

Expected outcomes

- Theory is related to “real” problem or situation. A particular practice is related to its actual environment.
- Something that cannot be brought into a classroom can be studied on site.
- Participants’ interests and concerns are stimulated.
- A course of action “in the field” or in a work place environment is demonstrated.
- Discussion with villagers in their actual work place environment is done.
- Details of how things are actually done in the village are learned.
- Classroom learning is complemented.

Requirements

- Information such as handouts and maps.
- A good facilitator to plan and organize the field visit or study tour.

How to conduct the activity

A field visit or study tour is characterized by a planned itinerary, usually of a pre-determined period, during which a particular environment or past and present “event” is observed or studied.

**Step 1.** The trainer-facilitator plans in detail and contacts every person or place that is to be visited. Whenever possible, the trainer-facilitator should make a preliminary visit to check on detailed arrangements, timing, etc.

**Step 2.** A program or schedule of activities is drawn up. Maps, handouts, (learning aids) and other materials are prepared. No schedule should be too tight – always allow for the unexpected. Build in social activities to provide for recreation. Once the program has been drawn up, prepare details of transport, guide, accommodation, and food arrangements.

**Step 3.** The participants are briefed on what they should expect to see, the purpose of each visit, and what is expected of them. All members must be advised on what will be required of them before the start of the field visit or study tour, e.g. preparation of individual or group report.

**Step 4.** During the visit a guide explains the relevant features of the site. The participants are encouraged to take notes and to ask questions.

**Step 5.** After each place visited, the participants meet to review what they have seen and its significance for them. This is facilitated by the trainer.
Sub-activity 1.1.2.6
Participatory training method 6- Exercise (individual or group)

Expected outcomes

- Practice of a new skill or technique is demonstrated.
- Learning and initiative is tested and reinforced.
- Acquired skills are reviewed.
- Familiarity with the “real” thing is promoted.
- Participants’ confidence, independence, and initiative are developed.

Requirements

- An adequate work space, materials, equipment, and tools, as needed.
- A good trainer-facilitator to provide guidance to the exercises.

How to conduct the activity

An individual or group exercise is a work assignment designed to provide the participants with hands-on experience in trying and practicing a skill or technique, either individually or as a group. It aims to review the skills already learnt and used as a basis for self-instructional learning.

Step 1. Brief the participants on the technique – its purpose, requirements and Expected outputs. Give a time limit to the exercise.

Step 2. Ask the participants to work either individually or as a group depending on the requirements of the assigned exercise. The trainers-facilitators should be available to each individual or group to provide guidance and supervision.

Step 3. Ask individuals or groups to present their outputs to the whole group. A critical but helpful feedback is an essential part of any worthwhile exercise. The trainer-facilitator should not forget to acknowledge and praise good work.
Sub-activity 1.1.2.7
Participatory training method 7 - Peer teaching (Peer tutoring)

Expected outcomes

- Large groups of participants are broken into small “learning cells”.
- The anxiety level at the start of a training course is reduced by involving the whole class in an active learning process.
- Particular topics are discussed in depth.
- A “one-on-one” situation is achieved.
- An active learning atmosphere for a large group is provided.
- Participants’ feelings of isolation and boredom are reduced.
- An immediate feedback for self-evaluation is provided.

Requirements

- Adequate space for small learning groups.
- A quiet room or any relaxing environment.
- Good trainers to supervise and facilitate the different “learning cells”.
- Sufficient time for processing and reflection.

How to conduct the activity

In peer teaching, small groups of peers act as both teacher and learner by switching roles (differs from peer tutoring, in which a participant who has adequate knowledge on a certain topic helps another who is having difficulties with it).

Step 1. The trainer-facilitator briefs the participants on the technique – its purpose, requirements, and Expected output.

Step 2. The participants are formed into “learning cells” or small groups of 3-4 people (in contrast to peer tutoring, which mixes the participants who have knowledge and skills on a certain topic with those who have difficulties with it). Most of the people in a large group are usually sitting next to friends. This tends to make peer teaching (peer tutoring) easier to get started. If the room space is inadequate, send the groups outside the training hall for a specific period of time.

Step 3. The participants conduct the exercise. Each participant must be asked to gain experience in both the teaching and learning roles; each member of every small group shares in asking and answering questions on a certain topic. The trainer-facilitator should always be available to supervise, to help solve problems, or to settle disagreements or arguments, and to provide advise as needed.

Step 5. The trainer-facilitator conducts a concluding session for the whole training group to answer any questions that were not adequately addressed in the learning “cells”.
Activity 1.1.3
Training of extension workers

Expected outcomes

- A corps of DAFO extension workers acquire the skills needed to do participatory extension work, including the use of PRA tools.

Requirements

- Extension support materials (e.g. flipcharts, brochures, posters, pamphlets, etc.).

How to conduct the activity

Training of extension workers is undertaken as a course with three modules: (a) planning and conducting participatory extension; (b) using PRA tools; and (c) conducting cross-village visits. The course modules are all taken up in more detail in the Village Forestry Training Manual prepared by FOMACOP. The use of PRA tools is also described in Task 1.3 (Learning together about the village through participatory rural appraisal), while the conduct of cross-village visits is described in Activity 1.1.4. The steps to be followed in planning and conducting participatory extension are summarized as follows:

Step 1. Preparing and planning for the village forestry extension work. The following are the steps in preparing and planning for the village forestry extension work. The steps are undertaken by a composite village forestry extension team made up of (a) forestry extension workers with adequate knowledge and skills in effectively working with villagers, and (b) a core of key villagers (e.g. VFA training and education committee) who can work closely with the forestry extension worker.

1. The composite village forestry team is provided adequate knowledge and skills in communication, participatory extension methods and techniques, use of visual aid extension materials, etc.

2. The team discusses and determines the specific objectives and Expected outputs of the village forestry extension work.

3. The team reviews the results of the PRA (e.g. social mapping, census mapping, wealth ranking, seasonal calendar, Venn diagram, village land use mapping, participatory village forest inventory, etc.) and uses these information stocks for planning the extension work in the village (e.g. scheduling of extension work, determining extension targets, and identifying the extension units).

4. The team discusses and identifies the villagers targeted by the extension work.

5. The team discusses and determines the best combination of extension methods (e.g. individual, group, or mass) to be used to achieve the extension objectives and outputs (see guidelines in selecting extension methods, Annex 1.1.3.1).

6. The team assesses the appropriate extension unit for conducting the extension work to reach the largest number of target villagers (e.g. nouay or group of households, village assembly meeting, etc.).
7. The team reviews the PRA results and other available materials relevant to the extension objectives, methods, targeted villagers, and discusses how to simplify and present them in a format (e.g. drawings, diagrams, maps, charts) that is easily understood by villagers. These materials are used as extension aids.

8. The team summarizes all the above information in a simple action plan (see sample in Annex 1.1.3.2) that will guide them in conducting the extension work in the village. The action plan includes: (a) extension objectives, (b) Expected outputs, (c) target villagers, (d) extension methods, (e) extension support materials, (f) activities, (e) schedule, (f) persons responsible for particular items, and (h) budget (if any).

**Step 2. Conducting village forestry extension work.** The actual conducting of the extension work indicated in the following steps is also undertaken by the composite village forestry extension team.

1. The team discusses the action plan with the VFA management committee and the village administration to get approval.

2. The team conducts the extension work in accordance with the approved action plan.

**Step 3. Evaluating and reporting the village forestry extension work.** At the end of the extension activity, the composite village forestry extension team then evaluates and reports the results of the work as follows:

1. The team meets to discuss the outcome of the extension work including problems encountered and recommends actions needed to improve subsequent extension work in the village.

2. The team prepares a report of the village forestry extension work (see sample in Annex 1.1.3.3) and submits to the VFA management committee, village administration, and DAFO, as may be required.
Activity 1.1.4
Planning and conducting a cross-village visit

Expected outcomes

- Information, knowledge, skills, and experiences are learned and shared between visiting villagers and host villagers.
- A villager-to-villager learning approach is adopted and close collaboration between villages is promoted.
- The morale and confidence of villagers is strengthened.

Requirements

- Both visiting and host villagers should understand the need and learning objectives of the cross-village visit.
- Effective trainer-facilitator to plan and organize a cross-village visit.
- Logistical support (e.g. transport, in-transit accommodation, and other materials).

How to conduct the activity

Step 1. The DAFO extension worker discusses with the village forestry core group or village forestry association the learning objectives and Expected outputs of the cross-village visit and the list of possible villages that can be visited.

Step 2. The village forestry core group or village forestry association in collaboration with the village administration discusses and selects the village to be visited and identifies participants in the cross-village visit.

Step 3. The village forestry core group or village forestry association initiates contacts with the identified host village preferably through written communication duly endorsed by the village chief(s) concerned. Through an exchange of communication between members of the visiting village and the host village, agreements are made regarding the learning objectives, program of activities and number of visitors, as well as arrangements for food, accommodation, and other needs. (Note: This is designed to promote inter-VFA communication and collaboration.)

Step 4. The host village prepares items for the cross-village visit such as (a) program of activities including places to be visited and the presentations, group discussions, techniques or practices to be demonstrated; and (b) food, accommodation, and other arrangements. The DAFO extension worker assigned to the host village provides the necessary assistance and helps facilitate arrangements for the cross-village visit.

Step 5. Before the cross-village visit, an orientation is organized and facilitated by the DAFO extension worker with the visiting villagers to discuss the learning objectives and expectations, program of activities, travel, food, accommodation, and other arrangements. (See Sub-activity 1.1.4.1 for the guide in conducting a cross-village visit orientation.) The DAFO extension worker assigned to the host village facilitates a similar orientation with the host village.
**Step 6.** The DAFO extension worker accompanies the visiting villagers and facilitates the actual conduct of the cross-village visit. He/she collaborates with the counterpart DAFO extension worker assigned to the host village.

**Step 7.** After the cross-village visit, a cross-village visit assessment is organized and facilitated by the DAFO extension worker with the visiting villagers to synthesize the lessons learned and discuss how these can be applied in their own village. Measures on how to improve the conduct of future cross-village visits are also discussed. (See Sub-activity 1.1.4.2 for the guidelines in conducting a cross-village visit assessment.) The DAFO extension worker assigned to the host village also facilitates a de-briefing with the host villagers.
Sub-activity 1.1.4.1  
Guidelines in conducting a cross-village visit orientation

Expected outcomes

- Participants are provided with an overview of the cross-village visit – its rationale, objectives. Expected outputs, detailed programme of activities, and other arrangements.
- Participants are provided with a brief introduction to the places to be visited and their village forestry activities.
- The participants’ learning expectations to be derived from the cross-village visit are drawn up.

Requirements

- Detailed programme of activities of the cross-village visit.
- Location map of host village(s).
- Summary of completed and on-going village forestry activities in the host village(s).

How to conduct the activity

The pre-cross-village visit orientation is organized before a cross-village visit is conducted.

**Step 1.** Ask the participants and the facilitators to briefly introduce themselves.

**Step 2.** The facilitator gives a briefing on the cross-village visit pertaining to the:
- Rationale and importance of the cross-village visit.
- Objectives and Expected outputs.
- Participants and facilitators.
- Detailed program of activities.
- Other arrangements.

**Step 3.** The facilitator gives a brief introduction on the location of the villages to be visited and a summary of their village forestry activities. (Detailed information is provided by the villagers in the host villages.)

**Step 4.** The facilitator conducts an exercise on surfacing of participants’ learning expectations from the cross-village visit. (Guide question: *What do the participants expect to learn from the cross village visit?*) The participants’ learning expectations are listed on a sheet of large brown paper.
Sub-activity 1.1.4.2
Guide in conducting a cross-village visit assessment

Expected outcomes

- The participants’ learning expectations to be derived from the cross-village visit are assessed.
- The lessons and experiences gained from the cross-village visit are processed and shared among the participants.
- The procedures in conducting the cross-village visit are reviewed and evaluated.
- Suggestions to improve the conducting of future cross-village visits are made.

Requirements

- Summary of participants’ learning expectations from the cross-village visit.
- Detailed program of activities.
- Cross-village visit evaluation forms (Annex 1.1.4.3).

How to conduct the activity

The post-cross village visit assessment is conducted immediately after the visit.

**Step 1.** Ask the participants to discuss and assess if their learning expectations were met. Use the list of participants’ learning expectations produced during the pre-cross village visit orientation as a reference.

**Step 2.** Ask the participants to discuss and share the lessons and experiences that they gained from the cross-village visit.

**Step 3.** Ask the participants to review and assess the cross village-visit using the cross-village visit evaluation form.

**Step 4.** Based on the review and evaluation of the cross-village visit, ask the participants to make suggestions to improve the planning and conducting of future cross-village visits.
Task 1.2
Introducing village forestry to villagers

Objectives

*Main objectives*

- To provide villagers with a basic understanding of the concept and practice of village forestry.

- To secure the villagers’ willingness to manage and benefit from the forest following indigenous and prescribed village forestry practices.

*Specific objectives*

- To conduct initial village forestry information work in the villages, making use of the village forestry flipchart as an extension aid tool in introducing and discussing the concept of village forestry with villagers.

- To form an informal village forestry core group (VFCG) that will undertake initial village forestry work in partnership with state forestry staff.

Rationale

Villagers have indigenous knowledge concerning the use and development of the forest. They are allowed by law to practice their customary right to use the forest, but they have not been allowed to harvest timber and other forest products commercially. In village forestry, it is recognized that the villagers have the potential as government partners to develop and manage the forest (e.g. production forests, protection forests, conservation forests, rehabilitation/degraded forests and barren forest land) on a sustainable basis, thereby arresting the trend of forest destruction in the country. At the same time, the villagers can earn a share of the revenue from sales of timber and other forest products for village welfare and development.

As a scientific means of forest management, village forestry is a new concept to the villagers. They need to have a good understanding of this new concept in relation to their indigenous knowledge and practices and what it can do for them before they can signify their willingness to participate. Therefore, village forestry information work has to be done by state forestry staff, i.e. DAFO extension workers, comprising a series of meetings with the village administration and the village assembly, to explain the concept and practice of village forestry. To help the DAFO extension workers in discussing the concept of village forestry with villagers, a village forestry flipchart was developed and pre-tested with inputs from selected villagers. While the flipchart was initially designed for FOMACOP village forestry work in production forests, it can also be used in other areas (i.e. protection forests, conservation forests, rehabilitation/degraded forests and barren forest land) provided the corresponding management objectives and activities are refined and emphasized. The important outputs of this initial village forestry information work are (a) a consensus reached and confirmation by villagers of their willingness to participate in village forestry; and (b) the formation of a village forestry core group (VFCG) which will act as the designated village representatives (under the village administration) to work with government forestry staff in village forestry.
Activities

**Activity 1.2.1 – Conducting initial village forestry information work in the village.** DAFO extension workers go to the village to introduce village forestry and ask villagers to reach a consensus and confirm their willingness to participate in village forestry.

**Activity 1.2.2 – Forming a village forestry core group.** Once the villagers have indicated their intention to participate, they form a village forestry core group.
Activity 1.2.1
Conducting initial village forestry information work in the village

Expected outcomes

- Villagers acquire a good understanding of the village forestry concept.
- DAFO extension workers establish initial rapport with villagers.
- Villagers reach a consensus and confirm their willingness to undertake village forestry activities in partnership with state forestry staff.

Requirements

- One or more DAFO extension workers with adequate knowledge and skills in effectively communicating the village forestry concept to villagers.
- Visual aid information support material (e.g. village forestry flipchart with a multi-purpose flipchart stand).

How to conduct the activity

The interpersonal method of communication (which means verbal communication using visual aid information material, i.e. village forestry flipchart) is used. In the dissemination of village forestry information, a two-step flow process is adopted wherein information moves through two phases:

- Firstly, from the DAFO extension worker to key villagers (e.g. opinion makers such as the village administration, elders, village forest volunteers, and other village leaders).
- Secondly, from the DAFO extension worker to key villagers to the village assembly.

The following are the steps in introducing the concept of village forestry to villagers:

Step 1. The DAFO extension worker prepares the materials needed in conducting the initial village forestry information work (e.g. village forestry flipchart, multi-purpose flipchart stand, chalk, eraser, large brown paper, markers, masking tape, etc.).

Step 2. The DAFO extension worker meets and gets the approval of concerned district authorities for conducting initial village forestry information work in the village.

Step 3. The DAFO extension worker meets and gets the approval of the village chief to conduct the initial village forestry information work in the village. He/she then initiates the arrangements for conducting the information work (e.g. date, place, and time of meetings, and who will participate).

Step 4. The DAFO extension worker meets with key villagers (e.g. village administration, elders, village forest volunteers, and other village leaders). He/she explains to the key villagers the objectives, Expected outputs, and procedures for conducting the initial village forestry information work.

Step 5. The DAFO extension worker introduces, explains, and discusses the concept of village forestry with the key villagers using the village forestry flipchart.
Step 6. After the village forestry flipchart presentation, the DAFO extension worker asks the key villagers if they have any questions or if there are any points which need to be clarified. He/she then gives the key villagers enough time to discuss matters among themselves in order to reach an initial consensus on participating in village forestry. The DAFO extension worker and the key villagers then agree on the date, place, and time for meeting with the village assembly.

Step 7. The DAFO extension worker meets with the village assembly (including women). He/she explains the purposes and Expected outputs of the meeting. He/she then requests one of the key villagers to present and explain the concept of village forestry to the village assembly using the village forestry flipchart (see Sub-activity 1.2.1.1). The DAFO extension worker provides guidance and assistance to the presenter, as needed.

Step 8. After summarizing the presentation of the village forestry flipchart, the DAFO extension worker asks the village assembly if they have any questions and helps to facilitate the ensuing discussions. The villagers are then given time to further discuss matters among themselves.

Step 9. The DAFO extension worker, though the village administration, gets a consensus from the village assembly on their willingness to participate in village forestry.
Sub-activity 1.2.1.1
Using the village forestry flipchart

Expected outcomes

- DAFO extension workers and key villagers acquire adequate knowledge and skills in effectively using the village forestry flipchart as a visual aid and information tool.

Requirements

- Village forestry flipcharts with a multipurpose flipchart stand.

How to conduct the activity

The activity is done jointly by a selected villager (presenter) and the DAFO extension worker. The presenter is first given the necessary instruction by the DAFO extension worker on how to interpret the flipcharts. During the actual presentation the DAFO extension worker provides assistance to the presenter, as needed, injects the guide questions, and facilitates the subsequent discussion. The presentation proceeds as follows:

**Step 1.** The village chief or a key villager makes a brief introduction of the village forestry flipchart presentation.

**Step 2.** The presenter, with the assistance of the DAFO extension worker, starts an interactive discussion with the villagers on the benefits to be derived from the forest using flipchart no.1 (Annex 1.2.1.1).

*Initial guide question*

- What benefits do villagers get from the forest?

After the discussion, transitory guide questions are used to introduce the next flipchart as follows:

*Transitory guide questions*

- Do the villagers want the benefits from the forest to continue?
- How should the villagers use the forest so that they will continue to get benefits from the forest?
- What are the differing effects if the villagers use the forest on a sustainable basis or in non-sustainable ways?

**Step 3.** Interactive discussion proceeds to flipcharts no. 2a and 2b to introduce the concept of sustainable use of forests. The scenarios of non-sustainable (flipchart no. 2a) and sustainable (flipchart no.2b) uses of the forest are discussed, giving the villagers some time to analyze the two scenarios and to discuss matters among themselves. The villagers are then asked to choose the scenario they prefer. Then a transitory guide question is used to introduce flipchart no.3.
**Transitory guide question**
- What activities should be undertaken by villagers to ensure sustainable use of the forest and to avoid its destruction?

**Step 4.** Interactive discussion proceeds to flipchart no.3 to introduce the concept of forest management and the activities involved, beginning with those activities familiar to villagers, e.g. protection of forests from fire. Transitory guide questions are then used to introduce flipchart no. 4.

**Transitory guide questions**
- Can these activities be done solely by the villagers? If the response is no, ask why not. If yes, probe.
- Can these activities be done solely by the state forestry staff? If no, ask why? If yes, probe.

**Step 5.** Interactive discussion proceeds to flipchart no. 4 to introduce the concept of village forestry and the partnership between villagers and state forestry staff. Transitory guide questions are then used to introduce flipchart no. 5.

**Transitory guide questions**
- Why is there a need for village forestry and for a partnership between the villagers and state forestry staff in sustainably managing the forest?
- Why is village forestry or this partnership between the villagers and state forestry staff important?
- What are the objectives of village forestry or this partnership in sustainable forest management?

**Step 6.** Interactive discussion proceeds to flipchart no. 5 to introduce the objectives of village forestry. Flipchart no. 2b is also used along with the discussions on sustainable use of forest and continued flow of forest benefits to villagers that eventually leads to the improvement of living conditions of villagers. A transitory guide question is then used to introduce flipchart no. 6.

**Transitory guide question**
- To attain the objectives of village forestry, what are the activities that should be undertaken together by the villagers and the state forestry staff?

**Step 7.** Interactive discussion proceeds to flipchart no. 6 to introduce village forestry activities and roles of villagers and the state forestry staff.

**Step 8.** A brief summary of the completed village forestry flipchart presentation is finally made.
Activity 1.2.2
Forming a village forestry core group

Expected outcomes

- A village forestry core group (VFCG), which is composed of 5-10 people selected by the village assembly and the village administration, is formed to work in partnership with the state forestry staff in planning, implementing, and managing initial village forestry activities in the village.
- The working relationship between the VFCG and village administration is established.
- The roles and responsibilities of the VFCG are identified and clearly understood.

Requirements

- The village administration and village assembly have reached a consensus and confirmed their willingness to participate in village forestry.
- DAFO extension workers with adequate knowledge and skills in training, facilitating, and providing technical assistance to villagers in forming a village forestry core group.

How to conduct the activity

**Step 1.** After the village administration and village assembly confirm their willingness to participate in village forestry, the villagers discuss how they intend to organize themselves to work in partnership with the state forestry staff. During the discussion the existing provision in the organizational structure of the village administration (i.e. making use of village forestry volunteers) is assessed for adequacy in working effectively with the forestry staff. If not, the idea of expanding the village forestry volunteers into a village forestry core group (VFCG) is initiated. The importance of forming the VFCG is discussed as well as its roles and responsibilities (see Annex 1.2.2.1 for a sample). The relationship of the VFCG with the village administration is also discussed. It should be clear that the VFCG operates under the village administration.

**Step 2.** Based on the VFCG roles and responsibilities, the village administration and village assembly are asked to develop and agree on a set of criteria for selecting the members of the VFCG.

**Step 3.** The village assembly and the village administration then select VFCG members in accordance with the agreed criteria (preferably 5-10 members depending on the area coverage, population size, and socio-cultural diversity of the village).

**Step 4.** The village administration appoints the chairman, vice-chairman, and secretary of the VFCG. A treasurer may also be appointed if the VFCG has initial funds to support the implementation of village forestry activities.

**Step 5.** The village administration informs DAFO of the names of VFCG officers and members who will work in partnership with the state forestry staff.
Task 1.3
Learning together about the village through participatory rural appraisal

Objectives

*Main objective*

- To learn about the village and generate relevant information needed in planning, implementing, and managing village forestry activities.

*Specific objective*

- To conduct a participatory rural appraisal (PRA) in the village, using selected PRA tools (e.g. social mapping, census mapping, wealth ranking, pair-wise ranking, Venn diagram, time chart or seasonal calendar, and village profiling) to enable the villagers to learn systematically the situation in the village.

Rationale

To plan, implement, and manage village forestry and village development activities, the villagers need to learn about themselves-- their needs, their situation, their institutions, and their activities. From learning about a poor situation springs the desire to improve; and about a good situation the desire to do even better, or at least sustain the good things. Participatory rural appraisal is a means to undertake this learning activity.

Activities

**Activity 1.3.1 Introducing and preparing for the participatory rural appraisal.**
A trained forestry staff first introduces PRA to the VFCG members and together they go about in preparing for and organizing the work.

**Activity 1.3.2 Social mapping.** Houses and other social infrastructures in the village are mapped.

**Activity 1.3.3 Census mapping.** Information about each and every household in the village is gathered.

**Activity 1.3.4 Wealth ranking.** The social and economic status of households in the village is determined. Wealth indicators are made available for planning, implementing, monitoring, and evaluating village development and other related activities.

**Activity 1.3.5 Pair-wise ranking.** Problems, issues, needs, decisions, and actions are identified, prioritized, and ranked according to how villagers perceive their importance.

**Activity 1.3.6 Venn diagram.** Different village institutions and organizations are identified and their importance to the villagers are depicted in a diagram.

**Activity 1.3.7 Time chart (seasonal calendar).** Activities and events engaging villagers (including traditional festivals) throughout the year are drawn in a time chart.

**Activity 1.3.8 Village profiling.** Information on the bio-physical and socio-economic conditions of the village, as well as its cultural and social organizations, are consolidated into a village profile.
Activity 1.3.1
Introducing and preparing for the participatory rural appraisal

Expected outcomes

- PRA teams are organized and prepared for their respective roles in the PRA exercises.
- The rapport and working relationship between villagers and the state forestry staff is established and improved.

Requirements

- Villagers have confirmed their willingness to participate in village forestry.
- Materials needed to conduct the PRA (e.g. available secondary data on the village including maps and reports; large brown sheets of paper, crayons, notebooks, and colored paper; a calculator; a calendar; and cards, paste, colored pens, pencils, etc.).

How to conduct the activity

Step 1. The forestry staff prepares the necessary materials in conducting PRA work in the village.

Step 2. The forestry staff meets with the village administration, VFCG, and key villagers to discuss the objectives, Expected outputs, processes, and requirements (e.g. organizing village PRA teams) in conducting joint PRA work in the village. The forestry staff also explains how the PRA results can be used in planning, implementing, and managing initial village forestry activities in the village.

Step 3. The forestry staff discusses with the village administration and VFCG the criteria for organizing a PRA team for each PRA exercise. The teams, consisting of VFCG members, state forestry staff, and selected villagers including women, are formed.

Step 4. Each PRA team prepares for the exercise by:
1. Discussing and agreeing on the roles of the villagers (e.g. lead the PRA process) and state forestry staff (e.g. provide technical assistance and facilitate the PRA process).
2. Discussing the procedures, requirements, and Expected outputs from the PRA exercise.
3. Preparing the schedule, venue, materials, and other requirements of the PRA exercise.

After the preparations have been made, the PRA teams proceed with the exercise, assess the results and their uses, and present them to the village administration and villagers (see Activities 1.3.2 to 1.3.8).
Activity 1.3.2
Social mapping

Expected outcomes

- A social map showing the houses and other social facilities and infrastructure (e.g. temples, stores, rice mills, school, village pharmacy, trails and roads, water pumps, irrigation, fishponds, water impounding dam and other facilities) in a village is prepared.

- The location of households and other social facilities are visualized and can serve as input in planning, implementing, monitoring, and evaluating village development and other related activities.

Requirements

- Large sheets of paper, pencils, crayons, and markers, and an official listing of households in the village showing the assigned nouay and house numbers.

How to conduct the activity

Social mapping is conducted in close collaboration with the village administration by a PRA social mapping team that is composed of the VFCG and selected key villagers (e.g. heads or representatives of nouays and/or women or youth representatives) and facilitated by the state forestry staff. The procedure in conducting social mapping is as follows:

Step 1. Plan and prepare for the social mapping exercise, i.e. how it is going to be done, what is the Expected output, where it will be conducted, and why it is necessary to be undertaken.

Step 2. Organize the PRA social mapping team (include women and youth). Orient the team on how to conduct the social mapping exercise and its purpose and importance. Discuss and agree on what information is needed to be shown on the social map and how this relates to the village land-use map. Allow the PRA team to design their own legend or symbol for each category of information to be shown on the social map. (See sample of legends commonly use by villagers in social mapping in Annex 1.3.2.1.)

Step 3. Choose an appropriate place and medium to conduct the exercise. Among the several media that can be used are the ground (using sticks, pebbles, and other available local materials), floor or flat surface (using chalk, stones, sticks and other materials), and large paper (using crayons, pencil, colored pens, etc.). Consult the team on the medium that it feels is most comfortable to work with.

Step 4. Facilitate the social mapping exercise to enhance participation of all team members. Help the team to get started by "handing over the pen, stick or whatever". Work on one item at a time, e.g. start drawing the boundary of the village, then show the locations of nouays and households before proceeding to the location of social facilities and infrastructure.

Step 5. Observe how the social mapping exercise is taking place. If certain items have been left out at the end of the exercise, ask the team about these. Encourage discussions,
cross-checking, and analysis of the social map so that key issues can be highlighted. Let the PRA team invent their own way of mapping.

**Step 6.** List the heads of households indicated in the social map. In order to easily keep track of the household heads and their corresponding houses, assign numbers to each of the houses indicated on the social map. In assigning the house numbers, use the nouay and house numbers already established and adopted by the village administration. In villages where there are still no established nouays and house numbering system, ask the village administration to designate the nouays and house numbers for the purpose of completing the social mapping exercise.

**Step 7.** Take note of the process. Copy the social map on paper, especially if it was done on the ground or floor or any flat surface for recording purposes (see Annex 1.3.2.2 for a sample). Indicate on the social map the names of the PRA team members, date, and place where the social map was prepared.

**Step 8.** Present and discuss the social map with the village administration and villagers.
Activity 1.3.3
Census mapping

Expected outcomes

- A census map that serves as a basis for villagers and the state forestry staff to identify indicators for planning, implementing, monitoring, and evaluating village development and other related activities.

- Villagers and state forestry staff can take a closer look and gain a better understanding of individual households in the village.

Requirements

- Social map and census cards (4” x 6”).
- Large paper, crayons, colored pens, markers, paste, and masking tape.

How to conduct the activity

Census mapping is conducted in close collaboration with the village administration by a PRA census mapping team composed of the VFCG and key villagers (e.g. heads or representatives of nouays and/or women and youth representatives) and facilitated by the state forestry staff. The PRA social mapping team may also serve as the PRA census mapping team. The procedure in conducting a census mapping is as follows:

Step 1. Plan and prepare for the census mapping exercise, i.e. how it is going to be done, what is the Expected output, where will it be done, and why it is necessary to be undertaken.

Step 2. Organize a composite PRA census mapping team (include women and youth).

Step 3. Orient the team on how to conduct the census mapping exercise and its importance. Discuss and agree on the information to be collected. Allow the team to design their own legend or symbol for each category of information to be gathered. See Annex 1.3.3.1 for a sample of legends commonly used by villagers in census mapping.

Step 4. Based on the list of households generated from the social mapping exercise, prepare a census card (approximately 4” x 6” in size) for each of the households (see Annex 1.3.3.2 for a sample).

Step 5. Number the census cards using the assigned house number and then indicate the corresponding name of the household head on the card (one card for each household). This should be done before the actual census mapping exercise is conducted To facilitate cross-checking, make sure that the card numbers match the numbers assigned to the houses indicated in the social map.

Step 6. Tape or paste the census cards on a large sheet of paper in consecutive order. The census cards can also be laid out on the floor or ground or on any flat surface. If the number of households in the village is large, it can be divided into nouays and a census map is prepared for each of the nouays (see Annex 1.3.3.3 for a sample).
Step 8. Proceed with the exercise by asking the composite PRA census mapping team, in collaboration with the *nouay* heads, to discuss with the heads or representatives of each of the households and fill out their respective census cards with the needed information using the agreed symbols, one census card for one household. Crayons or stickers of different colors and shapes can be used in recording data on the census cards. In some cases, seeds, stones, and other local materials are used when census mapping is done on the ground, floor, or on any flat surface.

Step 9. After all the census cards have been filled out, consolidate the data (see sample in Annex 1.3.3.4). Encourage discussions and cross-checking, and ask the composite PRA team to analyze the results of the census mapping exercise in collaboration with the heads of *nouays*.

Step 10. Indicate the names of the team members on the map including the date and place of the census mapping exercise.

Step 11. Present and discuss the census map with the village administration and villagers.
Activity 1.3.4
Wealth ranking

Expected outcomes

- The social and economic status of households in the villages is determined. Poor households in the village are identified.
- Wealth indicators are identified as an aid in planning, implementing, monitoring, and evaluating village development and other related activities.

Requirements

- Social map and census map.
- Large sheets of paper, markers, masking tape and cards (3” x 5”).

How to conduct the activity

The wealth ranking exercise is conducted by a PRA wealth ranking team involving a number of selected key informants (include women) within the village and facilitated by the state forestry staff. The PRA social mapping or PRA census mapping team may also serve as the PRA wealth ranking team. The procedure in conducting wealth ranking is as follows:

Step 1. Plan and prepare for the wealth ranking exercise, i.e. how it is going to be done, what is the Expected output, where will it be done, and why it is necessary to be done.

Step 2. Prepare cards of approximately 3” x 5” in size. Allot one card to each household. Assign a number to each household and indicate this on the top right-hand corner of the card. To avoid confusion, follow the same household numbering system used in the social and census mapping.

Step 3. Choose key informants (include women) based on the identified criteria, i.e. they should be knowledgeable about the households and should represent different economic status in the village. Members of the village administration, elders, VFCG, heads or representatives of nouays, and others who meet the criteria, may be selected as key informants.

Step 4. Select a place where the interview can take place, preferably in the informants’ house where no one is watching. (Note: In many places, the topic of wealth is considered sensitive and can be embarrassing on the part of the informants. Sometimes, it can be offending on the part of the one being ranked.) Use individual interviews rather than group interviews.

Step 5. Explain to the key informant the purpose, importance, Expected output, and usage of the wealth ranking exercise. Hand over the cards to the respondent one at a time. Ask if the household indicated in the card is rich, poor, or average. The informant should be allowed to classify the household freely. Three to five wealth categories may emerge (e.g. very rich, rich, average, poor, very poor).
Step 6. As soon as the key informant has ranked the card, ask him/her to place it in its relevant wealth ranking pile. Always ask the reasons for ranking each of the households and note down the reasons. These reasons will be used as indicators for the wealth categories that will be consolidated after the exercise.

Step 7. When all the cards have been sorted, ask the respondent to review the wealth ranking piles to make sure that the households have been classified correctly. Ask the key informants to rearrange the cards when needed. Ask the reasons for the changes in ranking of the household(s).

Step 8. After each of the key informants completes the exercise, make a list of households classified under each pile. If key informant number 1 sorted the households in five piles, assign number 5 to the richest and number 1 to the poorest. Numbers 2, 3, and 4 are assigned to the poor, average, and rich categories, respectively. If there are four categories, number 4 will be assigned to the richest and number 1 to the poorest.

Step 9. Compute the average scores for every household using the formula below:

\[
\text{Category number / Number of categories x 100}
\]

**Example 1.** Key informant no. 1 made 5 piles or categories of wealth. The score for the richest is computed as follows:

\[
5 / 5 \times 100 = 100
\]

Therefore, each card in the “richest” category of 5 piles will be assigned a score of 100.

The score for the “poorest” category of 5 piles is computed as follows:

\[
1 / 5 \times 100 = 20
\]

Therefore each card in the “poorest” category of five piles will be assigned a score of 20.

**Example 2.** Another key informant made 4 categories. The score for the richest is computed as follows:

\[
4 / 4 \times 100 = 100
\]

Each card in the “richest” category of four piles will be assigned a score of 100.

The score for the “poorest” is computed as follows:

\[
1 / 4 \times 100 = 25
\]

Each card in the poorest category of four piles will be assigned a score of 25.

**Step 10.** Repeat the process with 3-5 key informants. Then, compute the average score for each household by adding all the scores given by the key informants, which will be divided by the number of informants. The bigger the average score, the higher the wealth category or ranking of the household, e.g. households with scores ranging from 90 to 100 will emerge as the richest. The poorest will be those with lower scores.
Step 11. Categorize the households into rich, average, and poor (or into other categories that will emerge). The closeness of resulting average scores will determine the number of groupings which should, however, not exceed the number of piles given by the key informants.

Step 12. Consolidate the wealth indicators or descriptions of households in each wealth category or grouping as indicated by the key informants (see sample in Annex 1.4.3.1).
Activity 1.3.5
Pair-wise ranking

Expected outcomes

- Complicated needs, issues, problems, decisions, actions, etc., can be adequately prioritized and ranked in accordance to the preferences of villagers with different interests.
- The consensus building and decision making process is enhanced and facilitated.

Requirements

- Large brown paper, marker, masking tape.

How to conduct the activity

Ranking can be undertaken by a PRA team involving key informants or a group of villagers who represent a good mixture of interests, and is facilitated by a state forestry staff. It can also be conducted based on gender to determine different preferences between men and women. For complicated issues, pair-wise ranking can be used in order to determine the villagers’ preferences. The procedure in conducting a pair-wise ranking exercise is as follows:

Step 1. Select a time and place where the conduct of the pair-wise ranking exercise will not be disturbed or disrupted.

Step 2. Choose key informants or other knowledgeable villagers who are willing and able to participate in the pair-wise ranking exercise. Get good representation of the villagers in terms of spatial distribution, gender, wealth class, etc.

Step 3. Explain and agree on the purpose of the pair-wise ranking exercise before starting. Brief the key informants and villagers on how to conduct the exercise. Discuss Expected output and its usage.

Step 4. Ask the key informants and villagers to identify and prepare a list of needs, issues, problems, or actions to be ranked.

Step 5. Prepare a matrix on a large sheet of paper or blackboard. Indicate the needs, issues, problems, or actions on the top and left side of the matrix.

Step 6. Get the villagers’ preferences (through voting). Facilitate the comparison of the needs, issues, problems, decisions or actions with one another. The first need, issue, problem, decision or action listed on the left side of the matrix will be compared with all the needs, issues, problems, and actions listed on the top. Repeat the process until all the needs, issues, problems, decisions, and actions have been covered. See Annex 1.3.5.1 for a sample result of the exercise.

Step 7. Note down the number of times each problem was voted or preferred. Make a summary of the preferences and rank them accordingly.
Step 8. Encourage discussions while the exercise is being conducted to enhance probing and cross checking of information. Ask the villagers’ reasons for their choices and note down these reasons.

Step 9. Give enough time to villagers to discuss. Do not rush the exercise.

Step 10. At the end of the exercise, briefly discuss, analyze, and summarize the results of the pair-wise raking exercise together with the villagers.
Activity 1.3.6
Venn diagram

Expected outcome

- A diagram is prepared showing the key agencies, organizations, groups, or individuals and other villagers and their relationships and importance in decision making in the village.

Requirements

- Large sheet of paper, marker or blackboard chalk.

How to conduct the activity

A Venn diagram can be prepared on the ground, a large sheet of paper, or a blackboard. The villagers should draw their own Venn diagram. The state forestry staff only acts as facilitator. The procedure for preparing a Venn diagram is as follows:

Step 1. Select a time and place where the preparation of the Venn diagram will not be disturbed or disrupted.

Step 2. Identify villagers who are willing and able to participate in the preparation of the Venn diagram. Get good representation of the villagers, e.g. indicating spatial, gender, wealth class, etc.

Step 3. Explain the purpose and objective of the Venn diagram before starting. Brief the villagers on how to prepare the Venn diagram, discuss Expected output, and its usage.

Step 4. Ask the villagers to identify key agencies, organizations, other villages, groups or individuals involved in decision making or having strong influence in the village.

Step 5. Identify degree of importance, contact, and overlap between these agencies, organizations, other villages, groups, or individuals.

Step 6. Get additional information from key informants and available secondary data.

Step 7. Draw circles to represent each key agency, organization, other village, group, or individual (colors may be used to represent different agencies, organizations, institutions, groups or individuals).

Step 8. Encourage discussions while the exercise is being conducted to enhance cross-checking and probing.

Step 9. Size of the circle indicates importance or scope. A larger circle indicates higher degree of importance.

Step 10. Distance of circle from the village indicates degree of importance and interaction of agencies, organizations, other villages, groups or individuals to the village.
**Step 11.** Arrangement of the circles has meaning as follows:

- **Separate circles.** No contact or interaction
- **Touching circles.** Information passes between institution or organization but not much interaction
- **Small overlap.** Some degree of interaction, influence, and cooperation in decision making
- **Large overlap.** Considerable degree of interaction, influence, and cooperation in decision making

**Step 12.** At the end of the exercise, discuss and analyze the results together with the VFCG, village administration and villagers. Annex 1.3.6.1 shows an example of the results of the exercise.
Activity 1.3.7
Time chart (seasonal calendar)

Expected outcome

- A time chart (seasonal calendar) showing how villagers allocate their time and labor in various activities within the village is prepared. Since village forestry will eventually become an important activity in the village, it is essential to determine how villagers are presently utilizing their time and labor for existing village activities. A season chart can also be used to show different patterns of situation and trends throughout the year in a certain village, e.g. food availability, agricultural production, income and expenditures, health problems, and others.

Requirements

- Large sheet of paper, markers, blackboard, chalk.

How to conduct the activity

The time chart or seasonal calendar is prepared by drawing a two-dimensional matrix and writing the time period (e.g. by month in the year) along one axis and key village activities on the other axis. Villagers are encouraged to fill in the matrix of the chart or calendar by marking the grid or by placing stones or other objects on the matrix. A time chart (seasonal calendar) can be prepared on the ground, on a large sheet of paper, or on a blackboard.

Step 1. Select time and location where the preparation of a time chart or seasonal calendar is undisturbed or undisrupted.

Step 2. Identify key informants or knowledgeable villagers who are willing and able to participate in the preparation of a time chart or seasonal calendar. Get good representation of villagers, e.g. spatial, gender, wealth class, etc.

Step 3. Explain and agree on the purpose and objective of the time chart or seasonal calendar before starting. Discuss with the key informants how to prepare the time chart and seasonal calendar including Expected output and its usage.

Step 4. Agree and list the key activities of villagers. The key activities may be categorized into those activities done by men, by women, or by both men and women. Prepare a two-dimensional matrix by writing the months of the year along one axis and the activities along another axis. Ask the villagers to mark the grid by indicating which months of the year they undertake each activity (see Annex 1.3.7.1 for a sample).

Step 5. Encourage discussion while the exercise is being conducted to enhance probing and cross checking of information.

Step 6. At the end of the exercise, discuss the results and analyze the time chart (seasonal calendar) together with VFCG, village administration and villagers.
Activity 1.3.8
Village profiling

Expected outcomes

- Information on the bio-physical and socio-economic condition of a village as well as its cultural and social organizations are consolidated into a village profile.
- Villagers and state forestry staff learn and appreciate the local situation in a village.
- Baseline information banks for planning, implementing, monitoring, and evaluating village development and other related activities are established.

Requirements

- Village land-use map, social map, and census map.
- Large sheets of paper, marker, and masking tape.

How to conduct the activity

Village profiling is conducted in close collaboration with the village administration by a PRA village profiling team that is composed of the VFCG, heads/representatives of nouays, and/or women and youth representatives, and facilitated and assisted by a state forestry staff. The procedure in conducting a village profiling exercise is as follows:

**Step 1.** Plan and prepare for the village profiling exercise, i.e. how it is going to be done, where will it be done, and why it is necessary to be undertaken.

**Step 2.** Organize the village profiling team (include women and youth). Orient the team on how to conduct the exercise and its importance.

**Step 3.** Review the results of the social map, census map, village land-use map and other PRA exercises. Based on these, discuss and agree on what information (or contents) is needed to be included in the village profile and their reasons for its inclusion. (Note: the content of the village profile may change as additional relevant information on the village is generated).

**Step 4.** Based on the agreed contents, prepare a village profile. Facilitate the exercise to enhance participation. Help the team to get started by “handing over the pen or whatever”. Work on one item at a time, i.e. finish village history first before proceeding to socio-economic and other categories. Use guide questions to facilitate the preparation of a village profile.

**Step 5.** Observe how the exercise is taking place. If at the end of the exercise, you find that certain items have been left out, ask the team about these. Encourage discussions, cross-checking, and analysis of the village profile so that key issues can be highlighted.

**Step 6.** Take notes of the process. Indicate the names of the team members to give them credit, date, and place where the village profile was prepared.

**Step 7.** Present and discuss the village profile with the village administration and villagers. See Annex 1.3.8.1 for a sample.
Task 1.4  
Operating a village forestry core group

Objectives

Main objectives

• To enable the village forestry core group (VFCG) to operate and plan, implement, and manage initial village forestry activities in partnership with state forestry staff.

• To reach a consensus on an appropriate and formal organizational arrangement for village forestry at the forest management unit (FMU) level.

Specific objectives

• To formulate VFCG rules, procedures, and action plan.
• To assess the organizational options for village forestry at the FMU level.
• To reach a consensus on the form of organization to handle village forestry related activities at the FMU level.

Rationale

The VFCG is formed by the villagers and tasked with the undertaking of initial village forestry activities together with the state forestry staff. As the VFCG acquires more understanding of village forestry (through training) and generates relevant information about the village (through PRA), it should move ahead to formulate simple rules and procedures to guide its operations. It should also prepare an action plan (covering 6-12 months) as a guide in implementing and managing initial village forestry activities in the village. The rules, procedures, and action plan should be approved by the village administration. The village assembly should also be regularly informed of the progress of village forestry work (including problems encountered and recommended actions).

Through time, the VFCG acquires a better understanding of village forestry and its mechanics of implementation. It gains more practical experience and insights into the present and future village organizing requirements of village forestry operations. Thus it is able to assist the village administration and the village itself in assessing options for reaching a consensus on and forming a suitable and formal organization for village forestry that can look after the increasing number of village forestry activities in the village.

Activities

Activity 1.4.1 Formulating VFCG rules, operating procedures, and action plan. The forestry staff assists the VFCG in developing its rules, operating procedures, and action plan.

Activity 1.4.2 Assessing organizational options for village forestry at the FMU level. The forestry staff facilitates discussion on more permanent organizational options for village forestry at the FMU level with the VFCG and village administration, which in turn assists the village in deciding what the most suitable organizational option to take is.
Activity 1.4.1  
Formulating VFCG rules, operating procedures, and action plan

Expected outcomes

- Informal VFCG rules and operating procedures are formulated and approved by the village administration.
- A simple VFCG action plan is prepared and approved by the village administration.
- The capability of VFCG in performing its new role and responsibilities in village forestry is enhanced.

Requirements

- PAFO trainers with adequate knowledge and skills in training the VFCG in formulating simple rules, operating procedures, and action plan.
- DAFO extension worker with adequate knowledge and skill in facilitating and providing assistance to VFCG in formulating simple rules, operating procedures and action plan.
- List of the roles and responsibilities of the VFCG.
- Sample of a VFCG action plan.

How to conduct the activity

**Step 1. Training of the village forestry core group.**

1. PAFO trainers conduct a training needs assessment for the village forestry core group.
2. PAFO trainers design and conduct training courses for VFCG based on the results of the training needs assessment.

**Step 2. Formulating simple VFCG rules and procedures for operating the village forestry core group.**

1. The VFCG reviews its roles and responsibilities and formulates simple rules and operating procedures for approval of the village administration. Some examples of these rules and operating procedures include: (a) delegation of authority, (b) records keeping, (c) meetings, (d) reporting and (e) organizing and mobilizing villagers for village forestry work.
Step 3. Preparing a VFCG action plan.

1. Together with the state forestry staff, the VFCG reviews the initial activities in village forestry and prepares an action plan covering the period of 6-12 months. The action plan includes the VFCG activities, target goals, schedule, and responsible person (see sample in Annex 1.4.1.1).

2. The VFCG presents and discusses the action plan with the village administration and villagers for approval.

3. The VFCG implements the approved action plan in collaboration with the state forestry staff.
Activity 1.4.2
Assessing organizational options for village forestry at the FMU level

Expected outcomes

- The different options on how to formally organize the villagers to effectively plan, implement and manage village forestry activities at the FMU level are fully discussed and assessed.

- An option on how to formally organize the villagers for village forestry at the FMU level is selected by the villagers.

Requirements

- The villagers understand the village organizing requirements of the different tasks involved in planning, implementing, and managing village forestry activities at the FMU level in a production forest, protection forest, conservation forest, rehabilitation/degraded forest or tract of barren forest land.

- The villagers understand the existing organizational structures and processes in the village including their strengths and weaknesses in effectively organizing village forestry work at the FMU level.

- PAFO trainers and DAFO extension workers equipped with adequate knowledge and skills to provide training and technical assistance to villagers in assessing the organizational options for village forestry at the FMU level.

- Adequate time to allow the villagers to discuss and select the organizational options for village forestry best suited for them.

- Sample organizational structures of (a) village administration with village forest volunteers, (b) village administration with a village forestry core group, (c) village administration with a village forestry committee and (d) village administration with a village forestry association (conglomeration of different working committees and teams involved in village forestry).

How to conduct the activity

For a single village

Step 1. The village administration discusses with the village forest volunteers and/or VFCG the tasks and activities in village forestry and determines the best way to formally organize the villagers to effectively plan, implement and manage these village forestry activities at the FMU level.

Step 2. Options for formally organizing villagers for village forestry at the FMU level are identified and discussed. The organizational structure, composition, roles and responsibilities, and relationships with other village groups are discussed for each of the options. The advantages and disadvantages of each option are also discussed. Examples of these organizational options for village forestry at the FMU level are:
• **Option 1. - Village administration with village forest volunteers (VFFs)** This is an organizational arrangement already existing in many villages in Lao PDR. Under this option, the village administration plans, implements, and manages the village forestry activities in the village in collaboration with state forestry staff. The village administration directly supervises the work of the village forest volunteers and reports to the district authorities. Based on the village forestry activities, the village administration may increase the number of village forest volunteers (from the existing 2-3 volunteers to as many as needed). This option is suitable to villages where village forestry activities are traditional and routinary (e.g. forest protection from fire, illegal logging and hunting, information dissemination, tree planting). Increasing the number of volunteers is appropriate in villages where the village administration is involved in limited village development projects and has enough time to devote to village forestry.

• **Option 2.- Village administration with a village forestry core group (VFCG)** Under this option, the village administration and villagers select capable villagers (5-10 persons) to form an informal village forestry core group (VFCG). The village forest volunteers, among others, can become members of the VFCG. The VFCG is responsible in planning, implementing and managing village forestry activities in the village in partnership with state forestry staff and accountable to the village administration and villagers. The village administration oversees the work of the VFCG and reports to the district authorities. Based on the village forestry activities, the membership of the VFCG can be increased as needed. This option is suitable in villages which are embarking on new village forestry activities (e.g. establishment and management of a small village forestry nursery or few village woodlots or agroforestry farms, harvesting of timber and other forest products for sale, forest protection, etc). Under this option, the villagers try to understand and learn about village forestry so that they are able to effectively organize themselves to handle village forestry activities. It is suited for villages where the village administration is involved in some village development projects and does not have adequate time to plan, implement and manage village forestry activities and therefore delegates it to an informal VFCG.

• **Option 3- Village administration with a village forestry committee (VFC)** Under this option, the village administration and villagers transform the VFCG into a formal village forestry committee (VFC). The VFCG, among other roles, may become members of the committee. The VFC is responsible for planning, implementing, and managing the expanding village forestry activities in collaboration with state forestry staff. The village administrations oversee the work of the VFC and report to the district authorities. Based on the village forestry activities, the members of the VFC can be increased as needed. This option is suitable to villages where the village administration and the villagers have acquired, through the VFCG, considerable knowledge, skills, and experience in planning, implementing and managing increasing village forestry activities, and decides to form a more formal VFC to handle these activities. It is also suited to villages where the village administration is involved in numerous village development projects and does not have adequate time to plan, implement and manage village forestry activities, therefore delegating these activities to a formal VFC. It is appropriate for small villages whose work teams come from a small group of people.
• **Option 4. Village administration with a village forestry association (VFA) (a conglomeration of different working committees and teams involved in village forestry)** Under this option, the village administration and villagers convert the VFC into a more formal village forestry association (VFA) which is a conglomeration of different working committees and teams (e.g., policy committee, management committee, education and training committee, inventory and audit committee, and working teams) involved in village forestry. It is a systematic and coherent arrangement for organizing numerous and complex work in village forestry. The VFA is responsible for planning, implementing, and managing village forestry activities in the village in collaboration with state forestry staff and accountable to the village administration and villagers. The village administration oversees the operations of the VFA and reports to the district authorities. It is suited for villages where the village administration is involved in numerous village development projects and does not have enough time to plan, implement, and manage village forestry activities and therefore delegates it to the VFA. This option is appropriate in larger villages with many people and many ways of forming working teams and therefore needs a more elaborate organizational structure and operating procedures than the VFC.

In reality, the above organizational options are closely interrelated and they can form part of a continuum for organizing village forestry work at the FMU level. Option 1 is used as the entry point for initiating village forestry at the FMU level. As new village forestry activities emerge, the villagers form an informal village forestry core group (option 2). As village forestry activities increase, the villagers transform the VFCG into a formal village forestry committee (option 3) or a village forestry association (Option 4). As the village forestry activities become more complex and diversified, some of the VFCs graduate and mature into a formal village forestry association (option 4). Other villages may decide to remain with option 3. The final choice of organizational arrangement for village forestry depends on the needs of the villagers and on how they can best organize themselves to effectively and efficiently plan, implement, and manage village forestry activities at the FMU level in partnership with state forestry staff considering the existing situation and resources in their respective villages.

**Step 3.** The village administration discusses the organizational options for village forestry at the FMU level with villagers (including women) and reaches a consensus on the most suitable option.

**Step 4.** The DAFO extension worker provides necessary assistance and facilitates the series of meetings and discussions.

**For a village cluster or group of villages**

Each village in a cluster or group has separate VFFs/VFCG/VFC/ VFA, village administration, and village assembly. The above steps for a single village are followed in each village in the cluster or group, but the final decision is made in a joint meeting of all village administrations and village assemblies in the cluster or group.
Task 1.5  
Forming a village forestry association

Objectives

**Main objective**

- To form a village forestry association to effectively plan, implement, and manage village forestry activities in the village.

**Specific objectives**

- To formulate and ratify the VFA by-laws.
- To conduct a VFA membership campaign and registration of members.
- To constitute the VFA general assembly and other VFA committees.
- To elect VFA officers.

Rationale

The formation of a suitable and formal organization for the village level is necessary to effectively plan, implement, and manage the increasing village forestry activities at the FMU level. As a formal organization, the VFA must have a set of by-laws and procedures to govern its operations, a voluntary membership that is broad-based enough to represent the entire village, and an organizational structure consisting of a set of officers and working committees.

Activities

Figure 1 below shows the procedure for forming a village forestry association. The important activities listed below are further discussed in separate sections.

**Activity 5.1 Formulating the VFA by-laws.** The villagers organize a series of meetings to discuss and reach consensus on the key elements of the village forestry association such as its name and objectives, membership policies, administration and management, and sharing of costs and benefits. The consensus reached is used by the villagers as the basis for writing the VFA by-laws.

**Activity 5.2 Conducting a VFA membership campaign and registration.** The VFA by-laws are used by the villagers as basis for conducting a VFA membership campaign and registration.

**Activity 5.3 Convening the VFA general assembly, ratifying the VFA by-laws, and forming the VFA election committee.** A meeting of all VFA members, i.e. the VFA general assembly, is convened to ratify the VFA by-laws and constitute an election committee which will oversee the election of VFA officers.

**Activity 5.4 Forming the VFA committees and electing the VFA officers.** Once the VFA policy committee members are elected, they then meet to elect VFA officers from among themselves, as well as appoint the VFA management committee and other committees.
Figure 1 – Procedure for forming a village forestry association

**VFCG/VFC**

- Records the consensus reached in meetings
- Drafts of the VFA by-laws based on consensus reached
- Conducts VFA membership campaign

**Village Administration**

- Discusses with village assembly and reaches consensus on:
  - Name and objectives of VFA
  - VFA organizational structure
  - VFA administration and management
  - VFA officers and membership
  - Use of VFA income
  - Cost and benefit sharing
  - Contents of VFA by-laws
- Certifies the VFA membership registry
- Convenes the first meeting of the VFA membership
- Certifies the VFA by-laws and articles of association

**Village Forestry Association**

- Hands-over responsibilities, properties, and documents to VFA officers
- Convenes the VFA general assembly, ratifies the VFA by-laws and articles of association, and forms the election committee
- Forms the VFA policy committee, VFA management committee and other committees (village chief is automatic member of VFA policy committee)
Activity 1.5.1
Formulating the VFA by-laws

Expected outcomes

• Consensus on the contents of the VFA by-laws is reached by the village administration and village assembly.

• The set of VFA by-laws that will govern the operation of the association is formulated.

Requirements

• The organizational options for village forestry are thoroughly discussed and a consensus to form a village forestry association is reached by villagers and confirmed by the village administration.

• Villagers fully recognize the need and importance of the VFA by-laws.

• The village administration oversees the formulation of the VFA by-laws.

• The village administration and VFCG/VFC are provided adequate training and technical assistance in formulating the VFA by-laws.

• PAFO trainers and DAFO extension staff with adequate knowledge and skills in providing training and assisting villagers in formulating the VFA by-laws.

How to conduct the activity

**Step 1. Conducting a series of meetings and consultations.** The village administration convenes a series of meetings with the VFCG/VFC and village assembly to discuss and reach an initial consensus on:

• Name of the association.

• VFA membership (e.g. qualification, responsibilities and rights of members, membership application and fees, and termination of membership).

• Administration and management of the association (e.g. organizational structure; relationship between the VFA and village administration; responsibilities of VFA committees; and qualifications, duties, term of office, and compensation of VFA officers).

• Sharing of costs and benefits among villagers and between the VFA and the state including the use of VFA income.

The VFCG/VFC secretary records all agreements reached during this series of meetings. In the case of a village cluster or group, a series of individual and joint meetings of all concerned villagers in the cluster/group is conducted.
Step 2. Based on the above discussions and initial agreements, the VFVs/VFC/VFCG prepares and discusses the outline or contents of the VFA by-laws (see sample in Annex 1.5.1.1) and furnishes the village administration a copy for approval.

Step 3. Based on the approved outline of the VFA by-laws and the initial consensus reached in the series of meetings in Step 1, the VFVs/VFCG/VFC writes the VFA by-laws in collaboration with the village administration. In the case of a village cluster, the VFVs/VFCs/VFCGs in the cluster jointly write the VFA by-laws in close collaboration with the concerned village administrations. The DAFO extension worker facilitates and provides assistance in the writing of the VFA by-laws.
Activity 1.5.2
Conducting a VFA membership campaign and registration

Expected outcomes

- Villagers are informed about the village forestry association, i.e. its objectives, qualifications for membership, application for membership, rights and responsibilities of VFA members, etc.
- Qualified villagers voluntarily apply for VFA membership.
- VFA membership registry certified by the village administration.

Requirements

- Consensus reached on the contents of the VFA by-laws.
- VFCG/VFC with adequate knowledge and skills in communicating to the villagers concerning the VFA and its advantages, requirements, benefits, and procedure for applying for membership.
- PAFO trainers with adequate knowledge and skills in training the VFCG/VFC in conducting VFA membership campaign and registration.
- DAFO extension workers with adequate knowledge and skills in facilitating and providing assistance to VFCG/VFC in conducting VFA membership campaign and registration.
- Information aid materials on the VFA, e.g. objectives; qualifications, responsibilities, and rights of members; procedure for applying for membership; etc.
- VFA membership registry (see sample in Annex 1.5.2.1).

How to conduct the activity

**Step 1.** The PAFO trainer trains the VFCG/VFC (and other villagers as needed) in planning and conducting a VFA membership and registration.

**Step 2.** After the training, the VFCG/VFC prepares a simple action plan for conducting a VFA membership campaign and registration with assistance from the DAFO extension worker. The plan includes activities; schedule; appointments of persons responsible; date, place, and time of membership registration; etc.

**Step 3.** The VFCG/VFC submits the action plan to the village administration for approval.

**Step 4.** The village administration approves the action plan and makes an announcement in the village regarding the VFA membership campaign and registration.
Step 5. The VFCG/VFC prepares information materials on VFA objectives, qualifications, responsibilities and rights of members, membership application, etc., to be used in the VFA membership campaign.

Step 6. The VFCG/VFC organizes themselves into teams. The VFCG/VFC may seek the assistance of other villagers as needed. Each team is assigned a group of households and nouays.

Step 7. The teams undertake a VFA membership campaign in their respective households and nouay assignments. A combination of individual or group extension methods is adopted. The membership campaign may take more than 1 day depending on the number of nouays and households in the village.

Step 8. The VFCG/VFC prepares for the VFA membership registration on the designated date(s) and place in the village.

Step 9. Qualified villagers who want to apply for VFA membership proceed to the designated place for VFA membership registration and each enters his/her name, age, gender, and signature or thumb mark on the VFA membership registry (see sample in Annex 1.5.2.1). Before they register for membership, the VFCG/VFC reminds the applicants regarding objectives of village forestry and the roles and responsibilities of a VFA member. The VFA membership registration period may take more than 1 day.

Step 10. At the end of the initial VFA membership registration period, the village chief certifies and affixes his/her signature and official seal on the VFA membership registry. Other qualified villagers can still apply for VFA membership even after the VFA membership registration period is over.

The state forestry staff facilitates and provides assistance to the VFCG/VFC in planning and conducting the VFA membership campaign and registration.

Note: In the case of a village cluster or group, the VFA membership campaign and registration is conducted by VFCGs/VFCs in their respective villages. The village chiefs certify their respective VFA membership registry in the village. Then, all VFCGs/VFCs meet to consolidate the VFA membership registries of villages in the cluster or group.
Activity 1.5.3
Convening the VFA general assembly, ratifying the VFA by-laws, and forming the VFA election committee

Expected outcomes

- The VFA general assembly (highest decision making body) is constituted.
- The VFA by-laws are ratified by the VFA general assembly and certified by the village chief(s).
- The VFA election committee is formed.

Requirements

- VFA membership registry certified by the village chief(s).
- PAFO trainers with adequate knowledge and skills in training villagers in constituting the VFA general assembly, ratifying the VFA by-laws, and forming the VFA election committee.
- DAFO extension worker with adequate knowledge and skills in facilitating and assisting the villagers in constituting the VFA general assembly, ratifying the VFA by-laws and forming the VFA election committee.
- Required quorum for the VFA general assembly meeting is reached.

How to conduct the activity

**Step 1.** PAFO trainers provide training to villagers in constituting the VFA general assembly, ratifying the VFA by-laws, and forming the VFA election committee.

**Step 2.** The VFCG/VFC makes a proposal for the date, place, and time for convening a meeting of the VFA membership to constitute the VFA general assembly and ratifying the VFA by-laws and submits to the village administration for approval.

**Step 3.** The village administration approves the proposal and makes an announcement in the village(s) regarding the meeting of all VFA members.

**Step 4.** The VFCG/VFC in collaboration with the nouay heads follow-up and informs the VFA members regarding the meeting.

**Step 5.** The VFCG/VFC prepares for the meeting on the designated date, place, and time.

**Step 6.** The village administration assisted by the VFCG/VFC convenes the meeting of the VFA members and officially constitutes the VFA general assembly. (Note: At this point the VFA general assembly is formed.)

**Step 7.** VFCG/VFC secretary takes note of the attendance and ensures that the required quorum for the meeting is reached based on the initial consensus reached in previous meetings on the contents of the VFA by-laws.
Step 8. The VFCG/VFC chairperson presents the draft VFA by-laws to the VFA general assembly for approval. The VFCG/VVFC secretary takes the minutes of the meeting.

Step 9. When the VFA general assembly approves the VFA by-laws, the place and date of ratification is written on the VFA by-law and the VFA chairperson and village chief signs and affixes his/her official seal on VFA by-laws. In the case of a village cluster, all the concerned village chiefs in the cluster sign and affix their official seal.

Step 10. The VFA general assembly discusses and forms the VFA election committee (at least 3 persons) and appoints the chairperson and secretary.

Step 11. The DAFO extension worker facilitates and provides assistance to the villagers in constituting the VFA general assembly, ratifying the VFA by-laws and forming the VFA election committee.

Note: In the case of a village cluster or group, a joint meeting of all concerned VFA members from the villages within the cluster or group is required.
Activity 1.5.4
Forming the VFA committees and electing the VFA officers

Expected outcomes

- The VFA policy committee (policy making body) is constituted.
- The VFA management committee (implementing body) is formed.
- The VFA inventory and audit committee and VFA training and education committee are constituted.
- The VFA officers are elected and election procedures established.

Requirements

- Approved VFA by-laws.
- The required quorum for VFA general assembly is reached.
- DAFO extension worker with adequate knowledge and skills in facilitating and assisting villagers in constituting the VFA committees and electing VFA officers.

How to conduct the activity

Step 1. The VFA election committee in collaboration with the VFCG/VFC and the village administration prepares the procedures for the election of VFA officers in accordance with the approved VFA by-laws.

Step 2. The VFCG/VFC and VFA election committee prepares a proposal on the date, place and time for the meeting of the VFA general assembly to elect VFA officers and constitute the VFA committees for the approval of the village administration.

Step 3. The village administration approves the proposal and makes an announcement in the village. The VFCG/VFC in coordination with the nouay heads follow-up and informs all VFA members regarding the meeting.

Step 4. The VFCG/VFC and the VFA election committee prepares for the meeting on the designated date, place, and time.

Step 5. The village administration with the assistance of the VFCG/VFC convenes the meeting of the VFA general assembly.

Step 6. The VFCG/VFC secretary takes note of the attendance and ensures that the required quorum (as required in the approved VFA by-laws) is reached.

Step 7. The chairperson of the VFA election committee presents the procedures for the election of VFA officers to the VFA general assembly and village administration for approval.

Step 8. The VFA election committee initiates and manages the election process based on the approved procedures.

Step 9. The VFA general assembly makes nominations for the positions of VFA chairperson, deputy chairperson, manager, deputy manager, secretary, treasurer and
bookkeeper. The election of officers is by majority vote and by secret ballot. In the case of a village cluster, the nominees can come from the villages in the cluster.

**Step 10.** The VFA election committee tallies the results of the votes, makes an official list of elected VFA officers and informs the VFA general assembly. (Note: As per approved VFA by-laws, the village chief is an automatic member of the policy committee and can be elected as a VFA officer. The VFA secretary and treasurer automatically sit as members of the management committee. The VFA manager sits as automatic member of the VFA policy committee.)

**Step 11.** The village chief certifies the results of the election and informs the concerned district authority of the names of VFA officers. In the case of a village cluster, all the village chiefs in the cluster sign and affix their official seal.

**Step 12.** The VFCG/VFC hands over the village forestry responsibilities, documents, and properties to the newly elected VFA officers. (Note: At this point, the VFCG/VFC ceases to exist. In the case of a village cluster or group, all the VFCGs/VFCs in the cluster transfer the village forestry responsibilities, documents, and properties to the newly elected VFA officers.)

**Step 13.** The VFA general assembly forms the VFA inventory and audit committee (at least 3 persons) and appoints a chairman and secretary.

**Step 14.** The VFA policy committee meets and forms the VFA training and education committee (the VFA deputy chairperson is automatic chairperson of the VFA training and education committee).

**Step 15.** The DAFO extension worker facilitates and provides assistance to the VFCG/VFC and village administration in constituting the VFA committees and electing VFA officers.

**Note:** In the case of a village cluster or group, a joint meeting of all concerned VFA members from the villages in the cluster or group is required.
Task 1.6
Officially recognizing the village forestry association

Objectives

Main objective

- To secure VFA official recognition from district and provincial authorities.

Specific objectives

- To prepare the requirements for VFA official recognition.
- To submit and secure VFA official recognition from district and provincial authorities.

Rationale

Under existing government regulations, villagers have customary rights to harvest timber and other forest products for their own use (e.g. construction of houses and village facilities). But villagers do not have the management rights to harvest timber and other forest products for sale. The management rights can only be acquired from the state through a village forest management contract. The requirements for signing a village forest management contract are: (a) formation of a village forestry association officially recognized by the concerned district and provincial authorities, and (b) submission of a village forest management plan approved by the concerned district and provincial authorities.

