Sustainable Management of Natural Resources in Central Vietnam

SMNR-CV

MANUAL

COMMUNITY-BASED FOREST MANAGEMENT IN QUANG BINH PROVINCE

October 2006

GFA Consulting Group

gtz

ded Deutscher Entwicklungsdienst Vietnam

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Marianne Meijboom
Vu Van Manh and Nguyen Van Hop

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Preface

This first version of the manual on Community Based Forestry Management (CBFM) is developed by the project "Sustainable Management of Natural Resources in Central Vietnam" (SMNR-CV), which is supported by GTZ and implemented by GFA and DED. The manual builds on existing CBFM experience in Vietnam of other projects, including GTZ's former "Social Forestry Development Project", GTZ's current "Rural Development Project Dak Lak", and the "Extension and Training Support Project for Forestry and Agriculture in the uplands" implemented by Helvetas. The SMNR-CV project is piloting CBFM in four communes, including: Hoa Hop and Hoa Phuc communes in Minh Hoa district and Dong Hoa and Thanh Thach communes in Tuyen Hoa district, Quang Binh province.

There are some differences in the methodologies used by other projects and the SMNR-CV project. The SMNR-CV project pilots CBFM implementation by Kinh people, who received allocated forest land on an individual basis and formed user-groups, or who received allocated forest land on a group basis. Therefore, this manual mainly describes how CBFM plans can be developed and implemented on a group basis rather than on a village basis. Kinh villages often have more than 100 households, with different forest product interests, which makes CBFM on the village level complicated. Ethnic minorities often live in smaller villages and every household has in general similar needs for forest products.

There are also a number of other differences between Kinh people and ethnic minorities that should be taken into account in CBFM. The first and major difference is that Kinh people are more market-oriented compared to ethnic minorities and less concerned about the forest status. Therefore, CBFM can only be successful for Kinh people, if timber extraction for marketing is allowed under strict conditions and if the sustainable use of forest resources is carefully monitored.

We hope that this manual can contribute to the effective implementation of CBFM in Quang Binh province in order to enhance both the livelihoods and the forest status.

However, we consider this first version of the manual as a "living document" and as "work in progress". Therefore, would highly appreciate to receive comments from relevant institutions, and colleagues working on different aspect of community forestry. Integrating these comments into an improved version will help us to finally present a truly useful manual for forestry field staff and a documentation of field experience in Quang Binh which might be considered to improve the national framework of community forestry in Vietnam.

Please send your comments and contributions to the following address:

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Abbreviations

CBFM	Community Based Forestry Management
CFMB	Commune Forestry Management Board
CPC	Commune Peoples' Committee
DARD	Department of Agriculture and Rural Development (at provincial level)
DBH	Diameter at Breast Height (1.3 m)
DED	German Development Service
DPC	District Peoples' Committee
FIPI-QB	Forest Inventory and Planning Center in Quang Binh Province
FLA	Forest Land Allocation
FPD	Forest Protection Department (at provincial level)
FPDR	Forest Protection and Development Regulations
FPU	Forest Protection Unit (at district level)
GTZ	German Technical Cooperation
NTFP	Non Timber Forest Product
ONRE	Office of Natural Resources and Environment (at district level)
PLUP	Participatory Land Use Planning
VFMB	Village Forestry Management Board
SMNR-CV	Sustainable Management of Natural Resources in Central Vietnam

Introduction

This manual builds on the material developed by the former "Social Forestry Development Project" in Song Da, the project "Rural Development Dak Lak" (both supported by GTZ) and by the project "Extension and Training Support Project for Forestry and Agriculture in the uplands", supported by Helvetas. The manual reflects the situation in Quang Binh province and provides an overview of CBFM, including the development of CBFM plans, administrative procedures for implementation as well as silvicultural guidelines and techniques to ensure the proper implementation of the CBFM plans.

Participatory land use planning & forest land allocation[1] and the development of Forest Protection and Development Regulations[2] should be carried out before starting CBFM in the field. Land use planning and land allocation are necessary to secure land tenure and thus to secure the rights to obtain the benefits from forest management. Since the introduction of the revised Forest Protection and Development Law (29/2004/QH11) in 2004, it is possible to allocate forest land to villages and/or user-groups. The "Forest Protection and Development Regulations" developed by the local villagers are needed to have a general consensus among the villagers about forest management in the village and are an important issue in the implementation process of CBFM plans. The SMNR-CV project has developed manuals on the respective subjects that provide step by step guidance for "Participatory Land Use Planning & Forest Land Allocation" and for the development of "Forest Protection and Development Regulations".

CBFM is relatively new to Vietnam and entirely new to Quang Binh province. Therefore, CBFM should be carefully piloted and monitored in order to assess its potential to strengthen forest management, including forest development and forest protection, while at the same time increasing people's (legal) benefits from the forest resources they manage.

This manual is written as a tool for those who will work with villagers in developing, elaborating and implementing their CBFM plans. This can be project staff, extension workers or staff from supporting agencies of the district and/or commune level who act as facilitators and support local villagers in CBFM.

The manual consists of three parts. The first part provides an overview of the steps for CBFM. The second part offers practical guidance and exercises for the participatory implementation of the forest resource assessment and the elaboration of the 5-year CBFM plan (step 2 & step 3 in CBFM).The third part gives a brief overview of silvicultural techniques that should be considered in forest management, which relates to the implementation of the CBFM plan (step 5 in CBFM). Furthermore the appendices shows formats needed during CBFM (including forms for the establishment of the village and commune forest management boards, an example of a CBFM plan,, application forms and proposals, and record books).

What is Community-based Forestry Management?

In CBFM, local people are the managers of the forest. A "community" that manages the forest can for example be a village or a user group. In this manual also individual households that are managing forestland are also considered as practicing CBFM. The SMNR-CV project uses the term Community Based Forestry Management thus in its broadest sense to describe forest management practiced by local people as opposed to forest management by the state and forestry companies.

[1] There are a number of government decisions and instructions guiding land use planning and land allocation. See e.g. Decree 181/2004/ND-CP.
[2] FPDR should be developed according to Circular 56/1999/TT-BNN-KL.

Why Community-based Forestry Management?

In the past, the state was preliminary responsible for the development, conservation and management of the forests. It was thought that proper forest management can best be assured by the state because 1) forest management is complicated and forests fulfill many functions in producing raw materials and environmental services, because 2) forests are not only of importance in the locality but can also exert their environmental services to the region (e.g. watershed protection) and because 3) the production cycle in forestry takes in general many years. In other words local people were considered to lack the capacity and technical skills to manage forests properly, and unable to take into account the regional importance of forest. This train of thought led to the assumption that local people are a threat to proper forest management.

However, it is gradually recognized that people living in remote areas need to have access to forest products to meet their basic needs and are able to manage forests sustainably. Small timber (for e.g. house construction), fuel wood, medicinal plants, forest fruits and vegetables etc. are all essential for the survival of people living in marginalized forested areas. Furthermore, it is also acknowledged that the state forest enterprises face difficulties and lack the resources for good forest management. Therefore, in Vietnam forest land classified as production forest is increasingly allocated to individual households, groups of households and villages for their direct management with the aim to improve both the forest management and livelihoods of those who need the forest resources for their livelihood. Forests classified as “Special Use forest” or “Protection Forest” are mainly under the management of the state in order to safeguard the maintenance of the environmental services forests provide.

Basic principles

This manual on CBM is based on the following basic `principles:

1. Fit within the legal framework
2. Simple and easy to implement with the local available resources
3. Strengthen the sustainable management of forest resources while mitigating potential negative impacts
4. Participatory and ensure that the interests of local people are incorporated in CBFM
5. Reflect local peoples’ needs to access and use forest resources (and not merely focused on forbidding the extraction of forest products)

Role of facilitator

Depending on the local situation, there are different organizations that can take the initiative and facilitate CBFM in the field. Organizations at the district level such as the Office of Natural Resources and Environment (ONRE), the Forest Protection Unit (FPU) and the Economic Division can provide support and facilitate villages in the development and implementation of CBFM plans in cooperation with staff at the commune level and with overall backstopping support from the provincial level. It is of major importance that CBFM plans are developed according to the interests of the user-group/village and are based on the available forest resources. Long term objectives of CBFM, such as improved forest management and strengthened livelihoods can only be realized if CBFM is carried out according to the interests of the villagers and is based on the actual forest status. The people who support CBFM in the field should therefore ensure the participation of all user-groups in the development of CBFM plans and make certain that the forest resource assessments are carried out properly. Furthermore the role of the facilitator is to ensure that CBFM is carried out according to Vietnamese law and follows the correct procedures and steps.

Part I: Methodology for CBFM

The methodology for CBFM involves 6 major steps including: 1) Preparation, 2) Forest resource assessment, 3) Elaboration of the 5-year CBFM plan, 4) Approval of the commune CBFM plan, 5) Implementation of the CBFM plan and 6) Monitoring & evaluation. These 6 steps can be further divided in sub-activities. See the figure below.