Official recognition of the VFA by the concerned district and provincial authorities gives the VFA the authority and personality to represent the VFA in any government functions (e.g. meetings) and to enter into contract with the state (e.g. village forest management contract) and other parties (e.g. timber sales contract, timber harvest and transport contract, etc.).

Activities

Activity 1.6.1 Preparing the requirements for VFA official recognition. The VFA prepares the necessary documents for submission to the authorities.

Activity 1.6.2 Submitting and securing VFA official recognition. A sequence of activities is followed to provide the VFA with an official recognition.
Activity 1.6.1
Preparing the requirements for VFA official recognition

Expected outcome

- The requirements for VFA official recognition by district and provincial authorities are prepared.

Requirements

- PAFO trainers with adequate knowledge and skills in training VFA officers in preparing the requirements for VFA official recognition.

- DAFO extension workers with adequate knowledge and skills in facilitating and assisting VFA officers in preparing the requirements for VFA official recognition.

- VFA officers with adequate knowledge and skills in preparing the requirements for VFA recognition by concerned district and provincial authorities.

- Approved VFA by-laws.

- Sample formats of application letter, VFA articles of association, and VFA treasurer’s certification (see Annexes 1.6.1.1, 1.6.1.2, and 1.6.1.3).

How to conduct the activity

Step 1. The PAFO trainers train the VFA officers on the how to prepare the requirements for VFA official recognition by the district and provincial authorities.

Step 2. The VFA officers prepares four (4) copies of the requirements for VFA official recognition as follows:

- Application letter addressed to the Provincial Governor (through the District Chief, DAFO and PAFO) signed by the VFA chairperson and endorsed by the village chief(s) concerned requesting for official recognition of the VFA.

- VFA Articles of association signed by the VFA chairperson and attested by the village chief(s) concerned. It includes the list of VFA officers and members as annexes.

- VFA By-laws signed by the VFA chairperson and attested by the village chief(s) concerned. It includes the VFA organizational structure as annex.

- VFA Treasurer’s certification signed by the VFA treasurer and attested by the VFA chairperson and village chief(s) concerned.

The DAFO extension worker facilitates and assists the VFA officers in preparing the requirements for VFA official recognition.

Note: In the case of a village cluster, all the concerned village chiefs in the cluster attest and affix their signatures and official seals on the above documents.
Activity 1.6.2 – Submitting and securing VFA official recognition

Expected outcome

- VFA official recognition from the district and provincial authorities is secured.

Requirements

- Four (4) copies of the requirements for VFA official recognition.

- Procedures for processing, reviewing, and approving applications for VFA official recognition by district and provincial authority established (see Annex 1.6.2.1).

- VFA officers and concerned provincial and district staff understands the procedures for processing, reviewing, and approving applications for VFA official recognition.

- Concerned district and provincial staff trained on how to process and review the requirements for VFA official recognition.

How to conduct the activity

Village Level

Step 1. The VFA chairperson submits application letter with four copies of all the other requirements for VFA official recognition to the Provincial Governor through the district chief, DAFO, and PAFO.

District Level

Step 2. DAFO receives the letter of application for VFA official recognition and makes an approval sheet. DAFO forwards the letter of application together with the approval sheet to its Forestry Unit for review.

Step 3. DAFO Forestry Unit reviews the application for VFA official recognition.

Step 4. If the application is found to be in order, the Head of DAFO signs and affixes the official seal on the approval sheet and forwards the application to the district chief for endorsement to the Provincial Governor through PAFO. If not, DAFO returns the application to the VFA for revision.

Step 5. The district chief signs and affixes the official seal on the approval sheet and endorses the application for VFA official registration to the Provincial Governor through PAFO.
**Provincial Level**

**Step 6.** The Forestry Section receives the application letter and forwards it to its Forest Management Unit for review.

**Step 7.** The Forestry Section (Forest Management Unit) reviews the application. If it is found to be in order, the Head of Forestry Section and the PAFO Director sign and affix their official seals on the approval sheet and forwards the application for VFA official recognition to the Provincial Governor for signature. If not, the Forestry Section returns the application to the VFA through the DAFO for revision.

**Step 8.** The Provincial Governor signs and affixes the official seal on the approval sheet and returns it to PAFO.

**Step 9.** The Forestry Section enters important information in the **VFA Registry** for record and control purposes. The VFA registry contains:
   a. Official name of the VFA
   b. VFA recognition number
   c. Date of VFA recognition
   d. Date of approval of VFA by-laws
   e. Date of approval of VFA articles of association
   f. Total number of VFA members
   g. Total number of VFA officers
   h. Name of VFA chairperson

**Step 10.** PAFO sends copies of the approval sheet (together with the approved VFA articles of association and VFA by-laws) to VFA, DAFO, and DOF. A copy of each of these documents is kept at the Forestry Section.
Task 1.7
Operating the organizations for village forestry

Objectives

Main objectives

- To operate the organizations for village forestry (i.e. village forestry committees, inter-village forestry committees, village forestry associations, groups of VFCs/VFAs, etc.) in planning, implementing and managing village forestry activities in a production forest, protection forest, conservation forest, rehabilitation/degraded forest or barren forest lands.

Specific objectives

- To formulate and adopt the rules and procedures for operating an organization for village forestry.
- To prepare and approve the organization’s annual work plan and budget.
- To manage the records of the organization.
- To control and record the financial transactions of the organization.
- To report the operations of the organization.
- To audit the operations of the organization.

Rationale

Operating the organizations for village forestry (i.e. village forestry committees, village forestry associations, inter-village forestry committees, groups of VFCs/VFAs, etc.) covers both forestry and administrative aspects. The organization’s operating rules, annual work plan, records and financial management, and reporting and auditing procedures depend on the village forestry activities that they are undertaking in a production forest, protection forest, conservation forest, rehabilitation/degraded forest or barren forest land. Smooth and effective operation of these organizations is necessary so that they can achieve their goals and objectives. It is also essential for the survival and development of these organizations. In conducting the operations of the organizations, the relationship between these organizations and the village administrations should be clear. The operations of these organizations, particularly their financial transactions, should be open and transparent so that their members and other villagers will continue to trust and support them. Figure 1 depicts the procedures for operating the organizations for village forestry.

Activities

Activity 1.7.1 Formulating and adopting the rules and operating procedures. Different rules and procedures governing the operations of organizations for village forestry are formulated and adopted.

Activity 1.7.2 Preparing and approving the annual work plan and budget. The annual plan and budget is prepared by the organizations for village forestry and approved by their respective village administration(s) and relevant authorities (e.g. DAFO) as needed.
Activity 1.7.3 Managing records. The organizations for village forestry maintain a records keeping system to secure records and make them readily available for use.

Activity 1.7.4 Establishing a fund. The organizations for village forestry establish the funds for their operations, including maintaining bank account(s).

Activity 1.7.5 Controlling and recording financial transactions. All the financial transactions of organizations for village forestry are conducted according to standard operating procedures and recorded in their respective books of accounts.

Activity 1.7.6 Reporting operations. The operations of organizations for village forestry are regularly reported to the village administration and to relevant authorities.

Activity 1.7.7 Auditing operations. The financial operations of organizations for village forestry are subject to regular internal and external audits to check their legitimacy and proper conduct.
Figure 1 – Procedures in operating the organizations for village forestry

<table>
<thead>
<tr>
<th>VFCs/VFAs/IVFCs/Groups of VFCs/VFAs / etc.</th>
<th>Village administration</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Formulating rules and operating procedures</strong>&lt;br&gt;Establishment and management of fund&lt;br&gt;Delegation of authority&lt;br&gt;Membership&lt;br&gt;Employment and compensation&lt;br&gt;Use of income&lt;br&gt;Meetings&lt;br&gt;Reporting and audit</td>
<td>Overseeing operations of organizations</td>
</tr>
<tr>
<td><strong>Preparing annual work plan</strong></td>
<td>Approving rules of organizations</td>
</tr>
<tr>
<td><strong>Managing records</strong>&lt;br&gt;Sorting, arranging, and filing records&lt;br&gt;Tracking incoming and outgoing records&lt;br&gt;Updating records</td>
<td>Approving the organization’s annual workplan</td>
</tr>
<tr>
<td><strong>Establishing funds</strong>&lt;br&gt;Authorizing signatories&lt;br&gt;Completing the bank requirements&lt;br&gt;Opening bank accounts</td>
<td>Checking the organization’s records from time to time</td>
</tr>
<tr>
<td><strong>Managing funds (Budgeting and accounting)</strong>&lt;br&gt;Preparing annual budget&lt;br&gt;Establishing and maintaining financial books (e.g. budget book, cash book, receipt book and bank book)&lt;br&gt;Preparing and submitting monthly and annual financial statements</td>
<td>Endorsing the opening of bank accounts of the organization</td>
</tr>
<tr>
<td><strong>Auditing financial operations</strong>&lt;br&gt;Reviewing and checking all financial transaction records&lt;br&gt;Checking whether available money reconciles with the financial records&lt;br&gt;Inventory of existing assets&lt;br&gt;Preparing audit report</td>
<td>Approving the organization’s annual budget</td>
</tr>
<tr>
<td><strong>Receiving and attesting to monthly and annual financial statements</strong></td>
<td>Receiving and attesting to audit reports of the organization</td>
</tr>
<tr>
<td><strong>Reporting operations</strong>&lt;br&gt;Preparing monthly and annual reports on operations of the organization</td>
<td>Receiving reports of the organization</td>
</tr>
</tbody>
</table>
Activity 1.7.1
Formulating and adopting the rules and operating procedures

Expected outcome

• The rules and procedures that govern the operations of organizations for village forestry (i.e. village forestry committees, village forestry associations, inter-village forestry committees, Groups of VFCs/VFAs, etc) are established and adopted.

Requirements

• Approved by-laws and annual plan.

• PAFO trainers with adequate knowledge and skills in training the officers of the organizations in formulating rules and operating procedures.

• PAFO extension workers with adequate knowledge and skill in facilitating and assisting the officers of the organization in formulating rules and operating procedures.

• Officers of the organizations with adequate knowledge and skills in formulating rules and operating procedures.

• Sample format of a rule (see Annex 1.7.1.1).

How to conduct the activity

Step 1. The PAFO trainer trains officers of the organizations in formulating rules and operating procedures.

Step 2. The officers review the organization’s approved by-laws and annual plan and determines simple rules and operating procedures necessary to effectively implement them.

Step 3. The officers discuss and reach an initial consensus on the contents of the organization’s rules and operating procedures.

Step 4. The secretary records all the initial agreements reached during the discussion.

Step 5. The officers consolidate the initial agreements reached during the meeting(s) and write (draft) the organization’s rules and operating procedures following the format for a rule (see sample in Annex 1.7.1.1).

Step 6. The officers present the draft of the organization’s rules and operating procedures to the village administration and village assembly for discussion and approval. Some examples of what the rules cover are:

• Establishment and management of fund.
• Delegation of authority to officers.
• Membership.
• Employment and compensation.
• Use of income for operating costs and future village forestry expenses.
• Use of income for welfare support.
- Use of income for village development.
- Use of income for investment.
- Meetings.
- Internal audit and inventory.
- Reporting.
- Resolution of conflicts.
- Collection of non-timber forest products.
- Harvesting of timber for household and village use.
- Grazing.
- Hunting and biodiversity conservation.
- Soil and water conservation.
- Forest fire protection and control.
- Converting forests to other uses.

**Step 7.** The officers use the approved rules and procedures as a guide in carrying out the day-to-day operations of the organization.

**Step 8.** The officers conduct a series of meetings to inform their members and other villagers regarding the organization’s approved rules and operating procedures. Copies of the said rules are also posted on the village bulletin board to relay information to all the members and other villagers.

**Step 9.** The officers regularly review the organization’s rules and operating procedures and recommend necessary changes for approval of the members, village administration and village assembly.

The DAFO extension worker facilitates and provides assistance to the officers in formulating the rules and operating procedures of the organizations.

**Note:** In the case of a village cluster or group, all the concerned village chiefs in the cluster or group sign and affix their official seals on the organization’s approved rules and operating procedures.
Activity 1.7.2
Preparing and approving the annual work plan and budget

Expected outcome

- Annual work plan and budget of organizations for village forestry is prepared and approved.

Requirements

- Approved by-laws.
- Approved organization’s rules on employment, compensation, use of income for operating costs, welfare support, and village development (as applicable).
- Approved annual plan of the organization.
- PAFO trainers with adequate knowledge and skills in training officers in preparing an annual work plan and budget of the organizations.
- DAFO extension workers with adequate knowledge and skills in facilitating and assisting officers in preparing an annual work plan and budget.
- Officers with adequate knowledge and skills in preparing an annual work plan and budget of the organizations.
- Sample format of an annual work plan and budget (see Annex 1.7.2.1).

How to conduct the activity

Step 1. The PAFO trainers train the officers in preparing an annual work plan and budget for the organizations.

Step 2. The officers review an organization’s approved annual plan and rules on employment and compensation, use of income for operating costs, welfare support, and village development (as applicable).

Step 3. Based on the above review, the officers prepare a simple annual work plan which covers both forestry, administrative and other operations of the organization. The plan includes the activities, target outputs, schedule of activities, responsible persons, and budgetary estimates (see sample in annex 1.7.2.1). The DAFO extension worker facilitates and assists the officers in formulating an annual work plan and budget of the organizations.

Step 4. The chairperson presents the organization’s annual work plan and budget to the members, village administration, village assembly or to the district committee on village forestry for approval.

Note: In the case of a village cluster or group, all the concerned village chiefs in the cluster or group sign and affix their official seals on the annual work plan of the organization.
Activity 1.7.3
Managing records

Expected outcomes

- Procedures for managing the records of organizations for village forestry are established.
- Records of the organizations for village forestry are maintained and managed.

Requirements

- PAFO trainers with adequate knowledge and skills in training secretaries in managing the records of the organizations for village forestry.
- Secretaries with adequate knowledge and skills in managing the records of the organization.
- DAFO extension workers with adequate knowledge and skills in facilitating and assisting the secretaries in managing the records of the organizations.
- Materials for records keeping (e.g. folders, markers, stapler, staples, puncher, fasteners, filing cabinet, record book, pens).

How to conduct the activity

Step 1. The VFC/VFCG hands over all existing village forestry records to the secretary. Note: In the case of a village cluster or group, all the VFCs/VFCGs in the cluster or group hand over all village forestry records to the secretary.

Step 2. The PAFO trainers train the secretaries on how to manage the records of the organization.

Step 3. The secretary makes a complete inventory and listing of all village forestry records. He/she assesses the condition of the existing village forestry records using the records inventory and assessment form (see sample in Annex 1.7.3.1).

Step 4. The secretary reviews the results of records inventory and assessment and determines the categories or groupings of records to be used. Categories can be based on similarity of records (see sample in Annex 1.7.3.2).

Step 5. The secretary procures the materials needed for records keeping (folders, staplers, staples, markers, record books, pens, fasteners, etc.).

Step 6. The secretary sorts the existing records according to the category selected by the organization. Specific codes (e.g. numbers or letters) or symbols selected by the organization are assigned to individual files (see sample in Annex 1.7.3.2).

Step 7. The secretary assigns and marks the codes on the corresponding files. The secretary records the information of all files (including categories and codes) in the record book of the organization for control purposes. The record book has a section for recording incoming and outgoing files or records of the organization.
Step 8. The secretary updates the organization’s record book regularly and submits reports to the officers of the organization.

Step 9. The secretary arranges, files and stores (chronologically) records of the organization in a filing cabinet in order to protect them against damage and loss.

Step 10. The secretary regularly checks the organization’s records to determine proper filing and to repair damages (if any).
Activity 1.7.4
Establishing a fund

Expected outcomes

- A bank account for the organization is opened. Persons to deposit and withdraw money from the organization’s bank account are authorized. Bank book is secured.

Requirements

- Approved rules on establishment and management of a fund and delegation of authority.
- Sample of signature card, letter form for multiple signatures for cash withdrawals and checks, and deposit form (available from the bank).
- Initial money for deposit.
- PAFO trainers with adequate knowledge and skills in training officers in establishing the fund of the organization.
- DAFO extension worker with adequate knowledge and skills in facilitating and assisting officers in establishing the fund of the organization.
- Officers with adequate knowledge and skills in establishing the fund for the organization.

How to conduct the activity

Step 1. PAFO trainers train the officers in establishing the fund of the organization.

Step 2. The officers review and implement the provisions of the approved rules on the establishment of the fund and delegation of authority to open and maintain a bank account. Said rules specify, among others, the name of the bank account, name and place of the bank where an account will be opened, and the names of the authorized signatories to open, withdraw, and deposit money in the bank account of the organization.

Step 3. The authorized signatories (usually more than one person) collect and fill out the bank forms and other requirements for opening a bank account. These requirements include:
- Signature card.
- Letter form for multiple signatures for cash withdrawals and checks.
- Deposit form.

Step 4. The authorized signatories submit the duly accomplished forms to the bank together with (a) a letter from the organization’s chairperson attested by the village chief(s) confirming the opening of a bank account and certifying the identity of the authorized signatories, and (b) initial money to be deposited.

Note: In the case of a village cluster or group, the village chiefs in the cluster or group sign and affix their official seals on the letter.
Step 5. After the bank reviews and processes the requirements submitted by the organization and finds them to be in order, the authorized signatories receive the bank book and a copy of the bank slip for initial deposit. These are submitted to the organization’s bookkeeper for recording and safekeeping.
Activity 1.7.5
Controlling and recording financial transactions

Expected outcomes

- Procedures for controlling and recording the financial transactions of organizations for village forestry are established.
- Financial books (i.e. budget book, cash book, receipt book and bank book) of the organizations for village forestry are established and maintained.

Requirements

- PAFO trainers with adequate knowledge and skills in training officers in controlling and recording the financial transactions of organizations for village forestry.
- DAFO extension workers with adequate knowledge and skills in facilitating and assisting officers in controlling and recording the financial transactions of the organizations for village forestry.
- Officers with adequate knowledge and skills in controlling and recording the financial transactions of the organization.
- Financial books and other materials needed in controlling and recording the organization’s financial transactions (e.g. calculator, pen, financial forms and vouchers).

How to conduct the activity

**Step 1.** The PAFO trainers train the officers in controlling and recording the financial transactions of the organizations.

**Step 2.** The officers prepare an annual budget as part of the annual work plan for approval of the members, village administration, village assembly or district village forestry committee. Any changes on the approved annual budget are approved by the members, village administration, village assembly or the DVFC.

Note: In the case of a village cluster or group, all the concerned village chiefs in the cluster or group sign and affix their official seals.

**Step 3.** The important information regarding the approved annual budget is recorded by key activity with corresponding approved budget in a budget book of the organization (see sample in Annex 1.7.5.1) and regularly updated by the bookkeeper.

**Step 4.** All payments made by the organizations require authorization and approval of designated officers (e.g. chairperson or manager) using a payment voucher (see sample in Annex 1.7.5.2) in accordance with the following procedures:
- The bookkeeper certifies that the proposed expenditure is in accordance with the approved annual budget and that funds are available as indicated in the budget book of the organization.
• An officer of the organization (e.g. chairman or manager) certifies that the proposed expenditure is in accordance with the approved annual work plan and signs the payment voucher.

• The treasurer pays the approved amount to the payee and forwards a receipt of payment to the bookkeeper. If there is no official receipt available, an improvised receipt is prepared (see sample in Annex 1.7.5.4).

• The bookkeeper records the pertinent receipt information and updates the budget book and cashbook (see sample in Annex 1.7.5.5) of the organization.

• The bookkeeper files the receipt together with the corresponding approved payment voucher in the receipt book (see sample in Annex 1.7.5.6) of the organization.

**Step 5.** All financial records and books are kept and regularly updated by the bookkeeper. He/she ensures that the information in the organizations’ financial books (e.g. bank book, budget book, cash book and receipt book) are reconciled regularly (see Annex 1.7.5.7 for sample transactions recorded in a bank book).
Activity 1.7.6
Reporting operations

Expected outcomes

- Monthly and annual progress reports of the organization are prepared and submitted to the members, village administration, village assembly and other authorities concerned (e.g. DVFC).

- Monthly and annual financial statements of the organizations are prepared and reported to the members, village administration, village assembly, and other authorities concerned (e.g. DVFC).

Requirements

- Approved rules on reporting.

- Financial books maintained and updated.

- Sample format of a monthly and annual progress report.

- Sample formats of a monthly and annual financial statement.

- PAFO trainers with adequate knowledge and skills in training the officers in preparing monthly and annual progress reports and financial statements.

- DAFO extension workers with adequate knowledge and skills in facilitating and assisting the officers in preparing annual and monthly progress reports and financial statements.

- Officers with adequate knowledge and skills in preparing monthly and annual progress reports and financial statements of the organization.

How to conduct the activity

Step 1. The PAFO trainers train the officers in preparing monthly and annual progress reports and financial statements of the organization.

Step 2. The officer (e.g. manager) prepares the annual and monthly progress report (see sample in Annex 1.7.6.1). It is attested to by the organization’s chairperson and the village chief(s). In the case of a village cluster or group, the concerned village chiefs sign and affix their signatures and official seals on the report. The annual and monthly progress reports of the organization show the village forestry activities accomplished, problems encountered, and recommended action. The organization’s chairperson presents the annual and monthly progress report to the members, village administration and village assembly for information. It is also posted in the village bulletin board to relay information to the members and other villagers. The report is submitted to other authorities concerned (e.g. DVFC) as may be required.

Step 3. The bookkeeper and the treasurer prepares the annual and monthly financial statement of accounts (see sample in Annex 1.7.6.2). It is certified by the organization’s
chairperson and the village chief(s). In the case of a village cluster or group, all the concerned village chiefs in the cluster or group sign and affix their official seals. The annual and monthly financial statement shows how the organization’s money is being spent and how much balance is available. The organization’s chairperson presents the annual and monthly financial statement to the members, village administration and village assembly for information. It is also posted in the village bulletin board to relay the information to the members and other villagers. The report is submitted to other authorities concerned (e.g. DVFC) as may be required.
Activity 1.7.7
Auditing operations

Expected outcomes

- Financial operations of the organizations for village forestry are audited.
- Properties (equipment, tools, etc.) of the organizations are inventoried.
- Internal audit report is prepared and submitted to village administration and village assembly.

Requirements

- Approved by-laws.
- Approved rules and operating procedures of the organization.
- Approved annual work plan and budget of the organization.
- List of properties (equipment, tools, etc.) of the organization.
- PAFO trainers with adequate knowledge and skills in training villagers (e.g. audit and inventory committees) in conducting internal audit of financial operations of the organization.
- Villagers (e.g. audit and inventory committee) with adequate knowledge and skills in conducting an internal audit of the financial operations of the organization.
- DAFO extension workers with adequate knowledge and skills in facilitating and assisting the audit and inventory committee in conducting an internal audit of the financial operations of the organization.
- DAFO and PAFO external audit procedures established.

How to conduct the activity

**Step 1.** PAFO trainers train the audit and inventory committee in conducting an internal audit of the financial operations of the organization.

**Step 2.** After the training, the audit and inventory committee reviews the approved by-laws, rules, and operating procedures pertaining to financial management (e.g. establishment and management of the funds, use of income, employment and compensation) of the organization.

**Step 3.** The audit and inventory committee reviews and checks all the financial transaction records (e.g. cash book, receipt book, budget book and bank book) of the organization and checks that:
• There are receipts and records for all payments made by the organization.
• All cash transactions are recorded in the cashbook.
• All payments have been properly authorized.
• All receipts and records are dated.
• All transactions and receipts contain adequate descriptions.
• All bank transactions have been properly authorized and recorded.
• All purchases and payments are in accordance with approved annual budget.
• All cash receipts have been signed by the person receiving goods, services or cash.
• The compensation rates used are in accordance with the organization’s approved rules on employment and compensation (as applicable).

Step 4. The audit and inventory committee checks whether the money available on hand reconciles with the balance shown in the organization’s financial records. This includes:
• Counting the money in the cash box at the village.
• Checking the balance in the cash book.
• Checking the balance in the bank book.

Step 5. The audit and inventory committee reviews the list of properties of the organization (equipment, tools, etc.) and makes an inventory.

Step 6. The audit and inventory committee prepares a report and presents it to the organization’s officers, village administration and village assembly. The internal audit report includes the audit findings, inventory of the organization’s properties, equipment and tools, recommendations to correct any problems encountered and timeframe to correct said problems (see sample in Annex 1.7.7.1). The audit report is attested to by the chairperson of the organization and the village chief. In the case of a village cluster or group, all the village chiefs in the cluster or group sign and affix their official seals.

Step 7. The organization’s operation is externally audited by PAFO using existing standard auditing procedures. The external audit is conducted to help ensure that the organizations for village forestry are operating in accordance with the approved village forest management and annual plans. It also checks if the organization’s financial resources are used properly in accordance with their approved rules, procedures, plan, and budget.
Task 1.8
Forming a District Committee or Village Forestry Committee (VFC) and a Group of VFCs/VFAs

Objectives

Main objectives

- To form a District Village Forestry Committee and a Group of VFCs/VFAs to oversee and coordinate the operations of all organizations for village forestry in the district and to promote inter-village forestry cooperation.

Specific objectives

- To form an inter-VFC/VFA committee to look into organization options for village forestry at the district level.
- To formulate and ratify the Group by-laws.
- To conduct a Group membership campaign.
- To apply for Group membership.
- To constitute the Group general assembly.
- To elect Group officers.
- To prepare and sign Group membership agreements.

Rationale

There are essential village forestry operations that are more efficiently and effectively implemented jointly by the VFCs/VFAs and the district authorities. Some of these operations include: (a) securing annual timber harvesting quotas, (b) timber sales, (c) contracting timber harvesting and log transport, (d) establishing second landing sites and common access routes, (e) protecting the forest from fire and illegal logging, (f) resolving inter-village conflicts, and (g) others.

It is imperative that inter-village forestry cooperation is promoted and that the operations of all organizations for village forestry within the district is coordinated by the district authorities concerned. These can be done through the formation of a District Committee on Village Forestry (DVFC) and a Group of VFCs/VFAs. The DVFC is composed of representatives of district authorities and Groups of Cs/VFAs. The Group of VFCs/VFAs comprises representatives of all organization for village forestry in the district and is supervised by the DVFC.

The Committee or Group can also act as a monitoring and controlling mechanism to ensure that VFCs/VFAs conduct operations in accordance with their approved village forest management plans, annual operation plans, and a Group code of forest management practices. Then, if and when the VFCs/VFAs decide to have their forest management certified, the Group could be used as the mechanism for Group certification, since certification of individual VFCs/VFAs would be expensive and impractical.
Activities

Figure 1 illustrates the procedure for forming a Group of Village Forestry Associations, which is further discussed in the following sections.

Activity 1.8.1 Forming an inter-VFC/VFA committee to assess organizational options for village forestry at district level. Before the DVFC and the Group of VFCs/VFAs is formed, each VFC/VFA chooses a representative to an inter-VFC/VFA committee whose task is to assess together with the district authorities the organizational options for village forestry at the district level. The committee will initially undertake the activities that the Group would have been doing, and work on organizing the Group of VFCs/VFAs and its recognition by the Government.

Activity 1.8.2 Formulating the Group by-laws. The set of Group by-laws is formulated by the Inter-VFC/VFA Committee as one of the requirements for formally organizing the Group.

Activity 1.8.3 Planning and conducting a Group membership campaign. Based on the provisions of the as yet unofficial Group by-laws, a campaign for the acceptance of VFCs/VFAs of the Group’s existence and membership of VFCs/VFAs to the Group is launched.

Activity 1.8.4 Applying for Group membership. VFCs/VFAs formally apply for membership. The procedure also applies to new VFCs/VFAs applying for membership to an already existing Group.

Activity 1.8.5 Constituting the Group General Assembly, ratifying the Group by-laws, electing Group officers, and signing Group membership agreements. The initial member-VFCs/VFAs, which constitute the initial Group General Assembly, meet to ratify the Group by-laws, elect officers, and formalize their membership in the Group.
Figure 1 – Procedure for forming a Group of VFCs/VFAs

<table>
<thead>
<tr>
<th>VFC/VFA</th>
<th>Group of VFCs/VFAs</th>
<th>Inter-VFC/VFA Committee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discuss operational problems</td>
<td>Organize a consultation to discuss common VFA problems &amp; reach a consensus on inter-VFC/VFA cooperation</td>
<td>Form inter-VFC/VFA committee and prepare action plan</td>
</tr>
<tr>
<td>Discuss draft Group design and by-laws</td>
<td>Draft/finalize Group design and by-laws (with training/workshop)</td>
<td>Conduct Group membership campaign</td>
</tr>
<tr>
<td>Discuss Group membership application</td>
<td></td>
<td>Receive and evaluate applications for Group membership</td>
</tr>
<tr>
<td>Apply for Group membership through a VFC/VFA resolution confirmed by the village chief(s)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Constitute the Group general assembly</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ratify Group by-laws and articles of Group association</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Elect officers and form audit and inventory committee</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Form management committee, education and training committee and sub-committees</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Chairpersons of member-VFCs/VFAs and Group sign the Group membership agreement</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Note: The District committee on village forestry (DVFC) oversees and supervises the formation of the Group of VFCs/VFAs.</td>
</tr>
</tbody>
</table>
Activity 1.8.1
Forming an inter-VFC/VFA committee to look into organizational options for village forestry at district level

Expected outcomes

- An informal inter-VFC/VFA committee is formed to initiate the formation of a Group of VFCs/VFAs in collaboration with the district authorities concerned.

- A District committee on village forestry and a Group of VFCs/VFAs are formed.

Requirements

- DAFO extension worker with adequate knowledge and skills in facilitating and assisting villagers in forming an informal inter-VFC/VFA committee.

- Officially recognized VFCs/VFAs operating in a district.

- The district authorities and VFCs/VFAs recognition of the need and importance to promote inter-village forestry cooperation and to form a District committee on village forestry and a Group of VFCs/VFAs.

How to conduct the activity

**Step 1.** The DAFO extension worker conducts informal discussions with individual VFCs/VFAs regarding operational problems encountered and the need to promote inter-VFC/VFA cooperation and coordination.

**Step 2.** Based on the results of the discussions, the DAFO extension worker prepares a proposal (e.g. objectives, program and schedule of activities, Expected output, participants and facilitators, and budget) for conducting an inter-VFC/VFA consultation to be approved by the DAFO. The inter-VFC/VFA consultation is organized to discuss common VFC/VFA operational problems and identify possible solutions. The consultation is participated in by selected VFC/VFA officers (e.g. chairperson and manager) and their respective village chiefs and by representatives of the district authorities. In case of a village cluster or group, all the village chiefs in the cluster or group are invited to participate in the consultation.

**Step 3.** The DAFO head approves the conduct of an inter-VFC/VFA consultation. The DAFO extension worker prepares for the consultation and informs the participants accordingly.

**Step 4.** The DAFO conducts and facilitates the inter-VFC/VFA consultation in accordance to the approved proposal. Common operational problems and possible solutions are discussed and a consensus reached on the need for:
- Promoting inter-VFC/VFA cooperation and coordination.
- Forming a District committee on village forestry (DVFC).
- Forming an informal inter-VFC/VFA committee to initiate the formation of the Group.
- Forming a Group of VFCs/VFAs.
Step 5. The DAFO discusses the rationale and importance of forming a District Village Forestry Committee (DVFC). He/she also explains the composition and roles and responsibilities of the DVFC. The DVFC is responsible for supervising, coordinating, monitoring and evaluating the operations of all organizations for village forestry in the district. The committee is composed of:

a. Deputy District Governor – Chairman
b. Head of DAFO – Vice-Chairman
c. Chief of Forestry Unit DAFO – member
d. Chairman Group of VFCs/VFAs – member
e. Manager of Group of VFCs/VFAs – member

As needed, the DVFC may co-opt other representatives of the district authorities to become members of the committee.

Step 6. The participants select the members of the inter-VFC/VFA committee (e.g. all chairpersons or managers of VFC/VFAs). A chairperson, deputy chairperson and secretary of the inter-VFC/VFA committee are also elected.

Step 7. A simple action plan for the formation of a Group of VFCs/VFAs is prepared and approved during the consultation. The action plan includes the description and schedule of activities and persons responsible.

Step 8. The inter-VFC/VFA committee implements the approved action plan and reports the progress to the DVFC.
Activity 1.8.2
Formulating the Group by-laws

Expected outcome

- The Group by-laws are formulated, discussed, and initial consensus reached with individual VFCs/VFAs.

Requirements

- Consensus reached by VFCs/VFAs on the formation of a Group of VFCs/VFAs.
- VFCs/VFAs recognize the need and importance of a set of Group by-laws.
- PAFO trainers with adequate knowledge and skills in training the inter-VFC/VFA committee in formulating the Group by-laws.
- DAFO extension workers with adequate knowledge and skills in facilitating and assisting the inter-VFC/VFA committee in formulating the Group by-laws.
- Approved action plan for the formation of a Group of VFCs/VFAs.
- Sample format of Group by-laws.

How to conduct the activity

Step 1. The PAFO trainer trains the inter-VFC/VFA committee in formulating the Group by-laws.

Step 2. The inter-VFC/VFA committee reviews the approved action plan on the formation of a Group of VFCs/VFAs. It discusses and reaches initial consensus on:
- Name of the Group.
- Policy statements and objectives.
- Administration and management of the Group (e.g. organizational structure, relationship between the Group and member-VFCs/VFAs, responsibilities of Group committees, and qualification, duties, term of office of Group officers).
- Membership (e.g. qualifications, rights, responsibilities, application and termination of Group membership).
- Cost and benefit sharing among member-VFCs/VFAs of the Group.

Step 3. Based on the above discussion and initial consensus reached, the inter-VFC/VFA committee prepares, discusses, and makes initial agreement on the contents of the Group by-laws.

Step 4. Based on the agreed outline of the Group by-laws, the inter-VFC/VFA committee drafts the Group by-laws (see sample in Annex 1.8.5.1).

Step 5. The members of the inter-VFC/VFA committee form themselves into teams to visit the villages and discuss the draft Group by-laws with individual VFCs/VFAs and reach an initial agreement.

Step 6. Based on the discussions and initial consensus reached with individual VFCs/VFAs, the inter-VFC/VFA committee finalizes the draft Group by-laws.

The DAFO extension worker facilitates and assists the inter-VFC/VFA committee in drafting and discussing the Group by-laws with the VFCs/VFAs.
Activity 1.7.3
Planning and conducting a Group membership campaign

Expected outcome

- The VFCs/VFAs are informed about the Group (i.e. policies, objectives, qualification, rights, responsibilities, procedures, requirements for Group membership, and the relationship between individual VFCs/VFAs and the Group).

Requirements

- Initial agreements reached by individual VFCs/VFAs on the contents of the draft Group by-laws.

- PAFO trainers with adequate knowledge and skills in training the inter-VFC/VFA committee in planning and conducting the Group membership campaign.

- DAFO extension workers with adequate knowledge and skills in facilitating and providing assistance to the inter-VFC/VFA committee in planning and conducting the Group membership campaign.

- Inter-VFC/VFA committee with adequate knowledge and skills in planning and conducting the Group membership campaign.

- Approved action plan for the formation of a Group of VFCs/VFAs.

- Information materials about the Group of VFCs/VFAs (i.e. policies, objectives, qualification, rights, responsibilities, procedures and requirements for Group membership and relationship between the member-VFCs/VFAs and the Group).

How to conduct the activity

**Step 1.** The PAFO trainers train the inter-VFC/VFA committee in planning and conducting the Group membership campaign.

**Step 2.** The DAFO extension worker facilitates and provides assistance to the inter-VFC/VFA committee in planning and conducting the Group membership campaign. The inter-VFC/VFA committee reviews the approved action plan for the formation of a Group of VFCs/VFAs. The committee prepares information materials on Group policies, objectives, qualification, rights and responsibilities of Group membership, procedure and requirements for Group membership, relationship between member-VFCs/VFAs and the Group, etc., to be used in the Group membership campaign.

**Step 3.** The members of inter-VFC/VFA committee form themselves into teams. Each team is assigned VFCs/VFAs to be visited to discuss and inform them about the Group, giving emphasis on the benefits and requirements for Group membership.

**Step 4.** Preferably, the team(s) conducts Group membership campaigns in their respective VFCs/VFAs in collaboration with the village administration. The Group extension method is adopted. The conduct of the Group membership campaign may take more than one day.
Activity 1.8.4
Applying for Group membership

Expected outcome

- The requirements for Group membership (e.g. Group membership application letter and VFC/VFA resolution) are prepared.

Requirements

- VFC/VFA officers with adequate knowledge and skills in preparing the requirements for Group membership.

- DAFO extension workers with adequate knowledge and skills in facilitating and assisting VFC/VFA officers in preparing the requirements for Group membership.

- Formats of the requirements for Group membership (see sample of the Group membership application letter in Annex 1.8.4.1 and VFC/VFA resolution in Annex 1.8.4.2).

How to conduct the activity

**Step 1.** The VFC/VFA meets to discuss and reach consensus regarding VFC/VFA membership to the Group.

**Step 2.** Based on the agreement reached during the meeting, the VFC/VFA prepares a resolution on Group membership and authorizes two VFC/VFA official representatives to the Group general assembly. The VFC/VFA chairperson is an automatic member of the Group general assembly.

**Step 3.** The VFC/VFA chairperson prepares and submits the application letter for Group membership together with the VFC/VFA resolution to the inter-VFC/VFA committee.

The village chief signs and affixes the official seal to the VFC/VFA resolution and application letter for Group membership. In the case of a village cluster or group, all village chiefs concerned in the cluster or group affix their signatures and official seals.

The DAFO extension worker facilitates and provides assistance to the VFC/VFA officers in preparing the requirements for Group membership.
Activity 1.8.5
Constituting the Group General Assembly, ratifying the Group By-laws, electing the Group officers, and signing the Group membership agreements

Expected outcomes

- The Group General Assembly (highest decision and policy making body) is constituted.
- The Group by-laws are ratified by the Group General Assembly.
- The Group Management Committee, Audit and Inventory committee, and Education and Training Committee are formed.
- Group officers are elected.
- Group membership agreements are signed.

Requirements

- Requirements for Group membership (e.g. application letter and resolution) are submitted by VFCs/VFAs to the inter-VFC/VFA committee.

- Sample Group By-laws (see Annex 1.8.5.1) and Group Membership Agreement (see Annex 1.8.5.2).

- VFC/VFA representatives to the Group general assembly are authorized by respective VFCs/VFAs.

- DAFO extension workers with adequate knowledge and skills in facilitating and assisting the inter-VFC/VFA committee in constituting the Group general assembly, ratifying the Group By-laws, electing the Group officers and signing the Group membership agreements.

How to conduct the activity

**Step 1.** The inter-VFC/VFA committee with the assistance of the DAFO extension worker prepares for the meeting and informs the authorized VFC/VFA representatives of the date, place, and time of the meeting. The committee invites the Chairman of the DVFC (Deputy District Governor) and heads of DAFO and Forestry Unit to the meeting.

**Step 2.** The inter-VFC/VFA committee convenes the meeting and constitutes the Group General Assembly. At this point the Group general assembly is formed and the inter-VFC/VFA committee ceases to exist.

**Step 3.** The Group general assembly discusses and finalizes the draft Group By-laws and ratifies them.

**Step 4.** The Group general assembly reviews the provisions of the ratified Group By-laws pertaining to the Group officers (e.g. duties, qualification, term of office, and election procedure). The Group general assembly then nominates from among themselves the candidates for officers of the Group, i.e. Chairperson, Vice-Chairperson, Secretary, Treasurer, Manager, Deputy Manager, and Bookkeeper. The Group general assembly
votes by secret ballot. For each position the candidate with the highest number of votes is elected. The representatives of DVFC oversee the election process.

**Step 5.** The Group general assembly constitutes the Group Management Committee. The Group’s Secretary, Treasurer and Bookkeeper sit as automatic members of the committee.

**Step 6.** The Group general assembly constitutes the education and training committee and the audit and inventory committee. The general assembly appoints the officers and members of the Audit and Inventory Committee and the Training and Education Committee from qualified VFC/VFA representatives in the Group General Assembly. The Group Vice Chairperson is the automatic Chairperson of the Training and Education Committee.

**Step 7.** The Group Chairperson and the Chairpersons of member-VFCs/VFAs sign their respective Group Membership Agreements.
Task 1.9
Officially recognizing the Group

Objectives

Main objective

• To secure official recognition of the Group from district and provincial authorities.

Specific objectives

• To prepare the requirements for official recognition of the Group.
• To secure official recognition of the Group.

Rationale

The Group of VFCs/VFAs is comprised of officially recognized member-VFCs/VFAs. It represents these VFCs/VFAs in dealing with government agencies, timber companies, and other organizations. On behalf of member-VFCs/VFAs, it signs timber sales documents, harvest papers, and transport contracts with other parties and liaises with government agencies, e.g. to secure annual logging quotas, make requests for technical assistance services, etc. Thus, the Group must be officially recognized by the Government. Moreover, if and when the member-VFCs/VFAs seek forest management certification through group certification, official recognition of the Group is a requirement.

Activities

Activity 1.9.1. Preparing the requirements for Group official recognition. The Group officers prepare the requirements needed to obtain official recognition.

Activity 1.9.2. Securing Group official recognition. The requirements are submitted and a set of procedures is followed to have the Group recognized by the Government.
Activity 1.9.1
Preparing the requirements for official recognition of the Group

Expected outcomes

- Requirements (e.g. letter of application for Group recognition, Group By-laws, Articles of Group Association, and Group Treasurer’s certification) for official recognition of the Group by district and provincial authorities are prepared.
- The Group is officially recognized by district and provincial authorities.

Requirements

- Ratified Group By-laws.
- Sample format of requirements for Group official recognition (see Annexes 1.9.1.1, 1.9.1.2, and 1.9.1.3).
- PAFO trainers with adequate knowledge and skills in training Group officers in preparing the requirements for Group official recognition.
- DAFO extension workers with adequate knowledge and skills in facilitating and assisting the Group officers in preparing the requirements for Group official recognition.

How to conduct the activity

Step 1. PAFO trainers train the Group officers on how to prepare the requirements for Group official recognition.

Step 2. Assisted by DAFO extension workers and guided by the samples, the Group officers prepare four copies of the requirements for official recognition of the Group as follows:

- **Application letter** signed by the Group Chairperson addressed to the Provincial Governor through DAFO(s), District Chief(s), and PAFO requesting the official recognition of the Group.

- **Articles of Group Association** signed by the Group chairperson including the list of member-VFCs/VFAs and their authorized representatives to the Group General Assembly and the list of Group officers as annexes.

- **Group By-laws** signed by the Group chairperson including the Group’s organizational structure as annex.

- **Group Treasurer’s certification** signed by the Treasurer and attested to by the Group Chairperson.
Activity 1.9.2
Submitting and securing the Group official recognition

Expected outcome

- Group official recognition by district and provincial authorities is obtained.

Requirements

- Four copies of the requirements for Group official recognition.
- Procedures established by the authorities for processing and approving application for Group official recognition (see sample in Annex 1.9.2.1).
- Group officers and district and provincial staff concerned understand the procedures for processing, reviewing, and approving applications for Group official recognition.
- District and provincial staff trained on how to process and review the requirements for Group official recognition.

How to conduct the activity

Village level

Step 1. The Group chairperson sends an application letter (together with 4 copies of the requirements) to the Provincial Governor through the DAFO and District Chief concerned.

District level

Step 2. The head of the DAFO Forestry Unit reviews the application. If the application is in order, he/she signs the approval sheet and forwards it to the District Chief. If the application is not in order, DAFO returns the application to the Group for revision.

Step 3. Based on the recommendations of DAFO, the District Chief signs the approval sheet and endorses the request to the Provincial Governor, through PAFO, for approval.

Provincial level

Step 4. The PAFO Forestry Section reviews the application. If the application is in order, the PAFO Director signs the approval sheet and forwards it to the Provincial Governor for approval. If the application is not in order, PAFO returns the application to the Group through DAFO for revision.

Step 5. Based on the recommendations of the PAFO, the Provincial Governor signs the approval sheet officially recognizing the Group.

Step 6. The Forestry Section enters important information in the Registry of Groups of VFCs/VFAs for record and control purposes. The registry contains the following information:
- Official name of the Group.
• Group recognition number.
• Date of Group recognition.
• Date of approval of Group by-laws.
• Date of approval of Articles of Group Association.
• Total number of member-VFCs/VFAs.
• Total number of Group officers.
• Name of Group chairperson.

Step 7. PAFO forwards the approval sheet with pertinent attachments to the Group Chairperson. A copy is provided to DOF and DAFO, retaining a copy for itself.

Step 8. The Group Chairperson provides each member-VFCs/VFAs with a copy of the approved documents of official recognition of the Group.
Village forest management

Tasks and activities

Task 2.1 – Planning village land uses and allocating land for the village forest management unit

Activity 2.1.1 Village boundary demarcation
Activity 2.1.2 Village land-use mapping
Activity 2.1.3 Village land-use planning and land allocation

Task 2.2 – Conducting forest inventory for village forest management planning

Activity 2.2.1 Designing the forest inventory
Activity 2.2.2 Conducting the forest inventory
Activity 2.2.3 Calculating the forest inventory results and writing the forest inventory report
Activity 2.2.4 Keeping forest inventory records
Activity 2.2.5 Conducting forest inventory to fill information gaps
Activity 2.2.6 Consolidating forest inventory information

Task 2.3 – Assessing village forest growth and mortality

Activity 2.3.1 Adapting available forest growth and mortality information
Activity 2.3.2 Estimating forest growth and mortality from records of successive forest inventories

Task 2.4 – Village forest management planning

Activity 2.4.1 Specification of the village forest management system
Activity 2.4.2 Preparing maps, charts, and tables that illustrate the village forest management plan
Activity 2.4.3 Writing the village forest management plan

Task 2.5 – Securing the village forest management contract

Activity 2.5.1 Drafting the village forest management contract
Activity 2.5.2 Securing approval of the village forest management contract

Task 2.6 – Conducting forest inventory for annual harvest planning

Activity 2.6.1 Designing the pre-harvest inventory
Activity 2.6.2 Conducting the pre-harvest inventory
Activity 2.6.3 Calculating the pre-harvest inventory results and keeping records of the pre-harvest inventory
Task 2.7 – Annual village forestry operations planning

Activity 2.7.1 More detailed specification of the forest management system
Activity 2.7.2 Writing the annual village forestry operations plan
Activity 2.7.3 Submitting the annual village forestry operations plan and securing a logging quota

Task 2.8 – Conducting pre-harvest operations

Activity 2.8.1 Timber marketing
Activity 2.8.2 Re-allocating the logging quota
Activity 2.8.3 Tree marking
Activity 2.8.4 Securing a logging permit
Activity 2.8.5 Pre-harvest activities to help ensure forest regeneration

Task 2.9 – Conducting timber harvesting operations

Activity 2.9.1 Preparing access tracks, transport routes, and second landings
Activity 2.9.2 Mobilizing logging operations
Activity 2.9.3 Logging and log transport
Activity 2.9.4 Second landing operations
Activity 2.9.5 Timber harvesting activities to help ensure forest regeneration

Task 2.10 – Conducting post-harvest forest management operations

Activity 2.10.1 Post-harvest assessment
Activity 2.10.2 Post-harvest activities to ensure forest regeneration and improve the timber stand

Task 2.11 – Customary use of the forest

Activity 2.11.1 Utilization of timber for local use
Activity 2.11.2 Utilization of non-timber forest products

Task 2.12 – Forest protection and conservation

Activity 2.12.1 Forest protection from fire
Activity 2.12.2 Forest protection from conversion to unplanned land uses
Activity 2.12.3 Forest protection from over-grazing
Activity 2.12.4 Conserving soil and water resources
Activity 2.12.5 Conserving biodiversity
Task 2.1
Mapping and zoning production forests and
delineating the forest management unit

Objectives

Main objective

- To delineate the boundaries of the forest management unit based on the mapping and zoning of production forests.

Specific objectives

- To locate production forests for management on a sustainable basis.
- To identify the forest management partners.
- To demarcate the boundaries of the forest management unit.
- To reserve the forest management unit as a permanent forest estate.

Rationale

The very first task in forest management is delineating the forest management unit (FMU), i.e. a set of production forests that will be managed on a sustainable basis. To do this, it is advantageous and often necessary to first identify the forest management partners, i.e. the entities that will be working with the forestry administration (mainly at DAFO level) in managing the FMU.

In the past, partnerships between the forestry administration and state or business enterprises, which ignored the role of villagers, had generally resulted in unsustainable management and degradation, if not destruction, of the forest resources. At present, it is increasingly being recognized by government decision-makers that an effective, economically efficient, and sustainable management would result from a district-village level partnership, i.e. between DAFO staff and village teams working under the village administration whether directly or indirectly through some form of an organizational arrangement.

Once the forest management partners are known (e.g. a village or a set of villages that will work with DAFO), the boundaries of the FMU can then be demarcated. Its size may range from 1,000-50,000 hectares depending on how many villages are involved. FOMACOP has tested three options, namely: single village, village cluster, and a group of villages, and all of them have been found to be workable.

When working with a group of villages, it is not necessary to delineate the administrative boundaries of each village. When working with single villages, the boundaries between them must be known. Most rural Lao villages have no formally mapped boundaries, but the villagers know the extent of the land and forest resources over which they exercise their customary rights, apart from the land and forest resources that the people from adjacent villages use. In a few cases, people from two or more neighboring villages use a common forest that is difficult to partition in order for each village to have its own exclusive boundaries. The practical result is a village cluster, i.e. two or more neighboring villages sharing the same administrative boundaries yet having separate
village administration, which must always confer with each other on matters pertaining to their common land and forest resources.

The simpliest way to delineate the FMU is to include all forest areas within reach from identified partner villages. Village boundary demarcation and village land-use planning are not pre-requisites to this activity, but it is advantageous to do them because, firstly, future land-use conversions would be done in a planned manner, having the village land-use plan as a guide. Secondly, the resulting FMU would already exclude areas marked for conversion to other land uses; hence, it could be included in a permanent forest estate that would no longer be subject to any further conversion. Thirdly, village boundary demarcation and land-use planning are parts of the high-priority land allocation program of the government.

Activities

**Activity 2.1.1 Identifying suitable forests.** This activity is aimed at identifying production forests with potential for management on a sustainable basis.

**Activity 2.1.2 Identifying forest management partners.** Once a suitable forest area has been found, villages are identified and invited to participate in forest management. Villages may participate singly, as a cluster, or as a group.

**Activity 2.1.3 Mapping and zoning land uses, and allocating land for the FMU.** With the participation of the village(s), land-use mapping and zoning is undertaken resulting in land being allocated for the FMU. In the case of an FMU of a single village or a village cluster, this activity consists of three sub-activities described below as Sub-activities 2.1.3.1, 2.1.3.2, and 2.1.3.3. Mapping, zoning, and allocating land for an FMU, each of which is based on a group of villages, are described in Sub-activity 2.1.3.4.

**Sub-activity 2.1.3.1 Village boundary demarcation.** This activity is aimed at securing official recognition of the boundaries of the village or cluster.

**Sub-activity 2.1.3.2 Village land-use mapping.** Once the village boundaries are known, mapping of the present land uses in the village or cluster proceeds.

**Sub-activity 2.1.3.3 Village land-use planning and land allocation.** Using the present village land-use map as one of the main inputs, a ten-year village land-use plan is prepared followed by the allocation of land for forest management and other purposes.

**Sub-activity 2.1.3.4 Mapping, zoning, and allocating land for an FMU based on a group of villages.** The comprehensive land-use planning and land allocation exercise is skipped. Mapping and zoning are restricted to forest areas.

**Activity 2.1.4 Delineating the FMU.** Once land has been allocated for the FMU, it is mapped in preparation for subsequent forest inventory and management planning.
Activity 2.1.1
Identifying suitable forests

Expected outcomes

- Potential production forest areas are marked on the map for further field check.
- Rapid assessment of the timber production potential of the forest areas is done.
- Production forest boundaries are tentatively marked on the map.
- Priority forest areas are selected for mapping and further work.

Requirements

- **Forest production capability assessment team.** A team composed of 4 or more PAFO staff is formed. DAFO staff and villagers who are familiar with the condition of the forest join the team during the fieldwork.

- **Maps and imageries.** At the minimum, a topographic map with a scale of 1:100,000 is needed. It is preferred to have a set of completely covering, recently taken aerial photographs with a scale of 1:20,000. If none is available, a similar set of satellite imageries would be a useful supplement to the topographic map.

- **Other tools and materials.** A GPS (global positioning system) device for determining the coordinates of cornerpoints is very useful but not absolutely necessary. Mapping and writing tools and materials are needed. Knives for clearing strips are also needed.

- **Time.** The activity requires a few days of work depending on the size of the forest and the availability of good aerial photographs.

- **Place of work.** The activity is done first in the office and then in the forest.

How to conduct the activity

**Step 1. Preparatory work.** The proponent, e.g. PAFO, takes care of meeting the above-listed requirements. The team is formed and provided training and orientation. The required maps, aerial photographs, and other tools and materials are prepared.

**Step 2. Office work.** The team examines the topographic map and aerial photographs (if available) or satellite imageries. Forest types (e.g. mixed deciduous forests, dry evergreen forests, pine forests), which show potential for commercial production as shown from an examination of the map and prints, are tentatively identified and their boundaries are marked on the topographic map. A separate map is traced for each potential area.
Step 3. Fieldwork. The team undertakes the fieldwork by:

1. **Conferring with DAFO.** The PAFO team confers with DAFO regarding the activity and choose as many DAFO staff as necessary to assist in the fieldwork, noting that the team may be configured into a few sub-teams depending on the size of the forests to be checked.

2. **Conferring with villages located near the potential forest areas.** Logging operators normally use villagers as guides during logging operations. Hence, some villagers are familiar with the location of forest areas that have been logged. To gain access to this knowledge, the following are undertaken:
   a. The team makes a courtesy call with the village administration, explaining the objectives of the activity.
   b. Villagers who know about past logging activities are invited to a meeting.
   c. During the meeting the topographic map and aerial photographs are laid on the floor or ground, and the staff shows the villagers how to interpret the information available in the map and aerial photographs.
   d. Once the villagers have become familiar with the map and aerial photographs, they are then asked about present and previous logging activities in nearby forests, marking the areas that have been recently logged on the map.
   e. Two or three villagers are hired as guides for further assessment work in the forest.

3. **Open traverses of the forest areas.** The team is configured into sub-teams. Forest areas to be checked are assigned to each sub-team. The sub-teams go to each of the assigned areas to check their condition, i.e. whether:
   a. Heavily logged and should be closed from logging for many years.
   b. Logged-over but fast regenerating and will be commercially viable within ten years.
   c. Not heavily logged and is still commercially viable.
   d. Has not been logged and is definitely commercially viable.

   The GPS device is used if possible to determine the coordinates of corners and boundary points of the area. The points are marked on the map.

Step 4. Prioritizing the forest areas for further work. Back in the office, the PAFO team prioritizes the forest areas for further mapping as an FMU and for further work, e.g. forest inventory and preparation of a forest management plan. Priorities are set mainly on the basis of the commercial potential of the forest area.
Activity 2.1.2
Identifying forest management partners

Expected outcomes

- The FMUs are tentatively delineated.
- Villages that have agreed to work with DAFO as forest management partners in each FMU are known.

Requirements

- **Prior activity.** Forest areas have been identified and prioritized for mapping as FMUs and for further work.
- **FMU planning team.** A team composed of 4 or more PAFO staff is formed preferably from the same staff who participated in Activity 2.1.1.
- **Maps.** Maps of the forest areas identified and prioritized for further work in Activity 2.1.1 are needed.
- **Other tools and materials.** Mapping and writing tools and materials are needed.
- **Time and place of work.** The activity requires a couple of days of office work and two to three days of work in each identified village.

How to conduct the activity

**Step 1. Tentatively delineating the FMUs.** The PAFO team formulates options for delineating the priority forest areas into a number of FMUs based on the following criteria:
1. Range of possible FMU sizes, e.g. a thousand hectares to tens of thousand hectares.
2. Availability and location of villages relative to the forest.
3. Complexity of subsequent work, noting that:
   a. The more FMUs there are, the longer it would take for the staff to do village organizing, planning, and other work.
   b. The more villages there are in an FMU the more complex would be the organizational structure, and the more likely are conflicts between participating villages to arise.

**Step 2. Identifying villages as potential forest management partners.** The team prepares for each FMU a list of villages to visit and to invite to participate as forest management partners.

**Step 3. Village work.** The team, accompanied by representatives from DAFO, visits each village at least once to solicit the villagers’ participation and to confer with the village administration regarding collaborative work with other villages. More visits are made to finalize the grouping of villages that will participate as management partners in each FMU. Possible options and their advantages and disadvantages are as follows:

1. Single village. It is easier to work with a single village than with several villages in an FMU. However, if FMUs are based on single villages there may be too many of them
to handle for DAFO, e.g. in terms of access infrastructure and logistics. Nevertheless, for large forest areas with only a few villages, it would be preferable to form FMUs based on single villages.

2. **Village cluster.** As explained in the rationale for Task 2.1, a village cluster may result when two or more neighboring villages opt to have a common set of village boundaries yet maintaining separate village administration. A village cluster is only slightly more complex to handle than a single village. The advantages and disadvantages of a single-village FMU also apply in the case of an FMU based on a village cluster.

3. **Group of villages.** Unlike a village cluster, the villages in a group assigned to an FMU may be far apart. An FMU based on a group of villages would be relatively large, e.g. 5,000 to 50,000 hectares; consequently, there could conceivably be only a few of them in a district. However, dealing with a group of villages is more complicated than dealing with a single village in terms of obtaining common agreements and managing inter-village conflicts.
Activity 2.1.3
Mapping and zoning land uses, and allocating land for the FMU

Expected outcomes

• Land uses are mapped.
• Land and forests are zoned for different uses.
• Land is allocated for the FMU.

Requirements

• Prior activity. FMUs have been tentatively delineated and villages have been identified as management partners of DAFO.

• Other requirements. Refer to the sections on Sub-activities 2.1.3.1 to 2.1.3.4.

How to conduct the activity

FMUs based on a single village or village cluster

See the sections on the following sub-activities:
1. Sub-activity 2.1.3.1 – Village boundary demarcation.
2. Sub-activity 2.1.3.2 – Village land-use mapping.
3. Sub-activity 2.1.3.3 – Village land-use planning and land allocation.

FMUs based on a group of villages

See the section on Sub-activity 2.1.3.4 – Mapping, zoning, and allocating land for an FMU based on a group of villages.
Sub-activity 2.1.3.1
Village boundary demarcation

Expected outcomes

- The boundaries and cornerpoints of the given village or cluster are identified on the ground.
- All villages sharing boundaries with the village or cluster agree in writing with the identified boundaries and cornerpoints.
- The provincial governor approves the village boundaries, affixing his/her signature on the set of pertinent documents.
- The villagers are informed of the approved boundaries and are asked to respect these boundaries when conducting land-related activities in the future.

Requirements

- Prior agreement to conduct the activity. The initiative to conduct the activity is usually taken by a project, e.g. village forestry project, which requires that the boundaries of the given village or cluster are demarcated. However, initiative may also be taken by a village administration that wishes to participate in a program, e.g. village forestry, on its own. The villagers must indicate their agreement to conduct the activity in a village assembly meeting organized by the village administration.

- Village boundary demarcation team. A team, which is composed at the minimum of one previously trained forestry staff and two to four persons from each village sharing common boundaries, must be formed. Villagers who know most about the traditional village boundaries are preferred to compose the team.

- Maps and imageries. At the minimum, a topographic map with a scale of 1:100,000 is needed. It is preferred to have a set of completely covering, recently taken aerial photographs with a scale of 1:20,000. If none is available, a similar set of satellite imageries would be a useful supplement to the topographic map.

- Other tools and materials. A GPS (global positioning system) device for determining the coordinates of cornerpoints is very useful but not absolutely necessary. Mapping and writing tools and materials are needed. Knives for clearing strips, along with paint for marking boundaries, are also needed.

- Time. The activity requires at least three days of work by the team and more to have the pertinent documents approved. Large villages may take more days to do, especially if boundary conflicts arise.

- Place of work. The activity is done in the village, both at the village settlement and on the field.
How to conduct the activity

**Step 1. Preparatory work.** The initiator, i.e. project or village administration, takes care of meeting the above-listed requirements. Consent of the villagers is obtained and adjacent villages are informed. The team is formed and provided with training and orientation. The required maps, aerial photographs, and other tools and materials are prepared. If the village initiates the activity, it makes a request to the district authorities, particularly DAFO, for technical assistance.

**Step 2. Fieldwork.** The team undertakes the fieldwork by:

1. Drawing a sketch map showing the trial village or cluster boundaries and other features (see sample in Annex 2.1.3.1).

2. Marking preliminary cornerpoints on the topographic map and, if available, on the aerial photographs or satellite imageries (see sample in Annex 2.1.3.2).

3. Consulting the villages concerned on the preliminary boundaries and cornerpoints.

4. Examining and checking the boundaries in the field, if possible determining the coordinates (e.g. by taking GPS measurements) of and describing each cornerpoint.

5. Preparing a preliminary village or cluster boundary map (see sample in Annex 2.1.3.3).

6. Discussing the preliminary map with the villages concerned and asking the village chiefs to sign a village boundary agreement on behalf of villages. Any boundary conflicts are resolved. If the resolution of conflicts comes to a standstill, the assistance of district authorities is sought to settle the matter.

**Step 3. Preparation of documents.** The documents (see sample in Annex 2.1.3.4) include:

1. A cover sheet signed by the village chief requesting the authorities for approval of the village boundaries.

2. A finalized map of the village boundaries showing clearly the boundaries and cornerpoints together with their description.

3. A table of technical description of the boundaries and cornerpoints. It is not necessary that the technical description contains a complete set of bearings and distances along the boundaries. However, including in the technical description the coordinates of cornerpoints (taken using a GPS device) would be useful especially in resolving any boundary conflicts that may arise in the future. If a GPS device is not available, a verbal description of permanent features of the cornerpoints would suffice for the moment.

4. Agreements among villages concerned, signed by their respective village chiefs, on the location and description of the boundaries and cornerpoints.

**Step 4. Getting the approval of the authorities.** The documents are submitted for approval by the provincial governor, through the district authorities (head of DAFO and
district governor) and the head of PAFO. The village or each member-village in a cluster are provided a copy of the approved documents.

**Step 5. Informing the villagers.** A village assembly meeting is then conducted to inform the villagers of the approved boundaries, which everybody must respect when conducting land-use related activities in the future. The villagers are also reminded to get a prior authorization from the village chief before opening new lands for farming.
Sub-activity 2.1.3.2
Village land-use mapping

Expected outcomes

- A land-use map of the village or cluster drawn to scale (usually 1:20,000), showing the land-use compartments together with their assigned series number.
- A land-use tabulation showing the area in hectares of each land-use compartment.

Requirements

- **Demarcated village or cluster boundaries.** The boundaries of the village or cluster must already be demarcated, even if formal approval by the authorities is still in process. This means that boundary conflicts, if any, with adjacent villages are already resolved.
- **Village land-use mapping team.** The team is usually composed of the same persons as the members of the village boundary demarcation team (see Sub-activity 2.1.3.1), but excluding the members from adjacent villages.
- **Maps and imageries.** A copy of the village boundary map at the same scale as the aerial photographs (usually 1:20,000) is needed. Changing of the scale can be done beforehand in town by using a photocopy machine. Aerial photographs are very useful as they make it easy for the team to delineate the land compartments and identify their primary land use. Satellite imageries may be used in the absence of aerial photographs. Without aerial photographs or satellite imageries, mapping of the land uses would be difficult and time-consuming as it would involve much more fieldwork.
- **Other tools and materials.** A compass and brushcutting knives are needed for the fieldwork. Map making and writing tools, transparent mapping paper, plastic template at the same scale as the map (e.g. 1:20,000) for calculating area, and calculator are needed for the mapping work.
- **Time.** If aerial photographs are available, the activity requires about five days of work by the team. Village land-use mapping can be done immediately after village boundary demarcation, i.e. without any time gap and sharing a common preparatory work.
- **Place of work.** The activity is done in the village, both at the village settlement and on the field.

How to conduct the activity

**Step 1. Preparatory work.** The team is formed and provided training and orientation. The required maps, aerial photographs, and other tools and materials are prepared.

**Step 2. Sketch map.** A sketch map is made by first copying the village or cluster boundaries, then selecting a set of land-use categories, and finally drawing the boundaries of the land-use compartments based on information shown in the aerial photographs, satellite imageries, or topographic map (see Annex 2.1.3.5 for a sample sketch map). To
select the land-use categories, a comprehensive set of land uses, which can be simplified in actual work, is as follows:

1. Forest land uses
   1.1 Production forests
      1.1.1 Low dry evergreen forests (<200 masl)
      1.1.2 Upper dry evergreen forests
      1.1.3 Low mixed deciduous forests (<200 masl)
      1.1.4 Upper mixed deciduous forests
      1.1.5 Mixed deciduous and coniferous forests
      1.1.6 Dry dipterocarp forests
      1.1.7 Natural conifers
   1.2 Regeneration and degraded forests
      1.2.1 Low-stocked natural high forests (<50% canopy closure)
      1.2.2 Old fallow
      1.2.3 Young fallow with grass or shrubs
      1.2.4 Degraded fallow with imperata
      1.2.5 Low-stocked dry dipterocarp forests (<30% canopy closure)
      1.2.6 Bamboo forests
   1.3 Protection forests
      1.3.1 Soil protection zone (mountainous areas, steep land)
      1.3.2 Stream buffer strips
      1.3.3 Buffer zone for settlements
      1.3.4 Head watersheds
      1.3.5 Wetlands
   1.4 Conservation forests
      1.4.1 Biodiversity conservation forests
      1.4.2 Sacred forests
      1.4.3 Scenic and outdoor recreation areas
      1.4.4 Sites with historical importance
      1.4.5 Parks
   1.5 Forest plantations (various species groups)

2. Agricultural land uses
   2.1 Paddy
   2.2 Garden
   2.3 Tree crops
   2.4 Other upland crops
   2.5 Pasture/grazing land
   2.5 Others

3. Human settlements and social infrastructures (village area for houses, temples, schools, service centers, roads, and others)
4. Rivers, streams, ponds, lakes, and other waterways
5. Non-productive and other waste land

**Step 3. Field check.** The land uses indicated in the sketch map are checked by the team in the field. Any corrections pertaining to the boundaries or land-use of the compartments are made on the map.

**Step 4. Compartment numbers.** A series number is assigned to each land-use compartment and written on the corrected sketch map. For easy location of specific compartments on the map, assign the numbers systematically by type of land use (e.g. paddies first, then non-productive lands, then dry dipterocarp forests, and so on).
Step 5. Area of compartments. The area of each land-use compartment is estimated. The method of counting squares using the plastic template is adequate for this purpose. This method can be easily taught to villagers (see Annex 2.1.3.6 for a sample template).

Step 6. Land-use map. The final land-use map is drawn at a scale of 1:20,000 based on the corrected sketch map. For easy reference, a summary tabulation of primary land uses and their total area are written on the map. A more detailed tabulation of land-use compartments and their area is then prepared. See Annexes 2.1.3.7 and 2.1.3.8 for a sample village land-use map and area tabulation.

Step 7. Filing the map for convenient use. A copy of the land-use map and area tabulation are made available for use in subsequent activities. Another copy is filed and stored securely as a back up. The villagers are informed of the availability of the map.
Sub-activity 2.1.3.3
Village land-use planning and land allocation

Expected outcomes

- A village land-use plan showing which compartments are allocated for each type of land use.
- Information that the government can use in allocating land to land users, such as to individuals (e.g. for housing, paddy cultivation, or agroforestry) or to organizations (e.g. for sustainable forest management). In particular, land compartments that can be allocated for the FMU is known.
- Increased understanding among villagers on which compartments a given land-use activity should be done.

Requirements

- **Village land-use map.** The village land-use map produced in Sub-activity 2.1.3.2 shows where the different land-use activities are presently being done.
- **Village land-use planning team.** Land-use planning should be conducted by the village itself. The role of forestry staff should be limited to guiding and facilitating the process. Hence, the village administration should form a land-use planning team consisting of knowledgeable and concerned persons from the village, e.g. elders, progressive farmers, youth leaders, women leaders, etc. A DAFO staff who have had previous training and experience in village land-use planning should act as resource person, facilitator, and adviser in the team.
- **Other tools and materials.** A compass and brushcutting knives are needed for the fieldwork. Map making and writing tools, transparent mapping paper, plastic template calculating area, and calculator are needed for the mapping work.
- **Time.** The activity requires about five days of work by the team.
- **Place of work.** The activity is done in the village, both at the village settlement and on the field.

How to conduct the activity

The procedures and guidelines for land allocation in a village have been developed in the Ministry of Agriculture and Forestry. A more elaborate set of procedures and guidelines is followed in village forestry whereby:
- Village boundaries are delineated (Sub-activity 2.1.3.1).
- Village land uses are allocated in the process of village land-use planning (Sub-activity 2.1.3.3, this activity).
- Forests in the village are assigned for management to the forest manager(s) through an agreement between the forest manager(s) and the provincial government (Activity 2.5.2).
The procedure followed in village land-use planning is summarized below. It should be followed when new villages are initiated to village forestry.

**Step 1. Preparatory work.** The team is formed and provided training and orientation. The village land-use map and other tools and materials are prepared.

**Step 2. Land capability assessment.** Existing land uses are shown in the village land-use plan. What other uses the land can serve are determined through land capability assessment. A village land capability map is drawn from the village land-use map by the village land-use planning team after on-site inspections of the capability of selected land compartments to grow rice and other crops, or of the need to conserve given land compartments as sites of worship, head watersheds, scenic land, biodiversity conservation areas, etc. Site conditions, such as existing vegetation, soil quality, slope, elevation, water supply, are considered in the land capability assessment. Annex 2.1.3.9 shows a sample village land capability map.

**Step 3. Assessing demand for land.** Future needs for land for various community and household uses are assessed based on projected growth of population and number of households and an assessment of the changing needs of the households and the community for land. Annex 2.1.3.10 illustrates how the village population may be projected, while Annex 2.1.3.11 illustrates how future needs for land may be assessed.

**Step 4. Generating options and allocating land.** This is done as follows:
1. Start with the present land-use map and land capability map. While checking with the land capability map, mark on the land-use map the land compartments that can be used for meeting a given need for land.
2. Measure the marked area and compare it with the area needed.
3. If the required area is not yet fully met, look for other suitable areas using the land-use map and the land capability map. If no more suitable land can be found to fully meet the required area, re-assess the need for land with the view of scaling it down. For example, by introducing irrigation two rice crops may be grown in a year instead of one crop as in the case of a rainfed paddy field.
4. Stop the process when the all the needs are fully met.

**Step 5. Writing the village land-use plan.** The written up village land-use plan consists of a mapped plan and a written plan. The mapped land-use plan shows the location and area of land compartments that can be used to meet given needs as determined from Step 4. To simplify the process of writing the village land-use plan, the forestry extension worker should introduce a pre-written form that the village team can adopt. Annex 2.1.3.12 shows an example of a village land-use plan.

**Step 6. Discussing and finalizing the land-use plan.** The village land-use plan is then presented in a village assembly meeting for discussion and corrections and then finalized. Subsequently, village rules for allocating land within defined land-use zones to land users are developed (see related Activity 2.12.2 on protecting the forest against unplanned conversion to other uses).
Sub-activity 2.1.3.4
Mapping, zoning, and allocating land
for an FMU based on a group of villages

Expected outcomes

- Land uses in and around the FMU are mapped.
- Land and forests in and around the FMU are zoned for different uses.
- Land is allocated for the FMU.

Requirements

- **Prior activity.** The FMU has been tentatively delineated and a group of villages have been identified as management partners of DAFO.

- **FMU planning team.** The team that conducted Activity 2.1.2 continues the work.

- **Maps and imageries.** The topographic map and aerial photographs or satellite imageries used Activity 2.1.1 are needed as aid in mapping land uses.

- **Other tools and materials.** Mapping and writing tools and materials are needed.

- **Time and place of work.** The activity requires a couple of days of office work and two or more days of on-site work.

How to conduct the activity

**Step 1. Mapping land uses.** The PAFO team prepares a land-use map of the areas within the tentatively delineated FMU following a similar procedure as described in Sub-activity 2.1.3.2.

**Step 2. Zoning land and forests for different uses.** In lieu of conducting a more elaborate land-use planning exercise, the following steps are undertaken in zoning land and forests for different uses:

1. A thirty-meter wide strip on both sides of a stream (or fifty meters on both sides of a river) is delineated as a riparian buffer zone.

2. Areas too steep for trucks to negotiate during the dry season are zoned as protection forests.

3. Large steep areas, where wildlife is likely to take refuge from human disturbance, are zoned as biodiversity conservation forests. Other conservation zones include wetlands and spirit forests.

4. Open areas that cannot grow large trees because of their poor site condition, e.g. shallow soil on rock base, are zoned as non-productive land.

5. Heavily logged forests with stand density of less than 75 m³/ha are zoned as regenerating forests.
6. Dry dipterocarp forests stocked with short trees (indicative of their location in poor sites) are zoned for local use by the village.

7. Forests with commercial potential, e.g. dry dipterocarp forests well stocked with tall trees, dry evergreen forests, mixed deciduous forests, and pine forests, are zoned as production forests.

8. Paddy, gardens, fish ponds, other crop land, and settlement areas, including forests that have been identified for conversion to other land uses, are zoned as agricultural or non-forest land.

**Step 3. Allocating land for the FMU.** When allocating land for the FMU the following must be considered:

1. The FMU is primarily a forest area intended for forest production to generate revenue for its owners and managers.

2. It is preferably contiguous rather than composed of scattered land parcels.

3. It may include the different categories of forests, i.e. forest plantations, regenerating forests, protection forests, conservation forests, and production forests, where different management prescriptions would be applied.

4. While the FMU may be contiguous, non-forest zones may occur within its boundaries, e.g. non-productive land, settlement areas, paddy, etc.
Activity 2.1.4
Delineating the FMU

Expected outcomes

- The boundaries of the FMU are delineated.
- The FMU is mapped in preparation for subsequent work.

Requirements

- **Prior activity.** Land has been allocated for the FMU.
- **FMU planning team.** The team that conducted Activity 2.1.3 continues the work.
- **Maps.** Land-use maps and zoning maps prepared in Activity 2.1.3.
- **Other tools and materials.** Mapping and writing tools and materials are needed.
- **Time and place of work.** The activity requires a couple of days of office work, more to have the FMU reserved as a permanent forest estate by the forestry administration.

How to conduct the activity

**Step 1. Demarcating the FMU.** The boundaries of land parcels that have been allocated for the FMU are delineated on a 1:20,000-scale map, which was prepared in Activity 2.1.3. Then the outer boundaries of the FMU are delineated on the map based on the boundaries of the allocated land parcels.

**Step 2. Completing the mapping of the FMU.** Forest zones are indicated in the map. These include:

1. **Production forest zone.** Forest types with commercial potential (e.g. mixed deciduous forest, dry evergreen forest, high dry dipterocarp forest, and pine forest) having a stand density of 75 m$^3$/ha or more.

2. **Regenerating forest zone.** Forest types with commercial potential having a stand density of less than 75 m$^3$/ha.

3. **Forest plantation zone.** Areas that have been developed into forest plantations.

4. **Protection forest zone.** Stream buffer zones (i.e. 30 m on both sides of streams or 50 m on both sides of rivers) and steep areas (e.g. areas too steep to access by a logging truck during the dry season).

5. **Conservation forest zone.** Large contiguous areas (1000 ha or more) around mountain tops and ridges where wildlife usually seeks refuge when lowland forests are disturbed.

6. **Village-use forest zone.** Low dry dipterocarp forest with no commercial potential and being used by the village as grazing land and for collection of fuelwood, resin, edible plants, and other non-timber forest products.
7. **Nonproductive land.** Open areas with very shallow soils based on rock material.

8. **Wetland.** Areas always under water, e.g. ponds, marshland.

9. **Non-forest land.** Settlements and farm land included within the boundaries of the FMU.

Delineation of the different zones is followed by the delineation of compartments, i.e. zone sections defined by natural boundaries (e.g. streams) or man-made boundaries (e.g. forest track, trail).

**Step 3. Estimating the area of compartments and zones.** Each compartment is assigned a number and its area is estimated (e.g. by planimeter or using an area template). A summary tabulation of compartment and zone areas is then prepared. The map and area information will be used in subsequent work, e.g. forest inventory and forest management planning.
Task 2.2  
Conducting a forest inventory for forest management planning purposes

Objectives

Main objective

• To obtain forest inventory information that is suitable as inputs for the preparation of a forest management plan.

Specific objectives

• To design and conduct a forest inventory for forest management planning purposes.
• To prepare the forest inventory results and report, and keep them for later use.
• To update the forest inventory information to be used as inputs for updating the forest management plan.

Rationale

After the FMU has been delineated and mapped, a forest inventory is conducted. While mapping provides information about the FMU, e.g. location, extent, and type of forests and non-productive lands, the forest inventory provides information about the forest itself – its species composition, stand structure, stocking, quality of the resource, etc. All of these information are necessary in planning for sustainable forest management.

Task 2.2 includes two sets of activities:

1. Obtaining the initial forest inventory information. In Laos, normally there is no forest inventory information available for use in preparing the forest management plan. A forest inventory needs to be undertaken to cover the entire FMU. The design and conduct of this work are described in Activities 2.2.1 to 2.2.3.

2. Obtaining updated forest inventory information. New forest inventory information will be needed for updating the village forest management plan, say after ten years. At that time, if the cutting cycle adopted in the plan is say five years, then no forest inventory information would be older than five years, and some compartments would already have been recently inventoried. However, gaps in forest inventory information would occur if there are new areas that are put into timber production (e.g. regeneration forests that have attained stand densities of more than 75 m$^3$/ha). Keeping records of, filling gaps in, and updating forest inventory data are described in Activities 2.2.4 to 2.2.6.
Activities

**Activity 2.2.1 Designing the forest inventory.** This activity is aimed at providing a simple design for the conduct of the forest inventory.

**Activity 2.2.2 Conducting the forest inventory.** Fieldwork is conducted following the forest inventory design.

**Activity 2.2.3 Calculating the forest inventory results and writing the forest inventory report.** Data from the fieldwork are analyzed and a forest inventory report is prepared.

**Activity 2.2.4 Keeping forest inventory records.** Forest inventory reports and data are kept for use in preparing the village forest management plan, as well as for updating the forest inventory information in the future.

**Activity 2.2.5 Conducting forest inventory to fill information gaps.** To update the forest inventory information, new inventory may be needed for some compartments, such as those whose last inventory was done more than five years ago.

**Activity 2.2.6 Consolidating forest inventory information.** Data from forest inventories done in different years are consolidated and updated to a common year with the use of forest growth, mortality, and harvesting information.
Activity 2.2.1
Designing the forest inventory

Expected outcomes

• Compartments are selected for the forest inventory.

• The forest inventory is designed appropriate to the type of forest in the selected compartments and the need for the inventory information. This means that a suitable sampling method, inventory precision, and sampling intensity is selected.

• The forest inventory map is drawn based on the inventory design.

• Forest inventory forms, which are appropriate to the inventory design, are produced.

Requirements

• **Delineation of the FMU.** Forest inventory can proceed only after the compartments comprising the forest management unit have been allocated.

• **Village forest inventory team.** The number of forest inventory teams needed depends on the size of the FMU and the time allowed to complete the forest inventory (discussed later in Activity 2.2.2). A village with its own FMU will likely need at least two teams. Each village in a cluster or a group assigned to an FMU should have a team. Each team is composed of four to five villagers, who should be familiar with the forest and can identify the forest species. A trained forestry staff is needed to train in turn the village forest inventory teams.

• **Map.** A copy of the map depicting the village land-use plan is needed. The map shows the forest compartments and their areas and forest type.

• **Other tools and materials.** Map making and writing tools and materials are needed, such as transparent paper, writing paper, pencils, pens, markers, ruler, and compass.

• **Time.** One day is enough to do the activity, but additional days are required to reproduce an adequate number of forest inventory forms.

• **Place of work.** The activity is best done in the village, but several teams from different villages can be trained at the same time in a centralized facility, e.g. district training center.

How to conduct the activity

**Step 1. Preparatory work.** The forest manager (initially the Core Group) forms the village forest inventory teams and requests DAFO to organize the training of the team(s). The needed map, tools and materials are prepared. The subsequent steps are usually conducted at the time of the training of the forest inventory teams. A trained forestry staff makes the forest inventory design, which the teams later implement in the forest.
Step 2. Selecting the compartments to be inventoried. The village forest inventory team selects the compartments to be inventoried on the basis of the following rules:

1. All production forest compartments must be inventoried.

2. Degraded forests, shrublands, and other areas with low stocking are not inventoried as fully as production forests. It is enough to assess their regeneration so that proper silvicultural decisions regarding the development of the area can be made later.

3. Conservation forests and protection forests (e.g. stream buffer zones, forests with steep slopes) need not be inventoried. However, an assessment of biodiversity of these forests may be undertaken depending on the forest management objectives.

Step 3. Selecting the sampling method. Forest inventory is done by sampling, since the measurement of the entire forest population is not practical. There are several sampling methods that can be used, such as simple random sampling, systematic sampling, stratified sampling, cluster sampling, and two-phase sampling; and several types of sampling plots, such as fixed-radius circular plots, variable-radius circular plots, and rectangular plots. An appropriate sampling method should be selected by a trained forestry staff. The village forest inventory teams do not need to know all the intricacies of the sampling method, only how to implement the sampling.

In FOMACOP village forestry pilot sites, a compartment-wise, systematic sampling using the line-plot method was used because it is simple, easy to implement, and adequate for planning purposes. For this method the inventory design usually consists of a baseline, parallel striplines which are perpendicular to the base line, and sample plots placed at regular spacing along the striplines. In narrow, irregularly shaped compartments, a baseline may be omitted and striplines may follow one after the other. The sample plots are fixed-radius circular sample plots with a radius of 17.84 m corresponding to an area of 0.1 ha.

Step 4. Deciding the inventory precision and sampling intensity. The precision of a forest inventory differs for different purposes. A forest inventory done for the purpose of long-term management planning does not have to be as precise as that for the purpose of annual operations planning. The former shows the possibility and potential for sustainable production of different forest products; the latter shows specifically how much can be sustainably produced in a given year and provides the information needed to conduct activities that ensure that management is sustainable. An acceptable precision for a forest inventory done for long-term management planning purposes could be one which provides volume estimates with as much as 20 percent error from the mean volume for compartment sizes of about 100 hectares. This precision, however, is not good enough for planning how individual trees are to be cut.

Sampling intensity is measured as a ratio of the area sampled per unit of inventoried land. It can be expressed in percent or in terms of the number of sample plots measured per hectare. The higher the sampling intensity, the more plots are measured per hectare, and the lesser is the spacing between plots. Selection of the sampling intensity is a compromise between inventory precision and cost. The higher the precision requirement, the more sample plots per hectare are measured, and the more time-consuming and costly is the inventory.
Sampling intensity is also affected by forest stand conditions. To attain the same level of precision, the sampling intensity differs by forest type, since the homogeneity of the forest stand, and hence the variation among estimates of stand volume, are different from one forest type to another. The more homogeneous the forest stand is, the lesser is the sampling intensity required.

For example, to attain an allowable error of 20% of the mean volume for compartment sizes of about 100 ha, the dry dipterocarp forest compartments in the FOMACOP village forestry pilot sites were inventoried using a sampling intensity of one 0.1-ha plot per 10 hectares or 1% (0.1 ha/10 ha x 100). Sample plots were laid out at a spacing of 200 m along striplines spaced 500 m apart. To attain the same precision, the mixed deciduous and dry evergreen forest compartments were inventoried using a sampling intensity of one 0.1-ha plot per 3 hectares or 3.3%. Sample plots were laid out at a spacing of 100 m along striplines 300 m apart.

**Step 5. Laying out sample plots on the map.** The position of sample plots in a compartment is indicated on the forest inventory map by drawing the striplines and the sample plots along the striplines. The starting point and compass bearing of each strip must be clearly shown, as well as the distance to the first plot and between plots. Compass bearings are measured with a compass or protractor. The starting point of a stripline must be easy to locate on the ground. For example, corners of rice paddy or junctions of streams are good starting points. The center of the first plot is located at half the distance between sample plots (e.g. 100 m in dry dipterocarp forests and 50 m in mixed deciduous forests and dry evergreen forests). Figure 2.1 shows a part of a forest inventory map illustrating how sample plots are laid out.

![Sample plot diagram](image)

**Figure 2.1** – Lay out of sample plots in a forest inventory map

**Step 6. Preparing the forest inventory forms.** Before going on fieldwork the forest inventory team should prepare an adequate number of forest inventory forms. Annex 2.2.1.1 shows a sample forest inventory form. It consists of two parts. The upper part of the form contains general information about the inventory and the specific compartment; the
lower part contains the measurements in the sample plots. The general information consists of the following:

1. Name of the village
2. Number of the compartment
3. Forest type in the compartment
4. Area of the compartment
5. Date of measurement
6. Name of the team leader
7. Sheet number (several sheets may be needed in large compartments)

Tree data generated in a sample plot include the tree number, species, diameter at breast height (dbh), and tree height. To speed up the work, the tree height is not measured for every tree. Once the form factor for the tree species is determined from a few tree height measurements, the rest of the tree heights can be calculated as a function of dbh.

If desired, the forest inventory form and subsequent fieldwork can be simplified as follows:

1. Instead of recording measurements for each tree in the plot, the number of trees in each dbh class are counted for the entire compartment (i.e. all the plots in the compartment).

2. The total volume of the compartment for the species and dbh class is determined by multiplying the total number of trees for the species and dbh class by the average volume per tree for the species and dbh class.

3. Provision for recording the frequency of occurrences of non-timber forest products (e.g. bamboo, rattan, resin trees) in the compartment is also included in the table.

This simplified forest inventory form can provide volume estimates for the compartment but not the variation of volume estimates among plots. However, it is adequate for compartments where no commercial logging is allowed (e.g. poor dry dipterocarp forests), with the advantage that the time for conducting the inventory and calculating the results is considerably shortened. This method was employed in the dry dipterocarp forests in the FOMACOP village forestry pilot sites. Annex 2.2.1.2 shows an example of this simplified form, while Annex 2.2.1.3 shows an example of the inventory calculation form that is used together with the forest inventory form.
Activity 2.2.2
Conducting the forest inventory

Expected outcomes

- Selected compartments are inventoried following the forest inventory design. Striplines are established; sample plots are located along the striplines; trees, regeneration, and selected non-timber forest products found in the sample plots are measured or counted.

- The forest inventory data are filled into the forest inventory forms.

Requirements

- **Forest inventory map.** The forest inventory map, which consolidates the forest inventory design, allows the forest inventory team(s) to locate the striplines and plots.

- **Forest inventory teams and time to complete the forest inventory.** The number of 4-5-person teams to be formed depends on the size of the forest to be inventoried and the time allowed to complete the work. For example, if a village has 3000 ha of dry dipterocarp forests and 500 ha of mixed deciduous/dry evergreen forest, the time needed to conduct the field work could be as follows:

  Dry dipterocarp forests (DDF):
  - number of sample plots is 3000 ha/10 ha per plot = 300 plots
  - time needed is 300 plots/10 plots per day = 30 working days

  Mixed deciduous/dry evergreen forests (MDF/DEF):
  - number of sample plots is 500 ha/3 ha per plot = 167 plots
  - time needed is 167 plots/5 plots per day = 33 working days

  Preparation for fieldwork and calculation of the results take 5-10 days. With one inventory team, the total time needed for the forest inventory would be 10+30+33 = 73 working days or 12 weeks including one day off per week. With two inventory teams, the time needed would be about 7 weeks.

- **Training and orienting the forest inventory teams.** A trained DAFO staff provided with the necessary logistics (e.g. motorbike and daily allowance) can conduct the training of the village teams. The teams must be trained to do the work and be oriented on the work targets and the role of each member. The team leader is responsible for leading the work of the team, laying out the striplines and sample plots, and data recording. The other members of the team assist in cutting and laying out the striplines, locating the sample plots, and identifying and measuring the trees, bamboo, rattan and other selected NTFP.

- **Other tools and materials.** A minimum set of equipment and materials to be prepared are as follows:
  - Forest inventory map
  - Forest inventory forms
  - Field compass
  - Diameter tape
Calliper  
Measuring tape 50 m  
Ropes  
Machetes and knives  
Writing tools  
First aid kit  
Camping equipment (tent, cooking and eating utensils)  
Food provisions

- **Place of work.** The activity is done in the compartments selected to be inventoried.

**How to conduct the activity**

**Step 1. Preparatory work.** The village forest inventory teams are formed, trained, and provided with the required tools and materials. Fieldwork then proceeds as described below.

**Step 2. Locating sample plots in the forest.**

1. The village forest inventory team goes to the compartment and locates the starting point of the stripline with the help of the forest inventory map. A pole or standing tree is used to mark the starting point.

2. The compass bearing of the stripline (written on the forest inventory map) is taken and the predetermined distance is measured to the first sample plot. In an MDF/DEF compartment the stripline has to be cleared so that walking is possible along it. In a DDF compartment clearing along the stripline is not necessary because of the general absence of thick undergrowth there.

3. To locate the next plot along the stripline, the predetermined distance between plots is measured with the measuring tape or rope and the center of the sample plot is marked with a pole. The distance between plots can also be measured by pacing (counting double steps), to do the work faster. Nevertheless, the sample plots must be located as accurately as possible. Locating the sample plots must not be done subjectively, because it causes systematic error in the inventory results.

4. The sample plot is laid out as a circular plot with a fixed radius of 17.84 m (Figure 2.2). The area of the plot is 0.1 ha (1000 m²).
Step 3. Measuring trees in the sample plot.

1. The team members take measurements. Tree species are identified, the dbh of the trees are measured, the average density of regeneration in the sample plot is estimated, and the occurrences of non-timber forest products (NTFP) are counted. Tree height and bole length measurements are usually not taken. If needed in the calculations, they can be estimated based on dbh.

2. All living trees with dbh of at least 5 cm and dead trees, which are still standing, with commercial value, and with a dbh of at least 20 cm, are measured if they are located within or at the border of the plot. Trees inside the 17.84-m radius are measured in a clockwise order. A border tree is measured if more than half of its cross section at the height of 1.3 m is inside the radius of the plot.

3. The dbh is measured at the height of 1.3 m from the ground level or starting point of the stem with a calliper or diameter tape (for large trees with dbh exceeding the calliper opening). The height of the measurement point is determined by using 1.3-m stick. If there is a fork below 1.3 m, the tree is considered as two stems and the dbh is measured for both of them. If there is an irregular thickness at the height of 1.3 m, or if there is a large buttress, the diameter is measured at the point where the regular stem begins (Figure 2.3).
Step 5. Recording data.

1. **Selecting the recording method and corresponding forest inventory form.** The team leader records data. Either the forest inventory form shown in Annex 2.2.1.1 or that shown in Annex 2.4.2 is used. The simplified forest inventory form (Annex 2.2.1.2) is used if an estimate of the compartment volume is all that is needed. If the variation of volume estimates among plots is desired, then Annex 2.2.1.1 is used. For example, forest inventories done by village teams in FOMACOP sites made use of Annex 2.2.1.2 to speed up the work. There was no need to determine the variation of volume estimates among plots because they had been calculated from previous inventories.

2. **Main difference between the two kinds of forest inventory form.** If the forest inventory form shown in Annex 2.2.1.1 is used, the species and dbh of individual trees in the plot are recorded. Each sample plot requires one sheet of the form. If the simplified forest inventory form shown in Annex 2.2.1.2 is used, individual tree dbh is not entered, but the number of trees occurring in a dbh class is counted. A compartment needs only one sheet of the form. Annex 2.2.2.1 shows an example.

3. **Using the simplified forest inventory form.** When using the simplified forest inventory form shown in Annex 2.2.1.2, columns for tree counts of the five most common tree species found in the forest are provided. For example, in the forest inventory form for DDF compartments, separate columns are provided for mai koung, mai chik, mai sat, mai suak mon and mai deng. In the forest inventory form for MDF/DEF compartments, separate columns are provided for are mai puay, mai deng, mai si, mai laen and mai bak. Two columns are left empty for other more frequently occurring or otherwise important tree species. All other tree species, resin tapped trees, and dead trees with commercial value (dbh more than 20 cm) are marked in their own columns. After the tree species and dbh class have been determined, the tree count is recorded on the field sheet, for example, by using the so-called logger's huts with one complete hut equalling ten counted trees (Figure 2.4). This kind of marking saves space on the form.

![Figure 2.4 – Examples of tree counts using the logger's hut method](image)

4. **Average density of regeneration.** In order to assess the occurrence of natural regeneration in the forest compartment, the average density of regeneration in each sample plot is classified visually into empty, sparse, moderate, or dense classes. Vigorous saplings less than 2 m in height are considered as regeneration. If no saplings are found in the sample plot, the density class is 0. Regeneration is sparse (density class 1) if there are only a few saplings, i.e. less than 1000 small trees per hectare, or if the average distance between saplings is more than 3.2 m. Regeneration
is moderate (density class 2) if there are from 1000 to 5000 trees per hectare, or if the average distance between saplings is about 3.2 -1.4 m. Regeneration is dense (density class 3) if there are more than 5000 trees per hectare, or if the distance between saplings is less than 1.4 m. The density class code is entered on the space provided in the form.

5. **Number of plots.** After counting the trees and estimating the average density of regeneration, the number of the sample plots in the compartment is marked on the field sheet along with the code for the regeneration density class.

6. **Non-timber forest products.** Non-timber forest products (NTFP) are provided with their own column. In the field sheet for dry dipterocarp forests, columns are provided for NTFPs, which should be identified. In the field sheet for mixed deciduous/dry evergreen forests, columns are provided for bamboo, rattan, and other NTFPs (which should be identified). Live bamboo with heights of more than 1.3 m is recorded as clumps. Solitary bamboo culms are also recorded as clumps. Live rattan with length of more than 3 m is recorded.
Activity 2.2.3
Calculating the forest inventory results
and writing the forest inventory report

Expected outcomes

- Useful forest stand statistics are calculated, such as volume per hectare and number of trees per hectare by dbh class.
- The forest inventory results are presented in a forest inventory report.

Requirements

- Forest inventory forms filled in by the forest inventory team during fieldwork.
- Training of the forest inventory team to calculate inventory results provided by a trained forestry staff (part of the forest inventory training).
- Inventory calculation forms.
- Calculator.
- Writing tools and materials

How to conduct the activity

The following steps pertain to calculations based on the simplified forest inventory form (Annex 2.2.1.2).

Step 1. Transferring data from the forest inventory forms to the inventory calculation forms. Data from the forest inventory forms are carefully transferred to the inventory calculation forms before the results are computed. The inventory calculation form consists of two parts. The upper part of the sheet contains the general information. The lower part contains the copied forest inventory data and the calculated results.

The general information includes:
1. Name of the village
2. Number of the compartment
3. Forest type
4. Area of the compartment
5. Date of calculation
6. Name of the team member who calculated the results
7. Number of sample plots counted from the field sheet

The forest inventory data, i.e. the frequency of occurrence of specific tree species, other tree species, resin tapped trees, and dead trees in each diameter class, and the quantity of each NTFPs, are transferred from the forest inventory forms to the inventory calculation forms.

Step 2. Calculating forest stand statistics. If the simplified forest inventory form was used, the calculation of inventory results is simple by means of a pocket calculator. The inventory calculation form for a DDF compartment differs from that for an MDF/DEF compartments in the calculation coefficients since the sampling intensity is different for these forest types. The main statistics calculated are the estimates of the volume and number of trees in the compartment, which can also be expressed on a per hectare basis.
These and the other results should be clearly and easily obtained from the forest inventory report.

The team calculates the dbh distribution and the average density of regeneration. Columns of the sheet, which are shaded, refer to the number of stems per hectare and for the compartment. It should be fairly easy to teach the village team to calculate the bole volume per hectare and for the compartment, as well. The DAFO extension worker should provide assistance especially during the first time when the village team is not yet proficient.

Calculation is done as follows (Annex 2.2.3.1 shows a sample of filled-in inventory calculation form):

1. **Area factor.** The area factor (AF) of the compartment is used to convert plot data to compartment data. It is computed by dividing the area of the compartment by the total area of the sample plots.

2. **Number of sample trees in each dbh class.** For each dbh class, the number of sample trees by species is summed up (the sums are say A1, A2, etc.).

3. **Number of trees in each dbh class in the compartment.** The number of trees by diameter class (say B1, B2, etc.) shows the diameter distribution of trees in the compartment. B1, B2, etc. are calculated by multiplying A1, A2, etc. by AF. The grand total (B) is then calculated.

4. **Quantity of NTFPs.** The quantity of each NTFP in the compartment is calculated by multiplying by AF the quantity sampled. The total number of resin tapped trees is calculated in this manner, as well.

5. **Number of stems per hectare.** The number of stems per hectare is calculated by dividing the total number of trees in the compartment (B) by the area of the compartment.

6. **Volume by dbh class.** The bole volume in each dbh class is calculated by multiplying the average bole volume per tree by the number of trees in the dbh class (B1, B2, etc.). The grand total (C), or the total bole volume of the compartment, is then calculated.

7. **Bole volume per hectare.** The bole volume per hectare is calculated by dividing the bole volume of the compartment (C) by the area of the compartment.

8. **Density of regeneration.** The density of the regeneration in each sample plot is marked with number codes 0, 1, 2, or 3 on the field sheet in the row "Number of plots". The average density of regeneration is calculated by dividing the sum of the number codes by the number of sample plots, rounded to the nearest whole number. For low-volume compartments (shrubland, grassland etc.) only the average density of regeneration is estimated.

**Step 3. Writing the forest inventory report.** After the results have been computed, a forest inventory report is prepared annexing one set of the inventory calculation forms and the inventory map. The VFA/VFC Secretary keeps a copy of the inventory report, while another
copy is provided to the planning team. The VFA/VFC Secretary should also keep the original field sheets.

The forest inventory report should be as simple as possible (see Annex 2.2.3.2 for an example). It should contain the following:

- Summary sheet providing the general information.
- Summary of the forest inventory results.
- Annexes, i.e. the forest inventory map and inventory calculation forms.

The general information should include the following:

- Name of VFA/VFC, village, district, and province.
- Compartments inventoried, forest type, area, and number of plots.
- Dates of forest inventory.
- Name of the team members.

The summary of the forest inventory results should include for each compartment and for all compartments the following:

- Average volume per hectare by dbh grouping (10-30, 40-50, >50 dbh classes).
- Average number of trees per hectare by dbh grouping (10-30, 40-50, >50 dbh classes).
- Average quality of regeneration.
- Average quantity of NTFPs.
Activity 2.2.4
Keeping forest inventory records

Expected outcome

- A well organized set of forest inventory records that can be used later in planning and operations or to update forest inventory information.

Requirements

- The VFA/VFC Secretary (or a person assigned by the village forestry committee of the village administration in case there is no VFA/VFC) keeps the forest inventory records.
- A copy of the following:
  - Original forest inventory report including annexes.
  - Pre-harvest inventory reports done every year including annexes.
  - Forest stand growth and yield information.
- Filing cabinet or any secure filing box.

How to conduct the activity

Step 1. **Handing over records.** The village forest inventory team must hand over to the VFA/VFC Secretary a copy of the forest inventory records (i.e. original forest inventory report including annexes, pre-harvest inventory reports done every year including annexes, and forest stand growth and yield information).

Step 2. **Filing the records.** The forest inventory records must be filed by the VFA/VFC Secretary in a systematic and orderly manner, as well as protected from losses due to termite attacks, fire, or misuse.

Step 3. **Using the records.** If information is needed from the records, a copy must be made rather than removing the record from the files.
Activity 2.2.5
Conducting forest inventory to cover information gaps

Expected outcomes

• Updated forest inventory information for compartments whose last inventory was done more than five years ago, or for previously understocked compartments which have now attained full stocking.

• Forest inventory information gaps are filled in time for the revision of the forest management plan.

Requirements

• For deciding whether to conduct a new inventory: information on the year forest inventories were done and information on the status of previously understocked compartments (obtained by means of an ocular field check).

• For conducting a new forest inventory: the same requirements as those for the designing and conducting a forest inventory (see Activities 2.2.1, 2.2.2, and 2.2.3).

How to conduct the activity

Step 1. Deciding when to conduct a new forest inventory. New forest inventories, if any, are conducted just before the forest management plan is updated (i.e. nine years after the forest management plan was formulated, if the planning horizon is ten years).

Step 2. Deciding where to conduct a new forest inventory. Compartments that need to be re-inventoried are those whose last inventory was done more than five years ago. Compartments that need to be inventoried for the first time are previously understocked compartments which have currently attained full stocking.

Step 3. Designing and conducting a new forest inventory. Once the compartments to be inventoried have been identified, the forest inventory can be designed and conducted as described in Activities 2.2.1, 2.2.2, and 2.2.3.
Activity 2.2.6
Consolidation of forest inventory information

Expected outcome

- A complete and updated set of forest inventory information that is ready for use when updating the forest management plan.

Requirements

- Forest inventory information on each compartment, including the year the inventory information is applicable.
- Information on mortality and harvests or other cuttings done in the compartments.
- Forest growth and yield information.

How to conduct the activity

**Step 1. Checking the year of the last inventory of compartments.** The year of the last inventory of a compartment must be five years before or less, otherwise a new inventory should have been conducted. If the year of the last inventory is not the current year, determine the number of intervening years between the current year and the year of the inventory.

**Step 2. Updating the forest inventory information.** Update the forest inventory information by:

- Estimating the cuttings and mortality during the intervening years in terms of number and volume per hectare and deducting them from the inventory.
- Estimating the forest growth during the intervening years in terms of number and volume per hectare and adding them to the inventory.

For example, suppose:

- The compartment has an area of 100 ha.
- The forest inventory was done four years before and there were 300 trees/ha and 120 m$^3$/ha.
- Eight trees were cut with a total volume of 30 m$^3$. Allow a further damage to the stand of 20%.
- From applicable stand growth information, annual stand in-growth is 3 trees/ha and annual stand growth is 4 m$^3$/ha.

Then the current number of trees per hectare in the compartment is $300 - 1.2 \times 8 + 3$ trees/ha x 4 years, or 302 trees/ha. The current stand volume in the compartment is $120 - 1.2 \times 30 + 4$ m$^3$/ha x 4 years, or 100 m$^3$/ha. This example pertains to the total number of trees and volume per hectare, but actual data would enable further breakdown of the results by dbh class groupings.

**Step 3. Preparing a new forest inventory report.** The inventory information of all compartments must be updated. Then a forest inventory report must be prepared as before (see Activity 2.2.3 on writing an inventory report).
Task 2.3
Assessing village forest growth and mortality

Objectives

Main objective

- To obtain forest growth and mortality information that will be used as inputs to the village forest management plan.

Specific objectives

- To obtain forest growth and mortality information by using data available elsewhere in Laos.
- To obtain forest growth and mortality information by using data from successive forest inventories of the FMU compartments.

Rationale

The forest inventory provides information on the current condition of the forest but it does not show how the forest would develop over time, such as after each harvest. Therefore information obtained from the forest inventory is not sufficient to determine sustainable annual harvest levels. Further information on forest growth and mortality is needed.

In forests where the age of trees can be determined through annual ring counts, e.g. pine forests, it is possible to assess forest growth as a one-time exercise. However, this is not possible for almost all tropical forests because trees in the tropics normally do not have annual rings. What is usually done is to establish permanent sample plots and to conduct periodic measurements of the trees in the plots. This means that in almost all tropical forests a reliable assessment of forest growth would take a long period of time. Because of the time, effort, money, and specialist knowledge required to get useful results, the assessment of forest growth and mortality is generally undertaken as a research by a well-funded institution. Individual forest management units generally do not have the means to maintain permanent sample plots. This handbook therefore does not go into this process and it is left to the research unit of the Department of Forestry to undertake this activity. What can be done at FMU level are the two activities described below.

Activities

Activity 2.3.1 Adapting available forest growth and mortality information. Data available elsewhere in Laos are adapted to the specific conditions in the FMU.

Activity 2.3.2 Estimating forest growth and mortality from records of successive forest inventories. Periodic forest inventories of FMU compartments provide data that can be used to estimate forest growth and mortality in the compartments.
Activity 2.3.1
Adapting available forest growth and mortality information

Expected outcomes

- Estimates of forest growth and mortality for the compartments of a newly established FMU, which has forest types similar to those found in Savannakhet or Khammouane.

Requirements

- Forest growth and mortality information from FOMACOP village forestry sites.
- Forest inventory information, specifically the stand density, from the given compartment.

How to conduct the activity

**Step 1. Checking all available local information on forest growth and mortality.** Forest growth and mortality information is scanty in Lao PDR. NAWACOP was able to determine the diameter growth rate of two tree species, one of them a pine species, by dividing the radius of sample trees by the tree age, which was determined by counting annual rings. LSFP merely provided an expert estimate of 0.5 m$^3$/ha annual growth rate of commercial species in order to estimate the sustainable yield and formulate the management plan for the Dong Kapho forests in Savannakhet. FOMACOP needed to establish permanent sample plots to determine the growth rates of MDF/DEF and DDF in its pilot areas. Almost 250 plots were established in Savannakhet and 150 plots in Khammouane. These plots were measured annually and estimates of forest growth in Savannakhet are already available (see Table 2.10.1). The research unit of DOF has only recently established its own permanent sample plots with the assistance of LSFP and FOMACOP. Other than those from the above-mentioned projects, there are no forest growth information available in Lao PDR. When a management plan is developed for a forest management unit, information from these projects will have to be adapted to suit the specific conditions in the forest management unit.

**Table 2.10.1 – Forest growth and mortality in the Dong Sithouane forests, Savannakhet (m$^3$/ha)**

<table>
<thead>
<tr>
<th>Stand density</th>
<th>Growth</th>
<th>Ingrowth</th>
<th>Mortality</th>
<th>Net growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>40</td>
<td>2.26</td>
<td>0.07</td>
<td>0.00</td>
<td>2.33</td>
</tr>
<tr>
<td>60</td>
<td>2.96</td>
<td>0.09</td>
<td>0.02</td>
<td>3.03</td>
</tr>
<tr>
<td>80</td>
<td>3.48</td>
<td>0.09</td>
<td>0.12</td>
<td>3.45</td>
</tr>
<tr>
<td>100</td>
<td>3.86</td>
<td>0.09</td>
<td>0.35</td>
<td>3.60</td>
</tr>
<tr>
<td>120</td>
<td>4.14</td>
<td>0.09</td>
<td>0.75</td>
<td>3.48</td>
</tr>
<tr>
<td>140</td>
<td>4.34</td>
<td>0.08</td>
<td>1.26</td>
<td>3.17</td>
</tr>
<tr>
<td>160</td>
<td>4.49</td>
<td>0.08</td>
<td>1.82</td>
<td>2.75</td>
</tr>
<tr>
<td>180</td>
<td>4.60</td>
<td>0.07</td>
<td>2.38</td>
<td>2.29</td>
</tr>
<tr>
<td>200</td>
<td>4.68</td>
<td>0.06</td>
<td>2.88</td>
<td>1.86</td>
</tr>
<tr>
<td>250</td>
<td>4.81</td>
<td>0.04</td>
<td>3.82</td>
<td>1.03</td>
</tr>
<tr>
<td>300</td>
<td>4.86</td>
<td>0.03</td>
<td>4.37</td>
<td>0.52</td>
</tr>
<tr>
<td>350</td>
<td>4.88</td>
<td>0.02</td>
<td>4.64</td>
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<tr>
<td>400</td>
<td>4.90</td>
<td>0.02</td>
<td>4.78</td>
<td>0.13</td>
</tr>
</tbody>
</table>
2. Dry evergreen forests

<table>
<thead>
<tr>
<th>Stand density</th>
<th>Growth</th>
<th>Ingrowth</th>
<th>Mortality</th>
<th>Net growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>40</td>
<td>1.49</td>
<td>0.07</td>
<td>0.00</td>
<td>1.56</td>
</tr>
<tr>
<td>60</td>
<td>1.96</td>
<td>0.09</td>
<td>0.01</td>
<td>2.03</td>
</tr>
<tr>
<td>80</td>
<td>2.30</td>
<td>0.09</td>
<td>0.08</td>
<td>2.31</td>
</tr>
<tr>
<td>100</td>
<td>2.55</td>
<td>0.09</td>
<td>0.23</td>
<td>2.41</td>
</tr>
<tr>
<td>120</td>
<td>2.73</td>
<td>0.09</td>
<td>0.49</td>
<td>2.33</td>
</tr>
<tr>
<td>140</td>
<td>2.87</td>
<td>0.08</td>
<td>0.83</td>
<td>2.12</td>
</tr>
<tr>
<td>160</td>
<td>2.97</td>
<td>0.08</td>
<td>1.20</td>
<td>1.84</td>
</tr>
<tr>
<td>180</td>
<td>3.04</td>
<td>0.07</td>
<td>1.57</td>
<td>1.54</td>
</tr>
<tr>
<td>200</td>
<td>3.09</td>
<td>0.06</td>
<td>1.90</td>
<td>1.25</td>
</tr>
<tr>
<td>250</td>
<td>3.17</td>
<td>0.04</td>
<td>2.52</td>
<td>0.69</td>
</tr>
<tr>
<td>300</td>
<td>3.21</td>
<td>0.03</td>
<td>2.88</td>
<td>0.36</td>
</tr>
<tr>
<td>350</td>
<td>3.23</td>
<td>0.02</td>
<td>3.07</td>
<td>0.18</td>
</tr>
<tr>
<td>400</td>
<td>3.24</td>
<td>0.02</td>
<td>3.16</td>
<td>0.09</td>
</tr>
</tbody>
</table>

3. Dry dipterocarp forests

<table>
<thead>
<tr>
<th>Stand density</th>
<th>Growth</th>
<th>Ingrowth</th>
<th>Mortality</th>
<th>Net growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>0.80</td>
<td>0.05</td>
<td>0.00</td>
<td>0.85</td>
</tr>
<tr>
<td>40</td>
<td>1.39</td>
<td>0.07</td>
<td>0.00</td>
<td>1.46</td>
</tr>
<tr>
<td>60</td>
<td>1.82</td>
<td>0.09</td>
<td>0.01</td>
<td>1.90</td>
</tr>
<tr>
<td>80</td>
<td>2.14</td>
<td>0.09</td>
<td>0.07</td>
<td>2.16</td>
</tr>
<tr>
<td>100</td>
<td>2.37</td>
<td>0.09</td>
<td>0.22</td>
<td>2.25</td>
</tr>
<tr>
<td>120</td>
<td>2.54</td>
<td>0.09</td>
<td>0.46</td>
<td>2.17</td>
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<tr>
<td>140</td>
<td>2.67</td>
<td>0.08</td>
<td>0.77</td>
<td>1.98</td>
</tr>
<tr>
<td>160</td>
<td>2.76</td>
<td>0.08</td>
<td>1.12</td>
<td>1.72</td>
</tr>
<tr>
<td>180</td>
<td>2.83</td>
<td>0.07</td>
<td>1.46</td>
<td>1.44</td>
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<tr>
<td>200</td>
<td>2.88</td>
<td>0.06</td>
<td>1.77</td>
<td>1.17</td>
</tr>
</tbody>
</table>

It is shown in Table 2.10.1 that forest growth is related to stand density; (e.g. light stands have lower growth rates than the dense stands), but net growth in very dense stands approach zero as growth is offset by mortality.

Table 2.10.2 shows the main species found in the MDF/DEF and DDF in Dong Sithouane in Savannakhet.

**Table 2.10.2 – Main species found in the Dong Sithouane**

<table>
<thead>
<tr>
<th>Mixed deciduous forests</th>
<th>Dry evergreen forests</th>
<th>Dry dipterocarp forests</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mai puay</td>
<td>Mai si</td>
<td>Mai khoung</td>
</tr>
<tr>
<td>Mai deng</td>
<td>Mai deng</td>
<td>Mai chik</td>
</tr>
<tr>
<td>Mai vasom phou</td>
<td>Mai khen hua</td>
<td>Mai sat</td>
</tr>
<tr>
<td>Mai si</td>
<td>Mai puay</td>
<td>Mai deng</td>
</tr>
<tr>
<td>Mai muat</td>
<td>Mai nyang</td>
<td>Mai muat</td>
</tr>
<tr>
<td>Mai kholen phou</td>
<td>Mai ngeo</td>
<td>Mai kathang</td>
</tr>
<tr>
<td>Mai khen khanyom</td>
<td>Mai phok</td>
<td></td>
</tr>
<tr>
<td>Mai khimou</td>
<td>Mai laen</td>
<td></td>
</tr>
<tr>
<td>Mai khen hin</td>
<td>Mai hamao</td>
<td></td>
</tr>
<tr>
<td>Mai sakham</td>
<td>Mai khi hat</td>
<td></td>
</tr>
<tr>
<td>Mai nangdam</td>
<td>Mai kol</td>
<td></td>
</tr>
<tr>
<td>Mai laen</td>
<td>Mai kholen phou</td>
<td></td>
</tr>
<tr>
<td>Mai houalon</td>
<td>Mai kathang</td>
<td></td>
</tr>
<tr>
<td>Mai hanghon, Mai sakham</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Step 2. Using the forest growth and mortality information of FOMACOP. To estimate forest growth and mortality rates in the given forest compartment whose species composition are close to those found in Dong Sithouane, locate in Table 2.10.1 the stand density which is closest to the compartment’s stand density, and use the corresponding forest growth and mortality information from the table. Interpolate the data based on stand density, if necessary. For example, suppose the stand density of a mixed deciduous forest compartment as determined from the forest inventory is 120 m$^3$/ha. Then from Table 2.10.1 use 4.23 m$^3$/ha as the estimate of growth and ingrowth and 0.75 m$^3$/ha as the estimate of mortality, giving a net growth of 3.48 m$^3$/ha.
Activity 2.3.2
Estimating forest growth and mortality from records of successive forest inventories

Expected outcomes

- Estimates of forest growth and mortality for the compartments of a FMU which has been in operation for more than five years.

Requirements

- A minimum of two successive pre-harvest inventories must have been completed. Data with the least sampling error is obtainable from successive pre-harvest inventories that had exactly the same baselines, striplines, and sample plots, so that the successive measurements are done at exactly the same place each time. This could be done if the starting point of all striplines and the center of all sample plots are easy to locate, e.g. marked with a material that can last up to the next pre-harvest inventory (e.g. five years in the case of a five-year harvesting cycle).

- Pre-harvest inventory records must be kept well organized and carefully stored. The most important data to keep is the volume of each plot. In addition, the volume and other information concerning the harvest and its impacts (e.g. logging damage) must also be recorded and filed. This activity is primarily the responsibility of the VFA/VFC Secretary.

How to conduct the activity

Step 1. Stand density after the harvest. The stand density after the harvest is equal to the stand density before the harvest (determined from the pre-harvest inventory) less the volume of the harvest (determined from timber scaling) and the volume damaged during harvesting (determined from the post-harvest assessment).

Step 2. Stand growth during the cutting cycle. The stand growth during the cutting cycle is the difference between the stand density determined from the next pre-harvest inventory and the stand density after the harvest. This can be expressed on an annual basis by dividing the number by the number of intervening years between the harvest and the next pre-harvest inventory.

Step 3. Mortality during the cutting cycle. The mortality during the cutting cycle is estimated by dividing the volume of dead trees (determined from the next pre-harvest inventory) and the number of years in of the cutting cycle.

Step 4. Gross yield in dead and living trees. The gross yield during the cutting cycle is equal to the stand growth and stand mortality.

For example, suppose:

- The pre-harvest inventory plots were measured in 1996 and remeasured in 2001.
• The compartment has an area of 100 ha. The stand density in the compartment was 130 m³/ha in 1996 and 140 m³/ha in 2001. Dead trees in the compartment 2001 was estimated at 5 m³/ha.

• In 1996-1997, 600 m³ of timber was harvested. The post-harvest assessment showed that logging damage in the compartment was a total of 12 m³.

Then the calculation is as follows:

• The timber stand in the compartment had an average volume of 130 – 600/100 – 12/100 = 123.9 m³/ha after harvest.

• The timber stand in the compartment grew by about 140 – 123.9 or 16.1 m³/ha in the intervening 5 years or by about 3.2 m³/ha annually.

• The natural mortality is 1 m³/ha (5 m³/ha divided by 5 years).

• The gross yield is equal to 3.2 + 1 or 4.2 m³/ha annually.
Task 2.4
Village forest management planning

Objectives

Main objective

- To formulate a plan for managing the FMU on a sustainable basis.

Specific objectives

- To specify fully all the components of the village forest management system.
- To put in written form system and plan for managing the FMU on a sustainable basis.

Rationale

The village forest management plan is a visualization by villagers of how they would manage the forest resources in the village in the years to come. Some practices in the plan are already integrated in village life, e.g. cutting timber for housing, worshipping in the spirit forest, collecting NTFPs, and are respected under Lao laws as their customary rights to use the forest. Other practices have not been allowed in the past by the government, particularly commercial timber harvesting. Provisions for this practice has to conform to government regulations. The resulting plan is therefore a combination of traditional practices for which the villagers have already indigenous knowledge and new practices for which villagers have to learn from government forestry staff.

In the process of formulating the plan many options for doing things will present themselves to the forest managers. For example, several options are available concerning where, how much, and how often timber is cut; how much of an NTFP is allowed to be collected; and so on. The plan should present these different decision situations in a systematic manner and indicate what the decisions are and how they are arrived at. Collectively this decision system is referred to as the forest management system.

In village forest management planning, both the process and the product are important. Since the village forest management plan is the villagers’ own visualization, they must actively participate in the planning process. The resulting product is communicated more readily in the form of a written plan, but more importantly it should be a collective thought, i.e. an identical visualization in the minds of each of the villagers on how their forest resources are to be managed.

Activities

Activity 2.4.1 Specification of the village forest management system. All components of the system for managing the village forest resources are specified fully.

Activity 2.4.2 Preparing maps, charts, and tables that illustrate the village forest management plan. Graphical and tabular information are the main means for illustrating the plan and are prepared beforehand.

Activity 2.4.3 Writing the village forest management plan. The plan is put in written form for easy communication to the government and other stakeholders.
Activity 2.4.1
Specification of the village forest management system

Expected outcomes

- Detailed specification of the different parts of the village forest management system, i.e.:
  - Who the forest managers and stakeholders are.
  - What the forest management objectives are.
  - How long the management cycle is and when management operations are conducted.
  - Where they are conducted.
  - How much of each type of products and services is produced.
  - How they are produced and how sustainability of production is ensured.
  - What benefits, costs, and impacts are expected.

- A common understanding among the villagers (VFA/VFC officers and members) and the other stakeholders concerning the different parts of the village forest management system and their specifications.

Requirements

- **Information.** Information about the village and the FMU, forest inventory information, and forest growth and mortality information are needed. These can be obtained from the village land-use plan, forest inventory, and assessment of forest growth and mortality.

- **Forest management planning team.** Forest management planning should be conducted by the forest manager itself, e.g. VFA/VFC. The role of forestry staff should be limited to guiding and facilitating the process. Hence, the VFA/VFC should form a forest management planning team consisting of knowledgeable and concerned members, e.g. elders, youth leaders, women leaders, etc., including the head of the village forest inventory teams. A DAFO staff who have had previous training and experience in village forest management planning should act as resource person, facilitator, and adviser in the team.

- **Tools and materials.** Map making and writing tools and materials and a pocket calculator are needed.

- **Time.** It takes at least a week of full-time work for the team to complete this activity.

- **Place of work.** Work is usually done in the village. However, if the forestry staff is working with several villages simultaneously, a convenient place for all teams to work together may be selected, e.g. the district training facilities.

How to conduct the activity

**Step 1. Preparatory work.** The team should prepare the necessary information, tools, and materials.
Step 2. Specifying who the managers and stakeholders are. The forest managers are collectively the VFA/VFC and in particular the villagers comprising the management of the VFA/VFC, together with the forestry staff. The VFA/VFC derives its authority to manage the forest resources in the village from the government by means of a forest management contract (see Activities 2.5.1 and 2.5.2), official government memorandum, or any other valid tenurial instrument.

Stakeholders are people who are impacted by the management actions, including:

- Villagers themselves, whose practice of customary rights over forest use may be impeded. Villagers are therefore both managers and stakeholders.
- Consumers including forest industries, who need a sustained supply of forest products.
- Communities downstream, whose water supply may be adversely affected by improper logging practices.
- National community, which may be deprived of the benefits from the forest because of forest destruction or degradation.
- Global society, which may be deprived of the benefits of biological resources because of unsustainable management practices.

Step 3. Specifying the forest management objectives. The forest manager should define the objectives of forest management in terms of what products and services will be generated in the management unit. Which products and services are for commercial use, local consumption, or non-consumptive use should also be clarified.

Products include timber and non-timber forest products. Timber may be for commercial use or for consumption in the village. NTFPs are very important in a rural Lao village. They include fuelwood, small poles, bamboo, rattan and other vines, resin, and forest foods, including fruits, edible leaves, and wildlife.

Services and amenities that the forest delivers include the protection of soil and water resources and the provision of habitats for wildlife, grazing sites for livestock, places of recreation and worship, etc.

Step 4. Specifying the length of management cycles and timing of forest management operations. The generation of products and services ordinarily follows a certain cycle, which culminates in the delivery of the product or service. The forest manager should specify for each product or service the length of the management cycle and the timing of important activities within each cycle.

For example, in timber management, a low-intensity production regime that requires a correspondingly short management or cutting cycle is recommended to minimize forest degradation. The forest manager should choose a period of from 5 to 15 years as the cutting cycle depending on the condition of the forest, the availability of different resources to do the management operations, and other economic and environmental considerations. It should be understood that when the cutting cycle is long, operations are concentrated in a small area putting the forest resources under much pressure. A short cycle means that the annual cut is spread over a relatively large area. However, costs
associated with area, such as the cost of building access roads, may become excessively high. Fortunately, in most production forests in Lao PDR, slopes are flat to moderate, so that road building is not necessary if logging is done in the dry season. See Annexes 2.4.1.1 to 2.4.1.3 for further comparison between a short and a long cutting cycle.

Non-timber forest products are generally collected from all over the forest year after year; i.e. the management cycle is one year. Longer cycles are possible by partitioning the collection area and rotating the collection of NTFPs over these parts. Similarly, the management cycle for the delivery of services and amenities is one year, but it can also be extended by partitioning the service area, e.g. places for grazing livestock.

**Step 5. Specifying the compartments where forest management operations are conducted.** The forest manager should delineate where in the forest management unit each product or service is to be produced. If the product or service is produced in different compartments in different years, the management compartments should be further subdivided by year of production or management.

For example, in timber management, the production forest is divided into annual coupes or harvesting compartments, which are as many as the length of the cutting cycle.

As mentioned in the previous section, compartments for annual collection of NTFPs may be delineated if desired to meet management objectives. Annual grazing compartments may be similarly delineated.

**Step 6. Specifying how much of each type of products and services is produced.** The forest manager should determine how much of each product or service is to be produced in each compartment. The quantity to be delivered of each of the different products and services may vary from year to year, but it should not exceed the sustainable annual level of production calculated for the product or service.

For example, to attain a balance of the utilization and conservation objectives, timber production should be of such low intensity that it is as close as possible to rates of natural death and regeneration of trees in a stand, yet still remaining at profitable levels, i.e. able to meet the cost of production. The maximum annual level of production (or “A”) for timber production may be calculated as follows:

\[
A = \text{Net annual yield of the timber stand} \times \text{Production area}
\]

Where the net annual yield of the timber stand is calculated using stand growth and mortality data from permanent sample plots, giving an allowance for logging wastes and dead wood that cannot be utilized. The net annual yield should also allow for an increase in volume of the timber stand in forests, which are below full stocking because of previous logging. For example, an increase of about 2 m³/ha annually should be allowed for production forests with stand density of less than 150 m³/ha.

The following is an example of how the maximum annual level of production is calculated. Suppose:

- The cutting cycle selected is 5 years.
- There are 500 ha of MDF/DEF compartments and 100 ha of DDF compartments where the stand density is high enough to allow timber production.
- Average annual forest growth is assessed to be 4 m³/ha for MDF/DEF compartments and 1 m³/ha for DDF compartments.
• Average annual forest mortality is assessed to be 1 m$^3$/ha for MDF/DEF compartments and .02 m$^3$/ha for DDF compartments. Of this volume 10% can be recovered.
• Logging damage is estimated to be about 20% of the volume recovered.
• Because of previous logging and other utilization practices the stand densities are low, i.e. on average 125 m$^3$/ha for MDF/DEF compartments and 55 m$^3$/ha for DDF compartments. To allow the forest stand to grow dense, 2 m$^3$/ha of the forest growth is left uncut in MDF/DEF compartments and 0.5 m$^3$/ha for DDF compartments.

Then:
• The net annual yield for MDF/DEF compartments is calculated as follows:

  4 m$^3$/ha  (the average annual forest growth)
less  1 m$^3$/ha  (the average annual forest mortality)
less  2 m$^3$/ha  (the allowance to improve the stand density)
equals  1 m$^3$/ha  (the gross yield from living trees)
less  20% or 0.2 m$^3$/ha  (the logging damage)
equals  0.8 m$^3$/ha  (the net yield from living trees)
plus  10% of 1 m$^3$/ha  (the net yield from dying trees, part of mortality)
equals  0.9 m$^3$/ha  (the net annual yield)

• The net annual yield for DDF compartments is calculated as follows:

  1 m$^3$/ha  (the average annual forest growth)
less  0.2 m$^3$/ha  (the average annual forest mortality)
less  0.5 m$^3$/ha  (the allowance to improve the stand density)
equals  0.3 m$^3$/ha  (the gross yield from living trees)
less  20% or 0.06 m$^3$/ha  (the logging damage)
equals  0.24 m$^3$/ha  (the net yield from living trees)
plus  10% of 0.2 m$^3$/ha  (the net yield from dying trees, part of mortality)
equals  0.26 m$^3$/ha  (the net annual yield)

• The maximum annual level of production for all MDF/DEF compartments is calculated as 0.9 m$^3$/ha (the net annual yield) times 500 ha (the production area) or 450 m$^3$.

• The maximum annual level of production for all DDF compartments is calculated as 0.26 m$^3$/ha (the net annual yield) times 100 ha (the production area) or 26 m$^3$.

There may not be enough information on yields of non-timber forest products to determine sustainable collection levels. The forest manager should initiate and promote the monitoring of trends of annual collection levels (see Activity 2.11.2 on utilization of NTFPs). A declining trend would indicate that collection rates are excessive and should be reduced. An increasing trend would indicate that the resource base may be able to accommodate higher collection rates.

**Step 7. Specifying how forest management operations are conducted and how sustainability is ensured.** The forest manager should enumerate the steps to be followed to deliver the planned quantity of each product or service, and determine how each of the steps will be done. The management procedures should minimize the negative effects or impacts on the health and safety of workers and on the landscape, soil and water resources, and biodiversity. The management procedures should also include remedial measures to be undertaken in case any negative effects or impacts unavoidably occur.
In the case of timber production, the forest manager should clearly specify:

1. **How trees are selected for cutting.** The following rules should be applied:

   a. Compartments with stand density greater than 100 m$^3$/ha can be considered for commercial production for long-term planning purposes. Compartments in the dry dipterocarp forests with stand density greater than 50 m$^3$/ha can be considered for limited timber production for village use. However, after more detailed information is available from the pre-harvest inventory, the compartment should be sub-partitioned and no trees cut for commercial purposes in sub-compartments which have less than 120 m$^3$/ha in MDF/DEF or 100 m$^3$/ha in DDF. Generally trees should be cut in MDF/DEF sub-compartments with a stand density of 150 m$^3$/ha or more. Only dead trees may be recovered in sub-compartments with a stand density of less than 120 m$^3$/ha. In sub-compartments with a stand density of 120-150 m$^3$/ha, trees shall be cut only if the pre-harvest inventory has shown that there are:
      i. at least 180 saplings/ha of the valuable species, or
      ii. at least 1800 saplings/ha of other commercial species, or
      iii. at least 120 saplings/ha of the valuable species and at least 1200 saplings/ha of other commercial species.

   b. Fewer trees should be cut in light stands than in relatively dense stands. As a general principle, the maximum should be about 6-10% by volume for the dry evergreen and mixed deciduous forests and 3-5% for the dry dipterocarp forest.

   c. Trees should not be cut if the number of suitable seed trees around them is less than 10 per hectare. Seed trees should be of good form and condition and with at least 40 cm dbh.

   d. Trees to be cut should be at least 20 m apart to prevent excessive canopy openings that allow bamboo and other undesired vegetation to invade.

   e. Cutting trees from a clump is preferred to cutting solitary trees.

   f. Harvesting should concentrate on the more abundant species among the valuable species or on abundant species with commercial value. Species with patchy or scattered distribution should not be harvested. Cutting trees from several species should be done rather than only from a single or few species. Trees cut from a species should not exceed 20% of the large trees of that species (to help maintain the stand structure).

   g. Trees should not be cut from species with large trees comprising less than 1% of the total number of large trees (to conserve biodiversity).

   h. Trees should not be cut within 50 m from a river or 30 m from a stream (to protect riparian zones).

   i. Trees used for resin collection should be cut only with the permission of and fair compensation provided to the resin collector.

2. **How the forest is logged.** The following rules on low-impact logging should be adopted and specified in the plan:
a. Logging should be done in the dry season when it is convenient for log transport and soil erosion hazards are low.

b. Vines found around the tree to be felled should be cut during tree marking to weaken them and minimize damage to other trees and risks to the workers during felling.

c. Directional tree felling should be done to minimize killing of regeneration of valuable species.

d. The feller should maximize the volume of utilizable (or marketable) timber, i.e. by not leaving high stumps or large tops, by recovering large branches, by not leaving valuable wood behind in the forest, etc.

e. Log forwarding by logging truck should be applied. Log extraction from the roadside by cable from the winch of the logging truck should be done as much as possible to minimize the opening of access tracks.

f. Access tracks should be pre-selected to minimize tree removals from the growing stock. The same track should be used as much as possible in subsequent harvests to avoid making new openings in the forest. Clearing of access tracks should be done before actual logging and limited to a narrow width required for the logging truck to pass. Where possible, earthmoving along the access track should be avoided or minimized. Stream crossings should be selected to minimize any need for earthmoving.

3. **How the forest is regenerated after the timber harvest.** Conversion of natural forests to plantations is not permitted. Regeneration of the forest after harvest should be done by natural means. A minimum of 10 seed trees per hectare should be identified and marked in the field. If seeding is successful, it is expected that there would be no need for any artificial means of forest regeneration.

4. **What silvicultural treatments are needed to ensure regeneration and improve the growth and condition of the growing stock.** Because low-intensity and low-impact logging is practiced, it is expected that openings created during logging will be low enough for natural regeneration to succeed. The need for enrichment planting, if any, should be assessed after at least two rainy seasons have passed, e.g. at the time of pre-harvest inventory for the next cycle in the case of a 5-year cutting cycle. The assessment should also check if the forest stand would benefit from the liberation of saplings of valuable species from weeds and competition. Enrichment planting, if needed, should be of the commercial species growing naturally in the forest. It is expected that no other silvicultural treatments are needed.

5. **How the growing stock is protected from unplanned land-use conversion, poaching, fire, over-grazing, or any other causes.** Village rules covering forest protection should be appended in the plan (see Activities 2.12.1, 2.12.2, and 2.12.3 for examples of these rules). The following forest protection activities should be done:

a. Regular monitoring of the forest should be done to check any illegal cutting.
b. The land-use plan should be implemented emphasizing the prevention of unplanned conversion of forests to farms or any other land uses.

c. Fire prevention should be discussed in village assembly meetings especially just before and during the dry season.

d. Controlled burning in the dry dipterocarp forest to encourage grass to grow should be allowed only in areas allocated for livestock grazing.

e. Village teams should be organized and trained to control fire when they do occur.

f. A livestock grazing plan should be separately developed or rules should be formulated so that the destruction of regeneration of valuable species in both the dry dipterocarp forest and high forest is minimized. The feasibility of restricting grazing to certain sites at certain periods should also be a part of the livestock grazing plan or rules.

g. The forest manager should keep abreast of non-destructive collection techniques for non-timber forest products, e.g. resin, and initiate and promote their adoption by collectors.

The forest manager should also clarify how the management of the forest is to be sustained for each of the different management objectives. In the case of forest products, it is enough to show that the production levels do not exceed the production capacity of the forest. As previously illustrated in the case of timber management, production capacity is ordinarily determined based on information on growth and yield of the product. In case the information is not available for a product (e.g. non-timber forest product), as mentioned in Step 6 the forest manager should monitor the level and trend of product harvests, adjusting harvest levels to prevent the depletion of the resource base. In the case of services, it should be shown that the delivery of the service is not being impaired from year to year because of forest management and utilization.

**Step 8. Specifying the benefits, costs, and impacts of forest management.** The forest manager should estimate, in both non-monetary and monetary quantities, the benefits and costs of forest management. Any adverse impacts should be presented and explained.

**Step 9. Arriving at a common understanding the village forest management system.** In specifying the details of the different parts of the village forest management system (Steps 2 to 8), the planning team should consult with the members of the VFA/VFC and the other stakeholders, as much as possible, e.g. through informal meetings with groups of members. At the end of the process, a general assembly meeting should be called to present the village forest management system, solicit further suggestions to improve the system, and arrive at a common understanding on how the village forest resources are to be managed.
Activity 2.4.2
Preparing maps, charts, and tables that illustrate the village forest management plan

Expected outcomes

- A map that shows the annual coupes or harvesting compartments, particularly for timber, and their supporting maps.
- Organizational chart of the VFA/VFC.
- Tables that show the results of sustainable annual yield calculations and their supporting tables.

Requirements

- Information. This are mainly the outcomes of the specification of the village forest management system (Activity 2.4.1).
- Maps. These include a location map of the village and the map depicting the village land-use plan and the boundaries of the FMU.
- Tools and materials. Map-making and writing tools, calculator.
- Working team, time, and place of work. The same team, time, and place of work as Activity 2.4.1.

How to conduct the activity

Step 1. Preparing maps and charts. The following maps are prepared as annexes of the village forest management plan:

1. Location map of the village. The location map should show how the village is reached from known places (e.g. district and provincial centers) through the main highway. It should fit into an A4-size paper for convenience to the readers.

2. Map depicting the village land-use plan. This is the same map that was produced in Activity 2.1.3. It shows which compartments have been allocated for the FMU and which have been reserved for other land uses (e.g. conversion to farms, etc.)

3. Map depicting the village forest management plan. This map is drawn at the same scale from the village land-use plan, after which more features are added, e.g.
   a. Which compartments of the FMU can be harvested for village use and in what year.
   b. Which compartments of the FMU can be harvested for commercial purposes and in what year.
   c. Which compartments of the FMU are not harvested but allocated for further development of the timber stand, protection, or conservation.

4. Organizational chart of the VFA/VFC. This chart depicts how the VFA/VFC is organized (see Activity 1.5).
Step 2. Preparing tables. The following tables are prepared as annexes of the village forest management plan:

1. Present and planned land uses in the village. This table is copied from the village land-use plan (see Activity 2.1.3).

2. Inventory of MDF/DEF. This table is a summary of the forest inventory done in MDF/DEF compartments. It provides information on the average volume and number of trees per hectare in three dbh groupings (below 30 cm, 30-40 cm, 50 cm and above) in each compartment.