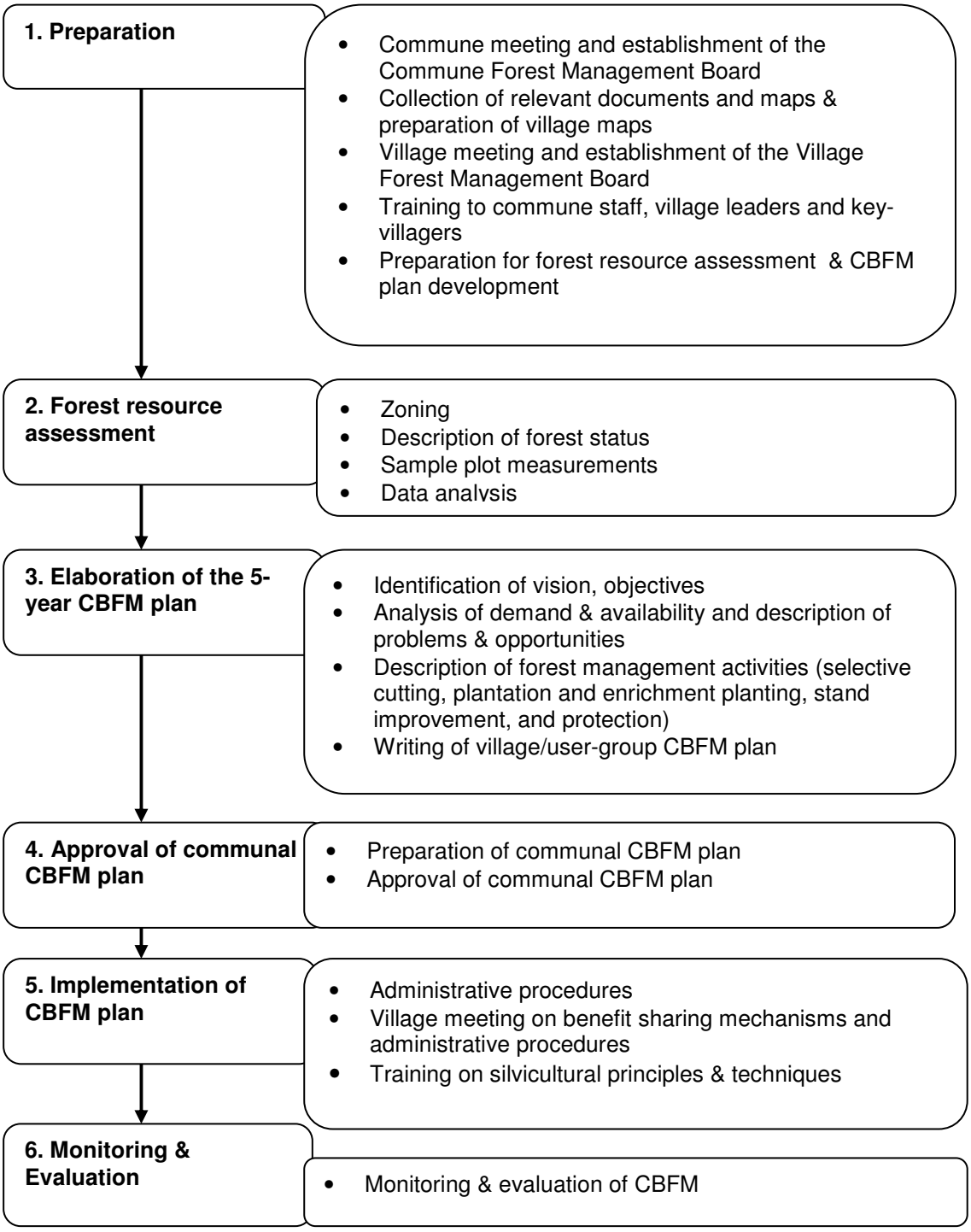


Figure 1: Steps and activities of CBFM

1.1 Step 1: Preparation

Activities in step 1: Preparation

1 Commune meeting and establishment of the Commune Forest Management Board (CFMB)
2 Collection and analysis of relevant documents and maps & preparation of village map
3 Village meeting and establishment of the Village Forest Management Board (VFMB)
4 Training to commune staff, village leaders and key villagers
5 Preparation for forest resource assessment & CBFM plan development

Before CBFM can take place in the field a number of preparation activities need to be carried out, including a commune meeting, collection & analysis of relevant documents and maps, training, a village meeting and specific preparations for the next steps. These activities are briefly described below.

Commune meeting and establishment of the Commune Forest Management Board (CFMB)
Participants of the commune meeting include representatives of the CPC, the commune cadastral and forestry staff, FPU and leaders of all villages.

The aims of this commune meeting are:
1. Agreement on CBFM methodology (steps and activities)
2. Agreement on the organizational arrangements for the development of CBFM plans in the commune
3. Establishment of the CFMB
4. To assign a person to collect relevant document and maps
5. To agree upon suitable areas/villages for CBFM
6. To inform communal staff and village leaders about the training on CBFM planning
7. Preparation of a draft working plan

1) Agreement on CBFM methodology
The facilitator will give a brief presentation on the methodology of CBFM and explain the steps and activities. After the presentation, the methodology can be further discussed and agreed upon by all participants of the meeting.

2) Agreement on the organizational arrangements for CBFM
CBFM is relatively complicated and therefore support is needed from the technical staff of the commune (cadastral & forestry staff) and also from the FPU. The support of these staff is essential during the participatory forest resource assessments and the development of the CBFM plans as well as the implementation of the plans. The responsibilities of the communal forestry staff and FPU is to provide technical support and monitor the development of CBFM plans and its implementation; the responsibilities of the village leader and head of the group are the development of the CBFM plans, its implementation including the organization of meetings and to inform the communal staff and FPU. Furthermore the head of the user-group and the village leader should ensure that the CBFM plans are submitted to the commune authorities and that permission is obtained for selective timber cutting once the plans have been approved by the district authorities. For the smooth operation of CBFM it is therefore useful to establish a CFMB and Village Forest Management Boards.

3) Establishment of the CFMB
Tasks of the CFMB are:

- To provide backstopping support in the elaboration of the 5-year CBFM plans
- To monitor and evaluate the implementation of CBFM in the villages
- To assess, review and approve the submitted proposals for selective timber cutting for thinning (trees with DBH < 20 cm) and domestic use
- To assess, review and submit timber harvesting proposals for commercial logging (DBH > 20 cm) to the district authorities
- To assess, review and submit 5-year CBFM plans to the district authorities
- To ensure that CBFM activities are carried out according to Vietnamese law (including the payment of taxes in case of commercial timber extraction)

Members of the commune forestry management board should include the chairman of the communal Peoples' Committee, the commune forestry worker and FPU staff. (See appendix 1 for a sample of a decision to establish the CFMB).

4) Collection of relevant documents and maps

Documents that need to be collected by the assigned person include the forest land allocation map and related cadastral documents (e.g. list of households and groups of households that received forest land), the forest status map (), relevant forest policies and the developed and approved "Forest Protection and Development Regulations".

5) Agreement on suitable areas/villages for CBFM

CBFM has most chances to be successful in areas, where:

- Forest resources are relative abundant and people can obtain benefits from forest products;
- people depend on the forest resources and see the need for sustainable forest management
- there is a strong social cohesion (for example in certain ethnic minority villages) among the community or user group

Village leaders can express during this meeting their interest in CBFM for their respective village. Suitable areas and villages for CBFM will be selected and agreed upon by all participants.

6) Informing communal staff and village leaders about the training on CBFM planning

The development of CBFM plans that are based on the local available forest resources and interests of the local people is complicated, therefore a short training course will be provided for the communal staff, village leaders and one or two key persons per village. The village leaders are requested to select 2-3 key-persons, who are heads of forest user groups, are interested in CBFM and have a good knowledge of the forest and plants. The training will take 4 days, including 1 day theory followed by 3 days practice for the actual development of a CBFM plan for a user group.

7) Preparation of a draft workplan

This draft workplan includes an overview of all the villages where CBFM will take place and the general time schedule for developing CBFM plans (it takes about 3 days to develop a CBFM plan per user group). Also appointments are made for the timing of the training on CBFM.

Collection and analysis of available documents and maps & preparation of village map

The following documents and maps should be collected if available:

- Cadastral documents related to forest land allocation, including lists of households and groups of households that received forest land with the respective areas and forest status and the forest land allocation map
- Forest status map of Quang Binh province of FIPI-QB or FPD of 1999 (a new map might become available at the end of 2006)
- Relevant forest policies such as Decision 178/2001/QD-TTg on the benefits and obligations of households with allocated forest land, the forest protection and development law (25/2004/L-CTN), Decision 40/2005/QD-BNN
- "Forest Protection and Development Regulations" as formerly developed and approved by the DPC of all villages where CBFM will be executed.

For the field work for CBFM planning it is useful to prepare village maps based on the communal FLA map. The village map can be a copy of the communal FLA map and should show the plots allocated to the households/groups of households, the areas and the location of the forest blocks and compartments. This village map will be used as a reference for the development of CBFM plans and will be used to select the sites for the participatory forest resource assessments.

For the analysis of the available information, the table below should be filled in. These data are later on essential for the final formulation of the CBFM plan.

Table 1: Overview of the allocated forest land per user group

Village: Commune:

User group ***(name of head of the group)***	***Local name of area***	***Forest block,***	***Forest compartment***	***Plot***	***Area (ha)***	***Forest status***

Village meeting and establishment of the Village Forest Management Board (VFMB)
In the commune meeting the villages where CBFM will be implemented were identified. Before starting the CBFM process in a village, a village meeting needs to be organized in which all organizations, unions, all heads of the allocated individual households and heads of user-groups are present. The facilitator (district staff, commune staff or project officer) will moderate the meeting. The aims of the meeting are:

1. To introduce CBFM to the village
2. To discuss the organizational arrangements for CBFM implementation and establishment of the VFMB
3. Agreement of the number of CBFM plans to be developed in the village.
4. To develop a workplan for CBFM plan elaboration in the village

1) Introduction of CBFM to the village
The facilitator will provide a brief introduction of CBFM to the participants of the meeting and explain the steps and activities of CBFM. Furthermore the facilitator will clearly explain the benefits of CBFM for the local villagers.

2) Organizational arrangements for CBFM implementation and establishment of the VFMB
The village is an important unit in CBFM implementation and therefore the establishment of a VFMB should be discussed. Tasks of the VFMB are for example:

- To assist user-groups in the preparation of CBFM plans and timber harvesting proposals
- To submit 5-year CBFM plans to the commune forestry board
- To monitor and evaluate the implementation of CBFM in the villages in cooperation with the CFMB
- To collect, aggregate and submit proposals for selective timber cutting for both domestic use and commercial purposes to the CFMB
- To keep a logbook of the implemented CBFM activities

Members of the village forestry management board should include the village leader, and 2-3 key-villagers representing and selected by the villagers. These key-villagers should be selected based on the following criteria:

- Good understanding of the forest and plants
- Respected by other villagers
- Motivated and interested in CBFM

Members of the VFMB will receive a short training on CBFM. The training will take 4 days, 1 day theory and 3 days practice in CBFM plan elaboration. See also appendix 2 for a sample of a decision to establish the VFMB.

3) Number of CBFM plans to be developed in the village
In case land has been allocated to the entire village, only one CBFM plan will be developed. If there are only a few user groups, CBFM plans will be developed for each user group. If there are many user groups, the plans of the user-groups with forest land in the same forest compartment will be compiled in the village CBFM plan. In cases where all the forest land has been allocated to individual households, the formation of user-groups should be discussed for the effective management of the forest resources. In this last case it is recommended that households who have allocated forest land adjacent to each other form a group to manage the forest land (especially the land that is located relative far from the residential area and which is thus difficult to manage on an individual basis) together.

In case user-groups still have to be formed, another village meeting for all representatives of households who have allocated forest land needs to be organized. During this meeting the formation of groups will be discussed and agreements need to be made about the clarification of boundaries in the field for each group. Depending on the local situation, there will be thus one or more CBFM plans developed in the village.

4) Workplan for CBFM plan elaboration in the village
In the meeting furthermore the workplan and the time-schedule for CBFM plan elaboration in the village will be discussed. For example it can be decided that CBFM plans will be developed one by one with support from the facilitator and the local people who will be trained in CBFM plan preparation or that the facilitator will go through the process with 1-3 representatives of each user-group and that each user-group will develop its plan on its own. In case one CBFM plan will be developed for the entire village, key-villagers should be selected who will prepare the draft CBFM plan.

Box: Formation of user-groups

In many areas in Quang Binh province, long narrow strips of forest land have been allocated to individual households. Although this ensures the equal distribution of forest land among villagers, it hampers practical forest management because the plot boundaries are unclear or difficult to maintain. Therefore, it is recommended to form user-groups. Households with allocated forest land adjacent to each other should form groups, clarify the boundaries of the forest land they manage as a group and share duties such as protection and benefits. Each group should appoint a head, who is the contact person and responsible for the elaboration and implementation of a CBFM plan in participation with the group members. The group members should discuss among themselves the arrangements of sharing duties and benefits. Protection duties can for example be shared through rotational patrolling. For benefit sharing the members can for example discuss who has the first priority to extract timber if forest resources are limited.

Training to members of the CFMB and VFMBs
The members of the CFMB and VFMB will be trained in the steps and activities of CBFM and in the elaboration of CBFM plans that are based on the local available forest resources and interests of local people. After the training the trained people can help the facilitator to further elaborate CBFM plans for villages and/or user groups.

The training will take 4 days. One day theory and 3 days practice for the elaboration of a CBFM plan.
The theoretical part will cover the following contents:

- Basic principles of CBFM and its practical implications
- Steps, activities and procedures in CBFM
- Policies and decrees related to CBFM (Forest Protection and Development Law (25/2004/L-CTN), the Decision on rights and benefits for households with allocated land (178/2001/QD-TTg) and the decision on harvesting forest products (40/2005/QD-BNN).
- Participatory tools for CBFM plan elaboration

Preparation for forest resource assessment and the elaboration of the 5-year CBFM plan
The forest resource assessment and CBFM plan elaboration will be carried out in participation with the local villagers. Therefore, the necessary documents (including relevant decisions, cadastral documents, village maps, forest status map, developed "Forest Protection and Development Regulations"), stationary and tools such as colored measurement tape to measure the DBH of trees in the sample plots, ropes to demarcate the sample plots, etc. need to be prepared. In part II practical exercises are provided for the participatory forest resource assessment and CBFM plan development. Per exercise the needed materials are listed. It is recommended to read all the exercises and prepare the needed materials in advance before commencing with the exercises.

1.2 Step 2: Forest resource assessment

Activities in step 2: Forest resource assessment

1 Zoning
2 Description of forest status
3 Sample plot measurements
4 Data analysis

After the preparation, the next step is to make forest resource assessments. The resource assessments are the basis for analyzing the amount of forest products that can be harvested while maintaining or improving the forest resource base. Forest resource assessments are carried out by local villagers themselves with support from the FPU and/or commune forestry staff. In this way local people will better understand the status of the forest they manage. Activities in this second step include zoning, description of forest status, sample plot measurements and data analysis. A brief description of these activities is below. In part II of the manual more practical guidelines are given about how to implement these activities.

Zoning
Zoning refers to the identification of forest areas with similar status. This is especially important when all the forest land has been allocated to the entire village because for each zone specific forest management activities will be identified. In case the land has been allocated to groups of households, the CBFM plan refers to the forest land area that is allocated to the group. In both cases a sketch map needs to be prepared that provides clear links between the village CBFM plan and the locations of the forest interventions.

Description of the forest status
A description of the forest status will be made per plot or zone (plot refers to the forest land allocated to a group of households or zone in case the forest land has been allocated to the entire village) according to a form (see part II). This form provides a quick overview of the forest status and informs about the current management activities and major problems encountered in the area. Furthermore, this information will help to identify the locations for the sample plot measurements.

Sample plot measurements
The sample plot measurement will provide more accurate data about the forest status. All trees with DBH>10 cm are measured in sample plots of 20x25 m, while regeneration and NTFPs (other

than trees) are measured in 4 smaller plots of 5x5m (located in each corner of the 20x25 m plot). For all trees recorded the name and the diameter class are noted on an inventory form. DBH classes can for example be every 5 or 10 cm. The smaller diameter classes will cause more work but will provide more accurate data for potential harvesting. It is important that the measurements are carried out accurately and carefully, because the sample plot outcomes will determine the quantities that can be extracted from the forests without having negative impacts on the resource base.

Comprehensive forestry inventories have already been carried during the FLA process in selected pilot communes by FIPI-QB. For these communes, the measurement of a few sample plots that represent the forest status of each area is sufficient. For other communes, the area of the sample plots should cover at least 1.5% of the total area, with the distribution of the sample plots being representative for the inventory area.

Data analysis

The data acquired during the sample plots measurements need to be analyzed. For the analysis histograms can be made of the different numbers of trees per DBH class. These histograms can then be compared with histograms made from data acquired from forest inventories in good forest that represent a forest status that can be considered as a reference for how the forest managed by the user-group should look like in the future. Histograms showing the DBH class distribution of trees in a rich forest are thus used as reference data for the user-group to develop plans for timber extraction. These histograms which can be used as a reference are named “DBH class distribution model” in this document. The histograms derived from the plot measurements in the forest that is managed by the user-groups can then be compared with the model of DBH class distribution. If for any given DBH class the number of trees (as measured in forest areas managed by user groups) exceeds the number of trees in the same DBH class as shown in the DBH class distribution model, the surplus of trees can be harvested. The extraction of these “surplus” trees will not have a negative impact on the forest resource base.

At present there are not yet figures available for the DBH class distribution that can officially be used as a reference in Quang Binh province. However the figure below provides initial DBH class distribution data of a good forest structure that can be used as a reference model. More research will be necessary to improve the data.