3. Inventory of DDF. This table is a summary of the forest inventory done in DDF compartments. It also provides information on the average volume and number of trees per hectare in three dbh groupings (below 30 cm, 30-40 cm, 50 cm and above) in each compartment.

4. Forest growth and mortality. This table shows the estimated forest growth and mortality of the compartments at given stand densities.

5. Net yield of living and dying trees. This table shows the estimated net yield of living and dying trees per hectare based on the calculations given in Activity 2.4.1 Step 6.

6. Maximum annual allowable harvests in MDF/DEF. This table shows how much can be harvested at the maximum in MDF/DEF compartments during each year in the cutting cycle.

7. Maximum annual allowable harvests in DDF. This table shows how much can be harvested at the maximum in DDF compartments during each year in the cutting cycle.

8. Timber harvesting schedule. This table shows how much of major timber harvesting activities is done each year in the cutting cycle (e.g. area to be harvested, length of access tracks to be improved or built).

9. Regeneration and timber stand improvement schedule. This table shows how much of major timber stand improvement related activities is done each year in the cutting cycle (e.g. pre-harvesting survey, vine cutting, post-harvest assessment, liberation cutting).

10. Human resources and financing needed to implement the plan. Estimates of annual person-years of employment, total cost of plan implementation, and how the cost is to be financed are provided in this table.

11. Projected timber sales, royalties, other costs, and net benefits. This table shows in monetary terms the annual timber sales, royalty payments, other costs to be incurred, and benefits to be obtained.

12. Projection of stand volume. This table projects the stand volume in each forest compartment at 5-year intervals for the next 30 years.
Activity 2.4.3
Writing the village forest management plan

Expected outcome

- Village forest management plan in written form.

Requirements

- **Information.** Write up of the specifications of the village forest management system; maps, charts, and tables from Activity 2.4.2; model write up of a village forest management plan.

- **Tools and materials.** Writing tools and materials.

- **Working team, time, and place of work.** The same team, time, and place of work as Activity 2.4.1.

How to conduct the activity

**Step 1. Preparatory work.** The planning team prepares all required information, tools, and materials.

**Step 2. Use of the model write up of a village forest management plan.** To simplify the process of writing the plan, the team should make use of a model plan (Annex 2.4.3.1), filling or substituting item by item the already developed and agreed specifications of the forest management system for the blanks or write ups in the model.

**Step 3. Writing the village forest management plan.** The team should then write up the plan in its entirety as shown below, and annex the maps, charts, and tables developed in Activity 2.4.2.

1. The forest management plan should have a 10-year planning horizon. It should include at the following sections:
   a. Introduction
   b. Forest management unit and its forest resources
   c. Forest management plan
   d. Plan implementation
   e. Benefits and impacts

2. The introduction section should contain:
   a. **Background.** This tells very briefly about the village – its location, population, and when it joined the village forestry program – and the VFA/VFC.
   b. **Plan objectives.** This presents the objectives of the village forest management plan.
   c. **Methodologies.** This briefly tells about how the plan was prepared.

3. The forest management unit and its forest resources section should contain:
   a. **Village land use plan.** This presents the map and tabulation of the present and planned land uses in the village.
   b. **Forest management unit.** This presents the map of the forest management unit.
c. *Forest resources.* This gives an assessment of the forest resources based on the forest inventory and other resource inventories, and an assessment of forest growth and mortality.

4. The forest management plan section gives the main description of the village forest management plan, i.e. the different specifications of the forest management system that were developed in Activity 2.4.1. It should contain:
   a. *Forest managers and stakeholders.* This tells who the forest managers and stakeholders in the village are and what are their rights.
   b. *Forest products and services.* This lists the products and services that the forests are managed for.
   c. *Forest harvesting cycles.* This tells what are the harvesting cycles for timber and other products.
   d. *Forest management for grazing and non-timber forest products.* This section introduces the rules that the village has adopted for managing the forest for grazing and non-timber products. The rules are given as an annex to the plan.
   e. *Timber harvesting sites.* This shows the division of the village forest management area into years of timber harvesting operations.
   f. *Annual allowable timber harvests.* This gives a tabulation of the annual forest growth and how they convert into annual allowable timber harvests for each forest type.
   g. *Trees to be harvested.* This gives the guidelines for the selection of trees to be harvested.
   h. *Timber harvesting methods and plan.* This gives the specifications for timber harvesting, as well as the schedule by year.
   i. *Regenerating and improving the forest.* This gives the specifications for regenerating the forest after harvest and for improving the condition of the forest.
   j. *Protecting the forest and preserving its values for various services.* This gives the specifications for forest protection.
   k. *Conservation.* This gives some specifications concerning the conservation of biodiversity and other forest values.

5. The plan implementation section should contain:
   a. *Village forestry association.* This tells about the plan implementation activities that the VFA/VFC will do.
   b. *Contractors.* This shows what activities will be contracted to other parties.
   c. *Schedule of operations.* This summarizes the activities planned and in what year they will be done. This section may however be omitted.
   d. *Resources to implement the plan.* This gives an estimate of how much human resources and financing will be needed to implement the plan, and also how the financing will be found.

6. The benefits and impacts section should contain:
   a. *Timber sales, royalties, and benefits.* This shows the projected timber sales, royalties, and benefits to the VFA/VFC for each year.
   b. *Impact on the forest stand.* This describes what are the possible impacts of the forest management on the forest stand.
   c. *Sustainability of forest management.* This tells whether the forest management will be sustainable over time, or not.
Task 2.5
Securing the village forest management contract

Objective

- To obtain the required authority for the VFA/VFC to manage the FMU. Authority is provided by a village forest management contract signed by authorized representatives of the government and the village.

Rationale

The Forest Law of 1996 provides that an organization may manage forests provided authority is given by the government. By organizing themselves as a VFA/VFC and presenting the village forest management plan, the villagers demonstrate their qualification, desire, and capability to put the village forest resources under sustainable management. A written contract signed by authorized representatives of the government and the village would then provide the required authority for the VFA/VFC to manage the FMU.

Activities

Activity 2.5.1 Drafting the village forest management contract. A contract is drafted with terms and conditions showing the rights and obligations of both contracting parties, i.e. the VFA/VFC and the government through DAFO and PAFO.

Activity 2.5.2 Securing approval of the village forest management contract. Once drafted, the contract and the attached village forest management plan are presented for review, finalizing if needed, and signature of the contracting parties.
Activity 2.5.1
Drafting the village forest management contract

Expected outcomes

- A draft of the village forest management contract.
- Other documents needed.

Requirements

- **Information.** Model village forest management contract, written up village forest management plan, written authorization to sign the contract as the representative of the VFA/VFC.

- **Tools and materials.** Writing tools and materials.

- **Working team, time, and place of work.** The Chairperson of the VFA/VFC should take charge in drafting the village forest management contract. Work is done in the village and should not take more than a day or two.

How to conduct the activity

**Step 1. Preparatory work.** The VFA/VFC Chairperson calls the VFA Policy Committee or VFC to a meeting to secure the needed resolution and then prepares all required information, tools, and materials with the help of the VFA/VFC Secretary.

**Step 2. Drafting the contract and attachments.** The VFA/VFC Chairperson takes charge in drafting the village forest management contract making use of a model contract to simplify the work (see Annex 2.5.1.1). The contract should include:

1. Rights and obligations of the VFA/VFC
   a. Rights to manage the FMU with the security of long-term tenure (e.g. 50 years)
   b. Rights to harvest and sell timber and NTFP.
   c. Rights to operate as a VFA/VFC according to government regulations.
   d. Rights to seek reconsideration or arbitration in cases of adverse government decisions imposed on the VFA/VFC.
   e. Obligations to assist the village in formulating a village land-use plan.
   f. Obligations to formulate a long-term village forest management plan and annual village forestry operations plans.
   g. Obligations to carry out forest regeneration, stand improvement, forest protection and other activities as prescribed in the village forest management plan and annual village forestry operations plans.
   h. Obligations to pay royalties, taxes, and fees for the harvested timber and other products as prescribed by the government.

2. Rights and obligations of the government
   a. Rights to check that the village forestry activities are carried out according to the plan and to impose penalties in cases of violations.
   b. Rights to suspend operations of the VFA/VFC in cases of gross violation of government laws, rules, and regulations.
c. Rights to collect royalties, taxes, and fees for the harvested timber and other products as prescribed by the government.
d. Obligations to assist the VFA/VFC by providing adequate training and technical assistance in carrying out village forestry activities.
e. Obligations to evaluate submitted plans and other official documents and to inform the VFA/VFC of its actions within a reasonable length of time.

A cover letter requesting for approval of the authorities of the contract and a copy of the village forest management plan are prepared as attachments.

**Step 3. Review and signing of the contract.** The draft contract and attachments are presented to the VFA Policy Committee or VFC for review and then finalized and signed by the VFA/VFC Chairperson.

**Step 4. Copies.** Two original copies of the cover letter and contract are prepared. Once approved adequate copies of the signed contract and attachments are made and distributed to the signatory offices.
Activity 2.5.2
Securing approval of the village forest management contract

Expected outcome

- A copy of the approved village forest management contract distributed to the offices concerned.

Requirements

- Two original copies of the village forest management contract bearing the signature of the VFA/VFC Chairperson, together with the attachments (a cover letter signed by the VFA/VFC Chairperson and addressed to the Provincial Governor and the village forest management plan).
- Official recognition by the government of the VFA/VFC (see Activity 1.6).

How to conduct the activity

**Step 1. Routing of the original copies.** See Annex 2.5.2.1 for a flowchart of the process.

1. The two original copies of the village forest management contract, together with the attachments are sent first by the VFA/VFC to DAFO.
2. DAFO acknowledges its receipt of the documents and forwards them to its Forestry Unit for review.
3. The DAFO Forestry Unit reviews the plan and the contract. If it is found to be complete, the Head of DAFO signs the documents and forwards them to the office of the District Governor for signature. If not, the documents are returned to the VFA/VFC for correction.
4. The district forwards the documents to the Provincial Forestry Section (Forest Management Unit) for review. If the plan and contract are found to be in order, the PAFO Director approves the plan. If not, the documents are returned to the VFA/VFC through the DAFO for correction.

**Step 2. Distribution of copies.** Once approved, enough copies are prepared and distributed as follows:

1. An original copy is kept by the VFA/VFC and the other original copy provided to the office of the Provincial Governor.
2. A copy is each provided to DAFO, PFS, and DOF.
Task 2.6
Conducting forest inventory for annual harvest planning

Objectives

_Main objective_

- To obtain forest inventory information that will be used as the main inputs to planning the annual timber harvest and the regeneration of the harvested compartments.

_Specific objectives_

- To map and measure potential harvest and seed trees in the compartments that are scheduled for timber harvesting.
- To inventory the trees that would form the growing stock after the timber harvest.
- To assess the regenerative capacity of the compartments after they are harvested.

Rationale

The village forest management contract allows the VFA/VFC to harvest trees in the production forest, which has been sub-divided into annual compartments in the village forest management plan. Before harvesting is done, it must be planned using accurate information about the site and its forest resources.

Forest inventory information obtained for the purposes of village forest management planning is not suitable for use in planning the annual timber harvest from the standpoint of sustainability. A more accurate and informative forest inventory is required to allow decisions to be made on:

- Whether a sub-compartment should be harvested, i.e. if the sub-compartment is adequately stocked and capable of regenerating itself after the harvest.
- How much timber can be harvested from the sub-compartment.
- Which trees are to be harvested.

Activities

**Activity 2.6.1 Designing the pre-harvest inventory.** The pre-harvest inventory is designed as a three part-inventory, a part each for large trees, small trees and poles, and regeneration of sapling size.

**Activity 2.6.2 Conducting the pre-harvest inventory.** The pre-harvest inventory is conducted following the design.

**Activity 2.6.3 Calculating the pre-harvest inventory results and keeping records of the pre-harvest inventory.** Pre-harvest inventory data are transformed into information that is useful for planning the annual timber harvest. Records are kept for later use in future forest inventories and the assessment of forest growth and mortality in the sub-compartments.
Activity 2.6.1
Designing the pre-harvest inventory

Expected outcomes

- Compartments are selected for the pre-harvest inventory.
- The pre-harvest inventory is designed to obtain statistically valid information about the timber resources located in each of the selected compartment, such as:
  - Species, size, volume, and quality of harvestable trees and potential seed trees.
  - Species composition, size structure, and volume of the entire tree crop.
  - Quantity and species composition of regeneration especially in low-volume compartments.
- The pre-harvest inventory map is drawn based on the inventory design.
- Pre-harvest inventory forms are produced.

Requirements

- **Valid village forest management contract.** Possession of a valid village forest management contract implies that the forest manager can operate in the coming year.

- **Pre-harvest inventory teams.** The number of forest inventory teams that the village needs depends on the area of the annual harvesting compartments and the need to complete the work in time for annual operations planning and requesting of logging quota (around min-June each year). Each team is composed of four to five villagers, who should be familiar with the forest and can identify the forest species. Usually they are the members of the forest inventory teams. A trained forestry staff is needed to train in turn the pre-harvest inventory teams.

- **Map.** A copy of the map depicting the village forest management plan is needed. The map shows the forest compartments scheduled for harvesting in the coming year.

- **Other tools and materials.** Map making and writing tools and materials are needed, such as transparent paper, writing paper, pencils, pens, markers, ruler, and compass.

- **Time.** One day is enough to do the activity, but additional days are required to reproduce an adequate number of pre-harvest inventory forms.

- **Place of work.** The activity is best done in the village, but several teams from different villages can be trained at the same time in a centralized facility, e.g. district training center.

How to conduct the activity

**Step 1. Preparatory work.** The forest manager forms the pre-harvest inventory teams and requests DAFO to organize the training of the team(s). The needed map, tools and materials are prepared. The subsequent steps are usually conducted at the time of the training of the forest inventory teams. A trained forestry staff makes the pre-harvest inventory design, which the teams later implement in the forest.
Step 2. **Selecting the compartments to be inventoried.** The compartments to be inventoried can be picked out from the map depicting the village forest management plan.

Step 3. **Designing the pre-harvest inventory.** The pre-harvest inventory is designed as a three-part inventory, one part for each for large trees, small trees, and regeneration, i.e.:

- A 100% inventory of large trees (i.e. 50 cm DBH or larger), which will be harvested or left as seed trees. Several 50-m wide strips are laid out to cover the annual harvesting compartment. A stripline is laid out at the middle of the strip, and large trees within 25 m distance from this line will be spotted, measured, and mapped (see Annex 2.6.1.1).

- A line-plot inventory of small trees (i.e. 5-49 cm DBH) using a 10% sampling intensity. A 0.1-ha circular plot (17.84-m radius) is laid out per hectare of the annual harvesting compartments (i.e. 100 m between striplines or at every other stripline and 100 m between plots along the stripline, see Annex 2.6.1.1).

- An inventory of regeneration in low-volume compartments (below 150 m$^3$/ha). Ten plots are selected at random for each low-volume compartment larger than 10 ha. Using the same plot center as the above line-plot inventory, regeneration will be tallied for saplings (at least 1.3 m in height and below 10 m DBH) that are within a radius of 5 m (plot size of 78.54 m$^2$).

Step 4. **Laying out the baselines, strips, and sample plots in a map.** Figure 2.5 shows how the baseline, strips, and sample plots are laid out.

![Sample layout of strips and plots in a harvesting compartment](image-url)
1. The 50-m wide strips are laid out as follows. The striplines (the centerline of a strip) are first mapped for each harvesting compartment (scale 1:10,000 or larger). The strips should be laid out parallel to each other, leaving no gaps or overlaps between them. To ensure this, lay out the striplines 50-m apart perpendicular to a straight baseline. Determine and write on the map the bearings of the baseline and the striplines.

2. Plots are laid out as follows: Along every other stripline (or 100 m apart) lay the first plot 50 m from the baseline, and subsequent plots 100 m apart.

3. Plots for the inventory of regeneration are selected as follows: The inventory of regeneration is specifically needed in low-volume compartments, i.e. with total bole volume of less than 150 m$^3$/ha. If there are more than one compartment, all of the compartments should be assessed to see if a regeneration inventory is needed. If the area of the compartment to be inventoried is less than 10 ha, there will be less than 10 plots in the compartment, and all of them should be selected for the inventory of regeneration. If the area of the compartment to be inventoried is more than 10 ha, select 10 plots at random.

**Step 5. Preparing the tree mapping and pre-harvest inventory forms.** The teams can prepare the tree mapping and pre-harvest inventory forms on their own (see Annexes 2.6.1.1 to 2.6.1.4 for sample forms), or the VFA/VFC can reproduce enough copies in town using a photocopier, or purchase them, e.g. from DAFO.
Activity 2.6.2
Conducting the pre-harvest inventory

Expected outcomes

- Selected compartments are inventoried following the pre-harvest inventory design.
- Tree measurements are filled into the appropriate pre-harvest inventory forms.
- Important features of the compartment, e.g. tracks and streams, are mapped.

Requirements

- **Pre-harvest inventory map.** The pre-harvest inventory map, which consolidates the forest inventory design, allows the pre-harvest inventory teams to locate the baselines, striplines, and sample plots in the field.

- **Pre-harvest inventory teams and time to complete the forest inventory.** The number of teams to be formed depends on the size of the compartments to be inventoried and the time allowed to complete the work. For example, if the area of the compartments totals 300 ha, the fieldwork takes one team about 100 days (at 3 ha per day) to do, less if the team is already experienced. If four teams are formed, the fieldwork takes about 25 days to do. Fieldwork should be completed in May before the rain comes and in time for the preparation of the annual village forestry operations plan and request for annual logging quota.

- **Training and orienting the pre-harvest inventory teams.** A trained DAFO staff provided with the necessary logistics (e.g. motorbike and daily allowance) can conduct the training of the village teams. The teams must be trained to do the work and oriented on the work targets and the role of each member. The team leader acts as recorder, mapper, and rear chainman. The other members include a brusher-compass man; a front chainman; and two tree spotters.

- **Other tools and materials.** A minimum set of equipment and materials to be prepared are as follows:
  - Enough copies of the tree mapping forms and the Pre-harvest Inventory Forms 1, 2, and 3.
  - Field compass.
  - Diameter tape.
  - Paint for marking starting point of striplines.
  - Calliper.
  - Measuring tape 50 m.
  - Ropes.
  - Machetes and knives.
  - Writing tools.
  - First aid kit.
  - Camping equipment (tent, cooking and eating utensils).
  - Food provisions.

- **Place of work.** The activity is done in the compartments selected to be inventoried.
How to conduct the activity

Step 1. Preparatory work. The teams are formed, trained, and provided with the required tools and materials. Fieldwork then proceeds as described below.

Step 2. Locating the baselines and striplines. It should be fairly easy to locate the starting point of baselines and striplines with the use of the pre-harvest inventory map, chain, and compass. The starting point of all striplines must be marked with a post and the number painted. The post should be made of durable material that can last up to the next pre-harvest inventory (e.g. 5 years if the cutting cycle is 5 years).

Step 3. Spotting and measuring large trees. The two tree spotters (one on each side of the stripline) then spot and determine the dbh (up to the nearest cm), height (up to the nearest m), and quality of large tree in 25-m sections along the strip. The quality of trees is any of the following:

1 – good quality trees without any visible defects
2 – good quality trees with minor defects
3 – dying trees (i.e. with serious defects and expected to die in 5 years)
4 – dead trees which are still standing and with sound stem
5 – dead trees which are already down but still with sound stem

The team leader records the tree measurements using Pre-harvest Inventory Form 1.

Step 4. Mapping large trees. First determine the location of the tree with respect to the stripline (i.e. its shortest distance from the stripline, which is measured or estimated visually perpendicular to the stripline, see Figure 2.6). With practice the spotters should be able to estimate visually the distance from the stripline. An accuracy of within 2-3 m is desired. Once the location is known, this is plotted on the map to scale. The distance is also recorded in the field sheet in case it is needed for verification.

![Figure 2.6 – Mapping of large trees](image)

For easy mapping of the tree with respect to the stripline (i.e. the points marked X on the figure above), the crew should move along the stripline at 25 m intervals, spotting trees in this area before moving for another 25 m. Mark or tie a knot every 5-m distance along the 25-m measuring rope so that it is easy for the team leader to verify the location of the tree with respect to the stripline.

Step 5. Mapping important features. Important features of the compartments, such as tracks and streams, found along the stripline should be drawn on the tree map.
Step 6. Locating sample plots. The team leader notes the distances covered along the strip and informs the brusher-front chainman when the center of a sample plot is reached. The first sample plot is usually located 50 m from the starting point of the stripline and subsequent sample plots at 100 m interval along the stripline. The center of each sample plot should be marked with and the number painted on a pole made of durable material.

Step 7. Counting trees in the sample plot. Trees that fall within a radius of 17.84 m and with a dbh of 5-49 cm are counted by species and dbh class and recorded using Pre-harvest Inventory Form 2.

Step 8. Counting regeneration. Once a regeneration plot is reached, the team leader tallies by species the regeneration that falls within a radius of 5 m from the plot center.

Step 9. Compiling inventory data. During and after the fieldwork is completed, the team leader systematically compiles the inventory data in preparation for the calculation of the pre-harvest inventory results.
Activity 2.6.3
Calculating pre-harvest inventory results
and keeping records of the pre-harvest inventory

Expected outcomes

- Statistically valid information about the timber resources located in each of the forest compartment scheduled for harvesting, such as:
  - Species, number, volume, and quality of harvestable trees and potential seed trees.
  - Species composition, size structure, and volume of the entire tree crop.
  - Quantity and species composition of regeneration especially in low-volume compartments.
- A written summary of the pre-harvest inventory results.
- Systematically complied records of the pre-harvest inventory.

Requirements

- Systematically complied tree maps and Pre-harvest Inventory Forms 1, 2, and 3 filled in during fieldwork.
- Training of the pre-harvest inventory team to calculate inventory results provided by a trained forestry staff (part of the pre-harvest inventory training).
- Calculator.
- Tree volume table.
- Writing tools and materials.

How to conduct the activity

**Step 1. Estimating the volume of large trees.** The volume of large trees is estimated by using a tree volume table (see Annex 2.6.3.1). The volume estimate is then recorded in Pre-harvest Inventory Form 1.

**Step 2. Estimating the plot volume.** The procedure is as follows:

1. Estimate the number of trees per hectare by species and dbh class (say N) by multiplying the sampled number of trees by 10 (the area factor for a 10% sampling intensity).

2. Estimate the volume of trees per hectare by species and dbh class by multiplying the number of trees (N) by the average volume trees falling in the given dbh class.

3. Add all estimated volumes over all species and dbh class to get the total volume of trees with dbh 5-49 cm.

3. Multiply the total volume of large trees (dbh 50 cm or larger) that fall within the sample plot (check the tree map to do this) by 10 (the area factor). Add these volumes to get the total volume of large trees.
4. Add the total volume of small trees and large trees to get the plot volume.

5. Tabulate the plot volume by plot number.

**Step 3. Estimating the regeneration count.** Classify the regeneration into commercially valuable species, other commercial species, and non-commercial species. Calculate the arithmetic average per plot of the regeneration count in each species class. To get the regeneration count per hectare, multiply the regeneration count per plot by the area factor. The area factor is equal to the product of 10 plots per compartment multiplied by the area of the plot \[3.1416 \times 5 \text{ m} \times 5 \text{ m} = 78.54 \text{ m}^2\] and then divided by the area of the compartment.

**Step 4. Determining the stand structure.** The stand structure in the compartment is the diameter distribution of trees in the compartment, estimated by the tree count by dbh class. The tree count for dbh classes below 50 cm is found by multiplying the total counted in each dbh class by the area factor of 10. Trees in dbh classes above 50 cm are counted directly from Pre-harvest Inventory Form 1. The results of this step should include:
1. Stand structure for all species (all dbh classes 10, 20, 30, etc.)
2. Stand structure by species (for large trees, i.e. dbh classes 50, 60, etc.)

**Step 5. Writing the pre-harvest inventory summary.** The pre-harvest inventory summary is written on a single sheet of paper. It contains the following:
1. Heading (i.e. Pre-harvest inventory summary for year [indicate the year])
2. Compartment numbers included in the inventory
3. Average volume per hectare in each compartment (small trees, large trees, and total)
4. Regeneration count per hectare in each compartment

**Step 6. Keeping records of the pre-harvest inventory.** Refer to Activity 2.2.4 on keeping forest inventory records. Records of the pre-harvest inventory should be made available for the preparation of the annual village forestry operations plan. Utmost care should be taken when using the records. If necessary a working copy should be made (e.g. tree map). After each use, the records should be kept with the VFA/VFC Secretary.
Task 2.7
Annual village forestry operations planning

Objectives

Main objective
- To formulate an annual village forestry operations plan for the coming year that the government authorities will approve and use as the basis for providing a logging quota to the VFA/VFC.

Specific objectives
- To specify the forest management system in more detail than that provided in the village forest management plan.
- To put the annual operations plan in writing for easy communication to all stakeholders.
- To have the annual operations plan approved by the government authorities and used as the basis for securing a logging quota for the coming year.

Rationale

The annual village forestry operations plan is a one-year slice of the ten-year village forest management plan. It makes use of a more accurate information about the annual compartments, both their site conditions and forest resources, that are available from the pre-harvest inventory. Recommendations in the plan, e.g. maximum annual allowable cut therefore override those provided for the coming year in the village forest management plan. Moreover, the information available from the pre-harvest inventory allows a more detailed specification of the forest management system, such as on:
- Which sub-compartments are adequately stocked for harvesting?
- How much can be harvested from the sub-compartment?
- Which trees in the sub-compartment should be selected for harvesting and which trees for seeding the openings created during harvesting?

Once the plan is written, it is submitted to PAFO for approval. The plan is then used in calculating the logging quota that PAFO will recommend to MAF/DOF. The logging quota may not be given individually to the VFAs/VFCs but granted as one quota to a group of VFAs/VFCs. To determine how much quota to recommend, PAFO can sum up the proposed harvest of individual VFAs/VFCs in the group. A VFA/VFC, which fails to submit its annual operations plan on time, stands to be excluded in the proposed quota and lose its right to harvest timber in the coming year.

Activities

Activity 2.7.1 More detailed specification of the forest management system. More details are provided about the components of the forest management system.

Activity 2.7.2 Writing the annual village forestry operations plan. The plan is put in written form for easy comprehension by all stakeholders and for submission to PAFO.

Activity 2.7.3 Submitting the annual village forestry operations plan and securing a logging quota. Once submitted and approved by PAFO, the plan is used as the basis for recommending a logging quota for the VFA/VFC.
Activity 2.7.1
More detailed specification of the village forest management system

Expected outcomes

- Details of the village forest management system that specifically apply to the coming year. These details, such as those given below, are to be incorporated in the annual village forestry operations plan.

  ➢ Map of compartments where operations are to be conducted, showing at a scale of 1:1000 the location of the large trees and the sample plots, and the plot volume.
  ➢ Subdivision of the compartments into sub-compartments and selection of sub-compartments where harvesting can take place.
  ➢ Selection of and marking on the map the actual trees to be harvested or left behind as seed trees based on the rules given in the village forest management plan.
  ➢ Maximum and expected yield of living, dying, and dead trees from each sub-compartment.
  ➢ Layout on the map of access tracks to the trees to be harvested.
  ➢ Sub-compartments where some operations are to be done in the coming months (e.g. tree marking and vine cutting, access track building).
  ➢ Tabulation of individual trees to be cut showing the species, dbh, height, quality class, and volume.
  ➢ Summary tabulation by species of the trees to be cut and the resulting log characteristics, such as expected diameters and log lengths.

- A common understanding among the villagers (VFA/VFC officers and members) and the other stakeholders concerning various aspects of the forest management operations that will be undertaken in the coming year.

Requirements

- **Information.** More precise inventory information for the compartments assigned for the coming year are obtained through the pre-harvest inventory. Most of the other information are available in the village forest management plan.

- **Annual operations planning team.** As with forest management planning, annual operations planning should be conducted by the forest manager itself, e.g. VFA/VFC. The role of forestry staff should be limited to guiding and facilitating the process. The annual operations planning team should be composed basically of the same members as those of the forest management planning team. A DAFO staff who have had previous training and experience in annual operations planning should act as resource person, facilitator, and adviser in the team.

- **Tools and materials.** Map making and writing tools and materials and a pocket calculator are needed.

- **Time.** It takes about three days of full-time work for the team to complete this activity.
• **Place of work.** Work is usually done in the village. However, if the forestry staff is working with several villages simultaneously, a convenient place for all teams to work together may be selected, e.g. the district training facilities.

**How to conduct the activity**

**Step 1. Preparatory work.** The team should prepare the necessary information, tools, and materials. If the team has not yet done the work before, or is not yet proficient with the work, the forestry staff should provide the necessary training to the team, while doing the work together with them. Given hands-on training for two to three times in separate years, the village team should be able to repeat the work on their own with little or no assistance from the forestry staff. However, the team may not learn to do the work independently if the forestry staff continues to do the work for them.

**Step 2. Preparing the annual operations map.** Photocopied sheets of the original A4-size tree maps are temporarily pasted together into an annual operations map with a scale of 1:1,000. If the original tree maps are dirty, a clean copy is first made by hand. The original A4-size tree maps should be filed for future use by the VFA/VFC Secretary.

**Step 3. Dividing the compartments into sub-compartments and selecting sub-compartments for harvesting.** The volume per hectare in each sample plot is first written on the map. Based on the sample plot volumes, the compartments are divided into sub-compartments. The objective is to maximize the sustainable cut for the year, considering that no logging is allowed in sub-compartments with stand density below 120 m$^3$/ha, and higher cut is allowed in sub-compartments with stand density of at least 150 m$^3$/ha than in sub-compartments with stand density of 120-149 m$^3$/ha. The maximum is attained when the area where no logging is allowed is minimized and where logging is allowed the area of maximum cut (i.e. where the stand density is at least 150 m$^3$/ha) is maximized.

Once the sub-compartment boundaries have been drawn, a sub-compartment number should be assigned and the stand density should be written on the map together with the sub-compartment number.

**Step 4. Calculating the maximum allowable cut from each sub-compartment.** The maximum allowable cut from each sub-compartment is calculated by multiplying the maximum allowable cut per hectare corresponding to the stand density of the sub-compartment by the area of the sub-compartment and the cutting cycle. Tabulate the results and write it on the tree map.

**Step 5. Selecting trees to be cut or left as seed trees.** Following the rules specified in the village forest management system, trees to be cut or left as seed trees are selected and marked using the following legend

- Living tree to be cut
- Dying tree to be cut
- Dead tree to be recovered
- Seed tree
The trees selected to be cut must be of the species currently in demand in the timber market (to see how forest certification can improve the timber market, refer to Activity 3.?). Dying trees of some species, which produce large butt and center rots, should not be cut. Similarly, dead trees only of durable species can be recovered.

**Step 6. Ensuring sustainability.** To ensure that the timber harvest is sustainable, the rules on selecting trees to be cut or left as seed trees, as specified in the village forest management system, must be followed. Species which are scarce in the area should not be cut. Check that the total estimated volume to be cut in each sub-compartment does not exceed the maximum allowed. Also check that the number of trees to be cut of each species does not exceed 20% of the total number of large trees (i.e. with dbh of at least 50 cm) of that species. A tabulation of the maximum allowed cut and the total volume of trees harvested in each sub-compartment should be written on the annual operations map, as well as in the annual village forestry operations plan itself.

**Step 7. Laying out access tracks.** Access tracks to trees to be cut are connected to existing tracks. Length in meters of access tracks to be built is measured on the map in millimeters, converted to meters using the map scale, and the length written at the starting point of the track, i.e. where it branches from another track.

**Step 8. Scheduling some operations.** The extent of some operations, such as tree marking and vine cutting in hectares and building of access track in meters, are estimated and scheduled by month of operation.

**Step 9. Tabulating information for timber marketing.** A tree list is prepared for timber marketing purposes. The list should include the tree number, species, diameter, length, quality class, and volume of all trees to be cut. The tree number is a unique number that includes the number of the stripline and the number of the tree along the stripline. A summary table is also be prepared by including the total volume by species and, if required by buyers, also the smallest, largest, and average dbh and the lowest, long, highest, and average length of trees of the given species.

Annexes 2.7.1.1 and 2.7.1.2 show an example of a tree list and a summary of trees available for marketing timber.

**Step 10. Making copies of the annual operations map.** After the annual operations map has been finalized, the individual sheets are separated so that adequate photocopies can be made for submission to the authorities and for own use. The photocopies sheets are then pasted together into copies of the annual operations map. The original, separated sheets are filed by the VFA/VFC Secretary for future use.

**Step 11. Disseminating information concerning the plan.** A village assembly meeting is then called for the purpose of discussing and seeking suggestions and improvements on the different operations planned for the coming year.
Activity 2.7.2
Writing the annual village forestry operations plan

Expected outcomes

• Annual village forestry operations plan in written form.

Requirements

• Information. Maps, tables, and other information produced in Activity 2.7.1; model write up of an annual village forestry operations plan.

• Tools and materials. Writing tools and materials.

• Working team, time, and place of work. The same team, time, and place of work as Activity 2.7.1.

How to conduct the activity

Step 1. Preparatory work. The planning team prepares all required information, tools, and materials.

Step 2. Use of the model write up of an annual village forestry operations plan. To simplify the process of writing the plan, the team should make use of a model plan (Annex 2.7.2.1), filling or substituting item by item the information produced in Activity 2.7.1 for the blanks or write ups in the model.

Step 3. Writing the annual village forestry operations plan. The team then writes up the annual village forestry operations plan in its entirety, as shown below, and annexes the maps, charts, and tables developed in Activity 2.7.1.

1. The plan has by definition a one-year planning horizon. It should include the following:
   a. Introduction
   b. Forest management unit and its management plan
   c. Annual Village Forestry Operations Plan
   d. Implementing the Annual Village Forestry Operations Plan
   e. Benefits and impacts

2. The introduction section should contain:
   a. Background. This tells about the village – its location, population, and when it joined the village forestry program. It also gives the relation between the village forest management plan and the annual operations plan.

   b. Plan objectives. This presents the objectives of the annual operations plan.

   c. Methodologies. This briefly tells about how the plan was prepared.

3. The section on the FMU and its management plan should relate the annual plan to the long-term forest management plan. It should contain:
a. *Forest management unit.* This gives the map of the village forest management area, the present and planned village land uses, and the products and services that the forests are expected to provide.

b. *Forest resources.* This describes the forest resources in the village – area by forest type and summary of the inventory of the entire forest resources and the pre-harvest inventory covering the high forest to be harvested during the year.

c. *Village forest management plan.* This briefly presents the ten-year village forest management plan, including the timber harvesting cycle, the estimated amount of the timber harvest and planned uses of the timber harvest.

4. The section on the annual plan itself should describe the planned activities for the coming year. It should contain:

a. *Access infrastructure.* This shows what access roads and trails will be used for the year’s operations, e.g. length of old access roads and trails to be re-opened and length of new access roads and trails to be cleared.

b. *Timber harvesting.* This describes the timber harvesting to be done during the year – how the maximum allowable timber harvest for the year was calculated for each sub-compartment; how the trees were selected to be cut or left to regenerate the area; what guidelines are to be followed during timber harvesting; and how much and in what month will timber be harvested and sold.

c. *Harvesting of non-timber forest products.* This gives the intention of the VFA/VFC concerning the harvesting of non-timber forest products.

d. *Post-harvest assessment.* This tells how many hectares and when post-harvest assessment will be done.

e. *Regenerating and improving the forest.* This tells how the forest will be regenerated and improved after the year’s harvest. In Dong Sithouane and Dong Phousoi, the forest will be regenerated naturally, i.e. by means of seed trees (at least 10 seed trees for every tree cut). There will be no need for artificial regeneration, i.e. planting seedlings. Vines will be cut some time (preferably at least a year) before actual harvesting to minimize damage to the residual stand during timber harvesting and for safety reasons.

f. Forest protection. This shows the forest protection activities planned for the year.

5. The section on implementing the annual plan should contain:

a. *Village forestry association/committee.* This shows how the VFA/VFC is organized to implement the different activities.

b. *Contractors.* This shows what activities will be contracted to other parties.

c. *Schedule of operations.* This summarizes the activities planned and in what month they will be done.
d. **Resources to implement the plan.** This gives an estimate of how much human resources and financing will be needed to implement the plan, and also how the financing will be found.

6. The section on benefits and impacts should contain:

   a. **Timber sales, royalties and benefits.** This shows how much timber will be sold and how timber revenues will be shared as royalties to the government and benefits to the VFA/VFC.

   b. **Impact on the forest stand.** This describes what are the possible impacts of the year’s operations on the residual forest stand.

   c. **Sustainability of forest management.** This tells whether the forest management will be sustainable over time, or not.
Activity 2.7.3
Submitting the annual village forestry operations plan
and securing a logging quota

Expected outcomes

- The annual village forestry operations plans for a group of VFAs/VFCs are approved by PAFO.
- A logging quota corresponding to the sustainable cut for the year is awarded by MAF/DOF to the group of VFAs/VFCs.

Requirements

- Two original copies of the annual village forestry operations plan and its cover letter of all VFAs/VFCs in a group.
- The VFAs/VFCs recognized by the government, the village forest management plans approved by PAFO, and a valid village forestry management contract between each of the VFAs/VFCs and the government.

How to conduct the activity

**Step 1. Submitting the annual village forestry operations plans.** Annual village forestry operations plans are normally submitted as a batch by a group of VFAs/VFCs (see Activity 1.8 on group of VFAs/VFCs). The process of submitting the plans proceeds as follows (see also Annex 2.7.3.1 for a flowchart of the process):

1. Two original copies of the set of plans and attachments are sent first by the group of VFA/VFCs to DAFO.
2. DAFO acknowledges its receipt of the documents and forwards them to its Forestry Unit for review.
3. The DAFO Forestry Unit reviews the plan and the contract. If it is found to be complete, the Head of DAFO signs the documents and forwards them to the office of the District Governor for signature. If not, the documents are returned to the VFA/VFC for correction.
4. The district forwards the documents to the Provincial Forestry Section (Forest Management Unit) for review. If the plans are found to be in order, the PAFO Director approves the plans. If not, the documents are returned to the group of VFA/VFC through the DAFO for correction.

**Step 2. Distribution of copies.** Once approved, enough copies are prepared and distributed as follows: an original copy is kept by the VFA/VFC and the other original copy provided to PFS, and a copy is each provided to DAFO, PAFO, and DOF.

**Step 3. Securing a logging quota.** When PAFO makes its annual request to MAF/DOF for logging quota for the province, a separate quota is requested for the group of VFAs/VFCs. Annual village forestry operations plan must therefore be prepared on time.
Task 2.8  
Conducting pre-harvest operations

Objectives

Main objective

• To conduct a sequence of preparatory activities so that timber harvesting can proceed.

Specific objective

• To pre-sell the timber so that only those that are bought are harvested.
• To re-allocate the logging quota among the VFAs/VFCs in the group.
• To mark enough trees in each FMU to meet the allocated quota.
• To secure a permit from PAFO to harvest the pre-sold timber.
• To conduct all pre-harvest operations in a way that will ensure the regeneration of the forest.

Rationale

The preparations for the timber harvest start with the pre-selling of timber. This activity is necessary because of the nature of the timber market in Lao PDR. Harvesting timber first and then selling them afterwards is risky because some species may not be sold and the logs of these species will just go to waste. After the timber is pre-sold, the total volume is allocated among the VFAs/VFCs in the group and tree marking proceeds. PAFO is then requested to issue a logging permit after all the requirements for the permit have been complied with. Only then can the actual timber harvesting related activities proceed.

When conducting the pre-harvest operations, the regeneration of the forest after the timber harvest is a foremost consideration. Thus as many species as possible should be sold to prevent the overcutting of a single or few species. A VFA/VFC is not allocated a volume of harvest that exceeds the sustainable capacity of its FMU.

Activities

Activity 2.8.1 Timber marketing. Timber is pre-sold as openly as possible to obtain the best prices.

Activity 2.8.2 Re-allocating the logging quota. Each VFA/VFC in the group is allocated a part of the logging quota in terms of volume for the species that were pre-sold.

Activity 2.8.3 Tree marking. The VFAs/VFCs mark the trees to be harvested to meet their respective quotas.

Activity 2.8.4 Securing a logging permit. PAFO is requested to issue a logging permit to the group of VFAs/VFCs after all requirements have been complied with.

Activity 2.8.5 Pre-harvest activities to help ensure forest regeneration. The different activities are done with utmost consideration to successfully regenerating the forest after the timber harvest.
Activity 2.8.1
Timber marketing

Expected outcomes

- Maximum volume of the trees selected for harvesting is sold.
- The best possible timber prices are obtained.
- One or more logging contracts are signed between the group of VFAs/VFCs and reliable buyer(s).
- Deposits are paid by the contracted buyer(s) and placed under the management of PFS.

Requirements

- Logging quota awarded to the group of VFAs/VFCs.
- Lists of trees selected for harvesting.
- Information on current timber prices and timber market conditions, royalties, logging and other costs, minimum margin acceptable to the group of VFAs/VFCs, etc.
- Timber sales committee formed by the province with the group of VFAs/VFCs well represented.
- A set of potential buyers.
- The place of work is usually at the provincial center at the times set by the timber sales committee.

How to conduct the activity

Step 1. Publicity. At the initiative of the timber sales committee or the group of VFAs/VFCs, as many as possible prospective buyers are informed of the availability of timber for sale. Information is disseminated both by sending letters to the buyers and advertising in newspapers, both in Laos and in neighboring countries such as Thailand and Vietnam. The information should include the name and address of the group of VFAs/VFCs, available volume of each species, location of sale, transport routes, date of the sale, and instructions on the requirements and process of the sale.

Step 2. Calculating floor prices. Floor prices in $ for each cubic meter of timber of given species and grade delivered to the second landing is calculated by adding the following (see Annex 2.8.1.1 for a sample calculation):
- Royalty for the given species and grade.
- Taxes and fees (e.g. tree planting fee).
- Average logging cost and transport cost to the second landing.
- Average forest management cost of the VFAs/VFCs.
- Profit margin of the VFAs.

Step 3. Timber sales by closed bidding. The timber sales committee uses closed bidding as the first option for conducting the sale. Its features are as follows:
- A list of timber by species, quality indication, and location of delivery point (second landing) is provided to the bidders. Instructions on how to obtain the letter of invitation and other documents, the deadline for submitting the bids, and the date, time, and place of opening of the bids are also provided.
- Invitation letters to bidders include the rules for evaluation of bids along with the other bidding documents.
• Closed bidding procedures are followed, i.e. bidders submit closed and sealed bids for evaluation by the committee.

• The bidders quote their own price for the desired volume of the given species, quality class, and location of second landing. Other information are also to be provided by the bidders, such as guarantee of payment, capability to pay a deposit upon signing of the contract, and minimum timber sizes and other specifications.

• In the bid, prices are quoted for timber delivered at the second landing, the actual place of the sale. The buyer is responsible for the cost and arrangement of timber transport out from the second landing.

• The bidder who quotes the highest price for the given species, quality class, and location has the priority to buy the volume desired at the quoted price. The second, third, and so on, highest bidders in that order can buy any remaining volume at their quoted price. To be valid, the timber price must be at least as much as the floor price.

• The committee has the right to reject any bid for any valid reason, such as the lack of guarantee of payment.

• Actual timber sales occur after timber of a certain lot size, e.g. 100 cubic meters, is available at the second landing. Timber sales operations consist of timber scaling and grading by PAFO (with representatives of the buyer and VFAs/VFCs present), invoicing, payment, preparation of timber transport documentation, and timber loading and transport. Full payment is needed before logs can be loaded for transporting out of the second landing.

**Step 4. Timber sales by canvassing interested buyers.** If the bidding fails (e.g. because of low prices, lack of capable buyers), the committee approaches interested buyers and asks them if they are interested to buy the given species and at what prices. Price negotiations are conducted with the prospective buyers and the right of sale for a given species is awarded to the buyer who offers the best prices.

**Step 5. Negotiating and signing the timber sales contract.** After the buyer and timber prices have been approved by the authorities (usually PAFO), contract negotiations between the group of VFAs/VFCs and the buyer proceed. A successful negotiation culminates with the signing of the timber sales contract. Otherwise, Step 4 is repeated with a different buyer. Approval of the contract is confirmed by the authorities (usually PAFO). Annex 2.8.1.2 shows an example of a timber sales contract.

**Step 6. Payment and management of deposits.** Within a stipulated time period after contract signing the buyer pays to the group of VFAs/VFCs the required amount of deposits. Then the required deposits for royalties, taxes, and other fees are paid to the finance department of the province by the group. The committee may assign a manager of the deposits with the agreement of the group. This could happen, for example, if it is inconvenient for the group to transact business at the provincial center on a regular basis. Once timber sales are completed, an accounting and auditing of the use of the deposits and other payments is made and funds that are due to the VFAs/VFCs are handed over to them.
Activity 2.8.2
Re-allocating the logging quota

Expected outcomes

- The group of VFAs/VFCs re-allocates the logging quota to individual VFAs/VFCs.

Requirements

- Timber sales contract signed.
- Information on the logging quota and the availability of timber of the species that were included in the timber sales contract.
- Authorized representatives of the VFAs/VFCs in the group meet together for the purpose of re-allocating the quota.

How to conduct the activity

**Step 1. Organizing a meeting among the VFAs/VFCs in the group.** Authorized representatives of VFAs/VFCs belonging to the group meet together to re-allocate the logging quota among the VFAs/VFCs.

**Step 2. Re-allocation of the logging quota.** Based on the total quota, the quantity of each species that were included in the timber sales contract(s), and the availability of trees to be cut in each individual FMU, the logging quota is broken down by volume of each species that each VFA/VFC is allowed to cut (see Annex 2.8.2.1 for an example of re-allocation of the logging quota).

**Step 3. Ratification of the allocation by the group of VFAs/VFCs.** Before the re-allocation is considered final, it must be formally ratified by the group during the meeting itself.
Activity 2.8.3
Tree marking

Expected outcomes

- A modified tree list for tree marking purposes.
- Trees for harvesting or left as seed trees are marked.
- A modified tree list for logging purposes is prepared.
- The annual village forestry operations plan is updated.

Requirements

- Tree list for timber marketing purposes.
- Logging quota re-allocated to the VFA/VFC.
- A copy of the tree map and Pre-harvest Inventory Form 1.
- Tree marking teams composed of 2-4 persons selected from the pre-harvest inventory teams.
- Knives for clearing trails and paint for marking trees.
- At least a week of fieldwork in the harvesting compartments, depending on the number of teams organized and the number of trees to be marked.

How to conduct the activity

**Step 1. Preparatory work.** The tree marking teams prepare the tools and materials needed. If this is the first time for them to conduct tree marking, they are given instructions by the forestry staff on how to conduct the activity.

**Step 2. Preparing a tree marking list.** A tree list for tree marking purposes is prepared from the tree list for timber marketing purposes by canceling those trees from species that were not bought.

**Step 3. Fieldwork.** With the help of the tree marking list, the tree map, and Pre-harvest Inventory Form 1, the trees to be marked for cutting are located in the forest and marked by:

- Painting a line around the tree at cutting level.
- Painting an upright arrow to indicate the direction of felling that minimizes destruction of the standing tree crop, taking into further consideration the direction of lean of the tree.
- Painting the tree number under the cutting line.

See Annex 2.8.3.1 for an illustration of how a tree is marked for cutting.

Trees to be left as seed trees, which are in danger of being cut (e.g. of the desired species, size, and form), are marked as seed trees by:

- Painting a pair of dots in the direction of the nearest tree to be cut. One dot should be above the probable cutting line and the other dot below the probable cutting line.
- Painting another pair of dots in the opposite side of the tree.

See Annex 2.8.3.2 for an illustration of how a tree is marked as seed tree.
When substituting another tree for a rejected tree, the rules for selecting trees as specified in the village forest management plan must be followed, for example:

- Trees to be cut must be at least 20 m apart, except for dead and dying trees.
- Trees in a clump of trees of the same species is preferred over solitary trees.
- A tree to be cut must have at least 10 seed trees within a hectare around it.
- Trees located within 30 m of streams and 50 m of rivers must not be cut.
- The total number of trees of a species to be cut must not exceed 20% of the total number of large trees (e.g. with dbh of at least 50 cm) of that species.
- The logging quota must not be exceeded.

**Step 4. Preparing a tree cutting list.** A new tree list for logging purposes is prepared by canceling from the tree marking list the trees which were marked for cutting but were rejected, and adding to the list trees the trees which were not in the list but were marked for cutting.

**Step 5. Updating the annual village forestry operations plan.** The annual village forestry operations plan is updated by unmarking on the map the trees which were originally marked for cutting but were not actually marked, and marking on the map the trees which were not originally marked for cutting but were actually marked.

To finalize the tree map, delete access to trees which will no longer be cut, and provide access to new trees to be cut. Revise the seed tree indicators by erasing marks on trees that will no longer be marked as seed trees and marking new seed trees. Re-measure or modify information that has changed, such as length of access trails, list of trees to be cut, etc.
Activity 2.8.4
Securing a logging permit

Expected outcomes

- A logging permit is issued by PAFO to the group of VFAs/VFCs.

Requirements

- Timber sales contract signed and deposits provided by the buyer.
- The logging quota re-allocated among the VFAs/VFCs in the group.
- The trees to be cut marked in each FMU.

How to conduct the activity

Step 1. Complying with the requirements for securing a logging permit. The main requirements that must be met before a logging permit is issued are:

1. Payment of deposits for royalties and other fees. After the timber sales contract has been signed and the buyer has paid the agreed deposits, the group of VFAs/VFCs will have the financing required to pay its deposits to the government.

2. Assurance regarding the planting of trees. PMO No. 11 requires tree planting to be carried out or alternatively that tree planting fees one to three dollars per cubic meter cut (depending on the species) is paid.

3. Stamping of the trees to be cut. PAFO should be requested to consider the tree marking done by the VFAs/VFCs in lieu of this requirement.

Step 2. Requesting PAFO for a logging permit. The group then requests PAFO for the issuance of a logging permit. Only then can actual logging operations proceed.
Activity 2.8.5
Pre-harvest activities to help in ensuring forest regeneration

Expected outcomes

- The different pre-logging activities are done to help in ensuring forest regeneration.

Requirements

- The same requirements as tree marking (Activity 2.8.3).

How to conduct the activity

Regeneration of the forest after harvesting is the heart of the village forest management system. All activities in the system directly or indirectly help to ensure that forest regeneration happens. Thus ensuring forest regeneration is, strictly speaking, not a separate activity, but a concern that is integrated in all activities. Pre-harvest activities that directly help to ensure regeneration include pre-harvest inventory, logging planning, tree marking, and vine cutting.

Step 1. Pre-harvest inventory. Pre-harvest inventory provides information needed for planning how to ensure regeneration after the harvest. These include the volume of sub-compartments, regeneration count, inventory information about potential seed trees, and map of the potential seed trees.

Step 2. Logging planning, deciding sub-compartments to be logged. The most important consideration in selecting which sub-compartments are to be logged is ensuring regeneration. Using stand volume as indicator:

- Sub-compartments with 150 m³/ha or more are considered to be adequately stocked with large trees of commercial species that can regenerate the site after logging; hence, they are the first choice for harvesting.

- Sub-compartments with 120-150 m³/ha may not have enough large trees of commercial species for regeneration purposes. To decide whether they should be harvested, the regeneration count is checked. Giving due consideration to how many of the existing regeneration are expected to grow to maturity, the following quantities of regeneration is recommended to be present before harvesting is allowed:
  - at least 180 saplings/ha of valuable species, or
  - at least 1800 saplings/ha of other commercial species, or
  - at least 120 saplings/ha of valuable species and at least 1200 saplings/ha of other commercial species.

- Sub-compartments with less than 120 m³/ha are considered for regeneration purposes to be inadequately stocked with large trees of commercial species. Logging is not allowed, but dead and dying trees may be recovered if the log extraction does not cause too much destruction of the regeneration, e.g. near an existing access track. Care is especially taken if the stand volume is less than 100 m³/ha, in which case, only highly valuable dead trees of small sizes (thus requiring only manual log extraction) can be removed, e.g. mai khanyong.
Step 3. Logging planning, selecting trees to be cut. The tree map and the inventory records of individual large trees (Pre-harvest Inventory Form 1) allow the selection of trees to be cut to ensure regeneration by:

- Preferring commercial species that are most abundant, e.g. mai khen hin, mai deng, over those that are not abundant, e.g. mai bak, mai khen thong, mai dou.

- Selecting as many species as possible so that cutting is not concentrated on only a few species, which may then change the stand composition.

- Not cutting too much of one species, i.e. not more than 20% of the number of large trees of a species.

- Preferring to select from a clump of trees to selecting a solitary tree.

- Spacing trees to be cut wide apart, e.g. at least 20 m, to prevent invasion of the open spaces by bamboos and other unwanted vegetation.

Step 4. Logging planning, selecting seed trees. There must be at least 10 seed trees within a one-hectare area around the tree selected to be cut. Seed trees must be:

- Of commercial species.
- Medium to large size (at least 40 cm dbh, actual size depends on the species).
- Of good form and condition (quality class 1 or 2).
- Capable of good seed production.

Step 5. Tree marking. Trees to be cut and seed trees are marked on the ground. For trees marked to be cut, the direction of cut that destroys the least number of regeneration is painted on the tree. Seed trees are marked with 2 dots on opposite sides of the stem at 1.3 m height and two dots on opposite sides of the stem below the cutting height (that could be used for checking if the seed tree is actually cut).

Step 6. Vine cutting. Cutting of vines around trees marked to be cut is done at the same time as tree marking. Vine cutting helps to:

- Reduce risk to the safety of the felling crew.
- Reduce felling damage because vines do not tie the trees together.
- Reduce post-felling competition for space and sunlight.
- Increase the availability of light reaching the understory, thereby preparing the seedlings for the post-logging environment.
Task 2.9
Conducting timber harvesting operations

Objectives

Main objective

- To harvest and sell timber to derive benefit in a way that cause minimal adverse impact on the growing stock, soil, and resource base for biodiversity.

Specific objectives

- To prepare access tracks to the trees to be harvested, second landings for the harvested logs, and transport routes connecting them to the harvesting site and the highway.
- To organize the logging teams and mobilize them.
- To conduct logging, log transport, and second landing operations.
- To conduct and control the different operations in a way that that cause minimal adverse impact on the growing stock, soil, and resource base for biodiversity.

Rationale

It is the responsibility of the VFA/VFC to ensure that the harvesting of timber does not cause minimal adverse impact on the growing stock, soil, and resource base for biodiversity. Even if some parts or all of the logging operations are contracted out by the VFA/VFC to a sub-contractor, the VFA/VFC remains responsible for and must always be in control in the conduct of the logging operations. Having prepared the trees for harvesting, the VFA/VFC prepares the access to them and the second landings for the harvested logs. During actual logging, the VFA/VFC supervises and controls the operations to meet the quota, secure the logs, and minimize any adverse impact on the growing stock, soil, and resource base for biodiversity.

Activities

Activity 2.9.1 Preparing access tracks, second landings, and transport routes. The required infrastructure for moving and storing the harvested logs are prepared.

Activity 2.9.2 Mobilizing logging operations. All logging teams are organized, oriented to the work, and mobilized.

Activity 2.9.3 Logging and log transport. Felling, log preparation, and log transport are conducted in a proper manner.

Activity 2.9.4 Second landing operations. Logs are secured, scaled, graded, and released to the buyer after all requirements for their transporting out are met.

Activity 2.9.5 Timber harvesting activities to help ensure forest regeneration. Ways to successfully regenerate the forest are exercised during timber harvesting.
Activity 2.9.1
Preparing access tracks, second landings, and transport routes

Expected outcomes

- Access from an existing road to each tree to be cut is prepared.
- All second landing sites are prepared to accommodate the planned volume of logs.
- All access tracks and routes allow unhindered transport of logs to the second landing.

Requirements

- Tree map showing the location of trees marked for cutting.
- Logging site map, or any map that shows existing routes that lead to possible second landing sites.
- Knives and other tools for cutting underbrush and small trees.
- Able bodied villagers who can be mobilized for forest work before actual logging starts.

How to conduct the activity

**Step 1. Selecting the second landings.** Using the logging site map, one or more second landings are selected from a set of alternative sites by the VFAs/VFCs, which will be using the landing together. The second landings must have the following features:
- Connected by roads to the different logging sites and to the highway.
- Centrally located to minimize the transport distance from the logging sites, but at sites likely to be accepted by the buyers.
- Large enough to accommodate the planned volume of logs.
- Flat terrain to facilitate all second landing operations.

**Step 2. Preparing access tracks.** The VFA/VFC mobilizes all able bodied villagers to help in preparing access tracks to the trees to be cut. The villagers are divided into teams, each headed by a person who knows the location of the trees to be cut (e.g. member of the tree marking team). Depending on his familiarity with the logging site, the team leader may or may not require a copy of the tree map.

Access tracks are prepared following these guidelines:
- Access tracks should be located by avoiding large trees, as well as regeneration of valuable species.
- Access tracks should be as short as possible when measured from one felling site to the preceding felling site.
- The access track should be wide enough for a logging truck to pass.
- The turning radius should not be difficult for a logging truck to negotiate.
- Steep areas should be avoided; otherwise, access trails should have moderate slopes (not exceeding a vertical to horizontal ratio of 0.1).
- Completion of access track preparation should be timed so that logging is not delayed.

**Step 3. Preparing the second landings.** VFAs/VFCs, which will be using a common second landing, cooperate in preparing it. If the second landing was chosen well in Step 1, its preparation would only require the clearing of vegetation using manual tools. The VFAs/VFCs should agree on how the work of cost of clearing would be shared and the timetable for its completion.
**Step 4. Ensuring that access routes to and from the second landing are passable.**

VFAs/VFCs using a common route in transporting logs to the second landing should cooperate in ensuring that the route is always passable during the logging season. They should agree on which village is responsible for building and maintaining which section of the route, including the timetable for completing the access route. Routes from the second landings to the highway should also be prepared to allow the buyer to take the bought logs out.
Activity 2.9.2
Mobilizing logging operations

Expected outcomes

- The VFA/VFC logging teams are organized and prepared for the work.
- Logging activities that the VFA/VFC cannot handle are contracted out.
- All concerned parties are ready to start the logging operations.

Requirements

- **Prior activities.** Timber sales contract signed and approved; logging permit issued; trees to be cut already marked; access tracks to these trees and transport routes to the second landing already prepared; the second landing ready to be used.

- **Logging teams.** Logging teams from the villages are organized to work in VFA/VFC or group related logging activities as described below.

- **Equipment, tools, and materials.** An adequate number of self-loading logging trucks is needed. One truck can accommodate up to 6 m³ for a small, locally improvised truck or 16 m³ for a Vietnam-made truck, hauling one or two loads per day depending on the distance from the forest to the second landing. One, preferably two, chainsaw is needed by each felling and log preparation team. Other materials include chalk and paint for marking logs, pen, and forms for log transport and scaling, as well as tools and materials for logging camp and equipment maintenance.

- **Time and place of work.** Mobilization of logging operations takes place outside the forest a few days before the actual start of logging.

How to conduct the activity

**Step 1. Organizing the logging teams.** The logging teams include the following:

- Logging supervisors, one per VFA/VFC, who are responsible for all logging work in their respective FMUs.

- Felling and log preparation teams each consisting of a guide from each VFA/VFC, who will show the location of marked trees and who will later mark the number of the logs, and a faller and his helper. A logging contractor may provide the fellers and helpers for the group of VFAs/VFCs. One team can prepare logs for one to three logging trucks.

- Log transport teams, one per logging truck, consisting of a driver and two to four choker setters. The teams may be organized by the VFA/VFC itself, or the group of VFAs/VFCs may contract out log transport along with felling and log preparation. The number of teams needed depends on the volume to be produced and the number of working days available, having taken into consideration the capacity of the kind of logging trucks that are available for use or hire.
• Two-person scaling teams at two teams per second landing. The teams are provided by the VFAs/VFCs but are hired by the group of VFAs/VFCs since they do work for all VFAs/VFCs that are using the second landing.

**Step 2. Contracting felling and log transport to the second landing.** As with timber sales contracting, the contracting of part of the logging operations (usually felling and log preparation and hauling) is done by the group of VFAs/VFCs, with the exclusion of VFAs/VFCs which can do all of the logging operations by themselves. The terms of the logging contract should include the following (see Annex 2.9.2.1 for a sample contract):

• The VFA/VFC is responsible for overseeing the operations being carried out in its FMU to ensure that they are carried out properly and timely. The VFA/VFC will mark the trees, clearing access tracks, and supervise the cutting and trucking operations.

• The contractor is responsible for felling, log preparation, and transport of logs to the second landing, as well as providing instructions regarding road clearing.

• The VFA/VFC will assign a logging supervisor who will work daily with the logging crews of the contractor.

• The logging crews of the contractor will follow the instructions of the VFA/VFC logging supervisor regarding what trees to cut, stump height, minimizing damage to existing vegetation, maximizing benefit from logs by selecting proper log length, etc.

• The VFA/VFC will pay the contractor the agreed price in $/m$^3$ of logs delivered to the second landing. A specified advance payment will be given to the contractor. The balance will be paid after the logs have been officially scaled.

• The contractor will provide the agreed number of logging crews with the agreed set of equipment, and will replace in a timely manner any crew or equipment which do not work properly.

• The logging contractor will deliver the agreed volume of logs to the second landing following the agreed timetable.

**Step 3. Mobilizing the logging operations.** Together with the individual VFAs/VFCs and the contractor, the group of VFAs/VFCs prepares a schedule for mobilizing the logging teams. The schedule includes the sequence and approximate dates of deployment of the logging teams in each FMU. Before a single tree is cut, all logging teams are called to a meeting for the purpose of explaining the guidelines for working in the forest, particularly those included in the terms of the logging contract.
Activity 2.9.3
Logging and log transport

Expected outcomes

- The volumes of each species of logs allocated to the FMU are delivered to the second landing.
- Damage to the growing stock, compaction of soils, pollution of waterways, and damage to roads are minimized.

Requirements

- Prior activities. Timber sales contract signed and approved; logging permit issued; trees to be cut already marked; access tracks to these trees and transport routes to the second landing already prepared; the second landing ready to be used; logging teams mobilized.
- Logging teams. As those enumerated in Activity 2.9.1.
- Equipment, tools, and materials. As those enumerated in Activity 2.9.1.
- Time and place of work. Logging is to be done entirely in the dry season. If the rains come, work is postponed until dry weather comes back. Log transport over public roads is not permitted in case of wet road conditions.

How to conduct the activity

Step 1. Felling. Only those trees that have been marked to be cut are felled. Felling is directed to minimize damage on the crop trees and regeneration, while ensuring the safety of the workers. So that the tree falls in the desired direction, a directional cut is made on the stem before the felling cut is made. The cuts are made as low as possible to maximize recovery of sellable logs. The use of wedges is important in many cases to properly direct the fall.

Step 2. Log preparation. In crosscutting the tree into logs, the hauling capacity of the logging truck and the specifications of the buyer concerning the minimum log diameter and length must be taken into account, while at the same time not leaving the minimum of valuable wood at the felling site. This means that the top diameter should be as small as possible, but satisfying the buyer’s specifications.

A log number is written using chalk at or near both ends of the log. The number is written as n/m/o/p, where “n” is the number of the VFA/VFC, ”m” is the number of the strip, ”o” is the number of the tree, and ”p” is a number 1, 2, or 3 where 1 is used for the first log made from the tree, 2 for the second, etc. By using this numbering system, it is possible to trace a log back to the stump of the tree in the forest.

Step 3. Log extraction and transport to the second landing. When extracting logs in most logging sites in Laos, it is possible to avoid the use of skidders (whether animal or mechanical), which is particularly damaging to the soil and standing trees. A logging truck is used as a forwarder, i.e. it is driven at or near the location of the log, which is
then skidded and loaded into the truck. Skidding over short distances, say 20 m which is possible with the truck’s winch, reduces damage to regeneration caused during the preparation of access tracks.

The VFA/VFC logging guide prepares a log transport slip in triplicate copies. At the minimum, the slip lists the number of the logs loaded into the truck and also contains the number of the truck and the signature of the logging guide (see Annex 2.9.3.1). The first copy is given to the truck driver for his record, the second is sent via the truck driver to the second landing supervisor, and the third is given by the logging guide to the logging supervisor.

**Step 3. Feedback from the second landing on volume produced.** At the second landing the logs are scaled and a running total of the log volume is made for each species and VFA/VFC (see Activity 2.9.4 concerning second landing operations). The running total is fed on a daily basis back to the logging supervisor, who is responsible for ensuring that the logging quota of the VFA/VFC species by species is not excessively exceeded.

**Step 4. Completion of logging.** Logging in a FMU is completed when the total volume cut for all species is about the same as the quota of the VFA/VFC. An allowance for exceeding the quota of a few, say up to 3, cubic meters is allowed. Once the quota is reached, any marked but still uncut tree is left unfelled. The logging supervisor makes sure that all prepared logs are transported to the second landing.
Activity 2.9.4
Second landing operations

Expected outcomes

- Logs transported to the second landing are properly received, scaled, and recorded.
- Batches of logs are officially scaled and graded.
- Logs are released to the buyer after they are fully paid for and the relevant documents are presented.

Requirements

- Prior activities. Logging operations have been started.
- Tools and materials. Scaling and recording materials.
- Work teams and work time. A second landing supervisor and scalers from the group of VFAs/VFCs and a forestry staff are deployed full-time at the second landing. A scaling and grading committee is deployed from time to time. Work goes on during the logging season.

How to conduct the activity

Step 1. Receiving, scaling, and recording logs. The log transport team unloads the logs at the second landing and hands over the a copy of the log transport slip to the second landing supervisor. The scaling team of the group of VFAs/VFCs paints the log number at both ends of the logs, and then scale the logs. The scaling data is unofficial but necessary for controlling the logging operations. The second landing supervisor ensures that the scaling data are properly recorded in the second landing registry (see Annex 2.9.4.1). After the last load of the day has been unloaded, the second landing supervisor makes a summary of logs delivered to the second landing. The summary shows the volume of logs by VFA/VFC and species already delivered. The summary is fed back to the VFA/VFC logging supervisors to ensure that no overcutting is done.

Step 2. Securing the logs. Logs are properly stored in the second landing. Each VFA/VFC has its own place assigned for storing its logs. Logs are guarded on a 24-hour basis by both forestry staff and villagers.

Step 3. Official scaling and grading. Once a certain batch of logs, e.g. 200 m³, has been delivered to the second landing, the forestry staff initiates a request for PAFO to officially scale and grade the logs. PAFO appoints a scaling and grading committee consisting of a PAFO scaler-grader, a DAFO assistant scaler-grader, and representatives of the buyer and the group of VFAs/VFCs. Annex 2.9.4.2 shows a summary of the scaling and grading rules.

Step 4. Release of logs to the buyer. The PAFO scaler-grader prepares the scaling and grading document and secures the signature of the members of the committee. This document is used as the basis for calculating and paying of royalties and other taxes and fees. An agent of the buyer normally follows up the process of paying for the logs and securing the documents for transporting logs out of the second landing. Logs are released by the forestry staff and the second landing supervisor to the buyer’s agent only after the log transport documents approved by PAFO have been presented. The release of the logs is then duly recorded in the second landing log registry.
Activity 2.9.5
Timber harvesting activities to help in ensuring forest regeneration

Expected outcomes

- Different timber harvesting activities are done in ways that help to ensure forest regeneration.

Requirements

- The same requirements as in preparing access tracks (Activity 2.9.1) and logging and log transport (Activity 2.9.3).

How to conduct the activity

Forest workers and logging teams should be trained to look out for and take good care of regeneration when conducting logging operations, e.g. during access track preparation, felling, and extracting of logs.

Step 1. Preparing access tracks. When directing workers to places to be cleared for access, the guide avoids places with plenty of regeneration of valuable species.