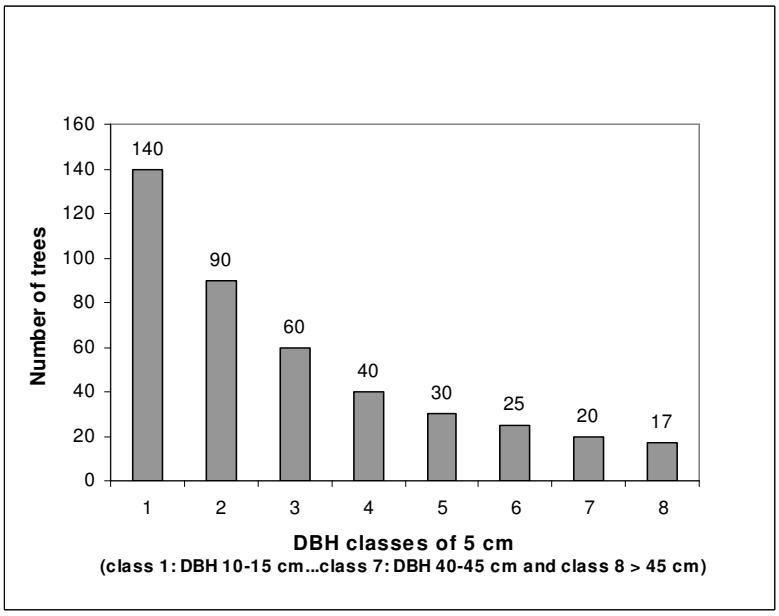


Figure 2: DBH class distribution model of natural forests in Quang Binh province

The above initial figure of the DBH class distribution of natural forests in Quang Binh province is comparable with the initial figures for natural forests in Dak Nong province. See figure 3.

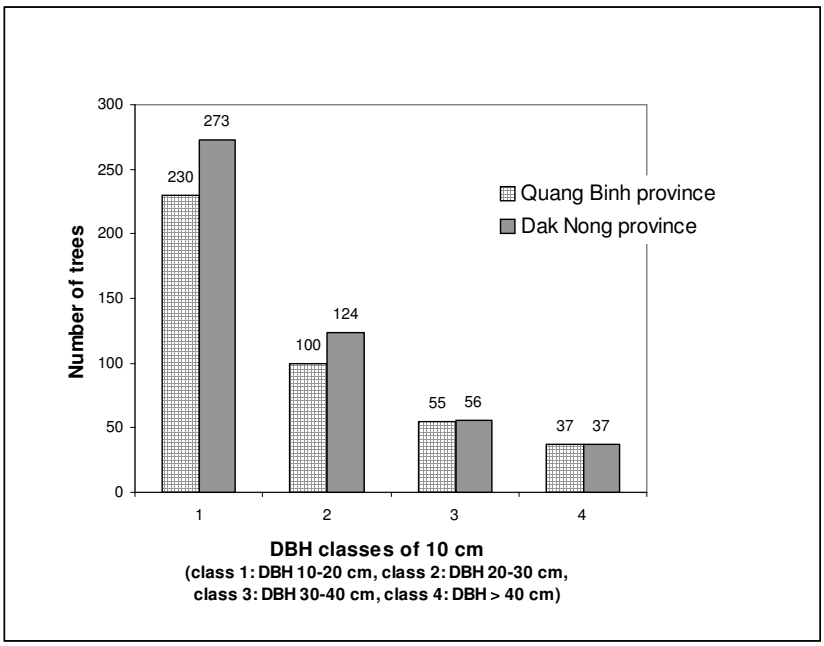


Figure 3: Comparison of DBH class distribution models for natural forest in Quang Binh and Dak Nong provinces[3]

1.3 Step 3: Elaboration of the 5-year CBFM plan

Activities in step 3: Elaboration of the 5-year CBFM plan

1. Identification of objectives for forest management
2. Analysis of demand & availability and description of problems and opportunities
3. Description of forest management activities (e.g. selective cutting, plantation & enrichment planting, stand improvement and protection)
4. Writing of the village/ user-group CBFM plan

It is important that user-groups make their own CBFM plan in order to create ownership of the plan. Activities in the CBFM plan elaboration include the identification of objectives for forest management, the description of the major activities related to selective cutting, plantation & enrichment planting, stand improvement techniques and protection, and finally the writing of the CBFM plan. Part II provides practical guidelines for the development of participatory CBFM plans.

Identification of objectives for forest management

For the identification of suitable objectives for forest management a vision for the forest status per plot or zone is needed. For the development of a vision questions should be answered such as: "How should the forest look like in 20 years time?" A vision for an area could for example be a rich forest that provides timber for subsistence use and marketing. In this case, the histogram showing the model for the DBH class distribution of natural forests in Quang Binh province should be used as basis for the calculation of the timber that can be extracted. The vision for each zone can differ and not all the plots/zones need to be transformed into good quality forests. A vision could for example also include a woodlot for the extraction of fuel wood. A vision should describe the trees (different sizes of trees) and NTFPs. Based on the vision the objective for an area can be formulated. The objectives refer to a time-span of 5 years because CBFM, plans are developed for a period of 5 years. Thus the objectives in this case refer to an aim for each zone, which can be

[3] Data of Dak Nong province derived from: Bao Huy, 2006. Technical guidelines – Community Forestry Management. ETSP, Helvetas, Vietnam

achieved within a timeframe of 5 years. The objective for an area will determine the silvicultural activities that will take place in a specific zone (see figure 4 below). These activities can best be grouped into four main activities, including selective cutting, stand improvement, plantation & enrichment planting and protection.

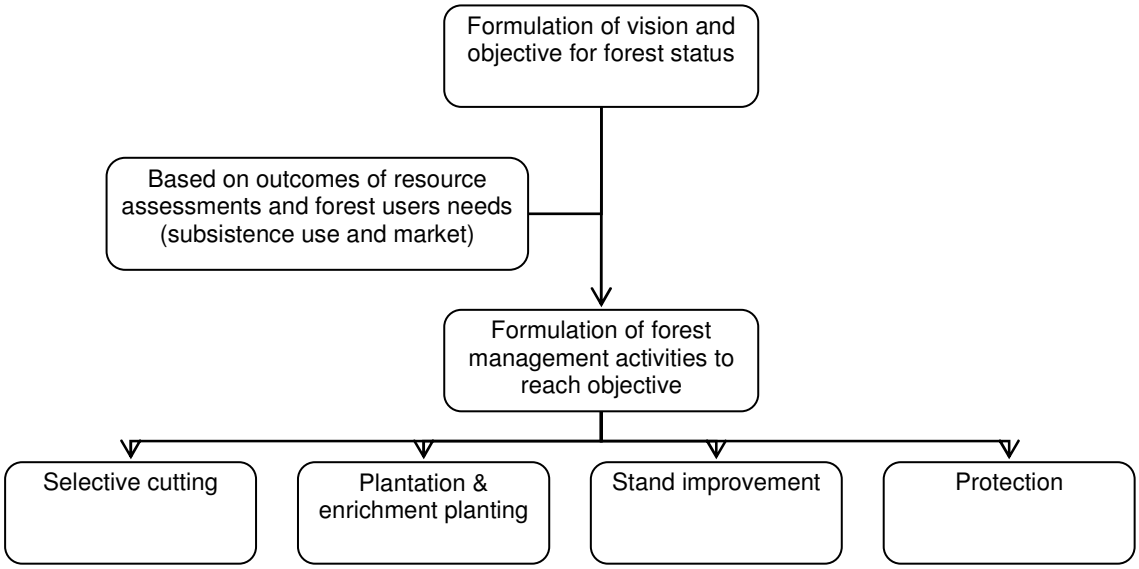


Figure 4: Overview for the formulation of forest management objectives

Analysis of demand & availability and description of problems & opportunities

Before the forest management activities are described, the situation in each plot or zone should be analyzed. This includes an analysis of the demands for forest products of the villagers compared to the available raw materials needed for these products. For ethnic minorities, product needs assessments can often be made in detail as almost all households have similar forest product needs. For Kinh people it is more complicated as the needs differ significantly from household to household and only a very rough estimate can be given of the needs. It is also very useful to describe the existing problems and opportunities for forest management in each zone/plot. For each problem there should be an activity identified to overcome the problem while for each opportunity an activity can be identified to make use of the opportunity.

Description of forest management activities

The most important part of the CBFM plan is the activity plan. The activities can in general be categorized into four major groups including: selective cutting, plantation & enrichment planting, stand improvement and protection. These main activities are briefly described below.

Table 2 provides some examples for vision & objectives and the main activities based on the actual forest status in natural forests. It is recommended to have no interventions other than protection for the sake of biodiversity conservation in limestone forests because limestone forests are very susceptible to exploitation and regenerate very slowly.