Step 2. Felling. Directional felling is used so that the tree falls towards the desired direction. The direction of fell is selected away from crop trees and from seedlings and saplings of valuable and other commercial species. Saplings are particularly prone to felling damage.

Step 3. Log transport. Log extraction techniques that minimize damage to crop trees and regeneration are selected. Forwarding method using logging trucks over prepared access tracks is preferred; fortunately it is the method commonly used in Lao PDR. Skidding over long distances is discouraged. Animal skidding is preferred to mechanized skidding.
Task 2.10
Conducting post-harvest forest management operations

Objectives

*Main objective*

- To assess the impacts of the timber harvesting operations and conduct activities to help in regenerating and improving the forest.

*Specific objectives*

- To assess damage to the growing stock and the soil caused by logging.
- To assess the quantity of timber wasted during logging.
- To assess the need for further forest regeneration and timber stand improvement operations.
- To conduct liberation cutting, enrichment planting, and other operations that help in regenerating and improving the forest.

Rationale

After the timber harvesting operations are done, two separate assessments are done. The first is done right after logging to assess how it was conducted and what were its impacts, with the view of improving the conduct of future operations. The second is done a few years after logging to decide what further actions are needed to help in regenerating and improving the forest. Silvicultural operations, such as liberation cutting and enrichment planting, are then conducted if they can provide benefits that are adequate to meet the cost of conducting them.

Activities

*Activity 2.10.1 Post-harvest assessment.* VFA/VFC teams conduct the assessment providing a report to DAFO.

*Activity 2.10.2 Post-harvest activities to ensure forest regeneration and improve the timber stand.* VFA/VFC teams conduct silvicultural operations upon the advice of DAFO.
Activity 2.10.1
Post-harvest assessment

Expected outcomes

• Damage to the growing stock, extent of soil erosion, extent of opening of the canopy, and quantity of wood wastes are assessed.

• If the post-harvest assessment is done after a few years have elapsed after logging, then the condition of regeneration and the need for silvicultural operations are assessed.

• Information on mortality is generated and kept for later use in modifying forest growth and mortality.

Requirements

• Distance measuring and scaling tools and materials.

• The post-harvest assessment team is a 2-3-person team of the VFA/VFC. It does the work just after the logging operations have ended. One day is enough to complete the work.

How to conduct the activity

Step 1. Preparatory work. A forestry staff provides instructions to the VFA/VFC post-harvest assessment team on how to collect data for the assessment. The forestry staff does all calculations in a workshop with the team and writes the assessment report.

Step 2. Assessing damage from preparing access roads. At least five 15-m sections of the access tracks are taken at random from a FMU. Data from several FMUs may be combined later to determine the results applicable to a larger area. The stump size of all trees cut in the sample sections are measured. The number and volume of the damaged trees per hectare are calculated from these measurements (see Annex 2.10.1.1 for a sample calculation).

Step 3. Assessing damage from felling and log extraction. Ten stumpsites are taken at random from a FMU. Data from several FMUs may be combined later to determine the results applicable to a larger area. The dbh of all trees in the stumpsite which were damaged during felling and log extraction is measured. The number and volume of the damaged trees per hectare are calculated from these measurements (see Annex 2.10.1.2 for a sample calculation).

Step 4. Assessing the quantity of utilizable materials left behind. At the same stumpsites taken in Step 3, the stump, top, and large branches left behind by the harvested tree are measured as follows:

• Stump. Measure from the cutting level to the level where the cut should have been made to save wood.

• Top. Measure from where the diameter is about 30 cm to the place of cut.

• Large branches. Measure the diameter and length of large branches above 30 cm in diameter.
Annex 2.10.1.3 shows the calculation of the volume of the logging waste materials.

**Step 5. Assessing the opening of the canopy.** At the same stumpsites, the diameter of the canopy opening is measured in meters.

**Step 6. Assessing the need for silvicultural operations.** When the second or subsequent cut is about to be undertaken, a few years would have elapsed since the last logging. In the case of a five-year cutting cycle, it would already have been about four years at the time of the pre-harvest inventory for the next cut. By this time, the need for timber stand improvement operations would already be more apparent. It is therefore recommended to combine the pre-harvest inventory for the next cut with post-harvest assessment of the last cut for the purpose of assessing the need for timber stand improvement operations.

To make the assessment, the team examines the logged-over sites and notes the location, if any, of places which can benefit from enrichment planting (e.g. large canopy openings) or liberation cutting to free the saplings of valuable species from weeds and other competition.

**Step 7. Checking soil erosion hazards.** All access tracks are checked for soil erosion hazards by walking through them. Corrective action, if required, is done by laying debris that will impede the surface run-off of water.

**Step 8. Preparing the post-harvest assessment report and updating of the tree map.** The post-harvest assessment report is written by filling information into the post-harvest assessment form (see Annex 2.10.1.4). The tree map is updated by updating the status of large trees (i.e. felled, damaged, still healthy) and marking the location of access tracks that are likely to be used permanently. DAFO should be provided a copy of the report.
Activity 2.10.2  
Post-harvest activities to ensure forest regeneration and improve the timber stand

Expected outcomes

- Post-harvest activities are done to ensure regeneration and improve the timber stand.

Requirements

- For post-harvest assessment requirements see Activity 2.10.1.
- Seedlings and tree planting and brush cutting teams, tools, and materials are needed in cases where additional work, e.g. enrichment planting, is to be done.

How to conduct the activity

After DAFO has been provided a copy of the report of the post-harvest assessment done a few years after logging, the VFA/VFC should confer with DAFO regarding the conduct of activities that would help in ensuring the regeneration of the timber stand, such as:

- Promoting the development of saplings of valuable species.
- Enrichment planting.
- Thinning and other timber stand improvement techniques.

Step 1. Promoting the development of saplings of valuable species. The main principle in promoting the development of saplings of valuable species is to reduce competition for space, light, water, and nutrients from unwanted vegetation. During post-harvest assessment (see Activity 2.10.1), the benefit of liberating saplings of valuable species or reducing competition is assessed. It is desirable to have 30-50 saplings/ha of valuable species growing well and free from competition that may prevent or hinder their growth into the top layer of the canopy.

Step 2. Doing enrichment planting. Enrichment planting is generally not recommended, since it requires considerable inputs and costs in procuring, planting, and tending of the seedlings. Enrichment planting may be necessary if the number of saplings of valuable species is minimal because of damage during harvesting. This is not likely to happen in village forestry sites, where adequate seed trees are provided and opening of the canopy during harvest is not large.

If enrichment planting is at all undertaken, then:

- Species selected for enrichment planting must be:
  - Known to have reasonable diameter growth rate (when in dominant position).
  - Of good stem shape (low tapering).
  - Belonging to commercially valuable species.
  - Reasonably quick to adapt to the site (less than 6 months).
  - Suitable species include mai peuay, mai deng, mai dou, mai tekha.

- No seedlings should be planted within 5 m of a commercial tree or sapling that has potential to reach the upper canopy.
• Regular tending of the seedlings should be done until they attain the size of 2-3 m to minimize competition from other vegetation. If this is not done, the efforts at enrichment planting will simply be wasted.

**Step 3. Doing thinning and other timber stand improvement techniques.** Aside from those already taken up, there is a number of other timber stand improvement techniques that have been tried in other countries, e.g.

• **Thinning.** The purpose of thinning is to remove undesirable trees (e.g. crooked, non-commercial species) which compete with the crop trees, as well as to remove some of the crop trees, if there are too many of them, in order to enhance the growth and quality of the remaining crop trees.

• **Pruning.** To remove branches that hinder the development of good tree form, as well as to hasten growth of the stem.

• **Singling.** In the case of coppicing trees, to reduce the number of stems that coppice from the stump.

• **Vine cutting.** To free the trees, especially their crown, from vines that threaten to cut off light and other growth requirements.

• **Liberation cutting.** To free saplings or crop trees from large trees so that they can grow well.

The main issue in selecting which of these techniques to use in village forestry sites is whether the benefits expected from their application exceeds the cost of the application (i.e. the investment in labor and other inputs). Experiences from other countries have shown mixed results, so that it cannot be said that village forestry sites are certain to benefit from these techniques. Research trials are needed to be conducted in Lao logged-over forests to assess the technical and economic viability of these techniques, before they can be recommended.

Further considerations for regenerating and improving the dry dipterocarp forest

• The major species in the dry dipterocarp forest are light demanding, hence larger gaps in the canopy are possible than in the high forest.

• Forest regeneration should be done by natural means.

  ➢ Regeneration of *Shorea obtusa* is generally good because:
    o Seed production is usually adequate in groups of the species.
    o It has good capacity to recover after damage by fire and grazing.
    o Vegetative regeneration from young stumps is generally viable up to 5-6 cm in dbh.

  ➢ Natural regeneration can be assisted:
    o By creating gaps with a radius of 10-15 m around identified seed trees.
    o By establishing areas where the development of existing seedlings will be promoted (minimum requirement – 100 saplings/ha of *Shorea obtusa, Dipterocarpus obtusifolius, D. tuberculatus*).
o By selecting 50-100 good quality saplings for tending (Protection is required until the saplings are tall enough, i.e. 3-4 m high, to tolerate fire and grazing. Fencing may be considered if the selected saplings are susceptible to fire and grazing. If fencing is not possible then grazing should be reduced by other means.).

- Alleviating pressure from grazing and fire:
  - Prescribed burning early rather than late in the dry season is less detrimental to forest regeneration.
  - The access of cattle and buffaloes to sensitive areas should be limited.

- Tending of scattered, good-quality trees of valuable species:
  - Straight, non-deformed and healthy stems of valuable species may be tended to enable them to grow into timber sizes.
  - Mai deng is a suitable species.
Task 2.11
Customary use of the forest

Objectives

Main objective

• To help in ensuring that the customary use of the forest by the villagers is done properly, e.g. without impairing the productive capacity of the resource base.

Specific objectives

• To develop and enforce village rules for the utilization of timber for local use.
• To develop and enforce village rules for the collection of non-timber forest products.

Rationale

The Forest Law provides for the customary use of the forest by the villagers. When the resource base is rich and the village population is low, few problems are encountered concerning the customary use of the forest by the villagers. To help in ensuring that this situation continues into the future, the village must monitor and control the activity. As part of its forest management responsibility, the VFA/VFC assists the village administration in developing and enforcing rules concerning this activity.

Activities

Activity 2.11.1 Utilization of timber for local use. The village develops and implements monitoring mechanisms and rules for harvesting timber for home and village use.

Activity 2.11.2 Utilization of non-timber forest products. The village develops and implements monitoring mechanisms and rules for the collection of non-timber forest products by the villagers.
Activity 2.11.1
Utilization of timber for local use

Expected outcomes

- The village formulates and approves its own rules for utilizing timber for household or village use.
- The villagers understand the rules and follow them when utilizing timber for household or village use.

Requirements

- **Prior activity.** The villagers have drafted their village forest management plan.
- **Tools and materials.** Large brown paper, markers, other writing tools and materials.
- **Team, place, and time for the activity.** Rules are formulated in the village through the leadership of the VFA Policy Committee or VFC, in consultation with the rest of the village, at the time when a sense of urgency for the rules is felt, preferably soon after the village forest management plan has been drafted. The presence of forestry staff when the village rules are formulated is desirable but not absolutely necessary.

How to conduct the activity

**Step 1. Formulating the rules and their monitoring and implementing mechanisms.**
The VFA Policy Committee or VFC, together with other knowledgeable villagers, e.g. elders, meet for the purpose of formulating the village rules on utilizing timber for local use. A forestry staff member facilitates and guides the process. If the staff member is not available at the time of the meeting, he/she must have had prior discussions with the committee regarding the need for and the process of formulating the rules. The committee meeting should cover:
- The present condition of the forest resources in the village based on the forest inventory and any cutting done since then.
- The consequences of not managing the cutting of timber for local use, and conversely the need for management.
- The existing practices concerning cutting timber for local use.
- Issues and problems related to cutting timber for local use, and what the village forest management plan and related government laws and regulations say about the matter.

The discussion is then followed by the formulation of the village rules, which should cover:
- Situations and conditions to exist before cutting of timber for local use is allowed.
- Forest compartments where cutting is allowed.
- Species and volume restrictions.
- Process of requesting and approving requests for cutting timber for local use.
- Process of enforcing the village rules and monitoring compliance.
- Penalties for breaking any provision of the village rules.
Step 2. Disseminating the village rules. After their formulation, the village rules are discussed in a village assembly meeting, where comments and recommendations are solicited and corrections are done to finalize the village rules.

Step 3. Applying the village rules for utilizing timber for local use. The following is an example of how the process of utilizing timber for local use may proceed:

1. The villager or village association, who wants to harvest timber for local use, makes an oral request to the VFA/VFC Secretary. The date and other information, together with the signature of the requester, are entered into a registry of timber harvest for local use (see Annex 2.11.1.1).

2. The request is presented to, discussed with, and evaluated by the village chief and VFA/VFC manager based on the following checklist:
   a. Is the request justified?
   b. Are the species and volume requested within limits?
   c. Is the harvesting area that as prescribed in the village forest management plan?

3. If the request is approved by the village chief and VFA/VFC manager, the requester and a VFA/VFC authorized representative go to the forest and mark the trees, making sure that cutting rules are followed, e.g. trees to be cut are not closer than 20 m apart; at least 10 seed trees are found within a hectare around the marked tree; cutting is outside the buffer strip of waterways, etc.

4. The tree(s) is cut under the supervision of the VFA/VFC authorized representative.

5. The VFA/VFC authorized representative reports the completion of the work to the VFA/VFC Secretary, who then makes the proper entry into the registry.
Activity 2.11.2
Utilization of non-timber forest products

Expected outcomes

- The village formulates and approves its own rules for utilizing non-timber forest products.
- The villagers understand the rules and follow them when utilizing non-timber forest products.

Requirements

- Prior activity. The villagers have drafted their village forest management plan.
- Tools and materials. Large brown paper, markers, other writing tools and materials.
- Team, place, and time for the activity. Rules are formulated in the village through the leadership of the VFA Policy Committee or VFC, in consultation with the rest of the village, at the time when a sense of urgency for the rules is felt, preferably soon after the village forest management plan has been drafted. The presence of forestry staff when the village rules are formulated is desirable but not absolutely necessary.

How to conduct the activity

Step 1. Formulating the rules and their monitoring and implementing mechanisms. The VFA Policy Committee or VFC, together with other knowledgeable villagers, e.g. elders, meet for the purpose of formulating the village rules on utilizing NTFP. A forestry staff facilitates and guide the process. If the staff member is not available at the time of the meeting, he/she must have had prior discussions with the committee regarding the need for and the process of formulating the rules. The committee meeting should cover:

- The types of NTFP collected in the village forests and purpose of collection.
- The location and present condition of the resource bases for NTFP in the village.
- The consequences of not managing the collection of NTFP, and conversely the need for management.
- The existing practices concerning collection of NTFP and the time of collection during the year.
- Trends of NTFP collection.
- Issues and problems related to the collection of NTFP, and what the village forest management plan and related government laws and regulations say about the matter.

The discussion is then followed by the formulation of the village rules, which should cover:

- Situations and conditions to exist before collection of the specific kind of NTFP is allowed.
- Forest compartments where collection is allowed.
- Collection quantity and other restrictions to be imposed on each type of NTFP.
- Regular monitoring of NTFP collection and updating of collection quantity and other restrictions for each type of NTFP.
- Process of enforcing the village rules and monitoring compliance.
- Penalties for breaking any provision of the village rules.
Step 2. Disseminating the village rules. After their formulation, the village rules are discussed in a village assembly meeting, where comments and recommendations are solicited and corrections are done to finalize the village rules.

Step 3. Applying the village rules. Because many kinds of NTFP is collected on a daily basis, it is not reasonable to require villagers to request permission or even inform the village administration or the VFA/VFC every time they want to collect NTFP. Control is exercised by disseminating current information on maximum sustainable collection rates (i.e. rates that do not start a downward trend in quantities collected or that correct a downward trend) and compartments for collection NTFP. The information is updated on an annual basis by monitoring the annual collection rates in each compartment and noting their trends.

Monitoring NTFP collection rates and trends is the responsibility of the NTFP monitoring team of the VFA/VFC. The team is responsible for:

- Identifying NTFP collection groups by forest compartments.
- Conducting a meeting with the collection groups every collection season (or year) to discuss collection rates and observations on collection trends, and to find out if current collection rates start a downward trend, or if they need to be adjusted.
- Consolidating the information (see Annex 2.11.2.1 for a sample form) and reporting it to the VFA Policy Committee or VFC as the basis for deciding the current applicable NTFP collection rates for each compartment.
Task 2.12

Forest protection and conservation

Objectives

*Main objective*

- To protect the forest from the different destructive agents and conserve its soil, water, and biodiversity.

*Specific objectives*

- To develop and enforce village rules on forest protection from fire, conversion to unplanned land uses, and over-grazing.
- To develop a village program for conserving the soil and water resources.
- To develop and enforce village rules on hunting, fishing, and other measures to conserve biodiversity.

Rationale

Forest protection and conservation is directly a concern of the villagers who use the forest, but it cannot be successfully done if it is confined to a single village. All villages in and surrounding the forest must be involved. They must develop and enforce rules and their monitoring and implementing mechanisms to protect the forest from the different destructive agents and conserve its soil, water, and biodiversity.

Activities

**Activity 2.12.1 Forest protection from fire.** The village develops and implements monitoring mechanisms and rules to prevent forest fires and prevent them from spreading once they occur.

**Activity 2.12.2 Forest protection from conversion to unplanned land uses.** Rules are made by the village to monitor land-use conversion and allowing the conversion of forests to other land uses only if this is provided for in the village land-use plan.

**Activity 2.12.3 Forest protection from over-grazing.** Village rules on grazing are developed for livestock owners to follow.

**Activity 2.12.4 Conserving soil and water resources.** A program for conserving soil and water resources is developed and implemented by the village.

**Activity 2.12.5 Conserving biodiversity.** The village develops and implements monitoring mechanisms and rules on hunting, fishing, and other measures to conserve biodiversity.
Activity 2.12.1
Forest protection from fire

Expected outcomes

- The village formulates and implements its own program for forest fire prevention and control.
- The villagers understand the need to prevent forest fires, and they help in suppressing forest fires when they occur.

Requirements

- **Prior activity.** The villagers have drafted their village forest management plan.
- **Tools and materials.** Large brown paper, markers, other writing tools and materials.
- **Team, place, and time for the activity.** The program is formulated in the village through the leadership of the VFA Policy Committee or VFC, in consultation with the rest of the village, at the time when a sense of urgency for the program is felt, preferably soon after the village forest management plan has been drafted. The presence of forestry staff when the program is formulated is desirable but not absolutely necessary.

How to conduct the activity

**Step 1. Formulating the forest fire prevention and control program.** The VFA Policy Committee or VFC, together with other knowledgeable villagers, e.g. elders, meet for the purpose of formulating a program for forest fire prevention and control. A forestry staff facilitates and guide the process. If the staff is not available at the time of the meeting, he/she must have had prior discussions with the committee regarding the need for and the process of formulating the program. The committee meeting should cover:
- Causes and effects, both negative and positive, of forest fire.
- Reasons for villagers setting the forest on fire, and village practices that requires fire as a tool (e.g. grazing, farming).
- Compartments which are most prone to forest fire.
- Time of the year when forest fire is most prevalent.
- Existing rules and practices used by villagers to prevent and control forest fires and their workability and effectiveness.
- How implementation of these practices are organized.
- Other problems and issues related to forest fire prevention and control.
- Provisions of the Forest Law, village forest management contract, village forest management plan, and annual operations plan concerning forest fire prevention and control.

The discussion is then followed by the formulation of the program for forest fire prevention and control, which should cover:
- Expression of the need for forest fire prevention and control.
- Extension program to prevent forest fire.
- Forest fire lookout and patrol program for early detection of forest fire.
- Fire line construction program.
• Use of supervised and controlled burning.
• Forest fire suppression program.
• Organizing the implementation of these programs, including teams, support for the teams, time period, etc.
• Inter-village action to prevent and control forest fire.
• Possible support from the group of VFAs/VFCs, e.g. financial assistance through a no-fire-bonus scheme.
• Other systems of rewards and penalties.

**Step 2. Disseminating the program for forest fire prevention and control.** After their formulation, the program for forest fire prevention and control is presented and discussed in a village assembly meeting, where comments and recommendations are solicited and corrections are done to finalize the program.

**Step 3. Implementing the program for forest fire prevention and control.** Inter-village cooperation is stressed. No village acting alone can effectively prevent or control forest fires even within its own territory. Implementation of the program in different villages should be initiated by the group of VFAs/VFCs. Part of timber revenues, especially when there are price premiums from forest certification, should be allocated for program implementation at group and VFA/VFC levels.
Activity 2.12.2
Forest protection from conversion to unplanned land uses

Expected outcomes

- The village formulates and approves its own rules for converting forest land to farms or other uses.
- The villagers understand the rules and follow them when converting forest land to farms or other uses.
- Land use and ownership are registered in a village cadastre.

Requirements

- **Prior activity**. The villagers have drafted their village land-use plan and forest management plan.
- **Tools and materials**. Large brown paper, markers, other writing tools and materials.
- **Team, place, and time for the activity**. Rules are formulated in the village through the leadership of the VFA Policy Committee or VFC and the Village Land Allocation Committee, in consultation with the rest of the village, at the time when a sense of urgency for the rules is felt, preferably soon after the village forest management plan has been drafted. The presence of forestry staff when the village rules are formulated is desirable but not absolutely necessary.

How to conduct the activity

**Step 1. Formulating the rules and their monitoring and implementing mechanisms.**
The VFA Policy Committee/VFC and the Village Land Allocation Committee, together with other knowledgeable villagers, e.g. elders, jointly meet for the purpose of formulating the village rules on converting forest land to farms or other uses. A forestry staff facilitates and guide the process. If the staff is not available at the time of the meeting, he/she must have had prior discussions with the committee regarding the need for and the process of formulating the rules. The committee meeting should cover:

- The present condition of land uses in the village.
- The consequences of not managing the conversion of forest land to farms or other uses.
- The existing guidelines and actual practices concerning the conversion of forest land to farms or other uses, including their effects on the village and the actions taken and the penalties imposed on unauthorized conversions.
- The need for a village cadastre and a registry of village land uses and ownership to better organize the use of land.
• The roles of the village administration, particularly the Village Land Allocation Committee, and the VFA/VFC in protecting the forest against unplanned land-use conversion.

• Inter-village conflicts concerning land use and cooperation in protecting forests against unplanned land-use conversion.

• Other issues and problems related to conversion of forest land to farms or other uses, and what the village land-use plan, village forest management plan, and relevant government laws and regulations say about the matter.

The discussion is then followed by the formulation of the village rules, which should cover:
• Situations and conditions to exist before conversion of forest land to farms or other uses is allowed.
• Forest compartments where conversion to farms or other uses is allowed.
• Restrictions on conversions of forests to farms or other uses.
• Process of requesting and approving requests for converting forest land to farms or other uses, including the criteria for approval.
• Process of registering land uses in the village cadastre.
• Process of enforcing the village rules and monitoring compliance.
• Penalties for breaking any provision of the village rules.
• Inter-village cooperation in monitoring and managing land uses.

Step 2. Disseminating the village rules. After their formulation, the village rules are discussed in a village assembly meeting, where comments and recommendations are solicited and corrections are done to finalize the village rules.

Step 3. Applying the village rules on land-use conversion. The following is an example of how the process of converting a forest into a farm or other land uses may proceed:

1. The villager or village association, who wants to convert a piece of forest into a farm or other land uses, makes a verbal application or request to the Secretary of the Village Land Allocation Committee. The date and other information, together with the signature (or thumbmark) of the applicant, are entered into a records of application for village land-use conversion (see Annex 2.12.2.1).

2. A member of the Village Land Allocation Committee conducts an ocular inspection of the requested land.

3. The application is presented to, discussed with, and evaluated by the Village Land Allocation Committee based on the following checklist:
   a. Is the request within limits set by law?
   b. Is the requested area as prescribed in the village land-use plan?
   c. Is the request justified and fitting to the intended purpose?
   d. Is the requested area clear of prior claims?
   e. Does the ocular inspection confirm the answers to the above questions?

4. The committee presents its recommendations to the village chief.
5. If the application is approved by the village chief, the Secretary of the committee records the date of approval and the village chief signs in his approval in the records of application for village land-use conversion.

6. The committee asks the village cadastral survey and mapping team, together with the applicant, to survey and map the area. The map and all related information are entered into the village cadastre and village land registry.

7. The applicant receives a copy of the map signed by the village chief.

8. If an official land title is desired, an application is made at the district headquarters with the endorsement of the village chief.
Activity 2.12.3
Forest protection from over-grazing

Expected outcomes

- The village formulates and approves its own rules on livestock grazing in the forest.
- The villagers understand the rules and follow them when they take their livestock to graze in the forest.

Requirements

- Prior activity. The villagers have drafted their village forest management plan.
- Tools and materials. Large brown paper, markers, other writing tools and materials.
- Team, place, and time for the activity. Rules are formulated in the village through the leadership of the VFA Policy Committee/VFC, in consultation with the rest of the village, at the time when a sense of urgency for the rules is felt, preferably soon after the village forest management plan has been drafted. The presence of forestry staff when the village rules are formulated is desirable but not absolutely necessary.

How to conduct the activity

Step 1. Formulating the rules and their monitoring and implementing mechanisms. The VFA Policy Committee/VFC, together with other knowledgeable villagers, e.g. elders, meet for the purpose of formulating the village rules on livestock grazing in the forest. A forestry staff facilitates and guide the process. If the staff is not available at the time of the meeting, he/she must have had prior discussions with the committee regarding the need for and the process of formulating the rules. The committee meeting should cover:

- The number of households taking their livestock to graze in the forest.
- The extent and trends of grazing in the forest.
- The present condition of the forest as the result of grazing.
- The consequences of not protecting the forest from over-grazing.
- The existing practices concerning grazing in the forest.
- The use of fire to induce new grass growth.
- Livestock raising techniques that the village has not used before, e.g. rotational grazing, cut and carry, introducing new fodder species.
- Other issues and problems related to grazing in the forest, and what the village forest management plan and related government laws and regulations say about the matter.

The discussion is then followed by the formulation of the village rules, which should cover:

- Situations and conditions to exist for grazing in a forest compartment to be allowed.
- Forest compartments where grazing is allowed.
- Time of the year when grazing in the compartment is allowed.
- Grazing procedures, including the use of fire.
- Introduction of new practices, e.g. rotational grazing.
- Process of requesting and approving requests for grazing in the forest.
• Process of enforcing the village rules and monitoring compliance.
• Penalties for breaking any provision of the village rules.

**Step 2. Disseminating the village rules.** After their formulation, the village rules are discussed in a village assembly meeting, where comments and recommendations are solicited and corrections are done to finalize the village rules.

**Step 3. Applying the village rules on livestock grazing in the forest.** Because almost all households in the village take their livestock to graze in the forest, it is not reasonable to require them to request permission or even inform the village administration or the VFA/VFC every time they want to take their livestock to the forest. However, villagers taking their livestock to the forest are expected to be fully aware of the village rules and to apply the rules themselves unsupervised. Any observation on violations or any problems are expected to be reported to the village chief.
Activity 2.12.4
Conserving soil and water resources

Expected outcomes

- The village formulates and approves its own program for conserving soil and water resources.
- The villagers understand the program and implement it.

Requirements

- Prior activity. The villagers have drafted their village forest management plan.
- Tools and materials. Large brown paper, markers, other writing tools and materials.
- Team, place, and time for the activity. The program is formulated in the village through the leadership of the VFA Policy Committee/VFC, in consultation with the rest of the village, at the time when a sense of urgency for the program is felt, preferably soon after the village forest management plan has been drafted. The presence of forestry staff when the program is formulated is desirable but not absolutely necessary.

How to conduct the activity

Step 1. Formulating the program. The VFA Policy Committee/VFC, together with other knowledgeable villagers, e.g. elders, meet for the purpose of formulating a program for controlling soil erosion and protecting waterways in the village. A forestry staff facilitates and guide the process. If the staff is not available at the time of the meeting, he/she must have had prior discussions with the committee regarding the need for and the process of formulating the program. The committee meeting should cover:

- The present condition of the land and water resources in the village.
- Problem places, e.g. badly eroded road sections cut by concentrated surface run-off of water.
- The consequences of not controlling soil erosion and protecting waterways.
- The existing land and water management practices.
- Issues and problems related to land and water management, and what the village forest management plan and related government laws and regulations say about the matter.

The discussion is then followed by the formulation of the program, which should cover:

- The program objectives.
- Identification and monitoring of problem areas.
- Actions to check soil erosion to protect waterways in identified areas.
- Setting of priorities on actions to be taken.
- Timed program for implementing the identified actions.
- Whether labor is voluntary or remunerated.

Step 2. Disseminating the program. After its formulation, the program is presented and discussed in a village assembly meeting, where comments and recommendations are solicited and corrections are done to finalize the program.

Step 3. Program implementation. The identified actions are implemented according to the timetable set in the program.
Activity 2.12.5
Conserving biodiversity

Expected outcomes

- The village formulates and approves its own rules for conserving biodiversity, particularly on hunting, fishing, and collection of rare or endangered plant species.
- The villagers understand the rules and follow them.

Requirements

- **Prior activity.** The villagers have drafted their village forest management plan.
- **Tools and materials.** Large brown paper, markers, other writing tools and materials.
- **Team, place, and time for the activity.** Rules are formulated in the village through the leadership of the VFA Policy Committee/VFC, in consultation with the rest of the village, at the time when a sense of urgency for the rules is felt, preferably soon after the village forest management plan has been drafted. The presence of forestry staff when the village rules are formulated is desirable but not absolutely necessary.

How to conduct the activity

**Step 1. Formulating the rules and their monitoring and implementing mechanisms.** The VFA Policy Committee/VFC, together with other knowledgeable villagers, e.g. elders, meet for the purpose of formulating the village rules on conserving biodiversity. A forestry staff facilitates and guide the process. If the staff is not available at the time of the meeting, he/she must have had prior discussions with the committee regarding the need for and the process of formulating the rules. The committee meeting should cover:
- The present condition of the forest resources and biodiversity in the village based on their local knowledge.
- The existence of protected species in the village based on the participatory wildlife survey conducted by experts.
- The need of the village to hunt, fish, or collect plants from the wild.
- The existing practices concerning hunting, fishing, and utilization of forest plants and wildlife.
- The extent of hunting, fishing, or collecting plants from the wild.
- How much of the collection is traded.
- The consequences of not conserving biodiversity.
- Issues and problems related to conserving biodiversity, and what the village forest management plan and related government laws and regulations say about the matter.

The discussion is then followed by the formulation of the village rules, which should cover:
- Situations and conditions to exist before hunting, fishing, or collecting plants is allowed.
- Compartments where hunting, fishing, or collecting plants is allowed.
- Species and quantity restrictions.
- Allowable practices.
• Process of enforcing the village rules and monitoring compliance.
• Penalties for breaking any provision of the village rules.

Step 2. Disseminating the village rules. After their formulation, the village rules are discussed in a village assembly meeting, where comments and recommendations are solicited and corrections are done to finalize the village rules.

Step 3. Applying the village rules. Because hunting, fishing, or collecting plants from the wild especially for food is prevalent, it is not reasonable to require villagers to request permission or even inform the village administration or the VFA/VFC every time they want to hunt, fish, or collect plants from the wild. However, the villagers are expected to be fully aware of the village rules and to apply the rules themselves unsupervised. Any observation on violations or any problems are expected to be reported to the village chief.

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Village development

Tasks and activities

Task 3.1 – Sharing the costs and benefits of village forestry

Activity 3.1.1 Cost and benefit sharing between the State and the VFA
Activity 3.1.2 Cost and benefit sharing among VFAs in the group
Activity 3.1.3 Cost and benefit sharing within the VFA

Task 3.2 – Initiating village development

Activity 3.2.1 Village development planning
Activity 3.2.2 Accessing resources and support for village development

Task 3.3 – Supporting village development projects through village forestry

Activity 3.3.1 Identifying and selecting village development projects
Activity 3.3.2 Formulating and approving village development projects

Task 3.4 – Monitoring and evaluating the progress and impact of village forestry

Activity 3.4.1 Determining the objectives and indicators for participatory monitoring and evaluation
Activity 3.4.2 Selecting appropriate tools for participatory monitoring and evaluation
Activity 3.4.3 Gathering the information needed for participatory monitoring and evaluation and presenting the results
Task 3.1
Sharing the costs and benefits of village forestry

Objectives

Main objective

- To share the village forestry costs and benefits between the state and the organizations for village forestry (i.e. village forestry committee, village forestry associations, inter-village forestry committee, Groups of VFCs/VFAs, etc) and among villagers.

Specific objectives

- To share the village forestry costs between the state and the villagers.
- To share the village forestry costs among villagers.
- To share the village forestry benefits between the state and the villagers.
- To share the village forestry benefits among villagers.

Rationale

All forests in Lao PDR are owned by the state on behalf of the national community. The state derives revenue from the forest in the form of taxes (e.g. royalties) and fees (e.g. tree planting fee). The revenue goes to the national treasury from where annual appropriations for forest management, protection, and conservation are obtained. However, the annual appropriations for forest management, protection, and conservation are inadequate to pay decent salaries to the forestry staff and finance their daily work. One of the results of this is that the forest is poorly, if at all, managed, and inadequately protected. Village forestry is therefore resorted to in order to bring the human resources in the village to help the state in the management, protection, and conservation of the forest.

Since the villages work with the state in forest management, protection, and conservation, and incur labor costs, it is but fair that they share with the state not only in the costs but also in the benefits. The state takes its share in the benefits in the form of taxes and fees, which represent a large percentage of the total timber or NTFP revenue. The rest should be used to pay the costs of timber or NTFP harvesting and transport, and subsequent forest regeneration and management, as well as contribute to village development.

Conceptually, from its share of the benefits the state pays for the costs of its staff and their operations by means of annual appropriations. However, since in practice the annual appropriations are inadequate, and so that village forestry can continue to work as a partnership between the state (through the forestry staff) and the village (through the organization for village forestry), the state may have to appropriate directly from forest revenues enough amount to pay staff operating costs on top of the taxes and fees that it already collects. The remaining share of the village is shared among villagers according to their internal agreement. For example, the villagers may agree to give priority to paying wages to village teams with the remaining amounts used for village development, welfare, and rural investments.
Activities

Activity 3.1.1 *Sharing the costs of village forestry between the State and the organization for village forestry.* The state pays the cost of maintaining a forestry administration whose main task is to look after the management, protection, and conservation of the forest. The organization shares in this task by providing the direct inputs mainly in the form of labor.

Activity 3.1.2 *Sharing the costs of village forestry among villagers.* Villagers are expected to protect the forest and use it wisely. Trained village teams do more specialized work such as forest inventory, supervision of timber harvesting, and forest regeneration.

Activity 3.1.3 *Sharing the benefits of village forestry between the State and the organization for village forestry.* As owner of the forest, the national community represented by the state takes a large percentage of the forest revenue in the form of royalties and also collects certain types of fees. With or without village forestry, the villagers benefit from the forest by means of their customary rights to use the forest. By practicing village forestry the villagers deserve to get part of the forest revenue to pay the costs of forest management and for village development.

Activity 3.1.4 *Sharing the benefits of village forestry among villagers.* Villagers, who directly participate in forest management, are given standard remunerations from the organization’s share of the net revenue. The entire village continues to reap benefits from a well managed and protected forest, as well as from village development partly funded from the net proceeds of village forestry.
Activity 3.1.1
Sharing the village forestry costs between the State and the organization for village forestry

Expected outcome

- Village forestry costs are shared between the state and the organization for village forestry (e.g. village forestry committee, VFA, inter-village village forestry committee on forestry, Group of VFCs/VFAs).

Requirements

- Approved village forest management contract.
- Approved by-laws of the organization.
- Approved annual work plan and budget of the organization.
- A good understanding of the costs related to the implementation of village forestry activities.

How to conduct the activity

**Step 1.** Review the provisions of the approved village forest management contract relating to village forestry cost sharing between the state and organization for village forestry.

**Step 2.** Review the provisions of the organization’s by-laws relating to village forestry cost sharing between the state and organization for village forestry.

**Step 3.** Review the key activities in the approved annual work plan and determine the costs, inputs, and resources from the state forestry agencies needed to implement each of the key activities (e.g. manpower, equipment, materials). For example, in conducting village forest inventory, the PAFO trainers train the village forest inventory teams and the DAFO extension worker provide technical assistance to the village forest inventory teams. The resources and inputs needed from the state forestry agencies in conducting village forest inventory are:

- Manpower (PAFO trainers and DAFO extension worker)
- Transport facilities
- Equipment and materials used in training

**Step 4.** Discuss the costs for the above inputs from the state forestry agencies in implementing village forestry activities. For example: salary, daily allowance, and others paid to state forestry staff, transport facilities, and operating costs (for fuel, oil, etc.), and training equipment and supplies. All of these are borne by the State and represents its share in the cost of implementing village forestry activities in the village.
Activity 3.1.2
Sharing the village forestry costs among villagers

Expected outcome

- Village forestry costs are shared by villagers.

Requirements

- Approved by-laws of the organization.
- Approved annual work plan and budget of the organization.
- A good understanding of the costs related to the implementation of village forestry activities.

How to conduct the activity

Step 1. Review the provisions of the approved by-laws relating to cost sharing.

Step 2. Review the key activities in the approved annual work plan and budget. Determine the costs, inputs, and resources needed to implement each of the key activities. For example, the resources needed in conducting village forest inventory are:
- Manpower – village forest inventory team members.
- Equipment – tree diameter, distance measuring devices, calculator, etc.
- Materials – survey sheets, pens, folders.

Step 3. Discuss how the costs for implementing the village forestry activities be shared among the villagers.

Step 4. Reach a consensus on how the villagers could share in the village forestry costs.

Step 5. Formulate rules and procedures (as needed) to help ensure that the village forestry costs are shared by villagers.
Activity 3.1.3 -
Sharing the village forestry benefits between the state and the organization for village forestry

Expected outcome

- Village forestry benefits are shared between the state and the organization for village forestry (e.g. village forestry committee, village forestry association, inter-village forestry committee, Group of VFCs/VFAs).

Requirements

- Approved village forest management contract.
- Approved by-laws.
- A good understanding of the village forestry benefits.
- Organization’s report on revenue from forest management and payment of royalties and taxes.

How to conduct the activity

Step 1. Review the provisions of the organization’s by-laws relating to village forestry benefits sharing between the state and the organization for village forestry.

Step 2. Review the different kinds of village forestry benefits derived by the state, for example:

* **Tangible benefits**
  - Revenue (in terms of royalties and taxes).
  - Sustainable management of forest.

* **Intangible benefits**
  - Biodiversity conservation.
  - Environmental improvement.

Step 3. Review the organization’s report on payment of royalties and taxes. Assess the amount of revenue that accrued to the state which represents the share of the state in village forestry benefits.

Step 4. Review the report on net revenue of the organization. Assess the amount of net revenue that accrued to the organization which represents the share of the organization in village forestry benefits.
Activity 3.1.4
Sharing the village forestry benefits among villagers

Expected outcome

- Village forestry benefits are shared by villagers.

Requirements

- Approved by-laws of the organization.
- Approved organization’s rules and procedures on employment and compensation and use of revenue for welfare support and village development.
- A good understanding of the benefits from village forestry.
- Organization’s report on revenue from forest management and royalties, taxes and contract payments.
- Organization’s report on employment, training, and the use of income for welfare support and village development.

How to conduct the activity

Step 1. Review the provisions of the approved organization’s by-laws relating to benefit sharing and use of revenue.

Step 2. Review the organization’s approved rules or procedures on employment and compensation including the use of revenue for welfare support and village development.

Step 3. Discuss the different kinds of benefits from village forestry derived by the villagers. For example:

**Tangible benefits**
- Revenue from forest management.
- Employment and revenue.
- Welfare support.
- Village development projects (e.g. water pumps, fish ponds, schools).
- Training.
- Wood for household and village use.
- Non-timber forest products for household use.

**Intangible benefits**
- Improved environment
- Biodiversity conservation
- Watershed protection

Step 4. Review the organization’s report on revenue from forest management and royalties, taxes, and contract payments.

Step 5. Review the organization’s report on employment, training, and use of revenue for welfare support and village development.

Step 6. Discuss and reach a consensus on how the village forestry benefits can be shared by the villagers.
Step 7. Revise and improve the organization’s existing rules or procedures on employment and use of revenue for welfare support and village development as needed to ensure that benefits are shared by the villagers.
Task 3.2
Supporting village development projects through village forestry

Objectives

Main objective

- To support village development projects out of the revenue from sustainable forest management.

Specific objectives

- To identify and select village development projects.
- To formulate and approve village development projects.

Rationale

Village forestry can be viewed as an “engine for village development”. One of the main objectives of village forestry is to help improve the socio-economic condition of villagers. In addition to training, welfare support, employment, and revenue derived by villagers from village forestry, part of the revenue generated from sustainable forest management through village forestry is used to support the planning, implementation, and management of village development project(s). This is clearly specified in the organization’s approved by-laws and rules on the use of revenue for village development.

Under existing Government administrative structure, the village administration is responsible for the overall planning, implementation, and management of development projects and activities in the village. One of the key roles of the organization for village forestry is to generate adequate revenue from sustainable forest management that can be used, among other purposes, to support village development. The money for village development is allocated to the village administration based on village development project plan(s) approved by district authorities. The money is placed into a village development fund that is managed by the village administration for implementing the approved village development projects.

See Figure 1 which shows the procedures for supporting village development projects out of the revenue from village forestry.

Activities

This task consists the following activities:

Activity 3.2.1 Identifying and selecting village development projects. The criteria and procedures for identifying and selecting village development projects are established. Possible village development projects are selected using a participatory process.

Activity 3.2.2 Formulating and approving village development projects. A participatory process of formulating and approving village development projects is established. Village development project plans are formulated and approved by the district authorities.
**Figure 1.** Procedure for supporting village development projects through village forestry

<table>
<thead>
<tr>
<th>Organization for village forestry</th>
<th>Village Administration</th>
<th>District Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generates forest management revenue and prepare rules on use of revenue for village development</td>
<td>Approves organization’s rules on use of income for village development</td>
<td>Prepares criteria and procedures for identifying and selecting village development projects and discussing with village assembly</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nouay households and women’s groups identify and discuss possible village development projects based on agreed criteria</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Discusses results with village assembly and reaches a consensus on village development project(s)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Coordinates Nouay and women’s group discussions and consolidates results</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Discusses results with village assembly and forwards them to district authority for approval</td>
</tr>
<tr>
<td>Confirms availability of funds or includes costs in organization’s annual budget</td>
<td>Prepares village development project plan(s) and discusses it with the organization re: availability of funds</td>
<td>Approves the village development project plan(s)</td>
</tr>
<tr>
<td>Allocates funds for village development based on approved plan(s)</td>
<td>Establishes and manages a village development fund</td>
<td>Monitors and evaluates implementation of approved village development project(s)</td>
</tr>
<tr>
<td></td>
<td>Implements and manages approved village development project(s)</td>
<td></td>
</tr>
</tbody>
</table>
Activity 3.2.1
Identifying and selecting village development project(s)

Expected outcomes

- Criteria for identifying and selecting village development project(s) are established.
- A participatory process for identifying and selecting village development project(s) is established.
- Possible village development projects to be supported out of the revenue from sustainable forest management are identified and selected by villagers.

Requirements

- Organization’s approved by-laws and rules on use of income for village development.
- PAFO trainers with adequate knowledge and skills in training the villagers in identifying and selecting possible village development projects.
- DAFO extension worker with adequate knowledge and skills in facilitating and providing technical assistance to villagers in identifying and selecting possible village development projects.
- Village administration and nouay heads with adequate knowledge and skills in facilitating the process of identifying and selecting possible village development projects.

How to conduct the activity

Step 1. The PAFO trainers train the villagers (e.g. village administration and nouay heads) in identifying and selecting possible village development projects to be supported out of the revenue from village forest management.

Step 2. After the training, the village administration, in collaboration with the organization, reviews the provisions of the organization’s approved by-laws relating to village development and the organization’s approved rules on use of income for village development.

Step 3. The village administration drafts the criteria and procedures for identifying and selecting possible village development project(s) to be supported out of the revenue from sustainable forest management. Some examples of the criteria for identifying and selecting possible village development project(s) include:

- It responds to prioritized basic needs of villagers.
- It benefits the greatest number of villagers, and in the case of a village cluster or group, it benefits all the concerned villages in the cluster or group.
- It is small scale, and the costs do not exceed the available revenue from village forest management allocated for village development.
- It requires equipment, tools, materials, manpower, and skills that are available in the village with limited additional external support services and resources needed.
- It is short term and can be completed within a reasonable period of time.
- It allows for counterpart contributions from the village (e.g. labor, tools, materials).
• It directly or indirectly supports sustainable forest management (e.g. water pumps, access roads, health centers), and it promotes village cooperation and enhances collective work.
• It complements (not duplicates) the overall village development plan of the district.

**Step 4.** The village administration meets with the village assembly to discuss and reach a consensus on the criteria and procedures for identifying and selecting possible village development project(s) to be funded out of the revenue from sustainable forest management.

**Note:** In the case of a village cluster or group, all the concerned village administration and village assembly in the cluster or group meet jointly to discuss and reach a consensus on the criteria and procedures for identifying and selecting possible village development projects.

**Step 5.** The *nouay* heads discuss, identify, and prioritize with the households (under the *nouay*) possible village development projects based on the agreed criteria for identifying and selecting village development project(s).

**Step 6.** The *nouay* heads form a women’s group within their respective *nouays* to identify, discuss, and prioritize possible village development projects based on the agreed criteria for identifying and selecting village development project(s).

**Step 7.** The village administration facilitates and coordinates the *nouay* household and women’s group discussions on possible village development projects and consolidates the results.

**Step 8.** The village administration presents and discuss the results to the village assembly. The village development projects are prioritized using PRA pair wise ranking.

**Step 9.** The village assembly reaches a consensus on the village development projects(s) that will be funded out of the revenue from village forest management.

**Note:** In the case of a village cluster or group, all members of the village administration and village assembly in the cluster or group meet jointly to discuss and reach a consensus on village development projects that can be funded out of revenue from village forest management.
Activity 3.2.2
Formulating and approving village development project plans

Expected outcomes

- A participatory process for formulating village development project plans is established.
- Village development project plans are formulated and approved.
- A village development fund is established and managed by the village administration.
- Capability of the village administration in planning, implementing, and managing village development projects is strengthened.
- Socio-economic condition of villagers is improved.

Requirements

- Organization’s approved by-laws and rules on use of income for village development.
- Adequate revenue from sustainable forest management to support village development project(s).
- PAFO trainers with adequate knowledge and skills in training the village administration in formulating village development project plan(s).
- DAFO extension workers with adequate knowledge and skills in facilitating and assisting the village administration in formulating village development project(s).
- Village administration with adequate knowledge and skills in formulating village development projects.
- Technical assistance from concerned district authorities provided to the village administration in planning, implementing and managing village development project(s).

How to conduct the activity

Step 1. The PAFO trainers train the village administration in formulating village development projects.

Step 2. The village administration coordinates with the concerned district authorities for guidance regarding the formulation of plan(s) for the selected village development project(s).

Step 3. The village administration formulates a plan for each of the selected village development projects (see sample in Annex 3.2.2.1). The contents of a village development project plan includes:

- **Project title** (e.g. Bakhounkham village water pump project, Nalaviang-Koktheuleu village road improvement project, Nonbokeo-Nonsombhat village school project).
- **Objectives** (e.g. number of water pumps to be established or length of road to be improved, and number of families to be benefited).
- **Description and schedule of activities.** Includes list of activities on project implementation and maintenance, schedule, and persons responsible.
• **Estimated cost.** Includes description of items, quantity, unit costs, total costs and source (e.g. village contribution, organizations for village forestry, district authorities, and other organizations).

• **Location map.** Shows the approximate location of the project in relation to the villages to be benefited.

**Step 4.** The village administration discusses the plan(s) with the organization to confirm availability of funds. If funds are not available, the organization considers the village development project costs in the formulation of its annual work plan and budget.

**Step 5.** The village administration presents and discusses the plan(s) to the village assembly and submits it to the concerned district administration for approval upon recommendation of the concerned district office (e.g. for a village school project, the district education office endorses the plan to the district chief for approval; for a village irrigation project, the district agriculture and forestry office endorses the plan.; for a village health clinic, the district health office endorses the plan).

**Note:** In the case of a village cluster or group, all the village administration in the cluster or group jointly prepare the village development project plan(s) and discuss it jointly with all the concerned members of the village assembly in the cluster or group.

**Step 6.** Based on the approved plan(s), the organization allocates and releases the money to the village administration to support the implementation of the approved village development project(s). Said money is kept in a village development fund that is established and managed by the village administration for such purpose.

**Step 7.** The village administration(s) implements the approved village development plans. It coordinates and secures external assistance from concerned district authorities and other organizations as needed.

**Note:** In the case of a village cluster or group, the plan(s) are implemented and managed jointly by all the concerned village administrations in the cluster or group. The village development fund is jointly managed by them.

**Step 8.** The concerned district authority monitors and evaluates the implementation of village development project(s).
Task 3.3
Learning together about the progress and impact of village forestry work through participatory monitoring and evaluation

Objectives

Main objective

- To learn about the implementation of village forestry work (i.e., status, progress, problems, and lessons) in the village as basis for adjusting and improving the operations and performance of organizations for village forestry (e.g., village forestry committee, village forestry association, inter-village forestry committee, Group of VFCs/VFAs).

Specific objectives

- To choose the objectives and indicators for participatory monitoring and evaluation.
- To select and use appropriate tools for participatory monitoring and evaluation.
- To gather the information needed for participatory monitoring and evaluation and to present the results to the villagers.

Rationale

Participatory monitoring and evaluation (PME) is a learning process for both the villagers and the state forestry staff. It is necessary that villagers, through the organization for village forestry, regularly check and ensure that the implementation of village forestry activities in the village is in accordance with the approved plans. It is essential that the village forestry activities in the village are also regularly assessed to determine whether the set goals and objectives of village forestry are being achieved. Participatory monitoring and evaluation is necessary to adjust or improve some parts of the organization’s plans or operations to improve its performance leading towards the achievements of its goals and objectives.

Participatory monitoring and evaluation is conducted by villagers for their own use. The PAFO trainers train the villagers in conducting participatory monitoring and evaluation. The DAFO extension worker facilitates and provide assistance to villagers in conducting participatory monitoring and evaluation. The PME results are presented and discussed with the village administration and village assembly so that they are aware of the status, progress, problems, and lessons in the implementation of village forestry activities. It also provides the villagers with a better understanding and appreciation of the implementation of village forestry activities and encourages active participation and support from them.

Activities

The task consists of the following activities:

Activity 3.3.1 Determining the objectives and indicators for participatory monitoring and evaluation. The rationale, objectives, and indicators for participatory monitoring and evaluation are discussed and chosen by the villages.
Activity 3.3.2 Selecting appropriate information gathering tools for participatory monitoring and evaluation. The appropriate information gathering tools for PME are discussed and selected by villagers. The criteria for selecting and using appropriate information gathering tools for PME are established.

Activity 3.3.3 Gathering and analyzing the information needed for participatory monitoring and presenting the results. The needed information for participatory monitoring and evaluation are gathered, analyzed, and presented to the villagers.
Activity 3.3.1
Determining the objectives and indicators for participatory monitoring and evaluation

Expected outcome

- The objectives and indicators for participatory monitoring and evaluation are chosen by the villagers.

Requirements

- PAFO trainers with adequate knowledge and skills in training villagers in choosing the PME objectives and indicators.
- DAFO extension workers with adequate knowledge and skills in facilitating and assisting villagers in choosing the PME objectives and indicators.
- Villagers with adequate knowledge and skills in choosing the PME objectives and indicators.
- Approved village land use plan, village forest management plan, annual operations plan, and the organization’s annual work plan.
- Approved by-laws of the organization.

How to conduct the activity

**Step 1.** The PAFO trainers train villagers (e.g. organization’s officers, village administration, key villagers) in choosing the PME objectives and indicators.

**Step 2.** The organization for village forestry and village administrations review the approved village land use plan, village forest management plan, annual operations plan, organization’s annual work plan and by-laws.

**Step 3.** Based on the review, the organization and village administration discuss and reach a consensus on the objectives of village forestry (e.g. sustainable management of village forests and improvement of socio-economic conditions of villagers) and the key activities needed to achieve these objectives.

**Step 4.** The organization and village administration discusses the need, importance, and benefits of participatory monitoring and evaluation of key activities in relation to the attainment of the village forestry objectives.

**Step 5.** The organization and village administration discuss and reach consensus on the objectives of participatory monitoring and evaluation (e.g. to determine progress in the implementation of planned village forestry activities; to determine the impact of village forestry activities on the forest and the villagers; and to learn lessons and gain experience from the implementation of village forestry activities).

**Step 6.** Based on the above discussions and agreements reached, the organization and village administration discuss and reach a consensus on the indicators (quantitative or qualitative) or key information to be gathered to help determine whether or not activities are implemented as planned and to assess the impact of these activities on the forest and the villagers. Examples of these indicators or key information are: (a) area of forest inventories, (b) number of villagers trained, (c) number of villagers employed, (d) volume
of timber sold, (e) amount to timber sales, (f) changes in the quantity of important NTFP collected, (g) changes in forest fire occurrences and illegal logging, and (h) number of village development projects established. If helpful to the villagers, these PME indicators may be complemented by guide questions. For example:

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Guide questions</th>
</tr>
</thead>
</table>
| Changes in the quantity of important NTFP collected | • Is the volume of important NTFP collected increasing or decreasing?  
• What are the reasons for the increase or decrease in volume of NTFP collected? |
| Number of villagers trained | • How many villagers were trained this year?  
• How many women were trained this year?  
• What are the kinds of training that villagers received this year? |

**Step 7.** The organization and the village administration discuss and reach a consensus on the appropriate timing and frequency of collecting the needed information relating to the PME indicators. For example:

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Timing and frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of villagers trained</td>
<td>Monthly, quarterly or yearly</td>
</tr>
<tr>
<td>Changes in forest fire occurrences</td>
<td>Yearly</td>
</tr>
</tbody>
</table>

**Step 8.** The organization and village administration present and discuss the objectives and indicators for participatory monitoring and evaluation with the village assembly.

The DAFO extension worker facilitates and assists the villagers in choosing the PME objectives and indicators.

**Note:** In the case of a village cluster or group, all the village administrations in the cluster or group meet with the organization to agree on the PME objectives and indicators for village forestry. Discussions with village assembly can be conducted by their respective village administrations.
Activity 3.3.2
Selecting appropriate information gathering tools
for participatory monitoring and evaluation

Expected outcome

- The appropriate information gathering tools for participatory monitoring and evaluation are selected and used by villagers.

Requirements

- PME objectives and indicators are chosen by the villagers.
- PAFO trainers with adequate knowledge and skills in training villagers in selecting and using appropriate PME information gathering tools.
- DAFO extension workers with adequate knowledge and skills in facilitating and assisting villagers in selecting and using appropriate PME information gathering tools.
- Villagers with adequate knowledge and skills in selecting and using appropriate PME information gathering tools.

How to conduct the activity

Step 1. The PAFO trainers train the villagers in selecting and using appropriate PME information gathering tools such as semi-structured interviews, participatory mapping, trend diagramming, direct observation, review of existing records and documentation, drawings, ranking, participatory forest inventory, participatory post harvest assessment, and others.

Step 2. Based on the training and on the agreed PME indicators and key information needed to be gathered, the organization and village administration discuss and select the PME information gathering tool appropriate for the indicators. The following are some guidelines in selecting the appropriate PME information gathering tools:

- Simple, efficient, and effective means of gathering the needed information.
- Villagers are familiar and possess the knowledge and skills in using the tools.
- Requirements (e.g. human and financial resources, time, materials, equipment) for using the tools are minimal and readily available in the village.
- Fits well with how the villagers communicate in the village (e.g. oral and visual communication pattern).

Step 3. The DAFO extension worker facilitates and provides assistance to villagers in selecting and using the appropriate PME information gathering tools.

Note: The use of selected PME information gathering tools such as semi-structured interviews, participatory mapping, trend diagramming, direct observation, review of existing records and documentation, drawings, ranking, participatory forest inventory, participatory post harvest assessment, and others, are already discussed in other sections of the Village Forestry Handbook and the Village Forestry Training Manual.
Activity 3.3.3
Gathering and analyzing the information needed for participatory monitoring and presenting the results

Expected outcome

- Information needed for participatory monitoring and evaluation is collected, analyzed, and presented to the villagers.

Requirements

- PME objectives and indicators are chosen.
- Appropriate PME information gathering tools are selected.
- PAFO trainers with adequate knowledge and skills in training villagers in gathering the information needed for PME and in analyzing and presenting the results.
- DAFO extension workers with adequate knowledge and skills in facilitating and assisting villagers in gathering the information needed for PME and in analyzing and presenting the results.
- Villagers with adequate knowledge and skills in gathering the information needed for PME and in analyzing and presenting the results.

How to conduct the activity

**Step 1.** Based on the indicators (including timing and frequency) and information gathering tools for PME selected, the organization identifies capable villagers and form PME team(s) to conduct participatory monitoring and evaluation. The selected villagers should possess a good understanding of the village forestry activities and PME indicators. They should also have adequate knowledge and skills in using the appropriate PME information gathering tools. They should have the interest, willingness, and time to conduct participatory monitoring and evaluation.

**Step 2.** The PAFO trainers train the PME teams in gathering the information needed for PME and in analyzing and presenting the results. The importance, purpose, Expected output, activities, indicators, information gathering tools, and schedule of participatory monitoring and evaluation work are also discussed.

**Step 3.** The PME teams collect the information needed for participatory monitoring and evaluation using appropriate PME information gathering tools.

**Step 4.** The PME teams analyze the information collected. They present the PME results to the village administration and village assembly using graphical, tabular, drawings, and other visual presentations.

**Step 5.** The organization and village administration uses the PME results in initiating the necessary adjustments in the organization’s plans or procedures to improve its performance and help ensure the attainment of the goals and objectives of village forestry.

A DAFO extension worker facilitates and provides assistance to the PME teams in gathering and analyzing the information needed for PME and in presenting the results to the villagers.

Go to the Annexes
Village organizing annexes

1.1.1.1 Sample of a training needs assessment form
1.1.2.1 Sample of a training evaluation form
1.1.3.1 Guide in selecting extension methods
1.1.3.2 Sample action plan for village forestry extension
1.1.3.3 Sample report on village forestry extension work
1.1.4.1 Sample cross-village visit evaluation form
1.2.1.1 Village forestry flipcharts (1, 2a, 2b, 3, 4, 5, and 6)
1.2.2.1 Roles and responsibilities of the village forestry core group
1.3.2.1 Sample of legends commonly used by villagers in social mapping
1.3.2.2 Sample social map of Ban Nabong, Thapangthong District, Savannakhet Province
1.3.3.1 Sample of legends commonly used by villagers in census mapping
1.3.3.2 Sample of the census card for Household No. 2, Nueay No. 1 in Ban Nabong, Thapangthong District, Savannakhet Province
1.3.3.3 Sample census map of Ban Nabong, Nouay No. 1, Thapangthong District, Savannakhet Province
1.3.3.4 Sample summary of census mapping of Ban Nabong, Nouay No. 1, Thapangthong District, Savannakhet Province
1.3.4.1 Sample of results of wealth ranking of households in Kengkhene Village, Sebangfai District, Khammouane Province
1.3.5.1 Sample of pair-wise ranking
1.3.6.1 Sample Venn diagram of Nongkhone Village, Songkhone District, Savannakhet Province
1.3.7.1 Sample of a time chart or season calendar of village work in Ban Bakkhoumkham, Thapangthong District, Savannakhet Province
1.3.8.1 Sample of a village profile
1.4.1.1 Sample format of a VFCG action plan
1.4.2.1 Sample organizational options for village forestry
1.5.1.1 Sample of a VFA By-Laws
1.5.2.1 Sample format of a VFA membership registry
1.6.1.1 Sample letter of application for VFA registration
1.6.1.2 Sample VFA Articles of Association
1.6.1.3 Sample VFA Treasurer’s Certification
1.6.2.1 Procedure for securing official recognition of the VFA
1.7.1.1 Format of a set of rules
1.7.2.1 Sample of an annual work plan and budget
1.7.3.1 Sample of a records inventory and assessment form
1.7.3.2 Sample categories and codes for records of an organization for village forestry
1.7.3.3 Sample list of some VFA numbers and names in Thapangthong District
1.7.5.1 Sample format of a budget book
1.7.5.2 Sample of a payment voucher for purchase of materials and equipment
1.7.5.3 Sample of a payment voucher for labor and other services
1.7.5.4 Sample of a receipt
1.7.5.5 Sample of a cashbook
1.7.6.1 Sample of a monthly and annual progress report
1.7.6.2 Sample of a monthly and annual statement of accounts
1.7.7.1 Sample format of an internal audit and inventory report
1.8.4.1 Sample letter of application for Group membership
1.8.4.2 Sample resolution of the VFA Policy Committee on Group membership
1.8.5.1 Sample Group By-Laws
1.8.5.2 Sample Group Membership Agreement
1.9.1.1 Sample letter of application for official recognition of the Group
1.9.1.2 Sample Articles of Group Association
1.9.1.3 Sample Group Treasurer’s certification
1.9.2.1 Procedure for securing official recognition of the Group
Annex 1.1.1.1 – Sample of a training needs assessment form

<table>
<thead>
<tr>
<th>Task/Responsibilities</th>
<th>Required by the task</th>
<th>Already possessed by villagers</th>
<th>Additional needed by villagers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Knowledge</td>
<td>Skills</td>
<td>Knowledge</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Skills</td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Name of staff/villager: ________________________________  
Position: ________________________________  
Office/Village: ________________________________  
Name of organization: ________________________________  
Conducted by: ________________________________  
Date conducted: ________________________________
Annex 1.1.2.1 – Sample of a training evaluation form

Title of the training course:_________________________________________________
Dates of training __________________ Place of training __________________________

*(Instruction: Encircle the number that best describes your evaluation rating)*

**CONTENT**

<table>
<thead>
<tr>
<th></th>
<th>Not relevant</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Very relevant</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Relevance of the course to your work</td>
<td>Very clear</td>
<td>4</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Level of instruction</td>
<td>Not clear</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>3. Time allocation</td>
<td>Too long</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

4. Additional comments on the contents of the course
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

5. What topics or lessons did you like most?
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

6. What topics or lessons did you like least?
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

**TRAINING METHODS**

<table>
<thead>
<tr>
<th></th>
<th>Very effective</th>
<th>Not effective</th>
</tr>
</thead>
<tbody>
<tr>
<td>7. Effectiveness of the training method used</td>
<td>Very effective</td>
<td>Not effective</td>
</tr>
<tr>
<td>7.1 Overall methods</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>7.2 Specific methods</td>
<td>Very effective</td>
<td>Not effective</td>
</tr>
<tr>
<td>7.2.1 Lecture-discussion</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>7.2.2 Group work</td>
<td>Very effective</td>
<td>Not effective</td>
</tr>
<tr>
<td>7.2.3 Role play</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>7.2.4 Field trip &amp; practicum</td>
<td>Very effective</td>
<td>Not effective</td>
</tr>
<tr>
<td>7.2.5 Demonstration</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>7.2.6 Group dynamic exercises &amp; games</td>
<td>Very effective</td>
<td>Not effective</td>
</tr>
<tr>
<td>7.2.7 Others, specify ____________</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

8. Additional comments on training methods used
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
TEACHING AIDS AND HANDOUTS

9. Effectiveness and usefulness of teaching aids

<table>
<thead>
<tr>
<th>Teaching Aids</th>
<th>Very effective</th>
<th>Not effective</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.1 Flipchart</td>
<td>1 2 3</td>
<td>4 5</td>
</tr>
<tr>
<td>9.2 Handouts</td>
<td>1 2 3</td>
<td>4 5</td>
</tr>
<tr>
<td>9.3 Overhead projector transparencies</td>
<td>1 2 3</td>
<td>4 5</td>
</tr>
<tr>
<td>9.4 Posters</td>
<td>1 2 3</td>
<td>4 5</td>
</tr>
<tr>
<td>9.5 Others, pls. specify__________</td>
<td>1 2 3</td>
<td>4 5</td>
</tr>
</tbody>
</table>

10. Additional comments on teaching aids and handouts

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

ORGANIZATION OF TRAINING

11. How was the overall organization of the training course?

<table>
<thead>
<tr>
<th>Organization aspect</th>
<th>Very good</th>
<th>Very poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.1 Conduciveness of training venue</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>11.2 Quality of transport facilities</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>11.3 Quality of accommodation</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>11.4 Quality of food (if provided)</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
</tbody>
</table>

12. Additional comments on organization of training

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
Annex 1.1.3.1 – Guide in selecting extension methods

☐ **Resources requirement**
Will the method require money, transport, materials, equipment, and/or other resources? Are these resources readily available in the area?

☐ **Coverage**
Will the method reach out to a greater number of target villagers than other possible methods would? Will it have a wider area of coverage?

☐ **Speed of delivery**
Is the method the fastest way for a message or technology or technique to reach the villagers?

☐ **Impact**
What effects will the method have on the extension teams and villagers?

☐ **Interactive**
Is the method participatory using two-way interactive communication?

☐ **Social acceptability**
Is the method socially and culturally acceptable to the extension team and villagers?

☐ **Literacy requirement**
Will the method require a literate extension team and villagers?

☐ **Replicability**
Can the method be used repeatedly in different places?

☐ **Skills requirement**
Will the method require specific skills of the extension team or villagers?

☐ **Local capacity building**
Will the method build up the capability, self-reliance, and confidence of the villagers?
Annex 1.1.3.2 – Sample action plan for village forestry extension

1. Name of village(s) _________________________________________________________
2. Dates of extension work: _________________________________________________
3. Extension objective(s) ____________________________________________________
   ________________________________________________________________________
4. Expected output(s) _______________________________________________________
   ________________________________________________________________________
5. Target villagers _________________________________________________________
   ________________________________________________________________________
6. Extension methods ________________________________________________________
7. Extension support materials _______________________________________________
8. Total budget (if any) _____________________________________________________

<table>
<thead>
<tr>
<th>Activity</th>
<th>Target</th>
<th>Schedule (Dates)</th>
<th>Persons responsible</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Prepared by: Attested by:

________________________ ________________________ ______________
Head Chairman / Manager Village Chief
Composite VF Extension Team Organization for Village Forestry
Village Chief
Annex 1.1.3.3 – Sample report on village forestry extension work

1. Name of village(s) _________________________________________________________
2. Dates of extension work: ___________________________________________________
3. Extension objective(s) _____________________________________________________

4. Extension methods _________________________________________________________
5. Extension support materials _______________________________________________
6. Total budget (if any) _______________________________________________________

<table>
<thead>
<tr>
<th>Activity</th>
<th>Target</th>
<th>Accomplished</th>
<th>Date accomplished</th>
<th>Persons responsible</th>
</tr>
</thead>
<tbody>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Prepared by: __________________________ Attested by: __________________________

________________ Head Chairman / Manager
Composite VF Extension Team Organization for Village Forestry

Village Chief

Noted by: __________________________
Head of DAFO
### Annex 1.1.4.1 – Sample cross-village visit evaluation form

*(Instruction: Encircle the number that best describes your evaluation rating)*

<table>
<thead>
<tr>
<th><strong>Relevance</strong></th>
<th>Relevant</th>
<th>Not relevant</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Was the cross-village visit relevant to your work?</em></td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Timeliness</strong></th>
<th>Timely</th>
<th>Not timely</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Was the conduct of the cross-village visit timely?</em></td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Cross-village visit methods</strong></th>
<th>Effective</th>
<th>Not Effective</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>(a) Presentations by VFA officers of host village</em></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td><em>(b) Inter-VFA discussions and consultations</em></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td><em>(c) VFA demonstrations</em></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td><em>(d) Field observations of VFA activities</em></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td><em>(e) Cross-village visit orientation</em></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td><em>(f) Cross-village visit assessment</em></td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Organization of cross-village visit</strong></th>
<th>Good</th>
<th>Not good</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>(a) Overall organization of the visit</em></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td><em>(b) Inter-VFA communication exchange (written)</em></td>
<td>Good</td>
<td>Not good</td>
</tr>
<tr>
<td><em>(c) Time allocation</em></td>
<td>Short</td>
<td>Enough</td>
</tr>
<tr>
<td><em>(d) Transport</em></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td><em>(e) In-transit accommodation</em></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td><em>(f) In-transit food arrangements</em></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td><em>(g) Food and accommodation arrangements</em></td>
<td>Good</td>
<td>Not good</td>
</tr>
<tr>
<td>at host village(s)</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td><em>(h) Role of facilitators</em></td>
<td>Useful</td>
<td>Not useful</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Suggestions to improve the conduct of future cross-village visits</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><em>What suggestions do you want to make to improve future cross-village visits?</em></td>
</tr>
</tbody>
</table>
Flipchart no. 1 - Benefits derived from the forest
Flipchart No. 2a- Non-sustainable use of forest
Flipchart No. 2b- Sustainable use of forest
Flipchart No. 3- Concept of forest management and its activities
Flipchart No. 4- Village forestry and the partnership between villagers and state forestry staff
Flipchart No. 5 – Objectives of village forestry
Flipchart no. 6- Village forestry activities and roles of villagers and state forestry staff
Annex 1.2.2.1 – Roles and responsibilities of the village forestry core group (VFCG)

Under the overall supervision of the village administration, the VFCG:

- Works with the state forestry staff in planning, implementing, and managing initial village forestry activities in the village.
- Organizes and leads the conduct of PRA work in the village jointly with state forestry staff.
- Prepares a simple action plan on village forestry to be approved by the village administration.
- Reports progress on the implementation of the VFCG action plan to the village administration and villagers.
- Organizes the formation of village forestry working teams, eg. village land use mapping teams, village forest inventory teams, etc., and mobilizes villagers for collective work in village forestry.
- Administers initial funds (if any) to support the implementation of the village forestry action plan and is accountable to the village administration and villagers.
- Maintains records relating to village forestry, eg. minutes of meetings, reports, maps, letters, plans, and other documentation.
- Organizes meetings and disseminates information on village forestry.
- Undertakes preparatory work for the establishment of appropriate organizational arrangements (e.g. VFC, VFA, etc.) for village forestry and proposes organizational structure, rules and regulations, operating systems and procedures, etc., for approval by the village administration and villagers.
- Hands over all village forestry records, funds, and responsibilities to the elected officers of the organization for village forestry.
Annex 1.3.2.1 Sample of legends commonly used by villagers in social mapping

<table>
<thead>
<tr>
<th>Legend</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nueay</td>
<td>House</td>
</tr>
<tr>
<td></td>
<td>Rice barn</td>
</tr>
<tr>
<td></td>
<td>Group rice barn</td>
</tr>
<tr>
<td></td>
<td>Rice mill</td>
</tr>
<tr>
<td></td>
<td>Temple</td>
</tr>
<tr>
<td></td>
<td>Church</td>
</tr>
<tr>
<td></td>
<td>School</td>
</tr>
<tr>
<td></td>
<td>Merchandise store</td>
</tr>
<tr>
<td></td>
<td>Private deep well water</td>
</tr>
<tr>
<td></td>
<td>Group deep well water</td>
</tr>
<tr>
<td></td>
<td>Private water pump</td>
</tr>
<tr>
<td></td>
<td>Group water pump</td>
</tr>
<tr>
<td></td>
<td>Fishpond</td>
</tr>
<tr>
<td></td>
<td>Irrigation system</td>
</tr>
<tr>
<td></td>
<td>Water dam</td>
</tr>
<tr>
<td></td>
<td>Village dispensary</td>
</tr>
<tr>
<td></td>
<td>Village administration office</td>
</tr>
<tr>
<td></td>
<td>Generator for charging battery</td>
</tr>
<tr>
<td></td>
<td>Road</td>
</tr>
<tr>
<td></td>
<td>Trail</td>
</tr>
<tr>
<td></td>
<td>Village boundary</td>
</tr>
<tr>
<td></td>
<td>Nueay boundary</td>
</tr>
<tr>
<td></td>
<td>River</td>
</tr>
<tr>
<td></td>
<td>Creek</td>
</tr>
</tbody>
</table>
Annex 1.3.2.2. Sample social map of Ban Nabong, Thapangtong District, Savannakhet Province

Social map of Ban Nabong, Thapangtong District, Savannakhet Province.

Legend:
- House
- Rice barn
- School
- Rice mill
- Water pump
- Village boundary
- Nouray boundary
- Trail
- River

Prepared by: Mr. Thongkham, Mr. Sihanouk, Mr. Kadam Date: 5.2.98 Place: Ban Nabong
Annex 1.3.3.1 – Sample of legends commonly used by villagers in census mapping

<table>
<thead>
<tr>
<th>Legend</th>
<th>Description</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family</td>
<td>Number of person in the household</td>
<td>2 families</td>
</tr>
<tr>
<td>Male</td>
<td></td>
<td>13 persons</td>
</tr>
<tr>
<td>Female</td>
<td></td>
<td>7 persons</td>
</tr>
<tr>
<td>Literate</td>
<td></td>
<td>6 persons</td>
</tr>
<tr>
<td>Illiterate</td>
<td></td>
<td>8 persons</td>
</tr>
<tr>
<td>Iron sheet roofing</td>
<td></td>
<td>5 persons</td>
</tr>
<tr>
<td>Wooden roofing</td>
<td></td>
<td>8 houses with iron roofing</td>
</tr>
<tr>
<td>Fiber cement roofing</td>
<td></td>
<td>4 houses with fiber cement roofing</td>
</tr>
<tr>
<td>Grass roofing</td>
<td></td>
<td>9 houses with grass roofing</td>
</tr>
<tr>
<td>Wooden wall</td>
<td></td>
<td>8 houses with wooden walls</td>
</tr>
<tr>
<td>Bamboo wall</td>
<td></td>
<td>7 houses with bamboo walls</td>
</tr>
<tr>
<td>Dried leaves wall</td>
<td></td>
<td>6 houses with dried leaves walls</td>
</tr>
<tr>
<td>Buffalo</td>
<td></td>
<td>9 buffalo</td>
</tr>
<tr>
<td>Cow</td>
<td></td>
<td>15 cows</td>
</tr>
<tr>
<td>Horse</td>
<td></td>
<td>3 horses</td>
</tr>
<tr>
<td>Bicycle</td>
<td></td>
<td>3 bicycles</td>
</tr>
<tr>
<td>Tractor</td>
<td></td>
<td>1 tractor</td>
</tr>
<tr>
<td>Motorbike</td>
<td></td>
<td>1 motorbike</td>
</tr>
<tr>
<td>Motorboat</td>
<td></td>
<td>1 motorboat</td>
</tr>
<tr>
<td>TV</td>
<td></td>
<td>2 TV</td>
</tr>
<tr>
<td>Radio</td>
<td></td>
<td>2 radio</td>
</tr>
<tr>
<td>Sewing machine</td>
<td></td>
<td>1 Sewing machine</td>
</tr>
<tr>
<td>Rice mill</td>
<td></td>
<td>1 Rice mill</td>
</tr>
<tr>
<td>Water pump</td>
<td></td>
<td>1 water pump</td>
</tr>
<tr>
<td>Regenerator for charge battery</td>
<td></td>
<td>1 Regenerator for charge battery</td>
</tr>
<tr>
<td>Merchandise store</td>
<td></td>
<td>1 Merchandise store</td>
</tr>
<tr>
<td>Rice barn</td>
<td></td>
<td>1 Rice barn</td>
</tr>
<tr>
<td>Rice paddy</td>
<td></td>
<td>2 Rice paddy, 3 ha and 2 ha</td>
</tr>
<tr>
<td>Fruit garden</td>
<td></td>
<td>3 Fruit orchard, 2 ha mango, 3 ha banana</td>
</tr>
<tr>
<td>Rice sufficiency</td>
<td></td>
<td>12 months rice is available to consume</td>
</tr>
</tbody>
</table>
Annex 1.3.3.2 – Sample of the census card for Household No. 2, Nouay No. 1 in Ban Nabong, Thapangthong District, Savannakhet Province

<table>
<thead>
<tr>
<th>Household No 2  Nouay No 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of household head Mr Xiangdy 85</td>
</tr>
<tr>
<td>year old</td>
</tr>
</tbody>
</table>

Legend:

- № 2: Number of family in the household
- № 13: Number of person in the household
- № 8: Male
- № 5: Female
- № 1: Iron sheet roofing
- № 1: Wooden wall
- № 13: Buffalo
- № 10: Cow
- № 3: Bicycle
- № 2: Tractor for transportation
- № 5: Illiterate
- № 8: Literate
- № 12: Rice sufficiency
Appendix 1.3.3.3 – Sample census map of Ban Nabong, Nouay No. 1, Thapangthong District, Savannakhet Province

Legend:
- Number of family in the household
- Number of person in the household
- Male
- Female
- Literate
- Illiterate
- Grass roofing
- Iron roofing
- Wooden roofing
- Wooden wall
- Bamboo wall
- Bicycle
- Motorbike
- Sewing machine
- Water pump
- Buffalo
- Cow
- Tractor for transportation
- Rice sufficient for certain month
- Rice mill
- Rice barn

Prepared by: Mr. Xiang, Mr. Somdy, Mr. Phom
Date: 28.1.98 Place: Ban Nabong
Annex 1.3.3.4 – Sample summary of census mapping of Ban Nabong, Nouay No. 1, Thapangthong District, Savannakhet Province

<table>
<thead>
<tr>
<th>Description</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of households</td>
<td>4</td>
</tr>
<tr>
<td>No. of families</td>
<td>5</td>
</tr>
<tr>
<td>Number of persons</td>
<td>32</td>
</tr>
<tr>
<td>No. of males</td>
<td>18</td>
</tr>
<tr>
<td>No. of females</td>
<td>14</td>
</tr>
<tr>
<td>No. of houses with grass roofing</td>
<td>2</td>
</tr>
<tr>
<td>No. of houses with iron sheet roofing</td>
<td>1</td>
</tr>
<tr>
<td>No. of houses with wooden roofing</td>
<td>1</td>
</tr>
<tr>
<td>No. of houses with bamboo walls</td>
<td>1</td>
</tr>
<tr>
<td>No. of houses with wooden walls</td>
<td>3</td>
</tr>
<tr>
<td>No. of bicycles</td>
<td>6</td>
</tr>
<tr>
<td>No. of sewing machines</td>
<td>1</td>
</tr>
<tr>
<td>No. of rice mills</td>
<td>1</td>
</tr>
<tr>
<td>No. of tractors</td>
<td>1</td>
</tr>
<tr>
<td>No. of water pumps</td>
<td>1</td>
</tr>
<tr>
<td>No. of buffaloes</td>
<td>29</td>
</tr>
<tr>
<td>No. of cows</td>
<td>26</td>
</tr>
<tr>
<td>Rice sufficiency</td>
<td></td>
</tr>
<tr>
<td>12 months with sufficient rice</td>
<td>2 households</td>
</tr>
<tr>
<td>8 months with sufficient rice</td>
<td>1 household</td>
</tr>
<tr>
<td>6 months with sufficient rice</td>
<td>1 household</td>
</tr>
<tr>
<td>No. of literates</td>
<td>19</td>
</tr>
<tr>
<td>No. of illiterates</td>
<td>13</td>
</tr>
<tr>
<td>No. of rice barns</td>
<td>2</td>
</tr>
<tr>
<td>No. of motorbikes</td>
<td>1</td>
</tr>
</tbody>
</table>
Annex 1.3.4.1 – Sample of results of wealth ranking of households in Kengkhene Village, Sebangfai District, Khammouane Province

<table>
<thead>
<tr>
<th>No.</th>
<th>Name of household head</th>
<th>Household No.</th>
<th>Score</th>
<th>Wealth ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Thao Khammi</td>
<td>3</td>
<td>90</td>
<td>Rich</td>
</tr>
<tr>
<td>2.</td>
<td>Bouthong</td>
<td>9</td>
<td>85</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Bountha</td>
<td>4</td>
<td>85</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Si</td>
<td>12</td>
<td>80</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Nang Song</td>
<td>19</td>
<td>80</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Thao Lai</td>
<td>24</td>
<td>80</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Thao Keo</td>
<td>1</td>
<td>75</td>
<td>Average</td>
</tr>
<tr>
<td>8.</td>
<td>Phone</td>
<td>5</td>
<td>75</td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>Nang Dok</td>
<td>6</td>
<td>75</td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>Nang Ti</td>
<td>8</td>
<td>70</td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>Thao Thong</td>
<td>10</td>
<td>70</td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>One</td>
<td>13</td>
<td>70</td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>Douang</td>
<td>14</td>
<td>65</td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td>Saithong</td>
<td>16</td>
<td>65</td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td>Chanh</td>
<td>20</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>16.</td>
<td>Xiang</td>
<td>21</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>17.</td>
<td>Mai</td>
<td>22</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>18.</td>
<td>Thao Phouvong</td>
<td>2</td>
<td>55</td>
<td>Poor</td>
</tr>
<tr>
<td>19.</td>
<td>Aliang</td>
<td>7</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>20.</td>
<td>Nong</td>
<td>11</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>21.</td>
<td>Khong</td>
<td>15</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>22.</td>
<td>Lasi</td>
<td>17</td>
<td>45</td>
<td></td>
</tr>
<tr>
<td>23.</td>
<td>Vong</td>
<td>18</td>
<td>45</td>
<td></td>
</tr>
<tr>
<td>24.</td>
<td>Ma</td>
<td>23</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>25.</td>
<td>Nang Nik</td>
<td>25</td>
<td>35</td>
<td></td>
</tr>
<tr>
<td>26.</td>
<td>Thao Toi</td>
<td>26</td>
<td>30</td>
<td></td>
</tr>
</tbody>
</table>

Total no. of households - 26
Number of rich households – 6 households or 23% of total households
Number of average households – 11 households or 42% total households
Number of poor households – 9 households or 35% of total households

Sample of criteria used by key informants in wealth ranking of household

<table>
<thead>
<tr>
<th>Rich household</th>
<th>Average household</th>
<th>Poor household</th>
</tr>
</thead>
<tbody>
<tr>
<td>House with iron roofing</td>
<td>House with wooden roofing</td>
<td>House with grass roofing</td>
</tr>
<tr>
<td>House with wooden walls</td>
<td>House with wooden roofing</td>
<td>House with dried leaf walls</td>
</tr>
<tr>
<td>Owns a rice mill</td>
<td>House with bamboo wall</td>
<td>Owns 1-2 buffaloes</td>
</tr>
<tr>
<td>Owns a motor boat</td>
<td>Owns a paddled boat</td>
<td>Owns 1-2 cows</td>
</tr>
<tr>
<td>Owns 10 cows or more</td>
<td>Owns 5-10 buffaloes</td>
<td>Owns 1ha or less</td>
</tr>
<tr>
<td>Owns 10 buffaloes or more</td>
<td>Owns 5-10 cows</td>
<td></td>
</tr>
<tr>
<td>Owns 3 ha of rice paddy or more</td>
<td>Owns 2-3 ha rice paddy</td>
<td></td>
</tr>
</tbody>
</table>
Annex 1.3.5.1 – Sample of pair-wise ranking

Ranking the basic needs of villagers in Nonsombat Village, Songkhone District, Savannakhet Province

<table>
<thead>
<tr>
<th>Basic Needs</th>
<th>Road</th>
<th>Irrigation</th>
<th>School</th>
<th>Temple</th>
<th>Health Center</th>
<th>Latrine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Road</td>
<td>Road</td>
<td>Irrigation</td>
<td>School</td>
<td>Temple</td>
<td>Health center</td>
<td>Latrine</td>
</tr>
<tr>
<td>Irrigation</td>
<td>Road</td>
<td>Irrigation</td>
<td>School</td>
<td>Temple</td>
<td>Health center</td>
<td>Latrine</td>
</tr>
<tr>
<td>School</td>
<td>Road</td>
<td>Irrigation</td>
<td>School</td>
<td>Temple</td>
<td>Health center</td>
<td>Latrine</td>
</tr>
<tr>
<td>Temple</td>
<td>Road</td>
<td>Irrigation</td>
<td>School</td>
<td>Temple</td>
<td>Health center</td>
<td>Latrine</td>
</tr>
<tr>
<td>Health Center</td>
<td>Road</td>
<td>Irrigation</td>
<td>School</td>
<td>Temple</td>
<td>Health center</td>
<td>Latrine</td>
</tr>
<tr>
<td>Latrine</td>
<td>Road</td>
<td>Irrigation</td>
<td>School</td>
<td>Temple</td>
<td>Health center</td>
<td>Latrine</td>
</tr>
</tbody>
</table>

Results of pair-wise ranking of basic needs

<table>
<thead>
<tr>
<th>Basic needs</th>
<th>Score</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Road</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Irrigation</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>School</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Temple</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Health center</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Latrine</td>
<td>0</td>
<td>6</td>
</tr>
</tbody>
</table>
Annex 1.3.6.1 – Sample Venn diagram of Nongkone Village, Songkone District, Savannakhet Province

Nongkone Village

- District Education Office
- District Health Office
- Women Union
- Village Chief
- Youth Union
- Village Elders
- Village Military/police
- Sub-district
- Naudoum Village
- Nonsombat Village
- Nonbokeo Village
Annex 1.3.7.1 – Sample of a time chart or season calendar of village work in Ban Bakhoumkkham, Thapangthong District, Savannakhet Province

ACTIVITIES

Legend

Activities done by women
Activities done by men
Activities done by both men and women
Annex 1.3.8.1 – Sample of a village profile

<table>
<thead>
<tr>
<th>VILLAGE PROFILE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Name of village:</strong> Ban Bakkhoumkham</td>
</tr>
<tr>
<td><strong>2. Location:</strong> 24 kilometers north of Thapangthong District.</td>
</tr>
</tbody>
</table>
| **3. Village history:** The village was established in 1929. The first settlers originated from Ban Bak at the other side of Xebanghiang river in Champhone District, Savannakhet Province. The reason for migrating was lack of land for agricultural production.  
  *(Source: Mr. Keo, Mr. Phomma and Mr. Bouathong through semi-structured interview)* |
| **4. Physical Information (in ha)** |
| 4.1 Village area | 15 |
| 4.2 Rice paddy field | 310 |
| 4.3 Low dry dipterocarp forest | 2062 |
| 4.4 High dry dipterocarp forest | 1884 |
| 4.5 Mixed deciduous forest | 1157 |
| 4.6 Non-productive land | 204 |
| 4.7 Sacred forest | 9 |
| 4.8 Stream buffer zone area | 610 |
| 4.9 Total area | 6251 |
  *(Source: Village land use mapping)* |
| **5. Socio-economic data** |
| 5.1 Population | 597 people, 314 females |
| 5.2 No. of families | 131 |
| 5.3 No. of households | 90 |
| 5.4 Ethnic group: | Lao Loum |
| 5.5 Illiteracy rate: | 235 persons |
| 5.6 Religion: | Buddhism |
| 5.7 Average annual income: | 3,000,000 kip |
| 5.8 Average annual birth rate | 10 |
| 5.9 Average annual mortality | 5 |
  *(Source: Census mapping)* |
| **6. Infrastructures and facilities** |
| 6.1 Education: 1 primary school with 4 classrooms and 2 teachers. |
| 6.2 Water source: Khomkham and Phalon stream, 2 deep wells. |
| 6.3 Religion facility: Temple |
| 6.4 Transportation: Buffalo carts, Handcarts, Bicycles, Trucks, Hand tractors, Motorcycles. |
| 6.5 Agricultural facility: 2 rice mills  
  *(Source: Nai Ban)* |
| **7. Wealth Ranking** |
| Very rich | 14 families or 11% |
| Rich | 34 families or 26% |
| Middle | 33 families or 25% |
| Poor | 50 families or 38% |
  *(Source: Village wealth ranking exercise)* |
| **8. Livelihood** |
| 8.1 Rice production: |
| *Total paddy field area* | 137 ha |
| *Total annual rice production* | 317.5 tons |
| *Average rice produced per ha* | 2.3 tons |
| *Average annual rice per capita* | 531.8 kg |
| 8.2 Vegetable and fruit production |
| - Vegetable for household consumption. |
| -Annual fruit production: Banana, tamarind and mango. |
| 8.3 Livestock production |
| *Buffaloes 370 head, cattle 500 head, pigs 200 head, ducks and chickens 365 head, 1 fish pond.* |
| 8.4 Handicrafts: Cotton weaving. |
| 8.5 Forestry activity |
| *Collection of wood for construction, firewood, resin and other non-timber forest products.* |
  *(Source: Census mapping)* |
| **9. Existing village organization** |
| • Village committee consisting of a chairman and 2 deputies. |
| • The members in the committee have elders, village police, village military, youth union, women’s union, village forest volunteers  
  *(Source: Village Venn diagram)* |
| **10. Basic needs** |
| • Water from deep well and irrigation |
| • Health facility (Medicinal Box) |
| • School |
| • Rice production: (fertilizer)  
  *(Source: Pair-wise ranking exercise)* |

**Prepared by:** Mr. Boungnod  
**Date:** 10.3.1996
Annex 1.4.1.1 – Sample format of a VFCG action plan

Name of village : ________________

<table>
<thead>
<tr>
<th>Activities</th>
<th>Target/Goal</th>
<th>Month Year</th>
<th>Persons responsible</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1 2 3 4 5 6 7 8 9 10 11 12</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Prepared by: ______________________________  Approved by: ______________________________

_____________________________   ______________________________
VFCG Chairperson               Village Chief
Annex 1.4.2.1 – Sample organizational options for village forestry

Option 1. Village administration with village forest volunteers (VFFs)

Chief of the village (Nai Ban)
Two Deputy Chiefs

---

Elders

---

Economic Committee (3 members)

- Agriculture
- Forestry (2-3 volunteers)
- Veterinary
- Business
- Income-generating activities

Socio-Cultural Committee (3 members)

- Health
- Education
- Women
- Youth
- Culture

Public Order and Safety Committee (3 members)

- Military
- Police
Option 2. Village administration with a village forestry core group (VFCG)

Chief of the village (Naiban)
Two Deputy Chiefs

Elders

Economic Committee (3 members)

- Agriculture
- Forestry (5-10 VFCG)
- Veterinary
- Business
- Income-generating activities

Socio-Cultural Committee (3 members)

- Health
- Education
- Women
- Youth
- Culture

Public Order and Safety Committee (3 members)

- Military
- Police
Option 3. Village administration with a village forestry committee (VFC)

Chief of the village
(Nai Ban)

Two Deputy Chiefs

Elders

Economic Committee
(3 members)

Socio-Cultural Committee
(3 members)

Public Order and Safety Committee
(3 members)

Agriculture
Forestry
Veterinary
Business
Income-generating activities

Health
Education
Women
Youth
Culture

Military
Police

Village Forestry Committee
Option 4. Village administration with a village forestry association (VFA)

Chief of the village
(*Nai Ban*)

Two Deputy Chiefs

Elders

Economic Committee
(3 members)

- Agriculture
- Forestry
- Veterinary
- Business
- Income generating activities

Socio-Cultural Committee
(3 members)

- Health
- Education
- Women
- Youth
- Culture

Public Order and Safety Committee
(3 members)

- Military
- Police

Village Forestry Association
Annex 1.5.1.1 – Sample of VFA By-Laws

Lao People's Democratic Republic
Peace Independence Democracy Prosperity

By-Laws of the Kiaosothkhoumkham Village Forestry Association

References:

2. Decision No. 0429/MAF dated June 18, 1992 on the Duties and Rights in Managing Forestry Resources at Village level
3. The Forestry Law of 1996

Note: Cite other relevant laws, legislations, rules and regulations as applicable.

We, the undersigned, citizens of the Lao PDR and residents of Ban Bakkhoumkham, District of Thapangthong, Province of Savannakhet, representing a majority of the members of the Kiaosothkhoumkham Village Forestry Association, hereinafter referred to as the association, do hereby adopt the following by-laws:

CHAPTER I
Name of the association

Article 1. Name. The name of the association is the Kiaosothkhoumkham Village Forestry Association.

CHAPTER II
Objectives

Article 2. Objective. The primary objective of the association is to sustainably manage and protect designated village forests in partnership with state forestry agencies.

CHAPTER III
Membership

Article 3. Qualification for membership. Membership to the association is voluntary and open to qualified men and women who are:
   b. At least 18 years of age.
   c. Willing to undertake the responsibilities of a member.

Article 4. Membership application and fee. A written application is made and presented to the policy committee including a membership fee of 500 kips.

Article 5. Responsibilities of a member. A member has the following responsibilities:
   a. To comply with the by-laws, rules, regulations, and decisions of the association.
   b. To support the objectives, programs, plans, and activities of the association.
   c. To share the costs and inputs of village forestry including other related activities of the association.
**Article 6. Rights of a member.** A member has the following rights:

a. To participate in discussions during membership meetings.
b. To vote on all matters brought before membership meetings.
c. To seek any elective position in the association.
d. To inspect and examine the books of the accounts, minutes of the meetings, and other records of the association.
e. To share in the benefits of village forestry and other related activities of the association.

**Article 7. Termination of Membership.** Membership can be terminated by withdrawal or removal.

**Article 8. Withdrawal.** A member who wants to withdraw from the association can do so by informing the policy committee.

**Article 9. Suspension/removal.** The policy committee can remove a member or suspend his/her right to vote if he/she does not undertake his/her responsibilities as a member. The action of the policy committee in suspending or removing a member can be taken up to the general assembly for reconsideration and final decision.

**CHAPTER IV**

**Administration and management of the association**

**Article 10. Structure of the association.** The association comprises three (3) main bodies, namely: (a) general assembly, (b) policy committee, and (c) management committee. The VFA can form other committees on election, education and training, audit and inventory and others including working teams as needed. The VFA organizational structure is shown in Appendix A.

**Article 11. General assembly.** The general assembly is the highest decision making body of the association. It comprises all members of the association.

**Article 12. Responsibilities of the general assembly.** The general assembly has the following responsibilities:

a. Approve the articles of association, by-laws, rules, and regulations of the association.
b. Approve programs, forest management plans, annual operations plans, village forest management agreements, and other contracts including the use of funds by association.
c. Elect, suspend, and remove any member the policy and election committees except the village chief.
d. Receive and act on the reports of the committees.
e. Veto or modify any decision of the policy committee.

**Article 13. General assembly meetings.** The general assembly meets at least four (4) times a year. Special general assembly meetings can be called at any time by the policy committee to discuss urgent matters requiring immediate decision.

**Article 14. Quorum at general assembly meetings.** During regular or special general assembly meetings, 60% of the total number of members constitutes a quorum.

**Article 15. Policy committee.** The policy committee is the policy making body of the association composed of 10 elected members. The village chief is an automatic member of the policy committee.
Article 16. Responsibilities of the policy committee. The policy committee has the following responsibilities:

a. Administer, oversee, and manage the programs and activities of the association.
b. Make policies, rules, and regulations that are consistent with existing Lao PDR laws, articles of association, and by-laws of the association for approval by the general assembly.
c. Select and replace the officers of the policy committee from among its members.
d. Appoint, suspend, and remove any member of any committees except the policy and election committees.

Article 17. Officers and their duties. The policy committee comprises the following officers:

Chairperson. The chairperson shall:

a. Preside over all meetings of the association and the policy committee.
b. Sign official documents, appointments to positions, forest management plans, and other contracts which the general assembly authorizes him/her to sign.
c. Perform other duties as authorized by the general assembly.

Vice-chairperson. In the absence or disability of the chairperson, the vice-chairperson shall undertake the duties of the chairperson.

Treasurer. The treasurer shall:

a. Take care of all money and other financial documents of the association.
b. Keep a complete record of its cash transactions for the establishment and proof of the association’s cash situation.
c. Certify to the correctness of the association’s cash situation in all financial statements and records submitted to the policy committee, general assembly, or any external agencies as required by law.
d. Pay, upon recommendation of the manager or as authorized by the policy committee, all money transactions.
e. Sit as a member of the management committee as its financial officer.

Secretary. The secretary shall:

a. Keep a complete list of members of the association and maintain a record of all meetings of the policy committee and general assembly.
b. Inform all members regarding meetings of the policy committee and general assembly.
c. Take care of the association’s official seal, records, and documents.
d. Sit as a member of the management committee as its administrative and clerical officer.

Article 18. Qualification. Members (men and women) who have the necessary knowledge, skills, experiences, time, and willingness to work are qualified to be voted as officers and members of the policy committee.

Article 19. Policy committee meetings. The policy committee meets at least once a month. Special meetings of the policy committee can be called by the chairperson or in his absence, by the vice-chairperson, or a majority of the policy committee members.

Article 20. Quorum at policy committee meetings. During regular and special meetings of the policy committee, 60% of the total number of the committee constitutes a quorum.

Article 21. Management committee. The management committee is the implementing body of the association. It comprises a manager, a deputy manager, administrative and finance staff. The treasurer and secretary of the policy committee sits as members of the management committee.
Article 22. Responsibilities of the management committee. The management committee has the following responsibilities:

a. Implement the policies, by-laws, rules and regulations, forest management plan, village forest management agreements, and other contracts approved by the general assembly.

b. Direct, control, supervise, implement, monitor and evaluate the day to day operations of the association.

c. Hire, suspend, and when necessary remove any member of the working teams.

Article 23. Qualification of the manager. Members (men or women) who have the necessary knowledge, skills, experience, time and willingness to work are qualified to be voted as manager and deputy manager. Specifically, he/she must:

a. Be familiar with the business operations of the association.

b. Possess educational background and/or experience in managing a business.

c. Be willing to undergo training.

Article 24. Duties of the manager. The manager has the following duties:

a. Take charge of all village forestry activities and business operations of the association.

b. Sit as a member of the policy committee.

c. Submit annual and regular financial statements and progress reports to the policy committee.

d. Employ, supervise, and dismiss any persons working as management committee support staff or members of working teams in accordance with the rules prepared by the policy committee and approved by the general assembly.

Article 25. Election of officers. No person is elected as officer or member of committees unless he/she has the necessary qualifications. The election of officers and members of committees of the association is through a majority vote of the general assembly and by secret balloting. Each member has only one vote. Voting through a representative of a member is not allowed.

Article 26. Term of office. The officers and members of the policy and election committees serve for a term of two (2) years unless earlier removed or withdrawn or have become incapacitated due to sickness or death. The term of office of the manager is indefinite. His/her removal is subject only to the decision of the policy committee.

Article 27. Removal of officers and members of the policy and election committees. Elected officers and members of the policy and election committees can be removed by a majority vote of the members of the association present at the regular or special general assembly. The successor serves the remaining term of office.

Article 28. Vacancies. When a vacancy in the policy and election committees occurs by reason of death, incapacity, withdrawal, or removal, the vacancy is filled by the remaining members of the policy and election committees as confirmed by the general assembly. The successor serves the remaining term of office.

Article 29. Compensation. The officers and members of committees and working teams are compensated out of the income generated by the association. The rate of compensation is approved by the general assembly.
CHAPTER V
Sharing of costs and benefits

Article 30. Sharing of costs and other inputs of village forestry. Costs and other inputs of village forestry are appropriately shared between the association and the state and among members of the association.

Article 31. Sharing of benefits of village forestry. Benefits of village forestry are shared between the organization and the state according to existing regulations. Benefits are not distributed directly among the members of the association, but services rendered can be compensated based on rates approved by the policy committee.

Article 32. Village forestry association (VFA) fund. A village forestry association fund is established and managed by the association. Income generated through village forestry is deposited into the VFA fund.

Article 33. Use of income. The use of income of the association requires the approval of the general assembly based on the recommendation of the policy committee. Funds may be allocated annually for the following purposes: (a) operating costs of the association including compensation; (b) reserves for future expenses in village forestry; (c) investments; (d) welfare support; and (e) village development.

CHAPTER VI
Approval of the by-laws

Article 34. Approval of the by-laws. The general assembly approves the by-laws through a majority vote.

CHAPTER VII
Amendments of the by-laws

Article 35. Amendments of the by-laws. The general assembly approves changes to the by-laws through a majority vote.

Approved by the VFA general assembly on March 3, 1998 at Ban Bakkhoumkham.

Signed by:

Mr. Phoulay
VFA Chairperson

Attested by:

Mr. Lath Inthavong
Village Chief

Note: In the case of a village cluster or group, all the village chiefs in the cluster or group attest and affix their signatures and official seals.
Appendix A

General Assembly
(highest decision-making body)

- Policy Committee
  (policy-making body)
    - Chairman
    - Village Chief
    - Deputy Chairman
    - Treasurer
    - Secretary
    - Members

- Audit and Inventory
  (Properties) Committee

- Management Committee
  (implementing body)
    - Manager
    - Deputy Manager
    - Bookkeeper
    - Administrative and Finance

- Election Committee

- Education and Training Committee

- Working Team
  - Working Team
  - Working Team
  - Working Team

Organizational structure of the Kiaosothkhoumkham Village Forestry Association
Annex 1.5.2.1 – Sample format of a VFA membership registry

Lao People’s Democratic Republic  
Peace  Independence  Democracy  Unity  Prosperity

We, who are residents of Ban ______________________, District of __________________, Province of __________________ and whose names and signatures/thumb marks are shown below certify that:

1. We understand and support the objectives, programs, and activities of the _______________ village forestry association.
2. We are willing to undertake the responsibilities as VFA members.
3. We voluntarily declare our intention to apply for membership to the association.

<table>
<thead>
<tr>
<th>No.</th>
<th>Date</th>
<th>Name</th>
<th>Sex</th>
<th>Age</th>
<th>Signature/Thumb mark</th>
</tr>
</thead>
<tbody>
<tr>
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</table>

Certified by: ____________________________  _________________________

Village Chief  Date
Annex 1.6.1.1 – Sample letter of application for VFA registration

Lao People’s Democratic Republic
Peace Independence Democracy Unity Prosperity

Province of Savannakhet
District of Thapangtong
Khiaosothkhoumkham Village Forestry Association
Ban Bakkhoumkham

June 10, 1998

The Governor
Savannakhet Province
(Thru: The DAFO and District Chief of Thapangtong)

Subject: Request for Official Recognition of the Kiaosothkhoumkham Village Forestry Association

Based on the Constitution of Lao PDR of 1991, Article 31 on the Organization of Associations
Based on the Decision No. 0429/MAF dated June 18, 1992 on the Duties and Rights in Managing Forestry Resources at Village Level
Based on the Forestry Law of 1996

Note: Cite other relevant laws, legislations, rules and regulations as applicable.

In order to sustainably manage 6,251 hectares of designated village forest in Thapangtong district and to improve the socio-economic condition of villagers in Ban Bakkhoumkham;

Therefore, I, Mr. Phoulay, Chairperson of the Kiaosothkhoumkham Village Forestry Association representing 287 members from Ban Bakkhoumkham, respectfully request that the Kiaosothkhoumkham Village Forestry Association be officially recognized by the Government.

Enclosed are the articles of association and bylaws of the Kiaosothkhoumkham Village Forestry Association and the Treasurer’s Certification for your consideration and approval.

Sincerely yours,

Mr. Phoulay
VFA Chairperson

Attested by:

Mr. Lath Inthavong
Village Chief

Note: In the case of a village cluster or group, all the concerned village chiefs in the cluster or group attest and affix their signatures and official seals.
Annex 1.6.1.2 – Sample VFA Articles of Association

Lao People’s Democratic Republic
Peace Independence Democracy Unity Prosperity

Articles of Association of the Kiaosothkhoumkham Village Forestry Association

References:
2. Decision No. 0429/MAF dated June 18, 1992 on the Duties and Rights in Managing Forestry Resources at Village Level
3. The Forestry law of 1996.

Note: Cite other relevent laws, legislations, rules and regulation as applicable.

We, the undersigned, representing the residents of Ban Bakkhoumkham, District of Thapangtong, Province of Savannakhet have voluntarily organized ourselves under the existing laws of Lao PDR. and hereby certify that:

CHAPTER I
Name of the association

The name of the organization is the Kiaosothkhoumkham Village Forestry Association, hereinafter referred to as the “association”.

CHAPTER II
Objectives

The objectives and purposes of the association are:

1. To sustainably manage and protect designated village forest in partnership with state forestry agencies.

2. To improve the socio-economic condition of its members through fair sharing of costs, inputs, and benefits in the sustainable management of designated village forest(s).

CHAPTER III
Area of operation

The area of operation of the association is in Ban Bakkhoumkham, District of Thapangtong, Province of Savannakhet.

CHAPTER IV
Term of existence

The term of existence of this association is indefinite.
CHAPTER V
Membership

The membership of the association is voluntary and open to men and women who are of legal age and are actually residing in the area of operation as defined in Chapter III hereof.

CHAPTER VI
Names of Members

The association is comprised originally of 287 members, who are all citizens of Lao PDR and residents of ban Bakkhoumkham, district of Thaoangtong, province of Savannakhet, and whose names are shown in Appendix A.

CHAPTER VII
Policy Committee

The number of officers and members of the policy committee of the association is ten (10). They are all citizens of the Lao PDR and residents of Ban Bakkhoumkham, District of Thapangtong, Province of Savannakhet. They were duly elected by the VFA general assembly as provided for in the VFA by-laws. The names of the policy committee officers and members are shown in Appendix B.

Date: June 6, 1998

Signed by: Attested by:

Mr. Phoulay Mr. Lath Inthavong
VFA Chairperson Village Chief

Note: In the case of a village cluster or group, all the village chiefs in the cluster or group attest and affix their signatures and official seals.
Appendix A

Names of members

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Age</th>
<th>Sex</th>
<th>No.</th>
<th>Name</th>
<th>Sex</th>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Keo</td>
<td>65</td>
<td>M</td>
<td></td>
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<tr>
<td>2</td>
<td>Sengdao</td>
<td>31</td>
<td>M</td>
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</tr>
<tr>
<td>3</td>
<td>Chaidy</td>
<td>43</td>
<td>F</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Vong</td>
<td>53</td>
<td>F</td>
<td></td>
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</tbody>
</table>
### Appendix B

**Names of VFA officers**

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mr. Phoulay</td>
<td>Chairperson</td>
</tr>
<tr>
<td>2</td>
<td>Mr. So</td>
<td>Vice Chairperson</td>
</tr>
<tr>
<td>3</td>
<td>Mr. Phouma</td>
<td>Treasurer</td>
</tr>
<tr>
<td>4</td>
<td>Mrs. Le</td>
<td>Secretary</td>
</tr>
<tr>
<td>5</td>
<td>Mr. Vandy</td>
<td>Manager</td>
</tr>
<tr>
<td>6.</td>
<td>Mr. Bouathong</td>
<td>Village Chief</td>
</tr>
<tr>
<td>7</td>
<td>Mr. Souphanh</td>
<td>Bookkeeper</td>
</tr>
<tr>
<td>8</td>
<td>Mr. Kounen</td>
<td>Officer</td>
</tr>
<tr>
<td>9</td>
<td>Mr. Sengchanh</td>
<td>Officer</td>
</tr>
<tr>
<td>10</td>
<td>Mr. Bounene</td>
<td>Officer</td>
</tr>
</tbody>
</table>
Annex 1.6.1.3 – Sample VFA Treasurer’s Certification

Lao People’s Democratic Republic
Peace Independence Democracy Unity Prosperity

Treasurer’s Certification

I, Phouma Chanhthongthip, duly elected treasurer by the general assembly of the Kiosothkhoumkham Village Forestry Association, hereby certify that the total amount received and presently kept by me (in cash) is 143,500 kips. This amount represents payments of VFA membership fees.

Signed by:

Phouma Chanhthongthip
VFA Treasurer
June 10, 1998

Attested by:

Mr. Phoulay
VFA Chairperson
June 10, 1998

Mr. Lath Inthavong
Village Chief
June 10, 1998

Note: In the case of a village cluster or group, all the village chiefs in the cluster or group attest and affix their signatures and official seals.
Annex 1.6.2.1 – Procedure for securing official recognition of the VFA

The VFA Chairperson sends letter of application with 4 copies of all requirements for VFA recognition to the Provincial Governor though DAFO and District Chief.

DAFO receives the application and forwards it to its Forestry Unit for review.

DAFO Forestry Unit reviews the application.

Head of DAFO signs the approval sheet and the application to District Chief.

PAFO Forestry Section receives the application and its Forest Management Unit reviews it.

PAFO Forestry Section (Forest Management Unit) reviews the application.

Forestry Section Head & PAFO Director sign the approval sheet and endorses it to the Provincial Governor for signature.

Provincial Governor signs the approval sheet recognizing the VFA and returns it to PAFO.

PAFO Forestry Section (Forest Management Unit) enters all relevant information into the VFA registry.

PAFO sends copies of approval letter and VFA Articles of Association and By-Laws to:
1. VFA 3. DOF
2. DAFO  A copy is kept at PAFO
Annex 1.7.1.1 – Format of a set of rules

Lao People’s Democratic Republic
Peace  Independence  Democracy  Prosperity

(Name of the organization for village forestry)
________________________________________

(Rule reference number)
Rule no. _____________

>Title of the Rules)
Rules on __________________________

(Reference to the by-laws of the organization for village forestry)
In accordance with Article __ Chapter __ of the by-laws of _____________ approved by the organization for village forestry and the village administration on ___________, the rules on _____________ are as follows:

(Article number. Title. Provision)

**Article 1. Name and scope of the rules.** The rules cover __________________

**Article 2. Purpose of the rules.** The purpose of the rules is to __________________

**Article 3. Provision on ____.** The organization shall __________________

**Article 4. Provision on ____.** The organization shall __________________

**Article … Effectivity.** This set of rules shall take effect on __________

(Date and place of approval)
Approved by the organization for village forestry and village assembly on __________ at Ban _____________

(Name and signature of certifying officers and their official seals)

Signed by: Attested by:

Chairperson Village chief(s)/
Organization for village forestry DAFO head

**Note:** In the case of a village cluster or group, all the concerned village chiefs in the cluster or group affix their signatures and official seals. For a village forestry committee and a village forestry association, the chairperson signs and the village chief attests. For an inter-village forestry committee and a Group of VFCs/VFAs, the chairperson signs and DAFO head attests.
Annex 1.7.2.1 – Sample of an annual work plan and budget

Name of organization for village forestry ________________________________________

<table>
<thead>
<tr>
<th>No.</th>
<th>Activity</th>
<th>Target output</th>
<th>Schedule</th>
<th>Estimated budget</th>
<th>Responsible persons committees/teams</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Qty</td>
<td>Unit</td>
<td>1</td>
<td>2</td>
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</tbody>
</table>

Approved by the organization for village forestry and the village administration on ______ at Ban _______________

Signed by: ____________________________  Attested by: ____________________________
Chairperson Village chief (s)/
Organization for village forestry DAFO head

Note: In the case of a village cluster or group, all the village chiefs in the cluster or group sign and affix their official seals. For a village forestry committee and a village forestry association, the chairperson signs and the village chief attests. For an inter-village forestry committee and a Group of VFCs/VFAs, the chairperson signs and DAFO head attests.
Annex 1.7.3.1 – Sample a records inventory and assessment form

Name of organization for village forestry: ________________________________

As of ______________________ (date)

<table>
<thead>
<tr>
<th>No.</th>
<th>Title</th>
<th>Status/condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>VFA by-laws</td>
<td>Good</td>
</tr>
<tr>
<td>2</td>
<td>Village land use map</td>
<td>Damaged</td>
</tr>
<tr>
<td>3</td>
<td>Annual operations plan 1998-1999</td>
<td>Lost/misplaced</td>
</tr>
</tbody>
</table>

Prepared by: __________________ Date: ______________

Secretary
Organization for village forestry
Annex 1.7.3.2 – Sample categories and codes for records of an organization for village forestry

A Plans
A1 Village land-use plan
A2 Village forest management plan
A3 Annual operations plan
A4 Annual work plan
A5 District village forestry master plan

B Contracts
B1 Village forest management contract
B2 Timber or NTFP sales contract
B3 Timber harvest and transport contract
B4 Village boundary agreement
B5 Group membership agreement

C Laws, rules, and regulations
C1 By-laws and articles of association
C2 Rules on employment and compensation
C3 Village rules on timber harvesting for household and village use
C4 Village rules on NTFP collection
C5 Forestry Law 1996

D Registry
D1 Land registry
D2 Registry of officers and members of the organization
D3 Registry of current village forest management areas (e.g. name, number, area, location)
D4 Registry of annual production and sales of timber/NTFP by volume and species by year
D5 Registry of contractors
D6 Registry of current forestry legislation
D7 Registry of related agencies including name and address of contact persons
D8 Registry of internal and external inspection or visit by officials and staff
D9 Registry of customary tree right holders
D10 Registry of training
D11 Registry of logs at second landing
D12 Registry of seedling production and planting

E Reports
E1 PRA reports (ie. village profile, wealth ranking, seasonal calendar, Venn diagram, etc.)
E2 Forest inventory reports
E3 Pre-harvest forest inventory report
E4 Tree marking report
E5 Post harvest assessment report
E6 Annual and monthly progress reports

F Minutes of meetings
F1 Minutes of meetings of the organization

G Letters and correspondences
G1 Incoming and outgoing correspondences
H  Maps, photographs, and charts
H1  Village land use map
H2  Village forest management map
H3  Village cadastral map
H4  Social map
H5  Census map
H6  Aerial photographs of a state production forest or other forest categories
H7  Village boundary map
H8  Forest nursery map
H9  Agroforestry farm map
H10 Village forest plantation map
H11 Map of NTFP collection sites
H12 Forest fire protection and control map
H13 Organizational chart

I  Licenses and permits
I1  Copies of licenses and permits

J  Payments of royalty and other taxes
J1  Documentation of payment of royalties
J2  Documentation for payment of other taxes

K  Miscellaneous
K1  Visitors logbook
K2  Photos

Notes:

(a) The organizations for village forestry use or establish only the codes and categories of records that are applicable to their activities and operations in a production forest, protection forest, conservation forest, rehabilitation/degraded forest, or barren forest land.

(b) In the case of an inter-village forestry committee or a Group of VFCs/VFAs, the format of the above codes (as applicable) may be changed as follows: Codes followed by a dash sign “-“ and the designated number of the VFC/VFA or item. For example: A2-1 stands for the village forest management plan of Khokteuleu. D11-2 stands for log registry at second landing number 2.

(c) Specific categories of records such as plans, registry, payments of royalties and taxes, etc., are requirements of forest management certification.
Annex 1.7.3.3 – Sample list of some VFA numbers and names in Thapangtong District

<table>
<thead>
<tr>
<th>VFA No.</th>
<th>Name of VFA</th>
<th>Villages covered</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Khokhanapheuviengkham</td>
<td>Khoktheuleu, Napheu, Nalavieng, Nachanthang</td>
</tr>
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<td>2</td>
<td>Hintang houamphathana</td>
<td>Hintangkhok, Hintangkang, Nakhagnom</td>
</tr>
<tr>
<td>3</td>
<td>Nonsawanghoungheuang</td>
<td>Nonsawang</td>
</tr>
<tr>
<td>4</td>
<td>Khiaosotkhoumkham</td>
<td>Bakkhoumkham</td>
</tr>
<tr>
<td>5</td>
<td>Thaphiphathana</td>
<td>Thaphi</td>
</tr>
<tr>
<td>6</td>
<td>Khiaosomboun</td>
<td>Nathammou, Natang-neua</td>
</tr>
</tbody>
</table>
Annex 1.7.5.1 – Sample of a budget book

Name of organization for village forestry_____________________
Activity number and title: _____________________
Approved budget: ______________

<table>
<thead>
<tr>
<th>No.</th>
<th>Date</th>
<th>Voucher No.</th>
<th>Amount</th>
<th>Balance</th>
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Prepared by:
______________________
Bookkeeper

Note: The budget book is a compilation of the budget per activity with corresponding based on the approved annual work plan and budget of the organization. All payments made by the organization are entered into the corresponding activity budget and updated regularly by the bookkeeper.
Annex 1.7.5.2 – Sample payment voucher for purchase of materials and equipment

<table>
<thead>
<tr>
<th>Name of organization</th>
<th>Authorization for materials and equipment purchase</th>
<th>No:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date: <em><strong>/</strong></em>/___</td>
<td>Authorized by</td>
<td></td>
</tr>
<tr>
<td>Amount: ______</td>
<td>Authorized by</td>
<td></td>
</tr>
<tr>
<td>Received by: ________</td>
<td>Authorized by</td>
<td></td>
</tr>
<tr>
<td>Details:</td>
<td>Authorized by</td>
<td></td>
</tr>
</tbody>
</table>

**Note:** Approval of this payment voucher is required for the purchase of materials and equipment. Prior to the actual payment, it has to be authorized by at least 3 persons (e.g. the bookkeeper certifies that the payment is in accordance with the approved annual budget and that there are available funds for the purpose; the chairperson or manager certifies that the payment is in accordance with the approved annual work plan and signs the voucher; and the treasurer makes the payment to the payee in accordance with the approved voucher.)
Annex 1.7.5.3 – Sample payment voucher for labor and other services

Name of organization__________________________________________________________
Summary for the month of _____________________________________
Payment for labor and other services _________________________________

No: ______________________

Paid to: ________________________________________________________________________

Work description: _______________________________________________________________
______________________________________________________________________________

Date from:  / / to   / /

<table>
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<tr>
<th>Name</th>
<th>Compensation rate</th>
<th>Total amount</th>
<th>Signature</th>
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<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Authorized by: Authorized by: Authorized by:

Note: Approval of this voucher is required for the payment of labor and other services. Prior to the actual payment, it has to be authorized by at least 3 persons (e.g. the bookkeeper certifies that the payment is in accordance with the approved annual budget and that there are available funds for the purpose; the chairperson or manager certifies that the payment is in accordance with the approved annual work plan and signs the voucher; and the treasurer makes the payment to the payee in accordance with the approved voucher.
Annex 1.7.5.4 – Sample of a receipt

If there is no official receipt available, a receipt can be written on a blank piece of paper. The information should include:

Receipt Number
Name of payee
Date
Amount
Description
Name and signature of person receiving money

Example:

<table>
<thead>
<tr>
<th>Name of organization</th>
<th>Receipt Number</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>___</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>_____</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Amount:</th>
</tr>
</thead>
<tbody>
<tr>
<td>_______</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description:</th>
</tr>
</thead>
<tbody>
<tr>
<td>______________</td>
</tr>
<tr>
<td>______________</td>
</tr>
<tr>
<td>______________</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Received by:</th>
</tr>
</thead>
<tbody>
<tr>
<td>____________</td>
</tr>
</tbody>
</table>
Annex 1.7.5.5 – Sample of a cashbook

A cashbook is a record of money coming in and/or going out of the organization’s treasury. For the purposes of the organization, there are six columns or categories:

Name of the organization

<table>
<thead>
<tr>
<th>Date</th>
<th>Details</th>
<th>Cash In</th>
<th>Cash Out</th>
<th>Balance</th>
<th>Record No.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Prepared by: ____________________
Bookkeeper

**Description of the columns in the cash book**

All of the information to be added in the cash book should be found on the receipts.

- **Date:** The day that the cash was paid or received by the organization.
- **Details:** A description of the payment or receipt.
- **Cash In:** The amount of cash in (amount received). If there is no cash in, leave this column blank.
- **Cash Out:** The amount of cash out (amount paid). If there is no cash out, leave this column blank.
- **Balance:** The amount of cash left after cash has been paid or received. To calculate the balance, take the previous balance and either add the cash in or subtract the cash out. The balance must always be calculated with every transaction.

Example

Previous balance + Cash In = Balance
(or)
Previous balance – Cash Out = Balance

- **Record No:** The number of the receipt.

To make it easier to understand the entries in the cash book, it may be helpful to use two different colored pens. For example, blue for all cash out, and black for all cash in.

**Monthly summaries**

At the end of each month, a sub-total of all expenditures will be calculated. To calculate the cash in sub-total, add together all the entries in the cash in column for the month. To calculate the cash out sub-total, add together all the entries in the cash out column for the month.
Annex 1.7.5.6 – Sample of a receipt book

Summary for the month of __________
Name of organization ______________________________________________

<table>
<thead>
<tr>
<th>No.</th>
<th>Receipt no.</th>
<th>Date of receipt</th>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Prepared by: _____________________________

Certified by: _____________________________

Bookkeeper (Date)  
Chairperson (Date)

Note: The receipt book consists of a chronological compilation of receipts together with the corresponding approved payment vouchers. Its also consists of a monthly summary of receipts which is prepared and updated by the bookkeeper and certified by the chairperson.
### Annex 1.7.5.7 – Sample of transactions in a bank book

<table>
<thead>
<tr>
<th>Date</th>
<th>Code</th>
<th>Withdrawal</th>
<th>Deposit</th>
<th>Balance</th>
<th>Authorized</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>02/03/98</td>
<td>=</td>
<td>=</td>
<td>=80.000,00</td>
<td>=80.000,00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>02/03/98</td>
<td>=</td>
<td>=</td>
<td>=25.000,00</td>
<td>=105.000,00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>02/03/98</td>
<td>25.000,00</td>
<td>=</td>
<td>=</td>
<td>=80.000,00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24/03/98</td>
<td>=</td>
<td>=</td>
<td>125.000,00</td>
<td>=205.000,00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24/03/98</td>
<td>=</td>
<td>=</td>
<td>50.000,00</td>
<td>=255.000,00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>26/03/98</td>
<td>=</td>
<td>=</td>
<td>100.000,00</td>
<td>=355.000,00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>09/04/98</td>
<td>250.000,00</td>
<td>=</td>
<td>=</td>
<td>=105.000,00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>09/04/98</td>
<td>=</td>
<td>=</td>
<td>1.000.000,00</td>
<td>=1.105.000,00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>09/04/98</td>
<td>=</td>
<td>=</td>
<td>25.000,00</td>
<td>=1.130.000,00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12/04/98</td>
<td>300.000,00</td>
<td>=</td>
<td>=</td>
<td>=830.000,00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25/04/98</td>
<td>=</td>
<td>=</td>
<td>1.000.000,00</td>
<td>=1.830.000,00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17/05/98</td>
<td>1.300.000,00</td>
<td>=</td>
<td>=</td>
<td>=530.000,00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22/06/98</td>
<td>30.000,00</td>
<td>=</td>
<td>=</td>
<td>=500.000,00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23/07/98</td>
<td>=</td>
<td>=</td>
<td>3.500.000,00</td>
<td>=4.000.000,00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23/07/98</td>
<td>30.000,00</td>
<td>=</td>
<td>=</td>
<td>=3.970.000,00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21/08/98</td>
<td>30.000,00</td>
<td>=</td>
<td>=</td>
<td>=3.940.000,00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>02/09/98</td>
<td>=</td>
<td>=</td>
<td>6.000.000,00</td>
<td>=9.940.000,00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>02/09/98</td>
<td>2.125.000,00</td>
<td>=</td>
<td>=</td>
<td>=7.815.000,00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17/09/98</td>
<td>1.250.000,00</td>
<td>=</td>
<td>=</td>
<td>=6.565.000,00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17/09/98</td>
<td>=</td>
<td>=</td>
<td>5.000.000,00</td>
<td>=11.565.000,00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>26/10/98</td>
<td>1.000.000,00</td>
<td>=</td>
<td>=</td>
<td>=10.565.000,00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>26/10/98</td>
<td>=</td>
<td>=</td>
<td>300.000,00</td>
<td>=10.865.000,00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>28/10/98</td>
<td>=</td>
<td>=</td>
<td>250.000,00</td>
<td>=11.115.000,00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>04/11/98</td>
<td>1.250.000,00</td>
<td>=</td>
<td>=</td>
<td>=9.865.000,00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>04/11/98</td>
<td>30.000,00</td>
<td>=</td>
<td>=</td>
<td>=9.835.000,00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18/11/98</td>
<td>12.000,00</td>
<td>=</td>
<td>=</td>
<td>=9.823.000,00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14/12/98</td>
<td>14.000,00</td>
<td>=</td>
<td>=</td>
<td>=9.809.000,00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14/12/98</td>
<td>=</td>
<td>=</td>
<td>12.000,00</td>
<td>=9.821.000,00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note:** The bank book shows all transactions relating to the organization’s bank account which includes dates and amounts of withdrawals and deposits, interest earned, and amount of balance in the bank. The transactions are recorded and updated by the bank. The bank book is kept by the bookkeeper of the organization.
**Annex 1.7.6.1 – Sample of a monthly and annual progress report**

Name of organization:
________________________________________________________________________

For the month/year of ________________________________

1. **Accomplishments**

<table>
<thead>
<tr>
<th>Activities</th>
<th>Target output</th>
<th>Accomplished</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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<td></td>
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<td></td>
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<td></td>
</tr>
</tbody>
</table>

2. **Problems and recommendations**

<table>
<thead>
<tr>
<th>Problems</th>
<th>Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

Ban ______________________________ (date)

**Prepared by:**

________________________
Manager

**Certified by:**

________________________
Chairperson

**Attested by:**

________________________
Village chief(s)

**Note:** In the case of a village cluster or group, all the concerned village chiefs in the cluster or group sign and affix their official seals.
Annex 1.7.6.2 – Sample of a monthly and annual statement of accounts

For the month/year of ________________

Name of organization:
____________________________________________________________________________

<table>
<thead>
<tr>
<th>Items</th>
<th>Details</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bank withdrawals</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(from bankbook)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bank deposits</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(from bankbook)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bank balance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(from bankbook)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash in</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(from cashbook)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash out</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(from cashbook)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash box balance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(from cashbook)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Account balance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(add bankbook &amp; cashbook balance)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Ban _________________________, _____________

Prepared by: _____________________________
Bookkeeper

Certified by: _____________________________
Treasurer

Chairperson

Attested by: _____________________________
Village Chief(s)

**Note:** In the case of a village cluster or group, all the concerned village chiefs in the cluster or group sign and affix their official seals.
Annex 1.7.7.1 – Sample format of an internal audit and inventory report

1. Name of the organization ___________________________ Audit report no._____

2. Reporting period _________________________________________________________________

3. List of rules reviewed List of financial book checked
   ___________________ Cash Book
   ___________________ Bank Book
   ___________________ Receipt Book
   ___________________ Budget Book
   ___________________ Others(specify)

Cash in hand: _________

5. Cash in bank accounts:
   Acct No. Balance
   Acct No. Balance
   Acct No. Balance

6. Current total cash: _________

7. Total interest payments (from all bank accounts): _______

8. Total cash in for year: _______

9. Disbursements

<table>
<thead>
<tr>
<th>Budget Items</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Examples</td>
<td></td>
</tr>
<tr>
<td>Forest management operations</td>
<td></td>
</tr>
<tr>
<td>Forest nursery operations</td>
<td></td>
</tr>
<tr>
<td>Village forest plantation operations</td>
<td></td>
</tr>
<tr>
<td>Agroforestry farm development</td>
<td></td>
</tr>
<tr>
<td>Administration of the organization</td>
<td></td>
</tr>
<tr>
<td>Welfare support</td>
<td></td>
</tr>
<tr>
<td>Village development</td>
<td></td>
</tr>
<tr>
<td>Others (specify)</td>
<td></td>
</tr>
</tbody>
</table>

TOTAL
10. Findings, problems, and recommendations

<table>
<thead>
<tr>
<th>Findings and problems</th>
<th>Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial records</td>
<td></td>
</tr>
<tr>
<td>Authorization of payments</td>
<td></td>
</tr>
<tr>
<td>Compensation (as applicable)</td>
<td></td>
</tr>
<tr>
<td>Receipts</td>
<td></td>
</tr>
<tr>
<td>Others (specify)</td>
<td></td>
</tr>
</tbody>
</table>
11. Inventory of properties

<table>
<thead>
<tr>
<th>Equipment and tools</th>
<th>Location</th>
<th>Status/condition</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Prepared by the Inventory and Audit Committee

__________________________________  ________________________
Chairperson  Date

__________________________________  ________________________
Member  Member

Attested by:

__________________________________  ________________________
VFA Chairperson  Village Chief

Date  Date

Note: In the case of a village cluster or group, all the village chiefs in the cluster or group sign and affix their official seals.
Annex 1.8.4.1 – Sample letter of application for Group membership

Lao People’s Democratic Republic
Peace Independence Democracy Unity Prosperity

Province of Savannakhet
District of Thapangthong
Bakhoumkham Village
Kiaosothkhoumkham Village Forestry Association

Date: _____________

To: The Chairperson
    Thapangtong Group of Village Forestry Associations

Subject: Application for Membership to the Thapangtong Group of Village Forestry Associations

Based on the Resolution of the Policy Committee of the Kiaosothkhoumkham Village Forestry Association dated ______; and

Recognizing the need for inter-VFA cooperation in sustainably managing designated village forests and in improving the socio-economic condition of villagers;

Therefore, I, Mr. Phoulay, Chairperson and representing the Kiaosothkhoumkham Village Forestry Association declare that:

1. The Kiaosothkhoumkham Village Forestry Association is recognized by the Government and has an approved village forest management plan covering an area of 6,251 hectares of forests.

2. The Kiaosothkhoumkham Village Forestry Association is operating in Thapangtong district.

3. The Kiaosothkhoumkham Village Forestry Association understands and supports the policies and objectives of the Group and is willing to undertake the responsibilities of a Group member.

4. The Kiaosothkhoumkham Village Forestry Association is voluntarily applying for membership to the Group.

Attached herewith is the required membership application fee of _______________ kips and the Resolution of the Policy Committee of ______________ VFA dated __________.

Sincerely yours,

Mr. Phoulay
Chairperson

Attested by:

Mr. Lath Inthavong
Village Chief

(\textbf{Note:} In the case of a village cluster or group, all village chiefs of the cluster or group sign and affix their official seals.)
Annex 1.8.4.2 – Sample resolution of the VFA Policy Committee on Group membership

Lao People’s Democratic Republic
Peace Independence Democracy Unity Prosperity

Province of Savannakhet
District of Thapangthong
Bakhounkham Village
Kiaosothkhoumkham Village Forestry Association

Policy Committee Resolution No. ____

Title: Membership to the Thapangtong Group of Village Forestry Associations

Purpose: To confirm the application for membership to the Thapangtong Group of VFAs and to authorize VFA representatives to the Group general assembly.

Justification: The reasons for applying for membership to the Thapangtong Group of VFAs are:

1. The Kiaosothkhoumkham Village Forestry Association recognizes the need for inter-VFA cooperation in sustainably managing designated village forests and the socio-economic development of villagers.

2. The Kiaosothkhoumkham Village Forestry Association understands and supports the policies and objectives of the Group and appreciates the benefits that can be derived from group membership.

3. The Kiaosothkhoumkham VFA qualifies for membership to the Thapangtong Group of VFAs.

Resolution: Now, therefore, be it resolved and agreed that:

1. The Kiaosothkhoumkham Village Forestry Association shall apply for membership to the Thapangtong Group of Village Forestry Associations.

2. The Kiaosothkhoumkham Village Forestry association shall authorize the following VFA officers as its representatives to the Group general assembly:

<table>
<thead>
<tr>
<th>Name of Representatives</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr. Phoulay</td>
<td>Chairperson</td>
</tr>
<tr>
<td>Mr. Vandy</td>
<td>Manager</td>
</tr>
</tbody>
</table>

The above authorized representatives shall make decisions and sign documents in consultation with the VFA Policy Committee.
Approved on ___________________ in Ban Bakkhoumkhham

Mr. Phoulay  
Chairperson

Mr. So  
Vice-Chairperson
Mr. Phouma  
Treasurer
Mr. Vandy  
Manager
Mr. Sengchanh  
Member

Mr. Kounen  
Member
Mr. Bouanen  
Member
Mr. Souphanh  
Member

This is to certify that the above resolution was unanimously approved by the VFA Policy Committee after a thorough discussion at a meeting called for the purpose on _________

Ms. Le  
VFA Secretary

Attested by:

Mr. Lath Inthavong  
Village Chief

**Note:** In the case of a village cluster or group, all village chiefs of the cluster or group sign and affix their official seals.
Annex 1.8.5.1 – Sample Group By-Laws

Lao People’s Democratic Republic
Peace  Independence  Democracy  Unity  Prosperity

By-Laws of the Thapangtong Group of Village Forestry Associations

Based on:

The Constitution of Lao PDR of 1991, Article 31 on the Organization of Associations

The Forestry Law of 1996

Note: Cite other relevant laws, legislations, rules and regulations applicable.

The Thapangtong Group of Village Forestry Associations, hereinafter referred to as the "Group", and represented by duly authorized representatives from member-VFAs do hereby adopts the following by-laws:

Chapter I
Name

Article 1. Name. The name of the organization is the Thapangtong Group of Village Forestry Associations.

Chapter II
Policy statements

Article 2. Policies. The Group is committed to the pursuit of the following policies:

1. The Group is truly dedicated to the promotion of inter-VFA cooperation in the sustainable management of designated forests in Thapangtong district and in the socio-economic development of villages in the area.

2. The Group is fully committed to comply with the Group code of good practices and all applicable national and local laws, rules, and regulations in the sustainable management of designated forests in Thapangtong district.

3. The Group is totally committed to promote effectiveness, efficiency, and autonomy in the operations of its member-VFAs to achieve their common goals and objectives.

4. The Group strongly advocates transparency in its operations and ensures that Group costs and benefits are fairly shared by its member-VFAs.

5. The Group strongly supports and is truly committed to work in partnership with district forestry authorities in the planning, implementation and management of village forestry programs, projects and activities.
Chapter III
Objectives

Article 3. Objectives. The Group is formed for the following objectives:

1. To request approval by the Government of the Group’s annual sustainable harvest of timber and non-timber forest products and to allocate them to member VFAs.
2. To enter into agreements with other parties pertaining to marketing, selling, harvesting, transporting, and processing of timber and other non-timber forest products.
3. To institute a Group code of good practices in forest management, organizational, and other operations.
4. To monitor, control, and audit compliance of member-VFAs with the Group code of good practices and all applicable national and local laws, rules, and regulations.
5. To provide educational, organizational, technical, and other needed services to member-VFAs.
6. To procure production inputs for member-VFAs through a collective purchasing system.
7. To establish and manage common VFA funds to support village forestry development.
8. To help resolve conflicts among VFA-members.
9. To liaise with government agencies, non-governmental organizations, forest certifiers, companies, and other concerned parties.

Chapter IV
Administration and Management of the Group

Article 4. Structure of the Group. The Group comprises two main bodies, namely: (a) general assembly, and (b) management committee. It can form other committees on education and training, audit and inventory, and other sub-committees as needed. The Group organizational structure is shown in Appendix A.

Article 5. General Assembly. The general assembly is the highest decision and policy making body of the Group. It is composed of all the member-VFAs represented by two representatives authorized through a resolution by their respective VFA policy committees. The VFA chairperson is an automatic member of the Group general assembly.

Article 6. Responsibilities of the General Assembly. The general assembly has the following responsibilities:

1. Administer and oversee the programs and activities of the Group, and approve the articles of Group association, by-laws, rules, and Group code of good practices.
2. Approve programs, plans, budgets, contracts, and agreements.
3. Appoint, suspend, remove, and reinstate any officers or member of committees.
4. Make decisions on reconsideration of rejected membership applications and reinstatement of member-VFAs.
5. Receive and act on the reports of the committees.

Article 7. General Assembly meetings. The annual General Assembly meeting is held at least three times a year. Special General Assembly meetings can be called by the Chairperson or a
majority of the General Assembly at any time to discuss urgent matters requiring immediate decision.