Table 2: Some examples for visions, objectives and main activities for natural forests in Quang Binh province based on the actual forest status

Actual forest status	*Vision & objectives*	*Main activities*
> IIA- poor, medium and rich forest	Medium and rich forest (> IIIA2) for timber harvesting, fuel wood & NTFP collection and ecological restoration and biodiversity conservation.	▪ Selective cutting (based on DBH class distribution figures) ▪ Protection ▪ Stand improvement (especially in forests of < IIIA1)
IIA-III A1 Poor forest	Poor forest (IIB/IIIA1) for fuel wood & NTFP collection and selective cutting of small timber	▪ Stand improvement (including thinning + pruning for fuelwood collection & some removal of undesired species) ▪ Protection ▪ Enrichment planting with NTFPs and timber trees
< IC	Plantation ▪ Fast growing species for short term economic benefits, or ▪ Mixed plantations with fast growing and indigenous species for short term and long term economic benefits and for ecological restoration, or ▪ Indigenous species for ecological restoration and long-term benefits	▪ Establishment of plantations with fast growing or indigenous species or mixed depending on the objective ▪ Protection ▪ Stand improvement

Selective cutting

Based on the outcomes of the analysis of the resource assessment, the number of trees that can be harvested per DBH class can be calculated. This means that in poor or medium forests also trees with small diameters can be harvested as long as the number of trees as measured in the field exceeds the number of trees of the DBH class distribution model figures. The proposed number of trees that will be cut depends thus on the willingness of the user-group with a maximum as can be derived from the DBH-class distribution model. In villages where the extraction of forest products and timber is mostly based on subsistence needs (i.e. most ethnic minority villagers), it is useful to make a demand analysis. For Kinh people a demand analysis seems less useful as they are in general more interested in timber for marketing. At the moment the official procedures for harvesting timber from natural forests for marketing purposes by local people are not yet in place in Quang Binh province. Furthermore, only ethnic minorities are allowed to extract timber from natural forests for house construction according to Decision 134/2004/QD-TTg at present.

Before the actual selection of trees to be cut in the field, please note that the valuable and rare timber species as mentioned in Decree 48/2002/ND-CP are not allowed to be harvested. Furthermore “seed trees” should be identified in the field, which should be well protected and never be cut down. Seed trees can be considered as mother trees as they provide the seeds for further natural regeneration. There must be at least 10 seed trees within a one-hectare area around the tree selected to be cut.

The necessity to include the extraction of quantities of NTFPs in the CBFM plan depends on:

- The interest of the user group. If the user-group is not interested in the extraction of any NTFPs it doesn’t need to be included in the management plan.
- The extent to which the NTFPs are easy to measure and to control. In case measuring and monitoring of NTFPs is difficult, guidelines on NTFP extraction can be included in the “Forest Protection and Development Regulations. In this respect guidelines could e.g. refer to a specific area for a certain time period (rotational harvesting), to a period (only harvesting of fruits when they are ripe) or to the modality of the plant (only harvest rattan canes when the cane is at least 5 m long). In case the status of the NTFPs is easy to measure and control,

quantities could be put in the CBFM management plan. However in general the elaboration of simple guidelines on NTFP extraction based on local knowledge will be sufficient.

Plantation & enrichment planting

Plantation is in general only suitable on barren land or on shrub land. Poor and medium forests harbor mostly enough young trees and seedlings. Protection with some stand improvement activities will allow natural regeneration to reach a good forest status and is therefore the best forest management option in many poor forests.

Enrichment planting is normally carried out in poor forest or areas that are poor in regeneration. The aims of enrichment planting are to accelerate forest regeneration and to increase the productivity of the forest in order to meet the demand for forest products. Enrichment with NTFPs, such as rattan, can furthermore increase the short-term benefits of a poor forest stand. The additional planting can be in an open gap of an existing forest or in rows whereby rows of poor forest are cleared to set up the enrichment planting. Enrichment planting is very labor intensive and time consuming. Therefore it should be carefully assessed if the benefits of the additional planting exceed the costs and resources put into it.

The selection of species depends on the aim of the plantation. Most local people are interested in fast growing tree species that can be harvested in 8-10 years such as Eucalyptus and Acacia. The negative environmental impacts of Eucalyptus, especially the deterioration of the soil and the high consumption of soil nutrients and deep underground water, are presently well-known and therefore the establishment of Eucalyptus plantations is not promoted. At present plantations with the fast growing hybrid acacia are encouraged, but it remains to be seen if the soil and water is not negatively impacted by this species after a number of rotations. Therefore it is recommended to set up mixed plantations with fast growing species to increase relative short term benefits with slower growing native species such as Lat hoa (*Chukrasia tabularis*), Tram do (*Aquilaria crassna*) or others in order to mitigate the negative impacts on the environment. A problem that is often faced in the establishment of mixed plantations is that seedlings of native species are not available or difficult to obtain. Seeds/seedlings often have to be found in the wild and transplanted at the desired site.

Stand improvement

There are a number of simple forestry activities that can improve the status of the forest, including thinning, pruning and removal of non-valuable plants to promote the growth of valuable plants/trees.

Thinning

The purpose of thinning is to enhance the growth and quality of trees through the removal of undesirable trees (e.g. crooked, diseased, non-commercial species) which compete with valuable trees, as well as the removal of some of the valuable trees if there are too many of them. The maximum number of trees that can be cut down can be derived from the DBH class distribution figure in comparison with the figure of the ideal forest structure. Thinning is thus also a form of selective cutting.

Pruning

Pruning is the removal of branches that hinder the development of a good tree form, as well as to speed up the growth of the stem and to reduce fire hazards. Pruning is also very important for species that provide several or many coppices in one stump; only the strongest should be kept and given the chance to further develop to a mature tree in case timber is desired. For fuel wood production a number of coppices can be left for further growth.

Removal of shrubs, vines, lianas etc. to promote tree growth

The removal of shrubs, vines, lianas and other un-desired species is carried out to reduce competition for space, light, water and nutrients and allow valuable species to reach maturity.

Weeding will help to establish tree seedlings and increase the survival rate, especially in the rainy season, while the ground cover should be maintained in the dry season.

Protection

Regulations for forest protection and its enforcement are part of the "Forest Protection and Development Regulations". However these regulations might not be sufficient to ensure that the forest land managed by the user group is well-protected. New established plantations or additional plantings in natural forest areas need to be well-protected against grazers. If cattle normally graze freely in the forest, fencing might be the only solution to protect the seedlings against grazing and browsing. The user group should discuss among its members how the protection of the forest land will be organized. For example the group members can decide to take turns in patrolling and protecting their forest land.

Writing of CBFM plan

After all the above activities have been discussed and it is clear where (location & forest status) which activities will occur, the CBFM plan of one user-group can be prepared. In the 5 year CBFM plan the activities (selective cutting, plantation & enrichment planting, stand improvement and protection) are described. For each activity the location and forest status (referring to the forest blocks & compartments and forest status as noted on the FLA map), the area (ha), the quantities (number of trees per DBH class, the responsibilities and the year in which the activity is planned is written. Furthermore, the CBFM plan includes a sketch map of the location of the forest land managed per user-group. An example of a CBFM activity plan is included in Part II.

1.4 Step 4: Approval of the communal CBFM plan

Activities in step 4: Approval of the communal CBFM plan

1 Preparation of communal CBFM plan
2 Approval of communal CBFM plan

It is difficult to get approval of the CBFM plan of one user-group or one village because a village is not an administrative unit. If CBFM is carried out in the entire commune, the plans should be aggregated for the preparation of a commune CBFM plan.

Preparation of communal CBFM plan

The village CBFM plan is a compilation of all the CBFM plans of all the user groups in the village, while the communal CBFM plan is a compilation of all the village CBFM plans. The communal CBFM plan furthermore includes a cover page, a request signed by all village leaders to implement the CBFM plans in their respective village, an overview of the present forest land areas and forest land tenures in the commune, an overview of the priorities for effective forest management, development and protection in the commune, an overview of the results of the forest resource assessments and a sketch map of the locations of the areas managed by user-groups and proposed for the CBFM interventions. The VFMB will compile the village CBFM plan, while the CFMB and the facilitator will compile the communal CBFM plan and send it to the commune authorities for approval. See appendix 2 for an example of a CBFM plan.

Approval of communal CBFM plan

The CBFM plan is checked by the commune authorities with support from the commune forestry staff. After approval from the CPC, the commune leader will send the plan to the District authorities to obtain their approval. At the district level, the plan will be assessed by the Economic Division and the FPU. The FPU will check in the field if the proposed interventions are suitable. After the assessment, the Economic Division will write an assessment to the DPC for approval of

the plan. If the CBFM plan is approved by the district authorities it will be sent back to the commune and the CFMB will inform the VFMB that the plans can be implemented in the field.

1.5 Step 5: Implementation of the CBFM plan

Activities in step 5: implementation of the CBFM plan

1 Administrative procedures
2 Village meeting on benefit sharing mechanisms and administrative procedures
3 Training on silvicultural principles & techniques

The implementation of the CBFM plan needs to follow certain procedures after approval of the DPC has been obtained. The user-groups and the supporting forest management boards have to agree upon the mechanisms for sharing the benefits from CBFM. Furthermore the user-groups need to know the administrative procedures for CBFM implementation and need to be trained in the silvicultural techniques to make optimal use of their allocated forest land.