**Article 8. Quorum at the General Assembly meetings.** In the regular or special General Assembly meetings, 60% of the total number of authorized VFA representatives to the General Assembly constitute a quorum.

**Article 9. Management Committee.** The Management Committee is the implementing body of the Group. It comprises a Manager and a Deputy Manager and supported by an administrative and finance staff. The Treasurer and Secretary of the General Assembly sit as members of the Management Committee.

**Article 10. Responsibilities of the Management Committee.** The management committee has the following responsibilities:

1. Implement the approved policies, by-laws, rules and regulations, programs, plans, contracts, and agreements of the Group.

2. Direct, control, supervise, implement, monitor, and evaluate the day-to-day operations of the Group.

3. Monitor, control, and audit the operations of member-VFAs to ensure that they comply with the Group code of good practices, as well as all applicable national and local laws, rules, and regulations.

4. Hire, suspend, and remove any member of the support staff and sub-committees.

5. Review and recommend actions on Group membership applications.

**Article 11. Audit and Inventory Committee.** The audit and inventory committee is responsible for the annual internal audit of the book of accounts and inventory of other records and properties of the Group. It is composed of three members elected by the general assembly. They elect from among themselves a chairperson and a secretary. No Group officers can be elected as members of the audit and inventory committee and vice versa.

**Article 12. Education and Training Committee.** The education and training committee is responsible for the planning and implementation of training and educational activities of the Group. It is composed of such number as may be determined and appointed by the management committee. The Group vice chairperson is automatically the chairperson of the education and training committee.

**Article 13. Group officers and their duties.** The Group comprises the following officers:

**Chairperson**

1. Presides over all meetings of the Group.

2. Signs official documents, appointments to positions, contracts, agreements, and others which the Group authorizes him/her to sign.

3. Performs other duties as authorized by the Group.
**Vice Chairperson.** Assumes the duties of the chairperson in the absence or disability of the chairperson. The vice-chairperson assumes the position of chairperson of the education and training committee.

**Manager**

1. Takes charge of all activities of the Group.

2. Sits as a member of the Group general assembly.

3. Submits regular progress and financial reports to the general assembly.

4. Employs, supervises, and dismisses any person working in the support staff and sub-committees in accordance with the rules approved by the general assembly.

**Deputy Manager.** Assumes the duties of the manager in the absence or disability of the manager.

**Secretary**

1. Keeps a complete record of group membership and minutes of meetings of the Group.

2. Informs all member-VFAs regarding meetings of the group.

3. Takes care of the Group’s non-financial records and other documents.

4. Sits as a member of the management committee as the administrative officer.

**Treasurer**

1. Takes care of all money and other financial records of the group.

2. Keeps a complete record of its cash transactions for the establishment and proof of the Group cash situation.

3. Certifies to the correctness of the Group cash situation in all financial statements and records submitted to the general assembly or any external agencies as required by law.

4. Pays, upon approval of the authorized officers, all financial transactions.

5. Sits as a member of the management committee as the financial officer.

**Article 14. Qualification.** Authorized representatives of member VFAs who sit in the Group general assembly and who have the necessary knowledge, skills, experience, time, and willingness to work are qualified to be elected or appointed as officers of the Group.

**Article 15. Election of officers.** No person is elected or appointed as an officer of the Group unless he or she has the necessary qualifications. The election or appointment of officers of the Group is through a majority vote of the general assembly and by secret balloting. Each member-VFA through its authorized representative(s) has only one vote.
Article 16. Term of office. The officers of the Group serve a term of three years unless removed or withdraw or have become incapacitated due to sickness or death. The term of office of the manager is indefinite. His/her removal is subject only to the unanimous decision of the general assembly.

Article 17. Removal of officers. Elected officers of the Group can be removed by a majority vote of the general assembly. The successor serves the remaining term of office.

Article 18. Vacancies. When a vacancy occurs by reason of death, incapacity, withdrawal, or removal, the vacancy shall be filled by the remaining members of the general assembly. The successor serves the remaining term of office.

Article 19. Compensation. The officers, support staff, and members of committees and sub-committees are compensated out of the funds generated by the Group. The rate of compensation is approved by the general assembly.

Chapter V
Membership

Article 20. Qualification of membership. Membership to the Group is voluntary and open to all village forestry associations that are:
1. Officially recognized (registered) by the Government
2. Operating in Thapangtong District
3. Willing to undertake the responsibilities of Group membership

Article 21. Application for Group membership. The procedures for Group membership application are:
1. The application for Group membership is made in writing duly supported by a resolution of the VFA Policy Committee and presented to the Group management committee for review and appropriate action. The resolution also includes and authorization of VFA representative(s) to the Group general assembly.
2. The application is accompanied by a membership fee of 200,000 kips which will be returned to the applicant if the membership application is rejected.
3. An applicant rejected by the Group management committee may appeal its application to the general assembly by giving notice to the Group secretary seven days before the next general assembly meeting. The decision of the Group general assembly is final.
4. If the membership application is accepted, a Group membership agreement is signed between an authorized representative of the VFA applicant and the Group chairperson.

Article 22. Annual contribution. Each member-VFA shall pay an annual contribution of 3% of its net revenue from forest management payable on June 30 of every year.

Article 23. Responsibilities of a member-VFA. A member-VFA has the following responsibilities:
1. To abide by the Group membership agreement, by-laws, rules, code of practice, and decisions.
2. To pay annual contributions to the Group to support its programs and activities.
3. To promote the policies, objectives, and purposes of the Group.
Article 24. Rights of a member-VFA. A member-VFA has the following rights:
1. To avail of the benefits and services provided by the Group.
2. To participate in all discussion during Group membership meetings.
3. To vote on all matters brought before Group membership meetings.
4. Authorized representatives of member-VFA can seek any elective position in the Group.
5. To inspect and examine the books of accounts, minutes of meetings, and other non-financial and financial records of the Group.

Article 25. Termination of membership. Membership can be terminated by withdrawal or removal.

Article 26. Withdrawal. A member-VFA that wants to withdraw shall inform the Group management committee through a VFA policy committee resolution. No member VFA shall be allowed to withdraw its membership during any period in which it has any pending obligations with the Group.

Article 27. Removal and suspension. The Group management committee, through a resolution, can remove or suspend any member-VFA if the latter does not assume its responsibilities as a member. The action of the Group management committee in suspending or removing a member-VFA can be appealed to the Group general assembly for reconsideration and final decision.

Chapter VI
Sharing of costs and benefits

Article 28. Sharing of costs and other inputs. The costs and other inputs needed in the operations of the Group are fairly shared by the member-VFAs.

Article 29. Sharing of benefits. Benefits and services of the Group are fairly shared by member-VFAs.

Article 30. Group Fund. The Group shall manage a Group Fund. This fund comes from membership fees and annual contributions of member-VFAs as stated in articles 21 and 22 and may include external donations.

Article 31. Use of the Group Fund. The use of the Group Fund is approved by the general assembly of the Group. Every year, the general assembly approves the allocation and use of funds into: (a) a Group Operating Fund to meet the operating costs of the Group, and (b) a Village Forestry Support Fund to finance provision of support services to the Group and member VFAs by forestry staff and other specialists.

Chapter VII
Miscellaneous

Article 32. Code of good practices. The Group shall prepare a written code of good practices that embodies the standard operating procedures that member-VFAs have to comply in their forest management, organizational, and other operations. The code of good practices shall be prepared by the management committee and approved by the general assembly. It shall be reviewed and updated regularly.

Article 33. Book of accounts. The group shall keep and maintain a book of accounts in accordance with generally accepted accounting principles and practices.
Article 34. **Internal audit and inventory.** At least once a year, the audit and inventory committee shall undertake an internal audit of the book of accounts and an inventory of other records and properties of the Group.

Article 35. **Annual report.** The Group chairperson shall present an annual progress report and financial statement to its member-VFAs in a general assembly meeting. The report shall also be submitted to concerned authorities, as may be required.

Articles 36. **Complaints.** Complaints from other stakeholders or the public regarding the operations of the Group shall be handled by the management committee in accordance with the procedures approved by the general assembly.

Chapter VIII
Approval of the by-laws

Article 37. **Approval of the by-laws.** The general assembly approves the Group by-laws through a majority vote.

Chapter IX
Changes in the by-laws

Article 38. **Amendments of the by-laws.** The general assembly approves changes to the by-laws through a majority vote.

Approved by a majority of the general assembly of the Thapangtong Group of Village Forestry Associations on November 4, 1999 at Thapangtong District.

Signed by:  
Mr. Phoulay  
Secretary

Attested by:  
Mr. Khamtane  
Chairperson
Appendix A – Organizational Structure of the Thapangtong Group of Village Forestry Associations

**GENERAL ASSEMBLY**
(Composed of member VFAs through their authorized representatives)

Highest decision and policy making body

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**MANAGEMENT COMMITTEE**
(Composed of a Manager, Deputy Manager, and support staff)

Implementing body

---

Audit and Inventory (Property) Committee

Education and Training Committee

Sub-committee

Sub-committee

Sub-committee

Sub-committee
Annex 1.8.5.2 – Sample Group Membership Agreement

Lao People’s Democratic Republic
Peace Independence Democracy Unity Prosperity

Group Membership Agreement

Based on the approved by-laws of the Thapangtong Group of VFAs dated _________ and the approved application for Group membership of the Kiaosothkhoumkham Village Forestry Association.

This Group membership agreement is entered into between the Kiaosothkhoumkham Village Forestry Association represented by its chairperson and the Thapangtong Group of VFAs represented by its chairperson.

Terms and conditions

The Kiaosothkhoumkham Village Forestry Association shall:
1. Abide by the terms and condition of membership agreement, by-laws, rules, and decisions of the Group.
2. Comply with the Group code of practice and all applicable national and local laws, rules and regulations in its forest management, organizational, and other operations.
3. Pay the annual contributions to the Group to support its programs and activities.
4. Promote the policies, objectives, and purposes of the Group.

The Thapangtong Group of Village Forestry Associations shall:
1. Provide technical, organizational, educational and other services needed by the Kiaosothkhoumkham Village Forestry Association.
2. Monitor, control, and audit compliance of Kiaosothkhoumkham Village Forestry Association with the Group code of practice including all applicable national and local laws, rules and regulations.

Termination of agreement

This agreement can be terminated by both parties for non-compliance of the terms and conditions.

Effectivity

This agreement shall take effect immediately upon signing of both parties.

Signed in Thapangtong District on ____________

Mr. Khamtane
Chairperson
Thapangtong Group of VFAs

Mr. Phoulay
Chairperson
Kiaosothkhoumkham Village Forestry Association
Annex 1.9.1.1 – Sample letter of application for official recognition of the Group

Lao People’s Democratic Republic
Peace Independence Democracy Unity Prosperity

Province of Savannakhet
Districts of Thapangtong and Songkone
Thapangtong Group of Village Forestry Associations

Date ____________________

To: The Governor
Province of Savannakhet
(Through: The DAFO and District Chief of Thapangtong)

Subject: Request for Official Recognition of the Thapangtong Group of Village Forestry Associations

Based on the:

2. The Forestry Law of 1996

Note: Cite other relevant laws, legislations, rules and regulations applicable.

In order to promote inter-VFA cooperation in sustainably managing ________ hectares of designated village forest in Thapangtong district and in improving the socio-economic condition of villagers in the area.

Therefore, I, Mr. Khamtane, Chairperson of the Thapangtong Group of Village Forestry Associations representing six (6) member-VFAs from Thapangtong district, respectfully request that the Thapangtong Group of Village Forestry Associations be officially recognized.

Enclosed are the Articles of Group Association, By-laws, and Group Treasurer’s Certification for your consideration and approval.

Sincerely yours,

(SGD) Mr. Khamtane
Chairperson

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Annex 1.9.1.2 – Sample Articles of Group Association

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Peace  Independence  Democracy  Unity  Prosperity

Articles of Group Association of the
Thapangtong Group of Village Forestry Associations

Based on:

2. The Forestry Law of 1996

Note: Cite other relevant laws, legislations, rules and regulation applicable

We, six registered village forestry associations in the district of Thapangtong, Province of Savannakhet, have voluntarily organized ourselves under the existing laws of Lao PDR. As authorized representatives of these village forestry associations, we hereby certify that:

Chapter I
Name

The name of the organization is the Thapangtong Group of Village Forestry Associations, hereinafter referred to as the "Group".

Chapter II
Policy statements

The Group is committed to the pursuit of the following policies:

1. Promotion of inter-VFA cooperation in the sustainable management of designated forests in Thapangtong district and in the socio-economic development of villages in the area.
2. Compliance with the Group code of practice and all applicable national and local laws, rules, and regulations in the sustainable management of designated forests in Thapangtong district.
3. Promotion of effectiveness, efficiency, and autonomy in the operations of its member-VFAs to achieve their common goals and objectives.
4. Transparency in its operations and ensuring that Group costs and benefits are fairly shared by its member-VFAs.
5. The Group strongly supports and is truly committed to work in partnership with district forestry authorities in the planning, implementation and management of village forestry programs, projects and activities.
Chapter III
Objectives

The group is formed for the following objectives:

1. To request approval by the Government of the Group’s annual sustainable harvest of timber and non-timber forest products and to allocate them to member VFAs.
2. To enter into agreements with other parties pertaining to marketing, selling, harvesting, transporting, and processing of timber and other non-timber forest products.
3. To institute a Group code of good practices in forest management, organizational, and other operations.
4. To monitor, control, and audit compliance of member-VFAs with the Group code of good practices and all applicable national and local laws, rules, and regulations.
5. To provide educational, organizational, technical, and other needed services to member-VFAs.
6. To procure production inputs for member-VFAs through a collective purchasing system.
7. To establish and manage common VFA funds to support village forestry development.
8. To help resolve conflicts among VFA-members.
9. To liaise with government agencies, non-governmental organizations, forest certifiers, companies, and other concerned parties.

Chapter IV
Area of Operation

The area of operation of the Group is in Thapangtong district, Province of Savannakhet with its principal office established in Thapangtong District.

Chapter V
Term of Existence

The term of existence of the Group is indefinite.

Chapter VI
Membership

The membership of the Group is voluntary and open to all village forestry associations officially recognized by the Government and operating in Thapangtong District.
Chapter VII
Names and Representatives of Member-VFAs

The Group is initially composed of seven founding member VFAs, which are represented by the following:

<table>
<thead>
<tr>
<th>Name of member-VFA</th>
<th>Villages/District</th>
<th>Name of authorized representatives</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Khiaosotkhunkham</td>
<td>Ban Bakhhoumkham, Thapangthong District</td>
<td>Mr. Phoulay</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mr. Vandy</td>
</tr>
<tr>
<td>2. Nonsavanghouangheung</td>
<td>Ban Nonsawang, Thapangthong District</td>
<td>Mr. Kham</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mr. Soumboun</td>
</tr>
<tr>
<td>3. Thapipattana</td>
<td>Ban Thapi, Thapangthong District</td>
<td>Mr. Keo</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mr. Vy</td>
</tr>
<tr>
<td>4. Khiaosomboun</td>
<td>Ban Natamou and Ban Natangneua, Thapangthong District</td>
<td>Mr. Chanekene</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mr. Ngod</td>
</tr>
<tr>
<td>5. Hintanghouampattana</td>
<td>Ban Hintangkang-Xe, Ban Hintangkok, and Ban Nakhayom,</td>
<td>Mr. Khamtane</td>
</tr>
<tr>
<td></td>
<td>Thapangthong District</td>
<td>Mr. Khampanh</td>
</tr>
<tr>
<td>6. Khokkhanaheuaviengkam</td>
<td>Ban Nachantang, Ban Kokthaleu, Ban Naphu, and Ban Nalavieng,</td>
<td>Mr. Samiane</td>
</tr>
<tr>
<td></td>
<td>Thapangthong District</td>
<td>Mr. Sykham</td>
</tr>
</tbody>
</table>
Chapter VIII
Group Officers

The number of officers of the Group is seven, who are all duly elected representatives of member VFAs as provided for in the by-laws. The names of the Group officers are follows:

<table>
<thead>
<tr>
<th>Name of officers</th>
<th>Position</th>
<th>Member-VFA represented</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr. Khamtane</td>
<td>Chairperson</td>
<td>Hintanghpoouampattana</td>
</tr>
<tr>
<td>Mr. Samiane</td>
<td>Vice-chairperson</td>
<td>Khokkhanapheuavangkam</td>
</tr>
<tr>
<td>Mr. Phoulay</td>
<td>Secretary</td>
<td>Kiaosothkhoumkham</td>
</tr>
<tr>
<td>Mr. Keo</td>
<td>Treasurer</td>
<td>Thapipattana</td>
</tr>
<tr>
<td>Mr. Vandy</td>
<td>Manager</td>
<td>Kiaosothkhoumkham</td>
</tr>
<tr>
<td>Mr. Soumboun</td>
<td>Deputy Manager</td>
<td>Nongsavanghouangheung</td>
</tr>
<tr>
<td>Mr. Ngod</td>
<td>Bookkeeper</td>
<td>Khiaosoumboun</td>
</tr>
</tbody>
</table>

Approved by a majority of the general assembly of the Thapangtong Group of Village Forestry Associations on November 4, 1999 at Thapangtong District.

Signed:

Mr. Khamtane
Chairperson
Representative of Hintanghpoouampattana VFA

Mr. Samiane
Vice-Chairperson
Representative of Khokkhanapheuavangkam VFA

Mr. Phoulay
Secretary
Representative of Kiaosothkhoumkham VFA

Mr. Keo
Treasurer
Representative of Thapipattana VFA

Mr. Vandy
Manager
Representative of Kiaosothkhoumkham VFA

Mr. Soumboun
Deputy Manager
Representative of Nongsavanghouangheung VFA

Mr. Ngod
Bookkeeper
Representative of Khiaosoumboun VFA
Annex 1.9.1.3 – Sample Group Treasurer’s Certification

Lao People’s Democratic Republic
Peace Independence Democracy Unity Prosperity

Group Treasurer’s Certification

This is to certify that, I, Mr. Keo, have been elected by the general assembly of the Thapangtong Group of Village Forestry Associations as its treasurer and that the total amount received and presently kept by me (in cash) is ________ kips. This amount represents payments of Group membership fees and annual contributions.

Signed by:

Mr. Keo
Group Treasurer

Attested by:

Mr. Khamtane
Group Chairperson
Annex 1.9.2.1 – Procedure for securing official recognition of the Group

1. The Group chairperson sends a letter application with 4 copies of all requirements for Group recognition to the Provincial Governor through DAFO and District Chief.

2. DAFO receives the application, prepare an approval sheet & forwards it to its Forestry Unit for review.

3. DAFO Forestry Unit reviews the application.

4. Head of DAFO signs the approval sheet and forwards the application to District Chief.

5. PAFO Forestry Section receives the application and its Forest Management Unit reviews it.

6. PAFO Forestry Section (Forest Management Unit) reviews the application.

7. Forestry Section Head and PAFO Director signs the approval sheet and endorses it to the Provincial Governor through PAFO.

8. Yes: Provincial Governor signs the approval sheet officially recognizing the Group and returns it to PAFO.

9. No: PAFO Forestry Section (Forest Management Unit) puts all relevant information into the Group registry.

10. PAFO sends copies of approval sheet and articles of group association and by-laws to: 1. Group, 2. DAFO, 3. DOF

11. A copy is kept at PAFO.

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2.8.1.2 An example of a timber sales contract
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2.10.1.2 Sample calculation of the volume of trees damaged during logging
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2.11.2.1 Sample form for monitoring NTFP collection
2.12.2.1 Sample records of application for village land-use conversion
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Annex 2.1.3.2 – Aerial photograph showing the trial corner points
Annex 2.1.3.3 – Preliminary village boundary map
Annex 2.1.3.4 – Set of documents submitted for approval of village boundaries

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<table>
<thead>
<tr>
<th>ទូទៅ</th>
<th>ទូទៅវេស្តី</th>
<th>ទូទៅវេស្តីងារ (GPS) (WGS 84)</th>
<th>ទូទៅវេស្តីងារ (KRASOVKIE)</th>
<th>បញ្ហារី</th>
<th>ស្តុករី</th>
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<td>16°55.007' 105°46.005'</td>
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<td>0.01</td>
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<td>ពីរា រាជា ពហុ</td>
<td>16°56.326' 105°44.585'</td>
<td>16°56.318' 105°44.579'</td>
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<td>0.06</td>
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<td>16°58.420' 105°46.955'</td>
<td>16°58.392' 105°46.973'</td>
<td>0.04</td>
<td>0.02</td>
</tr>
<tr>
<td>9</td>
<td>ស៊េរី ស្រី ស៊ួត</td>
<td>16°58.964' 105°45.395'</td>
<td>16°58.965' 105°45.404'</td>
<td>0.01</td>
<td>0.01</td>
</tr>
<tr>
<td>10</td>
<td>ស៊េរី ស្រី ស៊ួត</td>
<td>16°59.506' 105°45.629'</td>
<td>16°59.493' 105°45.623'</td>
<td>0.02</td>
<td>0.02</td>
</tr>
<tr>
<td>11</td>
<td>ស៊េរី ស្រី ពីរា រាជា ពហុ</td>
<td>16°41.524' 105°42.975'</td>
<td>16°41.520' 105°42.972'</td>
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<td>0.02</td>
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<tr>
<td>12</td>
<td>ស៊េរី ស្រី ពីរា រាជា ពហុ</td>
<td>16°44.187' 105°42.489'</td>
<td>16°44.169' 105°42.479'</td>
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<tr>
<td>13</td>
<td>ស៊េរី ស្រី ពីរា រាជា ពហុ</td>
<td>16°44.385' 105°43.759'</td>
<td>16°44.377' 105°43.750'</td>
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<td>0.03</td>
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<td>14</td>
<td>ស៊េរី ស្រី ពីរា រាជា ពហុ</td>
<td>16°44.780' 105°43.237'</td>
<td>16°44.780' 105°43.237'</td>
<td>0.03</td>
<td>0.03</td>
</tr>
<tr>
<td>15</td>
<td>ស៊េរី ស្រី ពីរា រាជា ពហុ</td>
<td>16°46.334' 105°43.331'</td>
<td>16°46.326' 105°43.331'</td>
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<td>0.03</td>
</tr>
<tr>
<td>16</td>
<td>ស៊េរី ស្រី ពីរា រាជា ពហុ</td>
<td>16°47.556' 105°43.444'</td>
<td>16°47.557' 105°43.444'</td>
<td>0.03</td>
<td>0.03</td>
</tr>
<tr>
<td>17</td>
<td>ស៊េរី ស្រី ពីរា រាជា ពហុ</td>
<td>16°49.704' 105°43.390'</td>
<td>16°49.703' 105°43.390'</td>
<td>0.03</td>
<td>0.03</td>
</tr>
<tr>
<td>ទិន្នន័យ</td>
<td>ប្រភ័ព</td>
<td>គ្រើនបាន បាន GPS (WGS 84)</td>
<td>គ្រើនបាន បាន VSKIE(KRASOVSKIE)</td>
<td>ប្រភ័ព ឈរ</td>
<td>សារ (ប្រភ័ព) ប្របាន</td>
</tr>
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<td>--------------------------</td>
</tr>
<tr>
<td>១២</td>
<td>ប្រភ័ព ១</td>
<td>៤៦°០៨, ៦៣៨, ៤៨</td>
<td>៤៦°០៨, ៦៣៨, ៤៨</td>
<td>១.៤៥</td>
<td>១.៤៥</td>
</tr>
<tr>
<td>១៣</td>
<td>ប្រភ័ព ២</td>
<td>៤៦°០៨, ១៣៥, ៤៨</td>
<td>៤៦°០៨, ១៣៥, ៤៨</td>
<td>១.៥៣</td>
<td>១.៥៣</td>
</tr>
<tr>
<td>១៤</td>
<td>ប្រភ័ព ៣</td>
<td>៤៦°០៨, ២៣៨, ៤៨</td>
<td>៤៦°០៨, ២៣៨, ៤៨</td>
<td>១.៣៥</td>
<td>១.៣៥</td>
</tr>
<tr>
<td>១៥</td>
<td>ប្រភ័ព ៤</td>
<td>៤៦°០៥, ៩៣០, ៤៨</td>
<td>៤៦°០៥, ៩៣០, ៤៨</td>
<td>១.២០</td>
<td>១.២០</td>
</tr>
</tbody>
</table>

គ្រើនបាន បាន VSKIE (Krassovskie) គ្នា ទៅ ទៅ ប្រភ័ព ប្រភ័ป ឈរ ១.៥៣ (១.៤៥) 

ទូច្ន័យ ប្រភ័ព   ១.៥៣ ប្រភ័ព ១.៤៥ ប្រភ័ព ១.៤៥ ប្រភ័ព ១.៤៥ ប្រភ័ព ១.៤៥
Annex 2.1.3.5 – Sketch village land-use map
### Annex 2.1.3.6 – Template for measuring area

<table>
<thead>
<tr>
<th>Scale</th>
<th>Square Size</th>
<th>Unit Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>1: 500</td>
<td>1 ตรม. = 16 ตรม.</td>
<td>1 ตรม. = 4 ตรม.</td>
</tr>
<tr>
<td>1: 1000</td>
<td>1 ตรม. = 64 ตรม.</td>
<td>1 ตรม. = 16 ตรม.</td>
</tr>
<tr>
<td>1: 2000</td>
<td>1 ตรม. = 256 ตรม.</td>
<td>1 ตรม. = 64 ตรม.</td>
</tr>
<tr>
<td>1: 5000</td>
<td>1 ตรม. = 16,000 ตรม.</td>
<td>1 ตรม. = 400 ตรม.</td>
</tr>
</tbody>
</table>
Annex 2.1.3.7 – Village land-use map
Annex 2.1.3.8 – Table of village land-use compartments

<table>
<thead>
<tr>
<th>Compartment number</th>
<th>Land use</th>
<th>Area (hectares)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Summary

<table>
<thead>
<tr>
<th>Land use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Village settlements</td>
</tr>
<tr>
<td>Paddy</td>
</tr>
<tr>
<td>Gardens</td>
</tr>
<tr>
<td>Open lands</td>
</tr>
<tr>
<td>Sacred forests</td>
</tr>
<tr>
<td>Dry dipterocarp forests</td>
</tr>
<tr>
<td>High forests</td>
</tr>
<tr>
<td>Stream buffer zones</td>
</tr>
<tr>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>
Annex 2.1.3.9 – Sample village land capability map
Annex 2.1.3.10 – Projection of village population

Population in 1997 = 384  
No. of births in 1988 to 1997 = 119  
Average annual births = 12  
No. of deaths in 1988 to 1997 = 41  
Average annual deaths = 4  
No. of people leaving the village in 1988 to 1997 = 38  
Average annual out-migration = 4  
No. of people joining the village in 1988 to 1997 = 11  
Average annual in-migration = 1

Population in 1998 = 384 + 12 – 4 + 1 – 4 = 389  
Projected births in 1998 = 12 * 389/384 = 12  
Projected deaths in 1998 = 4 * 389/384 = 4  
Projected in-migration in 1998 = 1 * 389/384 = 1  
Projected out-migration in 1998 = 4 * 389/384 = 4

<table>
<thead>
<tr>
<th>Year</th>
<th>Population</th>
<th>Births</th>
<th>Deaths</th>
<th>In-migration</th>
<th>Out-migration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>389</td>
<td>12</td>
<td>4</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>1999</td>
<td>394</td>
<td>12</td>
<td>4</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>2000</td>
<td>399</td>
<td>12</td>
<td>4</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>2001</td>
<td>404</td>
<td>12</td>
<td>4</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>2002</td>
<td>409</td>
<td>13</td>
<td>4</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>2003</td>
<td>415</td>
<td>13</td>
<td>4</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>2004</td>
<td>421</td>
<td>13</td>
<td>4</td>
<td>1</td>
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<td>13</td>
<td>4</td>
<td>1</td>
<td>4</td>
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<td>2006</td>
<td>433</td>
<td>13</td>
<td>4</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>2007</td>
<td>439</td>
<td>13</td>
<td>4</td>
<td>1</td>
<td>4</td>
</tr>
</tbody>
</table>
Annex 2.1.3.11 – Assessing the village’s future needs for land

Population data:

Population in 1998 = 389
Population in 2007 = 439
No. of households in 1998 = 65
Households in 2007 = 74

Data based on what land the villagers have or want:

Land for community use in 1998 and 2007 (hectares)

<table>
<thead>
<tr>
<th>Land use</th>
<th>Used in 1998</th>
<th>Additional land to be reserved</th>
<th>Land use in 2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administration office</td>
<td>0.0</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>School</td>
<td>0.2</td>
<td>1.8</td>
<td>2.0</td>
</tr>
<tr>
<td>Health center</td>
<td>0.0</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>Temple</td>
<td>1.5</td>
<td>0.0</td>
<td>1.5</td>
</tr>
</tbody>
</table>

Notes:  1. The village wants to have land for administration office and health center.
        2. The village also wants to enlarge the school grounds.

Land for household use in 1998 and 2007 (hectares)

<table>
<thead>
<tr>
<th>Land use</th>
<th>Used in 1998</th>
<th>Additional to be reserved</th>
<th>Land in 2007</th>
<th>Per capita</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housing</td>
<td>4.0</td>
<td>0.5</td>
<td>4.5</td>
<td>0.010</td>
</tr>
<tr>
<td>Paddy</td>
<td>60.0</td>
<td>10.0</td>
<td>70.0</td>
<td>0.154</td>
</tr>
<tr>
<td>Garden</td>
<td>1.0</td>
<td>0.5</td>
<td>1.5</td>
<td>0.002</td>
</tr>
<tr>
<td>Livestock pens</td>
<td>0.5</td>
<td>0.5</td>
<td>1.0</td>
<td>0.001</td>
</tr>
</tbody>
</table>

Notes:  1. The villagers agree to maintain the area per person for housing.
        2. The villagers want to increase the area per person for paddy, garden, and livestock to increase the present level of production.

Land for other uses in 1998 and 2007 (hectares)

<table>
<thead>
<tr>
<th>Land use</th>
<th>Used in 1998</th>
<th>Additional land to be reserved</th>
<th>Land use in 2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial area</td>
<td>0.0</td>
<td>0.5</td>
<td>0.5</td>
</tr>
</tbody>
</table>

Note: 1. The villagers want to reserve land for commercial purposes.
Annex 2.1.3.12 – Model for writing a village land-use plan

Village land-use plan of ______________

1. Introduction

1.1 Background

This report presents the land-use plan for Ban ____________. It covers a planning period of ten years from ________ to ________.

1.2 Objectives

• To project the need for land for various uses.
• To find where those needs for land can be met.
• To prepare a 10-year land-use plan for the village.

1.3 Methodology

Population projection

Land use is driven by the need of people for land. To project this need, it is necessary to project the level of population. For a village this is done as follows:
1. Do a population count of the village.
2. Collect data on births, deaths, and migration of people from and to the village.
3. Convert this data into annual basis.
4. Compute population from year to year by:

\[
\text{Population of the year} = \text{Population of previous year} + \text{Projected births} - \text{Projected deaths} + \text{Projected in-migration} - \text{Projected out-migration}
\]

Then recalculate the number of births, deaths, in-migration, and out-migration for the next yearly period as follows:

\[
\text{Projected births} = \frac{\text{Projected births}}{\text{Population of base year}} \times \frac{\text{Population of the year}}{\text{Population of base year}}
\]

where the base year is the past year, and similarly for deaths, in-migration, and out-migration.

Land needed by the community

1. List the various needs of the community for the next 10 years.
2. Consult with various sectors on the required area of each item in the list.
3. Consolidate the findings.

Land needed by households

1. List the various needs for land of the households.
2. Based on present land uses, calculate the present rates of land per capita for each item in the list.
3. Estimate the future use of land based on the present rates of use of land and the projected population of the village.

4. Discuss the results and the options for meeting needs for land with various sectors. For example, should the present rates of land use be maintained? Or instead, should the present areas of land use be maintained? If so, how should the increasing needs of the community and households (e.g. for food) be met (for example, by improving productivity by means of irrigation, better farming technology, etc.)? How can the households meet the financial requirements for the added inputs?

5. Consolidate the findings.

**Land needed for other purposes**

1. List the possible needs of land for other purposes (e.g. village industry, landings for forest products, etc.)
2. Consult with various sectors.
3. Consolidate the findings.

**Present land uses**

These were mapped earlier by a village mapping team, which was trained by a team of forestry staff. Aerial photographs were used to prepare the map of present land uses.

**Land capability**

Capability of selected land compartments for various uses (e.g. paddy production) is determined by a village team using indigenous knowledge on the suitability of the land and other information from fieldwork, e.g. transect walks, etc.

**Village land-use plan**

1. Indicate on the map where changes in land use will occur based on the projected needs for land, land capability, and various consultations made earlier.
2. Present and discuss the results with the entire village assembly.
3. Modify the plan based on the results of the discussion.

### 2.0 Projecting needs for land

#### 2.1 Population projection

**Table 1 – Projected population of the village**

<table>
<thead>
<tr>
<th>Year</th>
<th>Population</th>
<th>Births</th>
<th>Deaths</th>
<th>In-migration</th>
<th>Out-migration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
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<td>1999</td>
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<tr>
<td>2007</td>
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</tr>
</tbody>
</table>
2.2 Land needed by the community

Table 2 – Land for community use in 2007 (hectares)

<table>
<thead>
<tr>
<th>Land use</th>
<th>Used in 1998</th>
<th>Additional land to be reserved</th>
<th>Land use in 2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administration office</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health center</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temple</td>
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</tbody>
</table>

2.3 Land needed by households

Table 3 – Land for household use (hectares)

<table>
<thead>
<tr>
<th>Land use</th>
<th>Used in 1998</th>
<th>Additional to be reserved</th>
<th>Land in 2007</th>
<th>Per capita</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1998</td>
</tr>
<tr>
<td>Housing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paddy</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Garden</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Livestock</td>
<td></td>
<td></td>
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<tr>
<td>...</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2.4 Other needs for land

Table 4 – Land for other uses (hectares)

<table>
<thead>
<tr>
<th>Land use</th>
<th>Used in 1998</th>
<th>Additional land to be reserved</th>
<th>Land use in 2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sawmill</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commercial area</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Utilities</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>...</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3.0 Present land uses and land capability

3.1 Present land uses

Table 5 – Present land uses

<table>
<thead>
<tr>
<th>Land use</th>
<th>Area (hectares)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Village settlement</td>
<td></td>
</tr>
<tr>
<td>Paddy</td>
<td></td>
</tr>
<tr>
<td>High forest</td>
<td></td>
</tr>
<tr>
<td>...</td>
<td></td>
</tr>
</tbody>
</table>

Figure 1 – Map of present land uses (see attached)
3.2 Land capability

Table 6 – Land capability of different land uses

<table>
<thead>
<tr>
<th>Land capability type</th>
<th>Area (hectares)</th>
<th>Possible land uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Village settlement</td>
<td></td>
<td>Community land, household land, industrial land, and similar needs</td>
</tr>
<tr>
<td>Paddy</td>
<td></td>
<td>Rice production</td>
</tr>
<tr>
<td>Garden</td>
<td></td>
<td>Vegetable production</td>
</tr>
<tr>
<td>Fruit trees and grazing</td>
<td></td>
<td>Fruit tree, livestock, and upland crop production</td>
</tr>
<tr>
<td>High forest</td>
<td></td>
<td>Forestry purposes (not to be changed)</td>
</tr>
<tr>
<td>Dry dipterocarp forest</td>
<td></td>
<td>Maintained for forestry purposes, but may accommodate changes for additional village area, paddy, garden, fruit trees, etc.</td>
</tr>
</tbody>
</table>

Figure 2 – Land capability map (see attached)

4.0 Village land-use plan

4.1 Planned land uses

Table 7 – Land use-plan, 1998-2007 (hectares)

<table>
<thead>
<tr>
<th>Land use</th>
<th>Area in 1998</th>
<th>Area in 2007</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Village settlement</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paddy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Garden</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High forest</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dry dipterocarp forest</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 3 – Map of planned land uses (see attached)

4.2 Village cadastre

The village will maintain a village cadastre, which will record all relevant data concerning all land parcels in the village, including the parcel number, area, land category, present land use, name of owner, and registration number (if the land parcel is registered). The village cadastre will be managed by the Village Land Allocation Committee. The land parcels will be surveyed and mapped by a trained village cadastral survey and mapping team, and the maps will be kept as part of the village cadastre.

5.0 Plan implementation

5.1 Implementation strategy

The village will use all available resources to make sure that the plan will be properly implemented. The village administration will form a Village Land Allocation Committee and Village Cadastral Survey and Mapping Teams. The Village Land Allocation Committee will lead in implementing and updating the Village Land-Use Plan. All members of the village, including organizations, will be encouraged to have their land surveyed, mapped, and registered. All
information regarding the land will be maintained in the Village Land Registry. All changes in land use will be monitored by the Village Land Allocation Committee, which will report to the village administration all matters regarding land allocation and use.

5.2 Village Land Allocation Committee

The duties of the Village Land Allocation Committee are:
- Update the Village Land-Use Plan every 10 years.
- Formulate and implement land-use policies in accordance with the Village Land-Use Plan.
- Provide recommendations regarding land-use conversions.
- Maintain the Village Land Registry.
- Supervise the Village Cadastral Survey and Mapping Team.
- Do other work assigned by the village administration.

5.3 Village cadastral survey and mapping team

The duties of the Village Cadastral Survey and Mapping Team are:
- Survey all land parcels in the village.
- Map all the surveyed land parcels.
- Provide the Village Land Allocation Committee with all outputs and information from land survey and mapping.
- Do other work assigned by the Village Land Allocation Committee.

5.4 Resources to implement the plan

Human resources and financing

The village has the human resources to form the Village Land Allocation Committee and the Village Cadastral Survey and Mapping Teams. Training of the villagers will be done by government staff. Financing of land-planning and allocation activities will be provided by the village, but any assistance that the government can provide will be welcome.

Materials and tools

Some materials and tools have been provided by the government as shown below. The village will keep them in good condition or replenish them when they are used up.
- Plane table, compass, and metric tape
- Mapping pens, pencils, erasers, and rulers
- Survey and mapping paper
- Plastic templates, triangles, and protractor
- Calculator
- File folder and book for the Village Land Registry
Annex 2.2.1.1 – Sample forest inventory form

Name of village ___________________ Date ____________ Team leader __________________
Compartment no. _______ Forest type _________________ Plot number _________________

<table>
<thead>
<tr>
<th>Tree no.</th>
<th>Species</th>
<th>DBH (cm)</th>
<th>Bole height (m)</th>
<th>Total height (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>
Annex 2.2.1.2 – Sample of a simplified forest inventory form (for a dry dipterocarp forest compartment)

Village ________________ Compartment no. ____ Forest type or description _________________ Date ______ Measured by _______________ Sheet no __

<table>
<thead>
<tr>
<th>Dbh class cm</th>
<th>Koung</th>
<th>Chick</th>
<th>Sat</th>
<th>Suak mon</th>
<th>Deng</th>
<th>Other tree species</th>
<th>Resin tapped tree</th>
<th>Dead tree</th>
<th>NTFP</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 - 19,9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>20 - 29,9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>30 - 39,9</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
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<tr>
<td>40 - 49,9</td>
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<tr>
<td>50 - 59,9</td>
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<td></td>
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<td></td>
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<td></td>
<td></td>
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<tr>
<td>60 - 69,9</td>
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<td></td>
<td></td>
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<tr>
<td>&gt;70</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

Density of regeneration in the sample plot (height of sapling under 2 meters)

- 0 Empty (no saplings)
- 1 Sparse (average distance between saplings > 3.2 m)
- 2 Moderate (average distance between saplings 3.2 - 1.4 m)
- 3 Dense (average distance between saplings < 1.4 m)

Number of plots

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31-32
### Annex 2.2.1.3 – Sample of a forest inventory calculation form (for a dry dipterocarp forest compartment)

Village ________________ Compartment no. ____ Forest type or description _________________ Area _______ ha Date ______ Calculated by _______________

Number of sample plots (N) _____

<table>
<thead>
<tr>
<th>Dbh class cm</th>
<th>Koung Chick Sat Suak mon Deng Other tree spec.</th>
<th>Resin tapp. tree</th>
<th>Dead tree</th>
<th>No. of sample trees</th>
<th>Total no. of trees</th>
<th>Vol per tree</th>
<th>Vol per class</th>
<th>NTFP</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 - 19,9</td>
<td>A1</td>
<td>B1</td>
<td>0.062</td>
<td>C1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20 - 29,9</td>
<td>A2</td>
<td>B2</td>
<td>0.24</td>
<td>C2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30 - 39,9</td>
<td>A3</td>
<td>B3</td>
<td>0.57</td>
<td>C3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40 - 49,9</td>
<td>A4</td>
<td>B4</td>
<td>1.05</td>
<td>C4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50 - 59,9</td>
<td>A5</td>
<td>B5</td>
<td>1.69</td>
<td>C5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60 - 69,9</td>
<td>A6</td>
<td>B6</td>
<td>2.49</td>
<td>C6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt;70</td>
<td>A7</td>
<td>B7</td>
<td>3.46</td>
<td>C7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Area factor (AF) of the compartment:** Area/(N x 0.1) = ____/(____ x 0.1) = _______.

Total number of trees for each (7) diameter classes (B1, B2,...and B7): B1 = A1 x Area factor, B2 = A2 x Area factor etc.

Total number of NTFP : No. of NTFP (bamboo or others) x Area factor.

**Number of stems per hectare** = B/Area = ________/_____ = ______ stems/ha.

**Bole volume per class** = C1 = B1 x 0.062, C2 = B2 x 0.24 etc. Total bole volume of compartment = C = C1 + C2 ..+ C7

**Bole volume per hectare** = C/area = ________/_____ = ______ m3/ha.

**Average density of regeneration in the compartment:** _____

0 = empty, 1 = sparse, 2 = moderate, 3 = dense (average of density classes of the plots, rounded to the nearest whole number)
Annex 2.2.2.1 – An example of a filled-in forest inventory form

<table>
<thead>
<tr>
<th>ลำดับ</th>
<th>ปีกิจ</th>
<th>ปีกิจ</th>
<th>ปีกิจ</th>
<th>ปีกิจ</th>
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<th>ปีกิจ</th>
<th>ปีกิจ</th>
<th>ปีกิจ</th>
<th>ปีกิจ</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-19.9</td>
<td>⬤</td>
<td>□</td>
<td>⬤</td>
<td>□</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>30-39.9</td>
<td>⬤</td>
<td>□</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30-39.9</td>
<td>⬤</td>
<td>□</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30-39.9</td>
<td>⬤</td>
<td>□</td>
<td></td>
<td></td>
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<tr>
<td>40-49.9</td>
<td>⬤</td>
<td>□</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50-59.9</td>
<td>⬤</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>60-69.9</td>
<td>⬤</td>
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<td></td>
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<tr>
<td>&gt;70</td>
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<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

หมายเหตุ: ช่องที่แสดงเลขที่ไม่มีความหมายหรือช่องที่ไม่มีความหมายในแบบฟอร์ม

0. ข้อผังกิจ (ไม่ได้ยืนยันผล)
1. ข้อผังกิจ (มีผลคัดเลือกความยืดหยุ่นไม่ได้ยืนยัน>)
2. ข้อผังกิจ (มีผลคัดเลือกความยืดหยุ่นสูงสุดไม่ได้ยืนยัน>)
3. ข้อผังกิจ (มีผลคัดเลือกความยืดหยุ่นสูงสุดไม่ได้ยืนยัน>)
**Annex 2.2.3.1 – An example of a filled-in forest inventory calculation form**

An example of a filled-in inventory calculation form

<table>
<thead>
<tr>
<th>นักวิเคราะห์</th>
<th>ปี</th>
<th>จำนวน</th>
<th>ที่</th>
<th>ขนาด</th>
<th>แผนที่</th>
<th>ล่าง</th>
<th>หลักฐาน</th>
<th>ปริมาณผลิตผล</th>
<th>ปริมาณผลิตผล</th>
<th>บันทึกลง</th>
<th>บันทึกลง</th>
<th>บันทึกลง</th>
<th>บันทึกลง</th>
<th>บันทึกลง</th>
<th>บันทึกลง</th>
</tr>
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<td>7</td>
<td>1</td>
<td>8</td>
<td>12</td>
<td>2</td>
<td>21</td>
<td>A1</td>
<td>55</td>
<td>B1</td>
<td>3,928</td>
<td>10</td>
<td>0.062</td>
<td>C1</td>
<td>243</td>
</tr>
<tr>
<td>20</td>
<td>7</td>
<td>11</td>
<td>1</td>
<td>6</td>
<td>10</td>
<td>1</td>
<td>A2</td>
<td>22</td>
<td>B2</td>
<td>2,999</td>
<td>64</td>
<td>C2</td>
<td>719</td>
<td></td>
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</tr>
<tr>
<td>30</td>
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<td>2</td>
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<td>19</td>
<td></td>
<td>A3</td>
<td>19</td>
<td>B3</td>
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<td>18</td>
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<td>A4</td>
<td>9</td>
<td>B4</td>
<td>642</td>
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<td>C4</td>
<td>674</td>
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<tr>
<td>50</td>
<td>2</td>
<td>2</td>
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<td></td>
<td></td>
<td></td>
<td>A5</td>
<td>18</td>
<td>B5</td>
<td>1,428</td>
<td>84</td>
<td>C5</td>
<td>241</td>
<td></td>
<td></td>
</tr>
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<td>1</td>
<td>B6</td>
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<td>84</td>
<td>C6</td>
<td>355</td>
<td></td>
<td></td>
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<tr>
<td>&gt;70</td>
<td></td>
<td>0</td>
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<td></td>
<td></td>
<td></td>
<td>A7</td>
<td></td>
<td>B7</td>
<td>346</td>
<td></td>
<td>C7</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

นิยามของสูตรสูงสุด (AF) : ปริมาณ (N x 0.1) = 26 / (4 x 0.1) = 31.42.  
( N = จำนวนผลิตภัณฑ์ )

ปริมาณผลิตภัณฑ์ทั้งหมด (Σ) คือ B1 + B2 + B3 + B4 + B5 + B6 + B7.

ปริมาณผลิตภัณฑ์ที่ยังไม่ได้คิด (ไม่เบิกความ) = Σ - ปริมาณเบิกจ่าย.

ปริมาณเบิกจ่าย = B1 + B2 + B3 + B4 + B5 + B6 + B7.

ถ้ามีผลิตภัณฑ์ที่ยังไม่ได้คิด (ไม่เบิกความ) ค่าคงเหลือเป็นไปอยู่ในค่า C1 = 0.062, C2 = 0.24, C3 = 0.58.

ถ้ามีผลิตภัณฑ์ที่ยังไม่ได้คิด (ไม่เบิกความ) C4 = 0.062, C5 = 0.24, C6 = 0.58.

โดยทั่วไปผลิตภัณฑ์ที่ยังไม่ได้คิด (ไม่เบิกความ) จะมีค่าคงเหลือเป็นไปอยู่ในค่า 0.
Annex 2.2.3.2 – Model for writing a forest inventory report

Forest Inventory Report

General information

Name of VFA: ___________________________________________________________
Name of village: ___________________________________________________________
Name of district: ___________________________________________________________
Name of province: ___________________________________________________________
Dates of inventory: _________________________________________________________
Team members: _____________________________________________________________

<table>
<thead>
<tr>
<th>Compartment no.</th>
<th>Forest type</th>
<th>Area (hectares)</th>
<th>No. of plots</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
</tbody>
</table>
Summary of the forest inventory results

Volume and stems per hectare of the compartments

<table>
<thead>
<tr>
<th>Comp. No.</th>
<th>Area (ha)</th>
<th>Stem volume (m$^3$/ha)</th>
<th>Number of stems per hectare</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>10-30</td>
<td>31-50</td>
</tr>
<tr>
<td></td>
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</tbody>
</table>

354
### Regeneration and non-timber forest products by compartment

<table>
<thead>
<tr>
<th>Comp. No.</th>
<th>Regeneration Class</th>
<th>Resin trees (No./ha)</th>
<th>Bamboo (clumps/ha)</th>
<th>Rattan (stems/ha)</th>
<th>Others (specify)</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>

### Sample forest inventory report (annexes)

1. Forest inventory map (to be attached)
2. Calculation sheets for each compartment (to be attached)
Annex 2.4.1.1 – Comparison of annual areas and roads between a short and a long management cycle

<table>
<thead>
<tr>
<th></th>
<th>System 1</th>
<th>System 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cutting cycle</td>
<td>Short, e.g. 5 years</td>
<td>Long, e.g. 50 years</td>
</tr>
<tr>
<td>Annual coupe</td>
<td>Larger area</td>
<td>Smaller area</td>
</tr>
</tbody>
</table>

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>Year 1</td>
<td></td>
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<tr>
<td>Year 2</td>
<td></td>
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<tr>
<td>Year 3</td>
<td></td>
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<tr>
<td>Year 4</td>
<td></td>
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<tr>
<td>Year 5</td>
<td></td>
</tr>
<tr>
<td>Year 49</td>
<td></td>
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<tr>
<td>Year 50</td>
<td></td>
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<tr>
<td>Etc.</td>
<td></td>
</tr>
</tbody>
</table>

Length of access roads to be built each year

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1</td>
<td></td>
</tr>
<tr>
<td>Year 2</td>
<td></td>
</tr>
</tbody>
</table>

Longer                | Shorter
Annex 2.4.1.2 – Comparison of volume cut and canopy opening between a short and a long management cycle

<table>
<thead>
<tr>
<th></th>
<th>System 1</th>
<th>System 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Area</strong></td>
<td>50,000/5 = 10,000 ha</td>
<td>50,000/50 = 1,000 ha</td>
</tr>
<tr>
<td><strong>Sustainable cut</strong></td>
<td>50,000 m³ /10,000 ha = 5 m³/ha</td>
<td>50,000/1,000 = 50 m³/ha</td>
</tr>
<tr>
<td><strong>Annual allowable cut</strong></td>
<td>50,000 ha * 1 m³/ha = 50,000 m³ annually</td>
<td></td>
</tr>
<tr>
<td><strong>Area of annual coupe</strong></td>
<td>50,000/5 = 10,000 ha</td>
<td>50,000/50 = 1,000 ha</td>
</tr>
<tr>
<td><strong>Volume cut per ha</strong></td>
<td>About 1 tree/ha</td>
<td>About 8-12 trees/ha</td>
</tr>
<tr>
<td><strong>Trees cut per ha</strong></td>
<td>Suitable</td>
<td>Suitable</td>
</tr>
<tr>
<td><strong>Suitability:</strong></td>
<td>Suitable</td>
<td>Not suitable since the Forest will be heavily degraded</td>
</tr>
<tr>
<td>Dense stands, e.g. 300 m³/ha</td>
<td>Suitable</td>
<td>Suitable</td>
</tr>
<tr>
<td>Light stands, e.g. 120 m³/ha</td>
<td>Suitable</td>
<td></td>
</tr>
<tr>
<td>Canopy opening</td>
<td>Small opening</td>
<td>Large opening</td>
</tr>
</tbody>
</table>

Legend:
- Tree cut
- Tree killed or damaged

One-hectare stand

One-hectare stand
## Annex 2.4.1.3 – Sustainability of forest management for short and long management cycles

<table>
<thead>
<tr>
<th></th>
<th>System 1</th>
<th>System 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cutting intensity</strong></td>
<td>Light cut since the annual cut is distributed over a large area of annual coupe</td>
<td>Heavy cut since the annual cut is concentrated on a small area of annual coupe</td>
</tr>
<tr>
<td><strong>Size of opening</strong></td>
<td>Small opening</td>
<td>Large opening</td>
</tr>
<tr>
<td><strong>Scenario without treatment</strong></td>
<td>Opening regenerated naturally</td>
<td>Bamboos and weeds invade opening</td>
</tr>
<tr>
<td></td>
<td>Stand structure maintained</td>
<td>Stand structure changed drastically</td>
</tr>
<tr>
<td></td>
<td>Species composition maintained</td>
<td>Species composition changed drastically</td>
</tr>
<tr>
<td><strong>Treatment needed</strong></td>
<td>Likely that none is needed or light enrichment planting</td>
<td>Heavy enrichment planting</td>
</tr>
<tr>
<td><strong>Ease of land-use conversion</strong></td>
<td>Likely to remain a forest</td>
<td>Easy to convert to farms</td>
</tr>
<tr>
<td></td>
<td></td>
<td>May need to be converted to tree plantation</td>
</tr>
<tr>
<td><strong>Overall sustainability</strong></td>
<td>Likely to be sustainable since the light cut imitates the natural death and regeneration of trees in a forest</td>
<td>Likely to be unsustainable especially in light forest stands which cannot sustain heavy cuts</td>
</tr>
<tr>
<td><strong>Limitation to application</strong></td>
<td>Terrain which can be accessed in the dry season without building roads, since the light cut cannot sustain expensive road building or logging techniques</td>
<td>Can be done in most terrain since the heavy cut can sustain the high cost of road building and logging</td>
</tr>
</tbody>
</table>
Annex 2.4.3.1 – Model for writing a village forest management plan

Village Forest Management Plan, 1998-2008
For Ban __________
Submitted by the __________ Village Forestry Association

Introduction

1.1 Background

Ban __________ is located in the vicinity of Dong Sithouane in the District of __________, Province of Savannakhet. The village can be reached by road by _____________ _____________ _____________. Figure 1 shows the location of the village in relation to some of the neighboring villages in Dong Sithouane. (Note: All figures are attached to the last part of the report.)

Ban _____ has a population of _____, consisting of ____ males and ____ females. There are _____ families in ____ households living in the village. The village joined the village forestry program in the year ______.

This report presents the Village Forest Management Plan for Ban __________. It covers the planning period from 1998 to 2008. It was prepared by the __________ Village Forestry Association.

1.2 Objectives

The forest management objective of the village is to produce on a sustainable basis a desired mix of products and services from the forests located within the village territory. The different products and services are listed in Section 3.2. This Village Forest Management Plan shows how the forest management objective is to be attained over the planning period. It has several sections, which are aimed at:

- Describing the forest resources of Ban __________
- Showing what products and services these forest resources can provide to the residents of Ban __________ and to the rest of the country
- Showing how the forest resources of Ban __________ will be managed to provide these products and services
- Demonstrating that the forest management will be beneficial to all concerned and sustainable in perpetuity

1.3 Methodologies

The following describe the methodologies used in preparing this plan:

- The village boundaries were demarcated jointly by a team from the Provincial and District Agriculture and Forestry Offices and a team from the village. Adjacent villages were consulted during the delineation process. Aerial photographs were used to facilitate the consultation and demarcation. The location of corner points was determined in the field by using a GPS device. The village boundaries were then mapped, submitted, and subsequently approved by the governors of the district and the province.
• The boundaries of the forests were mapped at the same time as those of the other land uses by a village team assisted by government forestry staff, who also provided training to the village team. Aerial photographs were used to identify and map the land uses.

• A village team also conducted an inventory of the dry dipterocarp forests following the training provided by government forestry staff. The line-plot method was used at a sampling intensity of 1.25%. The inventory of the high forests had been done within the last two years by government forestry staff, who also used the line-plot method but at a sampling intensity of 3.3%.

• Government forestry staff provided forest stand growth information specific to the village. The information was based on permanent forest growth sample plots, some of which were located in the village.

• A team of villagers prepared a ten-year village land-use plan out of which the Village Forest Management Unit was drawn. Government forestry staff provided training and support. The village land-use plan was presented to and approved by the village assembly.

• The village planning team prepared the different parts of the village forest management plan, including the projected benefits and impacts. The details of these parts were discussed with and approved by the village assembly. Government forestry staff provided training and support to the villagers in the planning process.

2.0 Village Forest Management Unit and its resources

2.1 Village Land-use Plan

Figure 2 shows the map of present land uses in the Ban_____. Based on this map, the villagers’ land-use objectives, and their local knowledge about the land capability in the village, a ten-year Village Land-use Plan was prepared. A map (see Figure 3) serves as a summary of the Village Land-use Plan, which is available in the village as a separate report.

Table 1 shows the present and planned land uses in the village. (Note: All tables are located after the text part of the report.) In 1998, the village has a total area of _____ hectares, of which _____ hectares are forests, _____ hectares are cultivated, and _____ hectares have other land uses. According to the village land-use plan, _____ hectares of forests will be converted to cultivated land within the next ten years.

2.2 Village Forest Management Unit

All forest areas, including stream buffer zone and non-productive areas located therein, which will remain after the planned conversion to cultivated land, are defined as the Village Forest Management Unit. The Village Forest Management Unit covers _____ hectares (see Figure 4 for the extent of the area).
2.3 Forest resources

Several forest types occur in the Village Forest Management Area. These are as follows:

- Mixed deciduous forests and dry evergreen forests (or high forest) covering _____ ha
- High dry dipterocarp forests covering _____ ha
- Low dry dipterocarp forests covering _____ ha

Table 2 summarizes the inventory information about the high forests in the village. The average stand density in terms of stem volume is _____ m$^3$/ha, broken down as follows: _____ m$^3$/ha in trees with DBH of 10-30 cm, _____ m$^3$/ha in trees with DBH of 31-50 cm, and _____ m$^3$/ha in trees with DBH greater than 50 cm. On average there are _____ stems per hectare of trees with at least 10 CM DBH, broken down as follows: _____ stems with DBH of 10-30 cm, _____ stems with DBH of 31-50 cm, and _____ stems with DBH greater than 50 cm.

Table 3 summarizes the inventory information about the dry dipterocarp forests. The average stand density in terms of stem volume is _____ m$^3$/ha, broken down as follows: _____ m$^3$/ha in trees with DBH of 10-30 cm, _____ m$^3$/ha in trees with DBH of 31-50 cm, and _____ m$^3$/ha in trees with DBH greater than 50 cm. On average there are _____ stems per hectare of trees with at least 10 CM DBH, broken down as follows: _____ stems with DBH of 10-30 cm, _____ stems with DBH of 31-50 cm, and _____ stems with DBH greater than 50 cm.

2.4 Forest stand growth

Table 4 shows the growth and mortality information about the forests in the village. On average, trees in the high forest grows at the rate of 4.43 m$^3$/ha annually, but some trees also die (0.91 m$^3$/ha) leaving a net stand growth of 3.52 m$^3$/ha. On average, trees in the dry dipterocarp forest grows at the rate of 1.11 m$^3$/ha annually, but some trees also die (0.53 m$^3$/ha) leaving a net stand growth of 0.58 m$^3$/ha.

3.0 Forest management plan

3.1 Village forest management system

The village forest management system followed in Ban __________ is based on the objective of producing timber for village consumption and sale, while at the same time producing non-timber forest products and conserving the other values of the forest. Timber management is based on low-intensity harvesting with natural regeneration from seed trees. The following elements of the village forest management system are described briefly in the following sections:

- Forest managers and stakeholders
- Products and services to be produced in the forest, i.e. the objectives of management
- Timing or frequency of producing the different products and services
- Location in the forest of the production sites
- Level of production
- Method of production
- Method for ensuring sustainability
3.2 Forest managers and stakeholders

The Village Forestry Association, whose members come entirely from Ban ________, are the managers of the forests in the village, as contracted by the government following the village forestry program. The customary rights of all villagers to the forests in Ban ________ will be respected by the Village Forestry Association, but the practice of such customary rights will be coordinated with village forestry activities. Village forestry will also serve the interest of other stakeholders, such as forest industries and the national community, by providing products and services to them, paying taxes, and others.

3.3 Forest products and services

The Village Forest Management Unit will provide the following products and services. Management provisions for obtaining them have been considered in this plan.

**Products**
- Timber for commercial use
- Timber for the use of the village and the village households
- Non-timber forest products (firewood, resin, rattan, vines, forest foods, etc.)

**Services**
- Grazing places for livestock of the village households
- Protection of biodiversity and water resources of the village
- Places for worship and enjoyment of nature
- Enhancement of a healthy natural environment in the village

3.4 Forest management cycles

The following are the forest management cycles, which represent the time period between successive harvests of different products or between successive sets of management operations at different compartments in the Village Forest Management Unit.
- _____-year cycle for harvesting timber
- one-year cycle for collecting non-timber forest products (firewood, resin, rattan, vines, forest foods, etc.)
- one-year cycle for managing the forest to obtain the different services

3.5 Forest management compartments

**Timber harvesting sites**

Figure 4, which shows the Village Forest Management Unit, also shows how the different forests are divided into _____ timber harvesting sites and forest compartments in each site. On average, _____ ha/year of high forests and _____ ha/year of dry dipterocarp forests will be the site of timber harvesting operations. This means that only about _____ ha of high forests and _____ ha of dry dipterocarp forests will be put into timber production. The other forest areas are not suitable for timber production and are reserved for future development.
Sites for collecting non-timber forest products and for other services

In principle, all forest areas where non-timber forest products occur are the production sites for them. All forest areas are also the sites for deriving the different forest-based services, such as protection of soil, water, and biodiversity, enhancement of the environment, etc. Since the collection cycle is one year, villagers can come back every year to collect products from these sites. The people of Ban ______ have adopted rules for this purpose. These rules, which also include those for grazing livestock in the forest, are given in Annex 1.

3.6 Annual allowable harvests

Timber harvests

Annual allowable timber harvest for each compartment scheduled for harvesting during any given year were calculated using the following formulas:

\[
\begin{align*}
\text{AAC (live trees)} &= AC \times A \times CC \\
\text{AAC (dying trees)} &= AC \times B \times CC \\
\text{AAC (dead trees)} &= \text{depends on actual availability as determined during the pre-} \\
& \text{logging survey/inventory each year}
\end{align*}
\]

Where: AAC = Annual allowable cut (m$^3$)
AC = Area of the compartment (ha)
A and B = Volume allowed to be harvested annually (m$^3$/ha/year) from Table 5.
CC = cutting cycle (year)

The figures in Table 5 were calculated based on the following guidelines:

- Since the area has been logged before, the stand density of the forests are quite low at present. Thus, not all of the net growth of the stand is harvested. Part of the stand growth is reserved to allow the stand density to further increase.

- Mixed deciduous and dry evergreen forest stands, which have a density of less than 75 m$^3$/ha, are protected and reserved for future development. They are not included in calculating the size of compartments to be managed. Stands which have a density of more than 75 m$^3$/ha can be managed for commercial timber production, but cutting of live trees in any year is allowed only in compartments with at least 120 m$^3$/ha.

- Harvesting of timber for village consumption is allowed in the dry dipterocarp forest. Harvesting for commercial purposes is allowed only if the dry dipterocarp stand is highly productive (i.e. with at least 100 m$^3$/ha of stem volume). Stands which have a density of less than 50 m$^3$/ha are protected and reserved for future development. They are not included in calculating the size of compartments to be managed. Stands which have a density of more than m$^3$/ha can be managed for timber production, provided there are at least 10 large trees (i.e. at least 40 cm diameter at breast height or DBH) that can be left as seed trees.

- Allowance for logging damage is 20% of gross harvest of live trees.

- About 30% of the volume of dying trees is assumed to be recoverable.
Table 6 summarizes the calculation of the annual allowable timber harvests, which was based on the formula and information from Table 5. The annual allowable harvests of commercial timber from the high forests and the highly productive dry dipterocarp forests range from ____ to ____ m$^3$. The annual allowable harvests of timber for household and village use from the dry dipterocarp forests range from ____ to ____ m$^3$.

**Harvest of non-timber forest products**

There is not enough information for determining the maximum annual allowable harvest of non-timber forest products. The collection rules given in Annex 1 allows for the monitoring of annual collection. If the collection level of any product is on a declining trend, it is a sign that the resource base cannot sustain the current level of collection. In this case, either the collection level is reduced or collection is suspended until the resource base recovers.

**3.7 Production methods**

**Selection of trees to be harvested**

Trees will be selected for harvesting following these rules:

- A minimum of 10 seed trees/ha of valuable species will be left, i.e.
  - $\mathcal{F}$ Medium to large size (actual size depends on the species)
  - $\mathcal{F}$ Good tree form
  - $\mathcal{F}$ Capable of good seed production

- Harvesting will be done only in adequately stocked compartments, i.e. not less 120 m$^3$/ha for the high forest and 50 m$^3$/ha for the dry dipterocarp forest.

- Commercial harvesting will be allowed only in the high forest and in good dry dipterocarp forests (with volume not less than 100 m$^3$/ha). In general, timber from the dry dipterocarp forest is reserved for village and household use.

- Harvesting will concentrate on the more abundant species among the valuable species or on abundant species with commercial value. Species with patchy or scattered distribution will not be harvested.

- The maximum volume that will be removed depends on the average volume/ha of the compartment. As a general principle, the maximum will be about 6-10% for the high forest and 3-5% for the dry dipterocarp forest, e.g.

<table>
<thead>
<tr>
<th>Volume (m$^3$/ha)</th>
<th>Maximum for the high forest</th>
<th>Maximum for the dry dipterocarp</th>
</tr>
</thead>
<tbody>
<tr>
<td>50-80</td>
<td>0</td>
<td>3 or 1 tree/2 ha</td>
</tr>
<tr>
<td>80-120</td>
<td>6 or 1 tree/ha</td>
<td>4 or 1 tree/2 ha</td>
</tr>
<tr>
<td>120-150</td>
<td>7 or 1 tree/ha</td>
<td>5 or 1 tree/ha</td>
</tr>
<tr>
<td>150-200</td>
<td>10 or 1 big tree/ha</td>
<td>7 or 1 tree/ha</td>
</tr>
<tr>
<td>200-250</td>
<td>16 or 2 trees/ha</td>
<td>8 or 1 tree/ha</td>
</tr>
</tbody>
</table>

- Removal from a clump of trees will be preferred over removal of trees occurring singly. If there are clumps of trees of the same species, one or two trees can be removed from the clump. If there are clumps of trees of different species, one or two
trees can be removed from the clump provided there are enough of the species in the compartment.

- Solitary, good quality trees of the major commercial species will not be cut.
- The opening created in the main canopy will not be more than 20 m for the high forest.
- Trees within 30 m from a stream or 50 m from a river will not be cut.
- Trees used for resin collection will be cut only with the permission of and compensation provided to the resin collector.

**Timber harvesting methods and plan**

Timber harvesting will be done as follows:

- Timber harvesting will be done only during the dry season to avoid building all-season roads and to minimize disturbance of the soil.
- Access tracks will be built in the forest by opening a path wide enough for a logging truck (not more than 3 m wide path). Openings will be done by hand tools or small chainsaws. Bulldozers or mechanical road building equipment will not be used. They are not necessary in the flat to rolling terrain in the forest.
- The horizontal alignment of access trails will be decided on the ground to avoid cutting large trees or going through regeneration of valuable species.
- The same access tracks will be used as much as possible in subsequent harvests to avoid making new openings in the forest.
- Directional tree felling will be done to minimize killing of regeneration of valuable species. Stumps will be as short as possible to maximize tree utilization. Logs will be prepared without leaving valuable wood behind in the forest.
- Log extraction will be done by using self-loading logging trucks, which are locally available for contracting. These trucks will transport the logs directly to the second landing.
- Log extraction from the access track by cable from the winch of the logging truck will be done as much as possible to minimize the length of access tracks.

Table 7 shows the timber-harvesting schedule including the opening of access tracks. The length of access tracks to be opened or rebuilt annually varies from ____ to ____ km.
3.8 Method for ensuring sustainability

Regenerating and improving the productivity of the forest

The following will be done to regenerate and improve the condition and productivity of the forest:

- **Before timber harvesting:**
  - A pre-harvest timber inventory will be done with 10% sampling intensity for small and medium sized trees (10-50 cm DBH) and 100% sampling intensity for trees larger than 50 cm DBH. The information from the inventory will be the basis for annual operations planning and selection of trees to be cut.
  - Seed trees will be identified (minimum of 10 trees/ha).
  - Regeneration will be assessed in low-volume production compartments (i.e. with volume of 120-150 m$^3$/ha). If regeneration is poor in such compartments, timber harvesting will not be done.
  - Vine cutting will be done in compartments selected for timber harvesting. Vines will be cut around trees likely to be harvested. Vine cutting will help to reduce felling damage, increase light to the understory, and reduce post-harvest competition for space.