Administrative procedures
After approval from the DPC, the CBFM plans can be implemented by the respective user-groups. The implementation of activities related to plantation & enrichment planting, stand improvement and protection can be carried out without further intervention of the commune level and FPU. However the FPU has always the right to check and intervene in the CBFM plan implementation process and might for example check if plantations are set up at the right location. Only barren land, shrubland and/or poor forest classified as < IIA should be converted to plantations.

At present there are no clear official administrative procedures for the implementation of CBFM plans, especially related to the selective cutting of timber for domestic and marketing purposes. Here it is proposed that the CFMB can approve proposals for the selective cutting of timber for domestic use. While proposals for timber extraction for marketing purposes can only be reviewed, assessed and approved by the DPC. See figure 5 for the proposed administrative procedures.

At the time of timber extraction, user-groups should fill in an application form for timber harvesting (different forms for timber extraction for domestic use and marketing purposes). The VFMB will compile the application forms and prepare a village proposal for timber extraction and send the proposal to the CFMB. The CFMB will assess, review and approve the proposal for timber extraction for domestic use purposes. The village proposals for timber extraction for marketing will be compiled into a commune proposal and submitted to the DPC. After approval from CPC and/or DPC the CFMB will inform the VFMB. The VFMB will inform the user-groups. The user-groups have to mark the trees they want to extract and also at least 10 seed trees per ha in case timber extraction is for marketing purposes. The FPU, communal staff and the VFMB will supervise the timber extraction in the field. After the timber extraction the user-group and the VFMB should fill in the logbooks for monitoring the harvested timber quantities. See appendix 3 for samples of application forms, proposals and approval forms for timber extraction and appendix 4 for the logbooks.

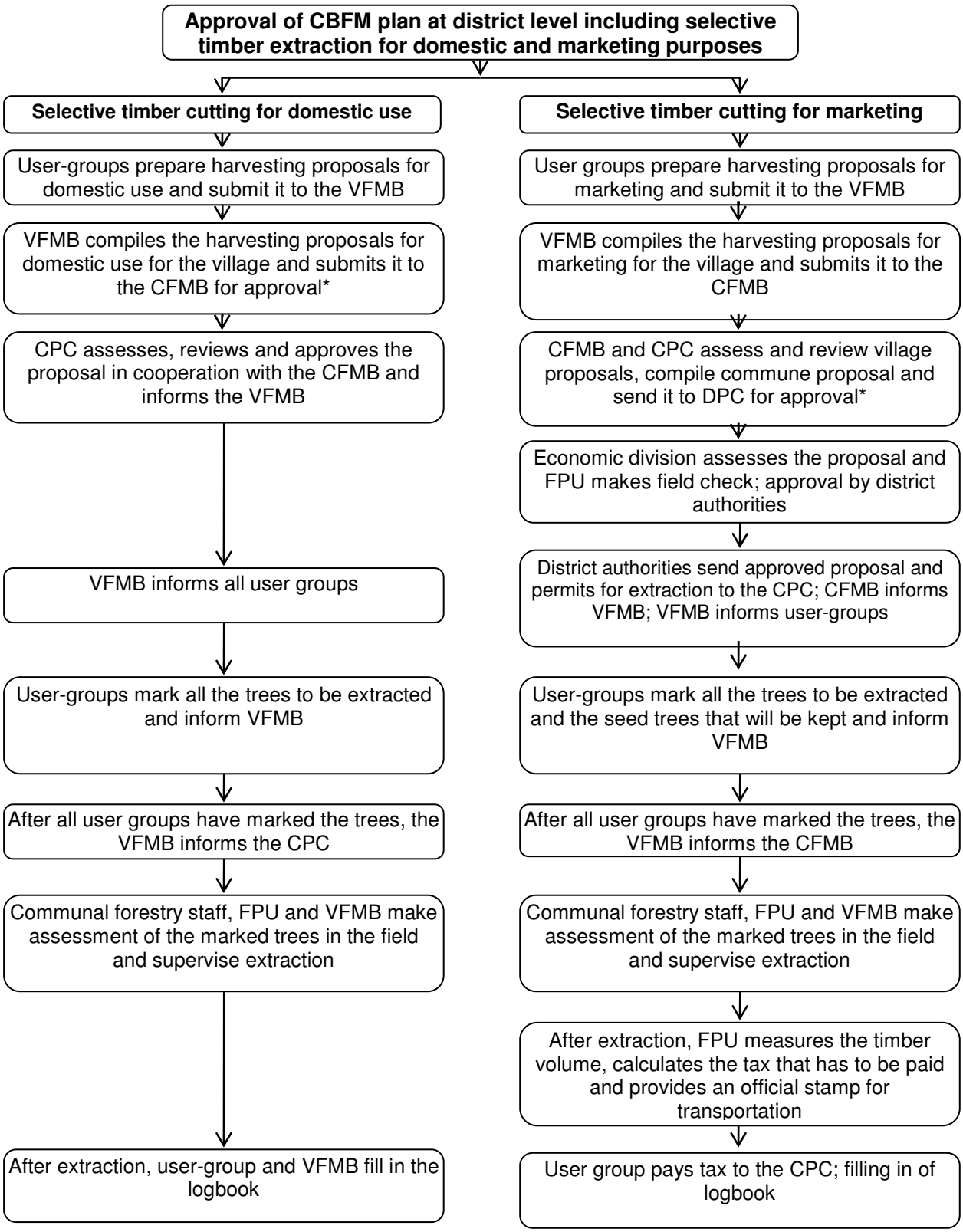


Figure 5: Proposed administrative procedures for selective cutting in pilot sites

*At the moment official approval is needed from the district authorities for selective cutting for domestic use (house construction) and from DARD for selective cutting for marketing purposes.

Village meeting on benefit sharing mechanisms and administrative procedures

The aim of this village meeting is to present the administrative procedures for CBFM plan implementation and to agree upon the benefit sharing arrangements between the user-groups and the supporting village and commune forest management boards. In this meeting members of the CFMB, VFMB, FPU and heads of the user-groups should be present. A member of the CFMB can present the administrative procedures and explain the application forms for timber extraction. These forms should be available at the house of the village leader.

The user-groups and the VFMB should make clear agreements on the sharing of the benefits related to CBFM. The user-groups, VFMB, CFMB and FPU should discuss if the user-groups need to pay any fee to cover the costs of the forest management boards related to the support provided for CBFM implementation. Therefore in this village meeting the user-groups and the supporting agencies should agree upon the costs for the supporting agencies and the fee that should be paid by the user-groups if any. For example an agreement can be made on the amount that should be paid per timber volume extracted. This amount can further depend on the timber species and the diameter of the log. In case timber is cut for marketing, the respective households will also have to pay tax as regulated in Decision 178/2001/QD-TTg.

The user-groups should further discuss the benefit sharing arrangements among themselves. For example for the selective cutting of trees for subsistence use (e.g. house construction) the user-group members can discuss the quantities needed for house construction and who has priority.

Training on silvicultural principles & techniques

There are a number of silvicultural principles that need to be applied in the implementation of CBFM plans to ensure that the forest is not further degraded. These principles are:

- Identify good healthy timber trees as seed trees to ensure the regeneration. These trees are the so-called seed trees. As a general rule of thumb about 10 seed trees should be identified per ha and left intact.
- The extraction of trees with a small DBH should be considered as a thinning to improve the forest status and enhance forest growth. The selection of trees with a small DBH for extraction should therefore focus on dead, diseased and poorly formed trees (trees with a broken top or with a stem that is forked, sweep, lean or crooked etc.) and on other trees if there are too many of them competing for sunlight, water, nutrients and space.
- Do not set up plantations on forest land classified as IIB or higher. The natural regeneration of these forests is in general good and stand improvement activities will provide better returns.
- For the selective cutting of timber trees, only cut the number of trees that are in surplus in comparison with the ideal DBH class distribution figures
- For house construction or marketing, select trees that are
    - most abundant
    - as many different species as possible so that cutting is not concentrated on only a few species (to avoid changing the stand position)
    - from a clump and leave solitary trees
    - wide apart, e.g. spacing of at least 20 m, to prevent the creation of open places which can be invaded by undesired vegetation.

CBFM can only be successful if local people apply these silvicultural principles and are aware of the silvicultural techniques to increase forest production and management. Training about silvicultural techniques, including selective cutting, stand improvement and the establishment of plantations, should therefore become part of the curriculum of the commune extension worker. See also Part III of this manual for more information about simple silvicultural techniques for selective cutting, plantation & enrichment planting and stand improvement.