- **Regeneration of openings created during timber harvesting will be by natural means.** By leaving an opening of not more than 20 m and an adequate number of good seed trees, natural regeneration is assured. There will be no need for enrichment planting or artificial means to regenerate the forest after timber harvesting.

- **Four years after timber harvesting, or at the time of pre-harvest inventory for the next harvesting cycle (in the case of 5-year cycle), assessment of regeneration will be done to see if the forest stand will benefit from enrichment planting or the liberation of saplings of valuable species from competition.**

- **Enrichment planting, if needed in areas with large openings, will be done using commercial species native to the area.**

Table 8 shows the schedule of regeneration and timber stand improvement activities. The area for doing the different activities correspond to the compartment area scheduled for harvesting in any given year. The area ranges from ____ to ____ ha.

Protecting the forest and preserving its values for various services

The following forest protection activities will be done:

- Regular monitoring of the forest will be done to check any illegal cutting.
- The Village Land-use Plan will be implemented, emphasizing the prevention of unplanned conversion of forests to farms or any other land uses. Implementation of the Village Land-use Plan will also result in the protection of the water resources of the village, since forests will not be conserved and land management practices will protect against soil erosion and silting of streams.
- Fire prevention will be discussed in village assembly meetings especially just before and during the dry season. It will be emphasized that fire destroys the forest, which is the source of income and many products, mars the beauty of the landscape, and pollutes the air.
- Village teams will be organized and trained to control fires when they do occur.
- A livestock-grazing plan will be separately developed for the purpose of minimizing destruction of regeneration of valuable species in both the high forest and the dry
dipterocarp forest. The feasibility of restricting grazing to certain sites at certain periods will also be a part of the livestock-grazing plan.

**Conserving soil, water, and biodiversity**

Forest management activities, especially timber harvesting, will be planned and implemented to help conserve soil, water, and biodiversity. For example:

- Work that tends to disturb the soil, such as timber hauling with trucks, will be done in the dry season when the ground is better able to support the weight of the vehicles and resist soil movements.
- Riparian zones will be maintained and no trees will be cut there, i.e. within 30 m from streams and 50 m from rivers.
- Tree selection will be done to maintain tree species diversity. If already available, at least 10 seed trees per hectare will be maintained at every point in time. A tree species will be cut only if there are others of the same species within a one-hectare area.
- Collection of plant species for food, which threatens the presence of the species in the site, will be controlled, e.g. cutting of rattan sprouts.
- With greater availability of funds to support livelihood activities (e.g. livestock raising), there will be less reasons to hunt wildlife.

**Village rules on forest protection and conservation**

The village will formulate and enforce rules covering the different forest protection and conservation activities.

### 4.0 Plan implementation

#### 4.1 Village Forestry Association

The __________ Village Forestry Association will be the implementing body of the Village Forest Management Plan. The association has ____ members, who are available for work in the different village forestry activities. About ___ of the members have regularly attended training activities conducted by the government forestry staff. Figure 5 shows the organizational structure of the _____________ Village Forestry Association.

#### 4.2 Contractors

Logging contractors will be hired to conduct felling, log preparation, log extraction, and log transport operations, but members of the __________ Village Forestry Association will do access track clearing. The staff of the logging contractors will be briefed about the timber harvesting operations and how they are to be properly carried out. A specially trained member of the ____ Village Forestry Association will point out the trees to be cut based on the tree marking conducted before logging. He or his alternate will accompany the logging contractor in the forest during the entire logging operations to ensure that the logging operations are properly carried out.

The names of the logging contractors will be made available in the Annual Operations Plan.
4.3 Resources to implement the plan

Table 9 shows the number of person-days and the amount of money required in doing the activities. The table also shows how the financial requirements will be met. Village forestry will provide from ____ to ____ person-days of employment annually. About _____ to ______ kips will be needed annually. In the first year (1998-1999), it will be necessary to borrow money to finance the operations. In subsequent years it is expected that the association can finance its operations from its own funds.

5.0 Benefits and impacts

5.1 Timber sales, royalties, and benefits

Table 10 shows the projected timber sales, net revenues, royalties to be paid to the government, and the benefits to the _____ Village Forestry Association. The royalties and taxes paid to the government include the timber royalty and all kinds of taxes, including any development tax that the district and province may impose, as well as any allocation for developing and promoting village forestry in other places. Table 10 shows that the amount of royalties ranges from _________ to ________ thousand kips and the net benefit to the association ranges from _________ to ________ thousand kips.

5.2 Impact on the forest stand

The forest management system followed in this plan will not adversely alter the biodiversity of the forest, nor deplete its volume content. In practice, the process of harvesting, which is based on low-intensity logging, imitates that of natural death of trees in the stand, and its impacts are beneficial, e.g.

- Only a small opening is created in the forest since only one or two trees are removed per hectare. Several seed trees of valuable species will remain to regenerate the opening, thereby improving the species mix towards having more of the valuable species. There is not enough space created for the invasion of bamboo and vine. Therefore the impact on the species mix is beneficial.
- Not all of the annual growth is harvested. About half is reserved to increase the tree volume content of the timber stand. This will allow the forest to gradually recover its volume to the level it had before it was logged destructively about ten years ago.
- The stand structure will be like that of an undisturbed forest. There will be plenty of regeneration and small trees in the understory to take over once the large trees in the main canopy are harvested.

5.3 Sustainability of forest management

Forest management following the system prescribed in the plan will be sustainable. As can be seen in the previous section, the forest stand will in fact improve its species mix and structure over time. Forest harvesting will be done at such a low rate that will allow the forest to improve its natural condition. Table 11 shows that the stand density of the different compartments of the high forest will increase over time.
### Table 1 – Present and planned land uses in the village

<table>
<thead>
<tr>
<th>Land uses</th>
<th>Area in 1997 (ha)</th>
<th>Area in 2007 (ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Village settlement sites</td>
<td></td>
<td></td>
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<tr>
<td>Paddy</td>
<td></td>
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<tr>
<td>Garden and other cultivation</td>
<td></td>
<td></td>
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<tr>
<td>High forest</td>
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<td></td>
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<tr>
<td>Dry dipterocarp forest (high)</td>
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<tr>
<td>Dry dipterocarp forest (low)</td>
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<td></td>
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<tr>
<td>Conservation forest</td>
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<tr>
<td>Stream buffer zone</td>
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<tr>
<td>Non-productive land</td>
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<td></td>
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<tr>
<td>Other land uses, if any</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
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</tr>
</tbody>
</table>

**Source:** Village land-use plan

### Table 2 – Inventory of the high forests

<table>
<thead>
<tr>
<th>Comp. No.</th>
<th>Area (ha)</th>
<th>Stem volume (m³/ha)</th>
<th>Number of stems per hectare</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>10-30 31-50 &gt;50 Total 10-30 31-50 &gt;50 Total</td>
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</tbody>
</table>

**Source:** Inventory conducted by ____________
Table 3 – Inventory of the dry dipterocarp forests

<table>
<thead>
<tr>
<th>Comp. No.</th>
<th>Area (ha)</th>
<th>Stem volume (m³/ha)</th>
<th>Number of stems per hectare</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10-30</td>
<td>30-50</td>
<td>&gt;50</td>
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<td>10-30</td>
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<td>&gt;50</td>
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<td></td>
<td>10-30</td>
<td>30-50</td>
<td>&gt;50</td>
</tr>
</tbody>
</table>

Source: Inventory conducted by the village inventory team
### Table 4 – Growth and mortality in forest stands (m³/ha)

<table>
<thead>
<tr>
<th>Forest type</th>
<th>Mixed deciduous and dry evergreen forests</th>
<th>Dry dipterocarp forests</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stand density</td>
<td>&lt;=75 75-150 &gt;150 Average</td>
<td>&lt;=75 &gt;75 Average</td>
</tr>
<tr>
<td>Growth</td>
<td>2.86 4.25 5.19 4.43</td>
<td>0.94 1.35 1.11</td>
</tr>
<tr>
<td>Mortality</td>
<td>0.00 1.29 0.75 0.91</td>
<td>0.54 0.52 0.53</td>
</tr>
</tbody>
</table>

**Source:** FOMACOP analysis of permanent sample plots

### Table 5 – Net harvest of live and dying trees (m³/ha)

<table>
<thead>
<tr>
<th>Forest type</th>
<th>Mixed deciduous and dry evergreen</th>
<th>Dry dipterocarp</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stand density</td>
<td>&lt;=75 75-150 &gt;150</td>
<td>&lt;=75 &gt;75</td>
</tr>
<tr>
<td>Net growth</td>
<td>2.86 2.96 4.44</td>
<td>0.40 0.83</td>
</tr>
<tr>
<td>Reserved for stand development</td>
<td>2.86 2.00 2.00</td>
<td>0.25 0.35</td>
</tr>
<tr>
<td>Gross harvest of live trees</td>
<td>0.00 0.96 2.44</td>
<td>0.15 0.48</td>
</tr>
<tr>
<td>Harvest damage</td>
<td>0.00 0.19 0.49</td>
<td>0.03 0.10</td>
</tr>
<tr>
<td>Harvest of live trees (A)</td>
<td>0.00 0.77 1.95</td>
<td>0.12 0.38</td>
</tr>
<tr>
<td>Harvest of dying trees (B)</td>
<td>0.00 0.39 0.22</td>
<td>0.16 0.15</td>
</tr>
<tr>
<td>Total harvest</td>
<td>0.00 1.16 2.17</td>
<td>0.28 0.53</td>
</tr>
</tbody>
</table>

**Source:** Calculated from Table 4 with the following notes:

1. Part of the net growth is reserved to develop the stand density further. The figures are as shown in the table.
2. Harvest damage is 20% of the gross harvest of live trees.
3. Harvest of live trees is gross harvest less harvest damage.
4. Harvest of dying trees is 30% of mortality (see Table 4).
Table 6 – Calculation of the annual allowable timber harvest

1. High forest compartments to be harvested and annual allowable timber harvests

<table>
<thead>
<tr>
<th>Compart-ment no.</th>
<th>Area (ha)</th>
<th>Volume (m³/ha)</th>
<th>Area of compartment to be harvested (ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td></td>
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<tr>
<td>Maximum harvest (m³/year)</td>
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<tr>
<td>Live trees</td>
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<td></td>
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<tr>
<td>Dying trees</td>
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<tr>
<td>Total maximum harvest</td>
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</tbody>
</table>

2. Dry dipterocarp forest compartments to be harvested and maximum allowable timber harvests

<table>
<thead>
<tr>
<th>Compart-ment no.</th>
<th>Area (ha)</th>
<th>Volume (m³/ha)</th>
<th>Area of compartment to be harvested (ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
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<tr>
<td>Maximum harvest (m³/year)</td>
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<tr>
<td>Live trees</td>
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<tr>
<td>Dying trees</td>
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<td></td>
<td></td>
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<tr>
<td>Total maximum harvest</td>
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</tbody>
</table>

**Notes:** Calculation of the annual allowable (or maximum) timber harvest is based on the formula and explanations given in the text and the data given in Table 5.
Table 7 - Timber-harvesting schedule

<table>
<thead>
<tr>
<th>Year</th>
<th>Area to be harvested (ha)</th>
<th>Volume to be harvested (m$^3$)</th>
<th>New openings of access trails (km)</th>
<th>Opening old trails (km)</th>
<th>Total opening of access trails (km)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td></td>
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<td>2000</td>
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</tbody>
</table>

**Source:** Area and volume to be harvested as per plan. Access tracks measured from the map of the plan.

Table 8 – Regeneration and timber stand improvement activities (ha)

<table>
<thead>
<tr>
<th>Year</th>
<th>Pre-logging survey</th>
<th>Tree marking/vine cutting</th>
<th>Post-harvest assessment</th>
<th>Freeing saplings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
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</tbody>
</table>

**Source:** As per plan.

Table 9 – Human resources and financing needed to implement the plan

<table>
<thead>
<tr>
<th>Year</th>
<th>Human resources (person-days)</th>
<th>Financing (thousand kips)</th>
<th>Source of financing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Deferred labor</td>
<td>Own funds</td>
</tr>
<tr>
<td>1999</td>
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<td>2000</td>
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<td>2008</td>
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</tbody>
</table>

**Notes:**

1. Human resources requirements were calculated based on 4.67 person-days per m$^3$ of timber harvested. Included are labor in different forest operations, including inventory, logging, and timber stand improvement, and human resources used in VFA management.

2. Amount of financing needed is based on figures in Table 10.

3. In 1999, payments for 80% of all costs are deferred for a few weeks until timber sales are completed, e.g. wages to villagers doing forest work, salaries of VFA management.
### Table 10 – Projected timber sales, net revenues, royalties, and benefits (million kips)

<table>
<thead>
<tr>
<th>Year</th>
<th>Harvest (m³)</th>
<th>Gross Benefit</th>
<th>Royalties</th>
<th>Taxes</th>
<th>VFA costs Logging</th>
<th>Others</th>
<th>Total</th>
<th>Net to VFA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
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</table>

**Notes:**
1. Gross benefit is based on an average log price at the second landing of ______ kips per m³.
2. Average royalty of __________ kips per m³ is used.
3. Logging cost is about __________ kips per m³.
4. Other costs of the VFA is about ________ kips per m³.

### Table 11 - Projection of stand volume in the high forest

| Compart- | Area (ha) | Years cut | Stand volume in m³/ha |
|-----------|-----------|-----------|-------|-------|-------|-------|-------|-------|-------|
|           |           |           |       |       |       |       |       |       |       |
|           |           |           |       |       |       |       |       |       |       |
|           |           |           |       |       |       |       |       |       |       |
|           |           |           |       |       |       |       |       |       |       |
|           |           |           |       |       |       |       |       |       |       |
|           |           |           |       |       |       |       |       |       |       |
|           |           |           |       |       |       |       |       |       |       |
|           |           |           |       |       |       |       |       |       |       |

**Note:**
The stand grows by 2.86 (for those with stem volume<75 m³/ha), 2.96 (for those with stem volume of 75-150 m³/ha), or 4.44 (for those with stem volume >150 m³/ha) m³/ha during the year when it is not cut, but only by 2.00 m³/ha during the year when it is cut.

**Figure 1** – Location map of Ban __________
**Figure 2** – Present land-use map of Ban ____________
**Figure 3** – Planned land-use map of Ban __________
**Figure 4** – Map of the village forest management plan of Ban __________
**Figure 5** – Organizational chart of the _____ Village Forestry Association
Village Forest Management Contract

Between

The Government of the Lao PDR
Through
The Provincial Government of Savannakhet
Represented by
The Provincial Agriculture and Forestry Office and
The _________________ District Agriculture and Forestry Office

And

The villagers of Ban _________________
Represented by
The _________________ Village Administration and
The _________________ Village Forestry Association
WHEREAS

1. The forest of Dong Sithouane in Savannakhet Province is a valuable resource as a source of food, income, and other forest products for villagers and a source of revenue for the Government;

2. The Government of the Lao PDR, which represents the national community as owner of the country’s forests, recognizes the importance of villagers’ participation in sustainable forest management, and has initiated village forestry as a means to establish a partnership with organized villagers for sustainable forest management;

3. The Forest Law, dated 2 November 1996 and its implementing Order No. ___/MAF, dated _____ 1998, on Village Forestry Rules and Regulations, and Decree No. 102/PM, dated 5 July 1993, on the Organization and Administration of the Village, promote and support forest management by individuals and organizations; and Order No. ___/MAF, dated 1995, on Customary Rights and Use of Forest Resources, recognizes the customary rights of villagers on the use of forest land and forest products;

4. The villagers of Ban ______________ (hereinafter referred to as the “Village”), a village situated in the Dong Sithouane area, confirmed their willingness to participate in village forestry and have organized themselves by forming the ________________ Village Forestry Association (hereinafter referred to as the “VFA”);

5. The VFA operates as a non-profit organization according to its roles and by-laws in conformity with the regulations of the village as provided for in Article 7 of Decree No. 102/PM, and is authorized by the ______________ Village Administration to collaborate with the Government on village forestry activities;

THEREFORE, in consideration for the foregoing premises,

6. A Village Forestry Management Contract (hereinafter referred to as the "Contract") is made and entered into by and between the Government of the Lao PDR and organized villagers of Ban ______________ represented by the Village Administration and the VFA. The Government is represented by the Savannakhet Provincial Agriculture and Forestry Office (hereinafter referred to as "PAFO") and the ______________ District Agriculture and Forestry Office (hereinafter referred to as "DAFO"). Said parties have made the following agreement for the sustainable management of designated village forests, and the following terms and conditions set forth the rights and obligations of the parties to this Contract:

Rights and Obligations

1. The ______________ Village Forestry Association shall:
   1.1 Manage (according to a plan approved by PAFO as given in Section 7.3) _____ hectares of high forests and _____ hectares of dry dipterocarp forests (together hereinafter referred to as the "Forest") situated within the village, whose boundaries have been approved by the Government as shown in the attached village map (Attachment 1); and effectively protect the forest from fire, illegal logging, illegal hunting, and unauthorized land uses.
   1.2 Assist the Village in formulating the Village Land-Use Plan, including the delineation of the area of the Forest, and updating it every ten years or sooner as deemed necessary by the Village.
1.3 Formulate a Village Forest Management Plan (hereinafter referred to as the "Management Plan") and update it every ten years or sooner (if PAFO or the VFA determines that it does not enable the Forest to be managed in an environmentally sustainable manner), and submit the Management Plan to PAFO for approval.

1.4 Prepare a Village Forest Operations Plan (hereinafter referred to as the "Operations Plan") covering three years of operations and based on the approved Management Plan, and submit the Operations Plan to PAFO for approval at least ninety (90) days before the start of the scheduled operations.

1.5 Have the sole rights to harvest timber and non-timber forest products from the Forest in accordance with the approved Management Plan, approved Operations Plan, and the provisions of the Forest Harvesting Code and the Order on Customary Rights and Use of Forest Resources.

1.6 Have the rights to sell the harvested timber and non-timber forest products to buyers at landings or sales sites authorized by PAFO, or process these products on its own.

1.7 Keep daily records of timber and non-timber forest products harvesting using the official forms of PAFO and submit the records to DAFO every month.

1.8 Carry out all forest regeneration, stand improvement, and protection activities as prescribed in the approved Management Plan and approved Operations Plan.

1.9 Pay to the Government at official rates and manner of payment (a) royalty for all harvested timber, except those marked by PAFO for infrastructure development and subsistence use of the Village, and (b) tax for non-timber forest products harvested, except those for subsistence use of the villagers.

1.10 Pay a fine that is double the royalty for trees felled which have not been marked for felling in the approved Operations Plan; and a fine that is equal to the royalty for sound wood from trees marked to be felled but left behind in the forest after felling.

1.11 Operate according to the Village Forestry Rules and Regulations approved by the Ministry of Agriculture and Forestry.

2. The Provincial Agriculture and Forestry Office shall:

8.1 Provide adequate training to VFA members on the organizational, technical, and entrepreneurial aspects of village forestry.

8.2 Provide adequate technical assistance to the VFA in the preparation and implementation of the Management Plan and Operations Plan.

8.3 Evaluate the Management Plan and Operations Plan submitted by the VFA and inform the VFA of its approval, or otherwise the reasons for disapproval and the corrections required, within thirty (30) days after receiving the plan.

8.4 Check that village forestry activities are carried out by VFA according to the Village Forestry Rules and Regulations, approved Management Plan, and approved Operations Plan and, in case of violations, impose the pertinent fines and other penalties.

9. The District Agriculture and Forestry Office shall:

9.1 Assign an extension agent to work with the VFA.

9.2 Assist the VFA in formulating and implementing the Village Land-Use Plan, Management Plan, and Operations Plan and in participatory monitoring and evaluation.

9.3 Assist PAFO in training VFA members.

9.4 Conduct forestry extension and village organizing work in collaboration with the VFA.
Effectivity, suspension, succession, and termination of the Contract

10. The Contract shall take effect immediately upon signing by all parties concerned and shall continue to be effective for a period of fifty (50) years from the date of signing. Thereafter the parties concerned shall negotiate for the renewal of the contract for a similar period.

11. PAFO shall suspend operations under the Contract in case of gross violation of the Village Forestry Rules and Regulations, or if there is no approved Management Plan or Operations Plan, and shall notify the VFA accordingly in writing. PAFO shall lift the suspension in writing within thirty (30) days after the VFA has satisfactorily made the required corrections.

12. If the Village is dissolved and absorbed by another village, the VFA, if any, of the absorbing village may succeed the VFA of the dissolved Village as party to the Contract provided that written notification is given to PAFO; otherwise, the Contract is terminated.

Amendment

13. Upon the proposal of any of the contracting parties, the Contract may be amended as mutually agreed by all the parties concerned.

Arbitration

14. In case of any conflict relating to this Contract that the parties cannot resolve by themselves, arbitration shall be done in a meeting chaired by a representative of the Department of Forestry with all the parties concerned duly represented. If this fails to resolve the conflict, a further meeting shall be held to be chaired by a representative of the Ministry of Agriculture and Forestry. If still this fails, the matter shall be brought to the proper Courts for settlement. The VFA shall have the rights to engage a legal adviser or any suitable party for assistance.

The provisions of this Contract have been thoroughly discussed and fully negotiated in a language understandable to all parties concerned. The Contract is hereby signed in four original copies, a copy each for the Village Administration, VFA, PAFO, and DAFO. A copy of the Contract shall be provided to the Department of Forestry.

For the villagers of Ban _____________ For the Government

Chairperson, VFA Head, ________ DAFO
Date Date:

Head, Village Administration Head, PAFO
Date Date:
Annex 2.5.2.1 – Flowchart for securing the approval of a village forest management plan and contract

Village Forestry Association

The VFA Chairperson sends 5 copies of the VFMP and VFMC, with a cover letter, to PAFO though DAFO

DAFO receives the VFMP and VFMC and forwards it to its Forestry Unit for review

DAFO Forestry Unit reviews the VFMP and VFMC

DAFO returns the VFMP & VFMC to the VFA for revision

PAFO returns the VFMP & VFMC to DAFO for revision

PAFO Forestry Section (Forest Management Unit) reviews the VFMP & VFMC

PAFO Director approves the VFMP & VFMC and sends copies to:
1. VFA
2. DAFO
3. DOF
A copy of the plan is kept at PAFO
Annex 2.6.1.1 – Sample tree mapping form
Annex 2.6.1.2 – Sample pre-harvest inventory form 1

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1. ต้นไม้ล้มที่ไม่มีรูปต้น
2. ต้นไม้ล้มที่มีรูปต้น แต่ไม่มีฝัก
3. ต้นไม้ล้มที่มีรูปต้น และมีฝัก ที่ฝักดิบไม่สามารถระบุได้ในต้นไม้ล้มที่มีรูปต้น
Annex 2.6.1.3 – Sample pre-harvest inventory form 2

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สำหรับ 10 กิโลกรัม = 10

(น้ำหนักต่อต้น x จำนวนต้น)
### Annex 2.6.1.4 – Sample pre-harvest inventory form 3

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หมายเหตุ: จำนวนต้น/พื้นที่ x 127.32
Annex 2.6.3.1 – Sample tree volume table

**VOLUME TABLE FOR COMMERCIAL BROADLEAVED SPECIES**

\[ V = \left( \frac{D}{200} \right)^2 \times 3.1416 \times BL \times FF \]

The volume is given in cubic meters.

\[ FF = 0.8212 - 0.0092 \times BL \]

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Annex 2.7.1.1 - An example of a tree list

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<td>koung</td>
<td>64</td>
<td>6</td>
<td>1</td>
<td>1.479</td>
</tr>
<tr>
<td>48</td>
<td>35</td>
<td>6</td>
<td>saat</td>
<td>64</td>
<td>8</td>
<td>1</td>
<td>1.924</td>
</tr>
</tbody>
</table>
## Annex 2.7.1.2 - An example of a summary of trees available for marketing timber

<table>
<thead>
<tr>
<th>No.</th>
<th>Species</th>
<th>DBH small</th>
<th>DBH large</th>
<th>No. of trees</th>
<th>Volume</th>
<th>Ave volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Chik</td>
<td>55</td>
<td>73</td>
<td>22</td>
<td>23.278</td>
<td>1.058</td>
</tr>
<tr>
<td>2</td>
<td>Koung</td>
<td>55</td>
<td>91</td>
<td>9</td>
<td>14.318</td>
<td>1.591</td>
</tr>
<tr>
<td>3</td>
<td>Saat</td>
<td>55</td>
<td>82</td>
<td>6</td>
<td>12.243</td>
<td>2.041</td>
</tr>
<tr>
<td>4</td>
<td>Laen</td>
<td>55</td>
<td>64</td>
<td>2</td>
<td>2.224</td>
<td>1.112</td>
</tr>
<tr>
<td>5</td>
<td>Daeng</td>
<td>55</td>
<td>64</td>
<td>2</td>
<td>1.755</td>
<td>0.877</td>
</tr>
<tr>
<td>6</td>
<td>Padong</td>
<td>82</td>
<td>82</td>
<td>1</td>
<td>1.657</td>
<td>1.657</td>
</tr>
<tr>
<td>7</td>
<td>Hao</td>
<td>55</td>
<td>55</td>
<td>1</td>
<td>1.421</td>
<td>1.421</td>
</tr>
<tr>
<td>8</td>
<td>Pouay</td>
<td>55</td>
<td>55</td>
<td>1</td>
<td>1.092</td>
<td>1.092</td>
</tr>
<tr>
<td>9</td>
<td>Mouang pa</td>
<td>55</td>
<td>64</td>
<td>2</td>
<td>3.016</td>
<td>1.508</td>
</tr>
<tr>
<td>10</td>
<td>namkiang</td>
<td>55</td>
<td>55</td>
<td>1</td>
<td>0.745</td>
<td>0.745</td>
</tr>
<tr>
<td>11</td>
<td>khanyom</td>
<td>64</td>
<td>73</td>
<td>2</td>
<td>3.696</td>
<td>1.848</td>
</tr>
<tr>
<td>12</td>
<td>Tea</td>
<td>55</td>
<td>64</td>
<td>2</td>
<td>2.570</td>
<td>1.285</td>
</tr>
<tr>
<td>13</td>
<td>Bok</td>
<td>64</td>
<td>64</td>
<td>1</td>
<td>1.924</td>
<td>1.924</td>
</tr>
<tr>
<td>14</td>
<td>Bak</td>
<td>64</td>
<td>64</td>
<td>1</td>
<td>2.138</td>
<td>2.138</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td>53</td>
<td>72.077</td>
<td>20.297</td>
</tr>
</tbody>
</table>
Annex 2.7.2.1 – Model for writing an annual village forestry operations plan

________________ Village Forestry Association

Introduction

1.1 Background

Ban ______ is located in the vicinity of Dong Sithouane in the District of _____ in the Province of Savannakhet. Map 1 shows the location of the village. Ban _____ has a population of _____, consisting of ____ males and ____ females. There are _____ families in ____ households living in the village. The village joined the village forestry programme in 1996.

A Village Forest Management Plan for Ban ___________ has been submitted and approved by PAFO in Savannakhet. This report presents the Annual Operations Plan to implement that part of the management plan which falls in the year 1998-1999. It was prepared by the ________ Village Forestry Association.

1.2 Plan objectives

The general objective of the Annual Operations Plan is to show how the Village Forest Management Plan will be implemented in the year 1998-99. Specifically, it will show:

- The forest resources of Ban ______
- What products and services these forest resources can provide to the residents of Ban ____ and to the rest of the country in the year 1998-99
- How the products and services will be provided during the year
- The resources needed and the benefits from the year’s operations

1.3 Methodologies

The following summarizes the methodologies used in preparing this plan:

- The management targets are those given in the Village Forest Management Plan. Details and necessary modifications were introduced to ensure that the targets are realistic and attainable for the planning year. The modifications are not substantial so the Village Forest Management Plan remains valid.

- A pre-harvest inventory was conducted over the area assigned for the 1998-99 operations by village teams with training and assistance provided by PAFO and DAFO.

- The village planning team prepared the different parts of the Annual Operations Plan, including the projected benefits and impacts. The details of these parts were discussed with and approved by the village assembly. Government forestry staff provided training and support to the villagers in the planning process.
2.0 Village Forest Management Unit and the management plan

2.1 Village Forest Management Unit

Map 2 shows the Village Forest Management Unit. The land uses included are those that are existing in 1998 and those planned for the next ten years (1998-2008). These are summarized in Table 1.

Table 1 – Present and planned land uses in the village

<table>
<thead>
<tr>
<th>Land uses</th>
<th>Area in 1998 (ha)</th>
<th>Area in 2008 (ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The Village Forest Management Unit will provide:

**Products**
- Timber for commercial use
- Timber for the use of village households and other village infrastructures
- Non-timber forest products (list them)

**Services**
- Grazing places for livestock of the village households
- Protection of the water resources of the village
- Places of worship and enjoyment of nature
- Enhancement of a healthy natural environment in the village
- Other services (list them, if any)

2.2 Forest resources

Several forest types occur in the Village Forest Management Unit. These are as follows:
- High forest covering _____ ha
- Good dry dipterocarp forests covering _____ ha
- Poor dry dipterocarp forests covering _____ ha
- Other forest types (list together with its area of coverage)

Table 2 summarizes the information about these forests and those compartments designated for management operations in 1998-99.

Table 2 – Forest resources

<table>
<thead>
<tr>
<th>Forest</th>
<th>Area (ha)</th>
<th>Stem volume (m³/ha)</th>
<th>Number of stems per hectare</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>10-30</td>
<td>30-50</td>
</tr>
<tr>
<td>All forests</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High forest</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dry dipterocarps</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating area</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>in 1998-99</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High forest</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comp. No. xx</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Etc.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dry dipterocarps</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comp No. xx</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Etc.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
2.3 Village Forest Management Plan

Timber harvest calculations are provided in the Village Forest Management Plan on the basis of a harvesting cycle of ____ years. The maximum annual allowable timber harvest amounts to ______ cubic metres of trees to be sold in the timber market and ______ cubic metres of trees to be used by the village for housing and other infrastructure. Commercial timber will come mainly from the high forest, while timber for village consumption will come entirely from dry dipterocarp forests. Rules for selecting trees to be harvested or left to regenerate the area are included in the plan. These rules were used in selecting the trees for this year’s operations.

No physical targets have been set for the collection of non-timber forest products, but there are already village rules governing this, which have been included in the Village Forest Management Plan.

Aspects of the Village Forest Management Plan, which are relevant for the operations in 1998-99, are explained in Section 3.

3.0 Implementing the Village Forest Management Plan for the year 1998-99

3.1 Access infrastructure

___ kilometres of new access roads will be built by manual clearing of small trees and other obstruction over a 3m wide path. ____ kilometres of existing access roads will be improved. Workers from the village will provide the labour for the work. Map 3 (map of the annual operations plan) shows the location of these access roads. Planned progress of work is shown in Table 3.

Table 3 – Access roads

<table>
<thead>
<tr>
<th>Month</th>
<th>Existing access roads to be improved (kilometres)</th>
<th>New access roads to be built (kilometres)</th>
</tr>
</thead>
<tbody>
<tr>
<td>October</td>
<td></td>
<td></td>
</tr>
<tr>
<td>November</td>
<td></td>
<td></td>
</tr>
<tr>
<td>December</td>
<td></td>
<td></td>
</tr>
<tr>
<td>January</td>
<td></td>
<td></td>
</tr>
<tr>
<td>February</td>
<td></td>
<td></td>
</tr>
<tr>
<td>March</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3.2 Timber harvesting

Figure 3 (map of the annual operations plan) shows the timber harvesting plan. Trees were selected for harvesting following these rules:

- Commercial timber harvesting will be done only in sections of compartments, where:
  - For the high forest, the bole volume is at least 150 m³/ha, or if only between 120-150 m³/ha the regeneration count is adequate (see Section 3.5 concerning regeneration).
  - For good dry dipterocarp forests, the bole volume is at least 100 m³/ha.
  - There will be at least 10 large trees left as seed trees.
• Harvesting will concentrate on the more abundant species among the valuable species or on abundant species with commercial value. Species with patchy or scattered distribution will not be harvested.

• The maximum volume that will be removed depends on the average volume/ha of the different sections of the compartment. As a general principle, the maximum will be about 6-10% for the high forest and 3-5% for the dry dipterocarp forest, e.g.

<table>
<thead>
<tr>
<th>Volume (m³/ha)</th>
<th>Maximum for the high forest</th>
<th>Maximum for the dry dipterocarp</th>
</tr>
</thead>
<tbody>
<tr>
<td>100-120</td>
<td>no harvesting</td>
<td>4 or 1 tree/2 ha</td>
</tr>
<tr>
<td>120-150</td>
<td>7 or 1 tree/ha</td>
<td>5 or 1 tree/ha</td>
</tr>
<tr>
<td>150-200</td>
<td>10 or 1 big tree/ha</td>
<td>7 or 1 tree/ha</td>
</tr>
<tr>
<td>200-250</td>
<td>16 or 2 trees/ha</td>
<td>8 or 1 tree/ha</td>
</tr>
</tbody>
</table>

• Removal from a clump of trees will be preferred over removal of trees occurring singly. If there are clumps of trees of the same species, one or two trees can be removed from the clump. If there are clumps of trees of different species, one or two trees can be removed from the clump provided there are enough of the species in the compartment.

• Solitary, good quality trees of the major commercial species will not be cut.

• The opening created in the main canopy will not be more than 20m for the high forest.

• Trees within 30 m from a stream will not be cut.

• Trees used for resin collection will be cut only with the permission of and compensation provided to the resin collector.

The _____ Village Forestry Association will mobilize trained tree selectors to select the trees to be cut following the timber harvesting plan and the above conditions. Contractors will be hired to harvest and transport the selected trees. Since the trees to be harvested are scattered over the area, tree selection, felling, and transport of the resulting logs to the second landing will be done by the same team as a single operation. Timber sales by auction will be done in the second landing under the supervision of PAFO.

The ____ Village Forestry Association will supervise the timber harvest to ensure that the trees are selected for harvesting according to the tree harvesting plan, to ensure that good timber is not wasted by too high stumps or wasteful log preparation, and to minimize damage to the seed trees and existing tree crops, such as by using directional felling. Planned progress of work is shown in Table 4.

Not included in Table 4 is the timber that will be harvested by villagers for housing or village infrastructure. However, these trees will be monitored by the _____ Village Forestry Association to ensure that the maximum annual allowable harvest of ____ cubic metres is not exceeded, the quantity harvested is appropriate to the need, and that the timber is harvested only in the designated dry dipterocarp forest compartments.
<table>
<thead>
<tr>
<th>Month</th>
<th>Tree harvest and transport (cubic metres)</th>
<th>Timber sales (cubic metres)</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td></td>
<td></td>
</tr>
<tr>
<td>February</td>
<td></td>
<td></td>
</tr>
<tr>
<td>March</td>
<td></td>
<td></td>
</tr>
<tr>
<td>April</td>
<td></td>
<td></td>
</tr>
<tr>
<td>May</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 3.3 Harvesting of non-timber forest products

The _______ Village Forestry Association will monitor the harvesting of non-timber forest products and provide a report to DAFO. It will also conduct extension work in the village to promote proper and non-wasteful extraction of the products and conservation of the resource base.

### 3.4 Post-harvest assessment

Post-harvest assessment covering the ___ ha of forest management operations in 1998-99 will be done in May 1999 to further check that trees were harvested according to the tree harvesting plan and seed trees were not cut. Assessment of regeneration will be done only after four years have elapsed since harvesting, so none will be done during the year.

### 3.5 Regenerating and improving the forest

Regeneration of the forest after harvest will be done by natural means. A minimum of 10 seed trees per hectare will be identified in the annual operations map (Figure 3) and marked in the field. Seed trees will be marked with 2 dots on opposite sides of the stem 1.3 m from the ground and one dot below cutting height.

No trees will be selected for harvesting in sections of a compartment with less than 10 large trees, i.e. >50 cm DBH. Furthermore, no trees will be selected for harvesting in sections where the regeneration is poor based on the regeneration survey done during the pre-harvest inventory, i.e. sections which do not satisfy the following conditions:

- With at least 180 saplings/ha of the valuable species, or
- With at least 1800 saplings/ha of other commercial species, or
- With at least 120 saplings/ha of the valuable species and at least 1200 saplings/ha of other commercial species.

The seed trees are expected to regenerate the openings created during and after the harvest. Openings created during timber harvesting are expected to be small, i.e. not more than 20 m in diameter, since only one or two trees will be harvested per hectare. It is also expected that enrichment planting of seedlings raised in nurseries will not be required.

Vines around trees expected to be harvested will be cut during the same field operation as the marking of seed trees. Planned progress of work is shown in Table 5.
Table 5 – Regeneration and forest improvement activities

<table>
<thead>
<tr>
<th>Month</th>
<th>Marking of seed trees (ha)</th>
<th>Vine cutting (ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>October</td>
<td></td>
<td></td>
</tr>
<tr>
<td>November</td>
<td></td>
<td></td>
</tr>
<tr>
<td>December</td>
<td></td>
<td></td>
</tr>
<tr>
<td>January</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3.6 Forest protection

The following forest protection activities will be done.

- Regular monitoring of the forest will be done to check any illegal cutting of trees.

- The Village Land-use Plan will be implemented emphasizing the prevention of unplanned conversion of forests to farms or any other land uses. Implementation of the Village Land-use Plan will also result in the protection of the water resources of the village, since forests will not be conserved and land management practices will protect against soil erosion and silting of streams.

- Fire prevention will be discussed in village assembly meetings especially just before and during the dry season. It will be emphasized that fire destroys the forest, which is the source of income and many products, mars the beauty of the landscape, and pollutes the air.

- Village teams will be organized and trained to control fires when they do occur.

- Extension work will be done to promote proper livestock grazing practices, e.g. avoiding the use of fire that will destroy tree regeneration.

Planned progress of work is shown in Table 6.

Table 6 – Forest protection activities

<table>
<thead>
<tr>
<th>Activities</th>
<th>Months</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monitoring of illegal cutting of trees</td>
<td>Whole year</td>
</tr>
<tr>
<td>Monitoring of unplanned conversion of land</td>
<td>Whole year</td>
</tr>
<tr>
<td>Fire prevention meetings with the village assembly</td>
<td>January to March</td>
</tr>
<tr>
<td>Monitoring of forest fires</td>
<td>January to May</td>
</tr>
</tbody>
</table>

4.0 Implementing the Annual Operations Plan

4.1 Village Forestry Association

The _________ Village Forestry Association will be the implementing body of the Village Forest Management Plan, and hence this Annual Operations Plan. The organization has ____ members, who are available for work in the different village forestry activities. About ___ of the members have regularly attended training activities conducted by the government forestry staff. Figure 4 shows its the organizational chart, including the names of its officers.
Figure 1 – Organizational chart of the ______ Village Forestry Association

- **General Assembly** (highest decision-making body)
  - Policy Committee (policy-making body)
    - Chairman
    - Village Chief
    - Deputy Chairman
    - Treasurer
    - Secretary
    - Members
  - Management Committee (implementing body)
    - Manager
    - Deputy Manager
    - Bookkeeper
    - Administrative and Finance
  - Audit and Inventory (Properties) Committee
  - Election Committee
  - Education and Training Committee
  - Working Team
  - Working Team
  - Working Team
  - Working Team
4.2 Contractors

Logging contractors will be hired to conduct felling, log preparation, log extraction, and log transport operations, but members of the __________ Village Forestry Association will do track clearing, tree selection, and the other activities. Staff of the logging contractors will be briefed about the timber harvesting operations and how they are to be properly carried out. A specially trained member of the _____ Village Forestry Association will do selection of trees to be cut. He or his alternate will accompany the logging contractor in the forest during the entire logging operations to ensure that the logging operations are properly carried out.

Logging contractors who will possibly be hired by the organization include the following:

• Put the names of the contractors here.
• Etc.

4.3 Schedule of operations

Figure 2 shows the schedule of operations to implement the plan.

<table>
<thead>
<tr>
<th>Activities</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
</tr>
</thead>
</table>

| Figure 2 – Schedule of operations |

4.4 Resources to implement the plan

Table 7 shows the number of man-days and the amount of money required in doing the activities. The table also shows how the financial requirements will be met.

| Table 7 – Manpower and financing needed to implement the plan |
|---|---|---|---|---|
| Month | Manpower (man-days) | Financing (thousand kips) | Source of financing |
| October | | | Deferred labour | Own funds | Borrowed funds |
| November | | | | |
| December | | | | |
| January | | | | |
| February | | | | |
| March | | | | |
| April | | | | |
| May | | | | |
5.0 Benefits and other impacts of the annual operations

5.1 Timber sales and royalties

Table 8 shows the projected timber sales, net revenues, royalties to be paid to the government, and the benefits to the _____ Village Forestry Association.

<table>
<thead>
<tr>
<th>Items</th>
<th>Production (m³)</th>
<th>Sales (‘000 kip)</th>
<th>Costs (‘000 kip)</th>
<th>Net revenue (‘000 kip)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timber production</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Species</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sub-total</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sub-total</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Net revenue</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Share of government</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Share of VFO</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5.2 Other benefits and impacts

In addition to timber production and the income that the organization derives from it, there are other benefits and impacts from forest management as follows:

List them here.

Maps (to be attached)

Map 1 – Location map of ___________________
Map 2 – Village forest management unit of ______________________
Map 3 – Annual operations plan of ______________________
Annex 2.7.3.1 – Flowchart for securing the approval of an annual village forestry operations plan

1. Village Forestry Association
   - The VFA Chairperson sends 5 copies of the AOP, with a cover letter, to PAFO through DAFO

2. DAFO receives the plans and forwards it to its Forestry Unit for review

3. DAFO Forestry Unit reviews the plan.

4. No, plan complete?
   - DAFO returns the plan to the VFA for revision
   - Yes

5. Head of DAFO forwards the plan to PAFO for approval

6. PAFO receives the plan and forwards it to its Forestry Section (Forest Management Unit) for review

7. PAFO Forestry Section (Forest Management Unit) reviews the plan

8. No, plan correct?
   - PAFO returns the plans to DAFO for revision
   - Yes

9. PAFO Director approves the plan and sends copies to:
   - 1. VFA
   - 2. DAFO
   - 3. DOF
   - A copy of the plan is kept at PAFO
### Annex 2.8.1.1 - An example of floor prices calculation for timber ($) 

<table>
<thead>
<tr>
<th>Local names</th>
<th>Volume (m³)</th>
<th>Species category</th>
<th>Royalty</th>
<th>Tree planting</th>
<th>Prov. Taxes</th>
<th>Log. cost</th>
<th>VFA cost</th>
<th>Floor price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Mai nyang</td>
<td>1,090</td>
<td>Contr. 1</td>
<td>55.00</td>
<td>2.00</td>
<td>3.13</td>
<td>20.00</td>
<td>5.00</td>
<td>85.13</td>
</tr>
<tr>
<td>2 Mai deng</td>
<td>2,998</td>
<td>Contr. 1</td>
<td>82.50</td>
<td>2.00</td>
<td>3.13</td>
<td>20.00</td>
<td>5.00</td>
<td>112.63</td>
</tr>
<tr>
<td>3 Mai bak</td>
<td>2,234</td>
<td>Contr. 1</td>
<td>55.00</td>
<td>2.00</td>
<td>3.13</td>
<td>20.00</td>
<td>5.00</td>
<td>85.13</td>
</tr>
<tr>
<td>4 Mai khen hin, laen</td>
<td>1,209</td>
<td>Contr. 1</td>
<td>44.00</td>
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<td>3.13</td>
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Total volume (m³) 11,226
Annex 2.8.1.2 – An example of a timber sales contract

**Timber sales contract**

This timber sales contract is between _________ hereinafter referred to as the buyer and the seller represented by PAFO and the Group of VFAs. The buyer is represented in this contract by _________ and the Group of VFAs by its Chairman.

The buyer agrees to buy and the VFAs agree to deliver to the second landings the following species and volumes with the following allowable variations and specifications and for the following prices:

<table>
<thead>
<tr>
<th>Species</th>
<th>Volume</th>
<th>Variation</th>
<th>dia.</th>
<th>length</th>
<th>Prices by grade</th>
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<tr>
<td></td>
<td>(m³)</td>
<td>(+/- m³)</td>
<td>(cm)</td>
<td>(m)</td>
<td>A</td>
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</table>

The second landings will be in the villages of ____________.

The prices include royalty prescribed by the government for each species and grade, logging and transport cost of $____ per cubic meter, and VFA costs of at least $____ per cubic meter to cover the costs of forest management and administration.

The buyer agrees to pay other costs such as tree planting fees and any other taxes and fees prescribed by the government. The buyer also agrees to pay the royalty prescribed deducting the amount from the agreed prices and paying the VFAs the logging cost and VFA costs, which in no case should fall below $____ per cubic meter.

The buyer agrees to pay within 3 working days after contract signing a deposit of $______ to the government and a downpayment of $_______ to cover the mobilization of the logging teams and VFA costs for immediate activities, such as tree marking and access road clearing. The buyer shall pay the balance less a proportionate deduction per cubic meter for the deposit and downpayment within ___ working days after receipt of invoices sent by the VFAs with attached official PAFO timber scaling and grading report.

Request for timber scaling and grading shall be submitted by the VFAs to PAFO after every ____ cubic meters delivered to the second landings. The buyer and the VFAs shall be informed of the dates of timber scaling and grading at least two working days in advance. If the buyer or the VFAs do not send their representative on the notified dates, the timber scaling and grading reports shall remain valid. Scaling and grading shall be according to government rules, which among others prescribe that sapwood shall be included in diameter measurements.

The closing date of the timber sale shall be on _______ after which date the buyer is not obliged to buy and the VFAs are not obliged to deliver any further timber at the second landing.

Signed:
Representative of VFAs  Buyer  Witnesses
Confirmed:
PFO  PAFO
### Annex 2.8.2.1 - Example of re-allocation of logging quota

**Volume available by species and VFA**  
**Volume allocated by species and VFA**

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<th>thong</th>
<th>hin/laen</th>
<th>bak</th>
<th>nyang</th>
<th>si</th>
<th>Total</th>
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<th>thong</th>
<th>hin/laen</th>
<th>bak</th>
<th>nyang</th>
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Notes:  
1. The total quota for the 23 VFAs is only 7500 m3.  
2. Since the total available timber is 8598 m3, some VFAs do not harvest all of their available timber.  
3. In this example, reductions were made for VFA 3 and VFA 22 since their villages have small population.  
4. Reductions are correspondingly made for mai bak and mai nyang (market limit about 2700m3) and mai si (market limit 300 m3).
Annex 2.8.3.1 – Marking a tree for felling
Annex 2.8.3.2 – Marking a seed tree
Annex 2.9.2.1 – Model for writing a logging contract

Logging Contract

This contract is entered into between:

Logging contractor

and

Group of VFAs

Whereas:

The VFAs belonging to the group collectively have a quota to harvest _________ cubic meters of logs and are responsible for sustainable forest management in their respective village forest management units.

The VFAs have organized themselves as a group for the purpose of jointly conducting the logging operations, the group being represented by the signatories below and attested by the attached signed concurrence of the VFAs.

The group lacks the capability to prepare logs in the forest and transport them to the second landing, and is willing to hire the logging contractor.

The logging contractor has the capability to prepare logs in the forest and transport them to the second landing, and is willing to work for the group.

Therefore, this logging contract is entered into with the following terms and conditions:

The logging contractor is responsible for felling trees marked by the group, preparing logs, and transporting logs to the second landing.

The group is responsible for overseeing the entire logging operations to ensure that they are carried out properly and timely. It will provide human resources for marking trees, clearing access tracks and transport routes to the second landing, and supervising the cutting and log transport operations.

The logging crews of the logging contractor will follow the instructions of the group’s VFA logging supervisor and logging guide regarding what trees to cut, stump height, minimizing damage to existing vegetation, maximizing benefit from logs by selecting proper log length, etc.

The group will pay the logging contractor ___ dollars for each cubic meter of logs delivered to the second landing. The logging contractor will be responsible for paying any taxes related to logging and log transport. All payments will be in kips calculated from dollars using the prevailing bank rate. An advance of __________ kips will be provided to the logging contractor for every cutting-trucking crew that is deployed. The logging contractor will bill the VFAs after each ______ cubic meters of logs are delivered to and officially scaled at the second landing.
The logging contractor will provide ___ cutting-trucking crews each equipped with a logging truck, two chainsaws, and other related tools, and will replace any crew or equipment that do not work properly.

The logging contractor will deliver up to ________ cubic meters of logs to the second landing on or before ____________.

This contract is valid from __________ to _____________ and may be terminated by any party with ____ weeks notice.

Any conflicts will be settled amicably between the signing parties and if unavoidable in Lao courts at ___________.

This contract is written and signed in two original copies, one copy for each signing party.

Signed this ______________ at _____________________.

__________________________  __________________________
Logging contractor            Representative of the group

__________________________  __________________________
Witness                        Witness

Attachment:
Conformation of each VFA to enter into joint logging as a group
Annex 2.9.3.1 – An example of a log transport slip

Loggint truck no. _____________________ Date _______________________

<table>
<thead>
<tr>
<th>No.</th>
<th>Log number</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
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</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
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<tr>
<td>5</td>
<td></td>
<td></td>
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<tr>
<td>6</td>
<td></td>
<td></td>
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<tr>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
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<td></td>
<td></td>
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<tr>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Signatures:

_________________________________________  _____________________________
VFA logging guide                          Logging truck driver

One copy each to VFA logging supervisor, logging contractor, and second landing supervisor
## Annex 2.9.4.1 – Contents of the second landing log registry

<table>
<thead>
<tr>
<th>Serial no.</th>
<th>Log no.</th>
<th>Species</th>
<th>D1</th>
<th>D2</th>
<th>d3</th>
<th>d4</th>
<th>Ave. diameter</th>
<th>Length (m)</th>
<th>Date delivered</th>
<th>Logging truck</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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</tr>
</tbody>
</table>

### Daily summary for VFA ________________

<table>
<thead>
<tr>
<th>Species</th>
<th>Delivered at date</th>
<th>Total delivered</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. of logs</td>
<td>No. of logs</td>
</tr>
<tr>
<td></td>
<td>Volume of logs</td>
<td>Volume of logs</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Annex 2.9.4.2 – Guidelines for log scaling and grading

Purpose of the guidelines

The guidelines overall consist of a set of guidelines for log scaling and another set for log grading. The log scaling guidelines are intended to set a scaling system for the use of VFAs. VFA scalers must be trained to apply these guidelines. The guidelines are based on the DOF scaling and grading rules, which are in turn based on the ASEAN standards for log grading.

The VFA scaler scales all the logs delivered to the second landing. The results are entered in the second landing log registry and used to as the basis for checking if the logging volume target for each species and VFA has been reached. While official scaling rules are used, the results cannot be used for royalty and tax calculations and other payments, e.g. to logging contractors.

Official log scaling and grading is done at the second landing by a PAFO-organized log scaling and grading committee, specifically by a PAFO scaler assisted by a DAFO staff in the presence of a representative from the VFA and buyers concerned. The results are used as the basis for invoicing and log transport permit documentation.

VFA scalers are also taught the rudiments of log grading so that they can effectively represent the VFA during the official scaling and grading of the logs at the second landing.

Log scaling guidelines

Logs shall be cross-cut at each end by a cut which is perpendicular (90 degrees) to the log axis (with a tolerance for error of not more than 10 degrees), and trimmed flush to the surface to remove buttress flares, branches, and other protuberances.

Any cutting on the log must be done before scaling. After scaling no further cutting is permitted.

There shall be four diameter measurements: D1=longest diameter at the larger end of the log, D2=diameter measured perpendicular to D1, d3=longest diameter at the smaller end of the log, and d4=diameter measured perpendicular to d1. If the log is highly irregular in its end cross section, more than four measurements may be taken, but the number of measurements must be equal at each end of the log (e.g. 3 measurements at the larger end and 3 at the smaller end).

The average log diameter is the average of all diameter measurements, e.g.
D=(D1+D2+d3+d4)/4. The results are expressed to the nearest lower centimeter (e.g. 57, 82).

Log length (L) is measured along a straight line parallel to the log axis, and recorded in meters to the nearest decimal place (i.e. decimeter) (e.g. 4.2, 7.3). A trimming allowance may be excluded but not more than 10 cm. That is, the actual log length must not be more than 10 cm longer than the measured log length.

The log volume in cubic meters is calculated as follows: V=(D x D x L x 0.7854) / 10000 and recorded to the nearest three decimal places (e.g. 3.104, 5.643 cubic meters).

The resulting log volume (V) shall be used as the basis for: (a) paying contractor and (b) checking whether the logging volume target for the species has been reached. There shall be no deductions on this volume to account for defects in the log.
Log grading guidelines

Log grading shall assess the following: (a) log form, (b) log soundness, (c) cross-section defects, and (d) log surface defects, and then, together with log size, relate these to determine the peeling and sawing grades of the log.

Log form refers to: (a) circularity of the cross section, (b) taper, (c) bend, and (d) fluting.

Log circularity of the cross section is calculated as the ratio (d-ratio) expressed in percent of the highest and lowest diameter measurements at the smaller end of the log (e.g. d4/d3 x 100%). If d-ratio is greater than 80%, then the log is “circular”, if 70-79% then the log is “nearly circular”, if less than 70% then the log is “irregular”.

Log taper is calculated as the rate at which the diameter decreases per meter of log length (i.e. [(D1+D2)/2 – (d3+d4)/2] / L expressed in centimeters per meter of log length). “Low taper” means less than 5 cm taper per meter of log length, “medium taper” means 5-10 cm taper per meter, and “high taper” means more than 10 cm taper per meter.

Not more than one bend is permitted per log. Bend is determined by the ratio of the deviation of the log center from the central axis and the average diameter, expressed as a percentage (i.e. bend ratio = deviation / D x 100%). “Small bend” means a bend ratio of less than 10%, “medium bend” means 10-20%, and “severe bend” means more than 20%.

Fluting is determined by the ratio of the deepest penetration of a depression in the log surface and the average diameter, expressed as a percentage (i.e. flute ratio = depression depth / D x 100%). “Shallow flutes” means a flute ratio of less than 15%, “medium flutes” means 15-30%, and “deep flutes” means more than 30%.

Log soundness refers to the degree to which the log is free from defects such as brittle heart, butt rot, and other defects located at or near the center of the log’s cross section. Soundness is determined as the ratio, expressed as a percentage, of the soundwood volume (SV) and the log volume (i.e. soundness = SV/V x 100%). Soundwood volume is determined by deducting the volume of the defect (VOLdef) from the log volume. Volume of the defect is found by: VOLdef = [ (df1 + df2) / 2 ]² x 0.7854 x Lf, where df1 and df2 are two estimates of the diameter of the defect, and Lf = L/2 if the defect is clearly visible only at the larger end of the log, but Lf = L if the defect can be seen at both ends.

Cross-section defects include heart location, shakes (heart, cup, ring), and checks.

Heart location is determined as the ratio, expressed as a fraction, of the deviation of the heart from the geometric center of the log and the average log diameter.

Heart shakes are fiber separations (like cracks) near the heart of the log. They are determined only for logs which are 100% sound. The number of heart shakes are counted.

Cup shakes are fiber separations along annual growth rings. Cup shakes do not completely encircle the heart. Cup shakes are counted and also assessed as the ratio, expressed as a percentage, of the total arc length and the average log diameter. “Low degree” of cup shake severity means less than 25%, “medium degree” means 25-35%, and “high degree” means more than 35%.
Ring shakes are also fiber separations along annual growth rings, but they almost or completely encircle the heart. Ring shakes are counted and also assessed as the ratio, expressed as a percentage, of the circumference of the ring shake and the average log diameter. The circumference is found by taking two measurements (perpendicular to each other) of the diameter of the ring shake, getting their average, and multiplying by pi (3.1416). ‘Low degree’ of ring shake severity means less than 25%, “medium degree” means 25-35%, and “high degree” means more than 35%.

Checks are small fiber separations visible on the log cross section oriented in a radial direction. Checks are assessed by the measurement using a probe of their depth of penetration into the log. Checks are recorded only if they are deeper than 2 cm.

Log surface defects include surface checks, knots, splits, borer holes, and twisted grain.

Surface checks are small fiber separations on the log surface oriented longitudinally. They are assessed by the measurement using a probe of their depth of penetration into the log. Checks are recorded only if they are deeper than 2 cm. As well, the number of quadrants of the log where checks appear are counted.

The maximum diameter of each knot is measured in centimeters to the nearest decimal point and the number counted. “Small knots” are less than 3 cm in diameter, “medium knots” 3-5 cm, and “large knots” more than 5 cm. The count of the knots is expressed as number per 2.5 of log length (i.e. multiply the count by 2.5/L).

Splits are wide longitudinal fiber separations. They are assessed by the ratio of their length in meters recorded to the nearest decimal place and the log length. Their number is also counted. “Short splits” have lengths less than 10% of L, “medium splits” 10-20%, “long splits” more than 20%.

The diameter of borer holes are measured in millimeters. “Small-sized” borer holes have diameter of less than 1.5 mm, “medium-sized” 1.5-3.0 mm, and “large-sized” greater than 3 mm. The degree of concentration of each size class of borer holes are determined by counting their number found in 4 sampling units (of size 15 cm x 15 cm) for each meter of log length. For small-sized borer holes the degree of concentration is “low” if there is an average of less than 5 counted, “medium” if 16-32 are counted, and “high” if more than 32 are counted. For medium-sized borer holes the degree of concentration is “low” if there is an average of less than 5 counted, “medium” if 5-8 are counted, and “high” if more than 8 are counted. For large-sized borer holes the degree of concentration is “low” if there is an average of less than 3 counted, “medium” if 3-4 are counted, and “high” if more than 4 are counted.

To assess degree of twist, draw a right triangle on the log using a chalk. One side of the triangle (T1) is along the central axis and about 60 cm long. The hypothenuse (T2) starts from T1 and is along the direction of the grain. The shortest side (T3) connects the other two. The degree of twist = T3/T2 x 100%. “Low degree” of twist means less than 5%, “medium degree” 5-10%, “high degree” more than 10%.

There are two peeler log grades (P1, P2) and six sawlog grades (S1, S2, S3, S4, S5, S6). The size and grade requirements for each grade are given in the following table.
<table>
<thead>
<tr>
<th>Grade factors</th>
<th>Units</th>
<th>Peeler grades</th>
<th>Sawlog grades</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>P1</td>
<td>P2</td>
</tr>
<tr>
<td>Diameter</td>
<td>cm</td>
<td>&gt;50</td>
<td>&gt;50</td>
</tr>
<tr>
<td>Length</td>
<td>m</td>
<td>&gt;2.5</td>
<td>&gt;2.5</td>
</tr>
<tr>
<td>Soundness</td>
<td>%</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Sapwood condition</td>
<td></td>
<td>Sound sapwood, but discolored sapwood is accepted</td>
<td></td>
</tr>
<tr>
<td>Form</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Circularity of cross section</td>
<td>%</td>
<td>&gt;80</td>
<td>70-79</td>
</tr>
<tr>
<td>Log taper</td>
<td>cm/m</td>
<td>&lt;5</td>
<td>5-10</td>
</tr>
<tr>
<td>Bend</td>
<td>%</td>
<td>&lt;10</td>
<td>10-20</td>
</tr>
<tr>
<td>Fluting</td>
<td>%</td>
<td>&lt;15</td>
<td>15-30</td>
</tr>
<tr>
<td>End defects</td>
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<td></td>
<td></td>
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<tr>
<td>Heart location</td>
<td>ratio</td>
<td>1/4</td>
<td>1/3</td>
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<tr>
<td>Heart shakes</td>
<td>number</td>
<td>none</td>
<td>2</td>
</tr>
<tr>
<td>Cup shakes</td>
<td>number</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>&lt;25</td>
<td>&lt;25</td>
</tr>
<tr>
<td>Ring shakes</td>
<td>number</td>
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<td>1</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>&lt;25</td>
<td>&lt;25</td>
</tr>
<tr>
<td>Checks, depth</td>
<td>cm</td>
<td>&lt;2</td>
<td>&lt;2</td>
</tr>
<tr>
<td>Checks, depth</td>
<td>quadrant</td>
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<tr>
<td>Surface defects</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Knots per 2.5 m of log length</td>
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<td>3 at 3-5</td>
<td>2 at 3-5</td>
</tr>
<tr>
<td></td>
<td>size, cm</td>
<td>3-5</td>
<td>1 at &gt;5</td>
</tr>
<tr>
<td>Splits, number and length</td>
<td>count</td>
<td>2 only</td>
<td>2 only</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>&lt;10</td>
<td>&lt;20</td>
</tr>
<tr>
<td>Borer holes, size and concentration</td>
<td>small/med</td>
<td>small/high</td>
<td>med/low</td>
</tr>
<tr>
<td>Twisted grain</td>
<td>%</td>
<td>&lt;5</td>
<td>&lt;10</td>
</tr>
</tbody>
</table>

Sawlog grade S6 has no minimum dimensions or degree of soundness.

The sawlog grades S2, S3, S4, S5, and S6 shall admit any log which is unacceptable for admission into a higher grade, subject to the specifications for the minimum dimensions and soundness being met.
Annex 2.10.1.1 - Sample calculation of the volume of trees damaged by clearing access tracks

Note:
A sample is 3m x 15m of track.
Area of track per sample is 45 m².
A tree requires on average 35 m of track allowing maximum skidding distance of 20 m by truck winch.

<table>
<thead>
<tr>
<th>Sample no.</th>
<th>10</th>
<th>20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trees cleared</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total no. of trees cleared</td>
<td>135</td>
<td>28</td>
</tr>
<tr>
<td>Ave. vol. per tree cleared</td>
<td>0.02</td>
<td>0.1</td>
</tr>
<tr>
<td>Total volume cleared</td>
<td>5.50</td>
<td>m³</td>
</tr>
<tr>
<td>Average volume cleared per sample</td>
<td>0.23</td>
<td>m³</td>
</tr>
<tr>
<td>Average volume cleared per m of track</td>
<td>0.02</td>
<td>m³</td>
</tr>
<tr>
<td>Average volume cleared per tree cut</td>
<td>0.53</td>
<td>m³</td>
</tr>
</tbody>
</table>

Average volume of trees killed or damaged (from Annex 2.10.1.2)

| Volume of trees killed | 43.88 | m³ | 0.73 |
| Volume of trees damaged | 37.76 | m³ | 0.63 |
| Volume of trees killed + 70% of trees damaged | 70.31 | m³ | 1.17 |
| Volume of trees killed + 50% of trees damaged | 62.76 | m³ | 1.05 |
| Volume of trees killed + 30% of trees damaged | 55.21 | m³ | 0.92 |

Average logging damage per tree cut

| (Includes damage from clearing access tracks, felling, and log extraction) | 1.71 | m³ | if 70% of damaged trees die |
| Logging damage in % |
| Logging damage as % of volume cut | 22.8% | if 70% of damaged trees die |
| Logging damage as % of volume cut | 21.1% | if 50% of damaged trees die |
| Logging damage as % of volume cut | 19.5% | if 30% of damaged trees die |
Annex 2.10.1.2 - Sample calculation of the volume of trees damaged during felling and log transport (data from 4 VFAs in May 1999)

<table>
<thead>
<tr>
<th>No.</th>
<th>Sample</th>
<th>DBH cm</th>
<th>Height m</th>
<th>Volume m³</th>
<th>No. of trees killed by DBH</th>
<th>No. of trees damaged by DBH</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Nyang</td>
<td>100</td>
<td>6</td>
<td>3.61</td>
<td>4 4 1 1</td>
<td>2 1</td>
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<tr>
<td>2</td>
<td>Nyang</td>
<td>67</td>
<td>14</td>
<td>3.42</td>
<td>2 2</td>
<td>3</td>
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<tr>
<td>3</td>
<td>Nyang</td>
<td>113</td>
<td>18</td>
<td>11.84</td>
<td>2 3 1</td>
<td>1</td>
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<td>4</td>
<td>Nyang</td>
<td>100</td>
<td>18</td>
<td>9.27</td>
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<td>2</td>
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<td>5</td>
<td>Nyang</td>
<td>135</td>
<td>18</td>
<td>16.89</td>
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<td>1 1</td>
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<td>Nyang</td>
<td>74</td>
<td>16</td>
<td>4.64</td>
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<tr>
<td>7</td>
<td>Nyang</td>
<td>72</td>
<td>26</td>
<td>6.16</td>
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<tr>
<td>8</td>
<td>Nyang</td>
<td>94</td>
<td>28</td>
<td>11.42</td>
<td>4</td>
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<td>9</td>
<td>Nyang</td>
<td>90</td>
<td>20</td>
<td>8.11</td>
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<td>1</td>
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<td>Nyang</td>
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<td>18</td>
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<td>Nyang</td>
<td>90</td>
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<td>7.51</td>
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<td>12</td>
<td>Nyang</td>
<td>120</td>
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<td>13.35</td>
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<td>6</td>
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<tr>
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<td>Nyang</td>
<td>145</td>
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<td>21.04</td>
<td>1 1</td>
<td>1 1</td>
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<tr>
<td>14</td>
<td>Nyang</td>
<td>100</td>
<td>16</td>
<td>8.47</td>
<td>5 1</td>
<td>2</td>
</tr>
<tr>
<td>15</td>
<td>Nyang</td>
<td>80</td>
<td>24</td>
<td>7.24</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>16</td>
<td>Bak</td>
<td>65</td>
<td>12</td>
<td>2.83</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>17</td>
<td>Bak</td>
<td>76</td>
<td>14</td>
<td>4.40</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>18</td>
<td>Bak</td>
<td>110</td>
<td>18</td>
<td>11.22</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>19</td>
<td>Bak</td>
<td>100</td>
<td>15</td>
<td>7.16</td>
<td>8 2 2</td>
<td>7 1 1 1</td>
</tr>
<tr>
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411
Annex 2.10.1.3 - Utilizable wastes left behind during logging (species with hard, durable wood)

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Ave. volume of logs recovered = 6.75 cubic meters  
Waste as % of logs recovered = 18.2%
## Utilizable wastes left behind during logging (construction wood species)

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**Average**

Ave. volume of logs recovered = 8.20 cubic meters  
Waste as % of logs recovered = 10.8%
Annex 2.11.1.1 – Sample registry of timber utilization for household and village use

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Annex 2.11.2.1 – Sample form for monitoring non-timber forest products utilization

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Annex 2.12.2.1 – Sample registry of village land use conversion

Ban ____________________________

<table>
<thead>
<tr>
<th>Date of request/approval</th>
<th>Name of requester</th>
<th>Land to be converted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Request</td>
<td>Signature/ Thumb mark</td>
<td>Approved</td>
</tr>
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</tbody>
</table>

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Village development annex

Annex 3.2.2.1 – Sample format of a plan for a village development project

1. Project title: ____________________________________________________________

2. Objectives: ____________________________________________________________
   ______________________________________________________________________
   ______________________________________________________________________
   ______________________________________________________________________

3. Description and schedule of activities

<table>
<thead>
<tr>
<th>Activity</th>
<th>Schedule (months)</th>
<th>Responsible person(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 2 3 4 5 6 7 8 9 10 11 12</td>
<td></td>
</tr>
<tr>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. Estimated cost

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit cost</th>
<th>Total cost</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supplies and Materials</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equipment and tools</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Labor</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

5. Location map showing the approximate location of the village development project(s) in the village(s).

Prepared by: ___________________________  Recommending approval: ___________________________  Approved by: ___________________________

Village Chief(s): ____________________  District office concerned: ____________________  District chief: ____________________

Date: ______________  Date: ______________  Date: ______________

Note: In case of a village cluster or group, the village chiefs in the cluster or group sign and affix their official seals.

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