1.6 Step 6: Monitoring & evaluation

Activities in step 6: Evaluation

1 Monitoring & evaluation of CBFM

Monitoring[4] of the implementation of the CBFM activities is important to assess whether CBFM has led to the intended impacts of improved forest management and increased (legal) incomes from forest resources. Furthermore, monitoring of the activities helps to identify difficulties, solutions and best practices. A record book of the extracted trees per DBH class and the fees paid should be kept by each user-group and the VFMB. From these records the number of extracted trees and the derived income can be calculated and evaluated (see appendix 4). For CBFM pilots also record books should be kept to monitor the time and other resources spent on CBFM activities in order to make an analysis of the costs and benefits and calculate the net incomes.

Forestry inventories are needed in order to monitor the impacts of CBFM on the forest status. Every 5 years a forest resource assessment will be carried out, which includes the presentation of the results in histograms of the DBH class distribution. The new DBH class distribution figures can then be compared with the former figures and also with the figures presenting the model for DBH class distribution. In this way the progress towards a better forest structure can be evaluated.

Both the monitoring and the evaluation should be carried out by the user groups themselves and the village management board. For the evaluation of the impact of CBFM including the comparison of the DBH class distribution figures in the histograms, the support of the FPU and the commune forestry staff is needed.

[4] Monitoring is the ongoing collection of information in order to assess the actual progress made and to identify difficulties, solutions and best practices. Monitoring should not be confused with checking of progress made.

Part II: Practical guidance for the development of community-based forestry management plans

This part offers practical guidance and exercises for the participatory implementation of the forest resource assessment and elaboration of the 5-year CBFM plan as described in step 2 & step 3 in Part I. Although exercises are described in details, the facilitator should be flexible in the use of these materials for the elaboration of CBFM plans. Some exercises might work better than others in different villages, and the facilitator needs to be able to respond rapidly to the developing situation rather than sticking rigidly to the detail of each exercise. The exercises can be understood as a framework that needs to be adapted to the real situation in each village, to the time schedule and to other local conditions. This means that sometimes exercises should be repeated, changed or connected with other exercises. Modifications will inevitably arise and are encouraged.

The exercises are designed to encourage participation of villagers and to support facilitators. Participation means that everyone is involved in all the activities. It does not mean that villagers have to do everything on their own or that facilitators have to do everything for the participants. Local villagers will not be able to prepare their own CBFM plans without the technical skills and abilities of facilitators to help them. On the other hand, facilitators cannot prepare a CBFM plan alone because they do not know the local conditions well enough and they do not know enough about the needs of the local stakeholders. Each CBFM training exercise describes the objectives, the required time and materials and provides step by step guidance for the facilitator to conduct the exercise (including prepared formats for A0 posters and handouts for participants). The facilitator needs to become familiar with each session before the start of the training and also needs to have an overview over the whole training process.

Participants of the CBFM training can be representatives of each forest user group or selected key-villagers in case the forest land is allocated to the entire village. It is important that women are also selected as one of the representatives of the user groups as men and women have often different (forest) products priorities. The representatives of the user groups will develop the initial CBFM plans for the specific sites.

Finally, it is important to recognize that CBFM is not that easy and a few days of training alone will not be sufficient to develop all the capacities and skills to apply CBFM in the field. The exercises in this training only focus on the development and elaboration of village CBFM plans and do not include exercises to develop and/or improve techniques for harvesting, planting, stand improvement and/or protection. Training in these silvicultural techniques should be provided after the CBFM plans have been approved. Background information on silvicultural techniques for the implementation of the CBFM plans is provided in Part III of this manual.

Tentative training schedule

Day 1	
Introduction (1 hour)	▪ Introduction to CBFM ▪ Participant expectations
Zoning (1 hour)	▪ Preparation of overview of the village forest areas according to the forest status and user-groups
Plot description (1 hour)	▪ Brief description of each plot according to a form
Preparation for fieldwork (1 hour)	▪ Explanation of tasks for the field work ▪ Selection of sites for the field work
Day 2	▪
Sample plot measurement (2 hours per plot + walking time))	▪ Practice locating and measuring one plot ▪ Collect data about available tree and NTFP resources in sample plots according to a form
Data analysis (3 hours)	▪ Compilation of sample plot data ▪ List of timber and NTFPs ▪ Presentation of histograms ▪ Identification of problems and opportunities ▪ Estimation of harvest levels
Day 3	▪
Identification of objectives, & activities (1.5 hours)	▪ Description of long term vision and objective ▪ Analysis of forest product demand and availability ▪ Description of problems and opportunities
Preparation of CBFM activity plan (1.5 hours)	▪ Description of activities (selective cutting, planting/enrichment planting, stand improvement and protection) ▪ Development of activity plans for each plot managed by a user-group
Evaluation and closing (30 min)	▪ Feedback from participants to improve the training ▪ Review of participants expectations ▪ Future activities

In the document the word plot is used to describe a piece of land that is allocated to a group of households or that is allocated to individual households but managed by a group of households, the word zone refers to forest land that has the same/similar forest status, while sample plots or sub plots refer to areas laid out in the forest for the collection of data about the available forest resources.

2.1 Exercise 1: Introduction

CBFM can only become a success with the active participation of the villagers that will implement the CBFM plans. This training course focuses on the development of CBFM plans. As a first step, it is important that the trainees get a good understanding of CBFM concept to be able to develop suitable plans for the local conditions.

Objectives
- To introduce the concept of CBFM
- To introduce participants and facilitators

Time needed 1 hour

Material A0 paper, markers and colour cards
Copies and A0 poster of the tentative schedule of the training course, copies of the steps and activities in CBFM

Steps
1. Welcome participants to the training. Present the objectives of the exercise, the steps that will be followed, the time that might be required and the role that participants are expected to play. Show the training chart of the training course and give an overview of the training in a chronological order.
2. Let all the participants introduce themselves. To make this a bit more interesting you can ask each participant to mention his/her name and one thing (s)he likes and dislikes most. Ask participants to agree on certain ground rules – starting and finishing times; arrangements for lunch and any other rules which might be necessary.
3. Explain briefly about CBFM. Explain that a community can be a whole village or a group of households that form a “community”. CBFM plans will be developed for a user-group in case forest land has been allocated to a group of households or if households with adjacent forest land formed user-groups to manage the forest land together. A CBFM plan for a whole village will be prepared if the land has been allocated to the entire village. The latter is mostly the case in ethnic minority villages.
4. Explain the steps in the CBFM process (see the overview of the CBFM steps and activities in Part I of this manual).
5. Explain that this training course will only focus on the development of CBFM plans and not on silvicultural techniques to improve forest management. Training on silvicultural techniques should be provided once the CBFM plan has been approved. The CBFM plans should be developed by villagers for themselves; the facilitator will support them to develop suitable plans.
6. After this introduction on CBFM, ask participants to write down what they expect from the training on a color card. Collect the color cards and go through them. Explain which expectations are correct and which ones are beyond the training course.
7. Note the expectations on an A0 poster and hang the results on the wall for later reference

2.2 Exercise 2: Zoning

Zoning refers to the identification of forest areas with similar status. This is especially important when all the forest land has been allocated to the entire village because for each zone specific forest management activities will be identified. In case the land has been allocated to groups of households, the CBFM plan refers to the forest land area that is allocated to the group. In both cases a sketch map needs to be prepared that provides clear links between the village CBFM plan and the locations of the forest interventions.

Objectives

In case of forest land managed by user-groups:

- To prepare a sketch map of the forest land managed by the user-groups
- To provide an overview of the forest land managed by user-groups

In case of forest land managed by the entire village:

- To divide the village forests into separate zones with similar forest status and goal
- To prepare a sketch map and estimate the area of each zone and name it

Time needed 1 hour (depending on the available information)

Material A0 paper, markers, white board markers, transparency sheets
Forest status map (prepared during PLUP-FLA process), forest land allocation map, received red books, copy of table on forest land areas received by household groups (part of the cadastral documents).

Steps for zoning in case of forest land managed by user-groups

1. Present the objectives of the exercise.
2. Show the forest status map as prepared during the PLUP-FLA process and give an overall explanation of the Vietnamese forest classification system (Group I- barren/shrub land), Group II and IIIA1 poor forests, Group IIIA2 + IIIB medium forest, Group IV primary forests). Explain that each user-group will develop a CBFM plan for the forest land under their management. User-groups with forest land of a similar status will have similar management plans in future.
3. Show the table with an overview of the allocated land per user-group (as previously prepared based on the cadastral documents) on an A0 poster.
4. Discuss briefly if the forest status as described is in general correct.
5. Prepare a sketch map of the village showing which areas are managed by which user-groups. It is useful to give each user-group a number and relate the number to the same number on the map. (Instead of a sketch map the facilitator or the communal cadastral officer can prepare on a transparency the location of all forest land plots, compartments and blocks. First reduce the size of the FLA map to A3, make a transparency overlay showing the locations of the forest blocks, compartments and plots. This A3 transparency can then be copied and further reduced to A4. This map on A4 will become part of the CBFM plan (see appendix 2)).
6. Explain that user-groups with the same or similar status of forest land should work together in the development of the CBFM plans
7. Explain that the table and map provide essential information for the elaboration and approval of the CBFM plans.

Steps for zoning in case of forest land allocated to entire village

1. Present the objectives of the exercise.
2. Show the land use map (and 3-D model if still available) as prepared during the PLUP-FLA process and ask the key representatives to look at it and try to recognize the features on the map.
3. Provide a transparent overlay and put it over the map (use clips to hold it in place). Take a whiteboard marker (can be erased) and show how they can draw on the overlay and delineate boundaries.
4. Ask villagers to begin to draw lines around the forest land that has been allocated to the village (check if all lines join and if there are any inconsistencies).
5. Next ask the villagers to draw lines around the forest areas that are distinctive of other forest areas and give an overall explanation of the Vietnamese forest classification system (Group I-barren/shrub land), Group II and IIIA1 poor forests, Group IIIA2 + IIIB medium and rich forest, Group IV primary forests). Explain that the management plans for forest in the same status will have similar management plans in future.
6. When the map looks complete ask the villagers to write the names of each forest zone on the map. These zones will usually be distinct areas of forest with clear boundaries.
7. Ask all participants if they agree with the names and boundaries. It is useful to give each zone a number.
8. Explain that they need to know the areas of each zone. The areas can be roughly measured by using squares drawn on a piece of transparent sheet. If the map scale is 1:5,000 then a 2x2 cm square is equal to 1 ha.
9. Write all the information on a table format (see table 2). If the forest status according to the Vietnamese classification system can be derived from the land use map or the forest status map, the symbol should be filled in the column of forest status. If these data are not available just refer to rich, medium or poor natural forest, barren land and/or plantations.

Note:

In this manual we use the word “plot” to refer to the area allocated to a group of households for which a CBFM plan is elaborated. The word zone refers to an area within the village with similar forest status. In case, forest land is allocated to the entire village the exercises should refer to the different zones because different forestry interventions will be identified for each zone. In the following exercises the word “plot” is used, please read zone if the forest land is allocated to the entire village.

Table 1: Total forest land area (ha) managed by user groups

User group ***(name of head of the group)***	***Local name of area***	***Forest block****	***Forest compartment***	***Plot***	***Area (ha)***	***Forest status***

Table 2: Areas of different types of forest land in the village

Zone (number)	***Local name of area***	***Forest block****	***Forest compartment***	***Area (ha)***	***Forest status***

* Refers to the forest block, compartment and plot number as indicated on the communal FLA map or provincial forest status map.

2.3 Exercise 3: Plot description

The development of CBFM plans depends on the land use option as identified during the PLUP-FLA process and the actual forest status of the plot. This exercise deals with describing the status of the plot, which will help to identify the locations of the sample plots for the forest resource assessment. In case the land has been allocated to the entire village, a plot description form is used for each zone as identified in the former exercise.

Objectives

- To describe briefly each plot based on existing knowledge
- To discuss the major opportunities and challenges for present forest management
- To decide on the locations of the sample plots for the forest resource assessment

Time needed 1 hour

Material A0 paper, markers and blank description forms (one for each plot)

Steps

1. Present the objectives of the exercise.
2. Divide the group into small groups (user-groups with the same forest status together). Explain that each user group will describe the forest land that falls under their management. (In case of land has been allocated to the entire village, people will prepare a description form per zone)
3. Distribute the forms and go through the forms (all representatives of the user groups should get one form). Summarize and explain the information that is needed per section.
   Access: Walking distance to the parcel from the village
   Slope: Mention if the slope is steep, moderate or gentle
   Dominant species: List here the most dominant/abundant plant species that are present and are characteristic for the plot (those species are not necessarily used)
   Forest status: Mention here the forest status: grasses and shrubland (IA, IB, IC), poor forest (IIA, IIB and IIIA1), medium forest (IIIA2) and rich forest (IIIA3 and IV)
   Canopy cover*:* Mention here if the canopy is <u>open</u> (lack of big trees, some smaller trees), has <u>big gaps</u> (bigger trees spaced more than a crown-extent away, no understorey), is <u>light</u> (crowns not more than one crown extent away from each other), or is <u>closed</u> (crowns of the trees are touching each other
   Timber: Mention here if members of the user-group are currently extracting timber from the plot or expect to do so in the near future (within 5 years). List the species or explain why extraction is not carried out (e.g. too far, no valuable species, not enough trees, etc).
   NTFPs: Mention here if members of the user-group are currently extracting NTFPs from the plot or expect to do so in the near future (within 5 years). List the species or explain why extraction is not carried out (e.g. too far, no valuable species, not enough NTFPs etc). (NTFPs include species such as fuelwood, rattan, bamboo, medicinal plants, forest fruits and vegetables, mushrooms, etc.)
   Management practices: List the silvicultural and agricultural practices as carried out at present in the parcel.
   Problems: List the major problems faced in the plot such as fire, weed invasion, illegal exploitation, free grazing or other problems. If there are other problems, mention these problems in detail.
4. Allow 20-30 min to fill in one form based on peoples' memory of the forest plot.
5. Let a representative of each group present their results and ask if other user-groups managing forest land with the same status have similar results.
6. Analyze the form together:
   <u>Access</u>:
   - less than one hour distance is suitable for fuel wood collection

- 1-2 hours mainly timber & NTFP collection
- more than 2 hours, only valuable timber and NTFP extraction

Timber: If timber is or expected to be harvested in the coming 5 years, a forest resource assessment is needed (see next steps)

Problems: If invasion of weeds is a major problem, no harvesting of timber should be allowed to avoid further opening of the canopy, if grazing, fire or illegal exploitation are mentioned special measurements should be included later on in the CBFM plan to overcome these problems.

7. Identify the areas where sample plot measurements are needed (in the plots where extraction of timber is to be expected) based on the village map.
8. Summarize the results and end the exercise.

Plot description form

Date…….. Village……..…… Commune:……..
Recorder…… User group:……. Area [ha]……..……..….
Forest block:…….. Forest compartment:……. Forest plot:…….

Access	What is the walking time from the village to reach the plot?					
	less than 1 hour		1-2 hours		More than 2 hours	

Slope	What is the slope? Steep, moderate or gentle?	

Dominant species	What are the dominant plant species? 1. …. 2. …. 3. …. 4. …. 5. ….

Forest status	Grass+ shrubs	Poor forest	Average forest	Rich forest

Canopy cover	Open	Big gaps	Light	Closed

Timber	Do you harvest any timber from the plot at present?
	If not, why not:
	If yes, which species:
	Do you expect to harvest any timber from the plot in the near future (within coming 5 years)?
	If not, why not?
	If yes, which species:

NTFPs	Do you harvest any NTFPs (fuelwood, medicinal plants, rattan, bamboo, etc) from the plot at present?
	If not, why not:
	If yes, which species:
	Do you expect to harvest any NTFPs from the plot in the near future?
	If not, why not?
	If yes, which species:

Management practices	What are the current management practices in the plot?
	Agricultural practices:
	Silvicultural practices:

Problems	What are the major problems faced in the parcel?					
	Free-grazing	Fire	Illegal exploitation	Weed invasion	Flooding	Other

2.4 Exercise 4: Preparation for field work

It is useful to discuss clearly how sample plots are measured for the forest resource assessment in order to be more effective in the field. Field work will be easier if people have an idea why and what they are going to do in the field. However most people learn best by doing thus do not expect people are able to measure totally independently sample plots after this exercise.

Objectives

- To explain the field work to be more effective in the field
- To decide which plot will be used for the field exercise and how many sample plots will be measured

Time needed 1 hour

Material A0 paper, markers, measurement tape (this can be DBH tape but normal tape will also do), two sets of ropes (2 x 25 m rope with a knot at 5 m from the ends; and 2 x 20 m ropes also with knots at 5 m from the ends), forest status map, handout showing how to measure plots, blank sample plot forms

Steps

1. Present the objectives of the exercise and stress the importance of carrying out the plot measurements accurately. The obtained data during the sample plot measurements will determine if timber extraction is feasible.
2. Explain that the field work will be done in small groups (number of small groups depends on the forest status and number of plots) which will work separately. Every group will measure about 3 plots.
3. Explain that the number of sample plots in each plot depends on the size of the plot and the status of the forest (according to Decision 682/QD and QP N6-84 by MARD dated 1 August 1994).

For

Forest status	Sample area (% of total area)
Regeneration forest (IB, IC)	0.2%
Recovered and poor forest (IIA, IIB, IIIA1)	1%
Medium and rich forest (IIIA2, IV)	1.5%

*example if the total area allocated to groups where timber extraction is expected in the coming 5 years is 400 ha of forest land classified as IIIA1, the total sample plot area is 4 ha, which is equivalent to 80 sample plots of 0.05 ha (20*25 m)*

4. The sample plots can be at random laid out in the forest area (at least one sample plot per user-group if timber harvesting is expected within the next 5 years), look at the forest status map, the sketch map of the village and the previously prepared tables and discuss where and how many sample plots will be laid out.
5. Use the A0 paper to draw a plot layout. Refer to the handout which shows this. The sample plot is 20x25 m and has 4 subplots of 5x5m which are laid in each corner of the sample plot. Show how the two 20 m and 25 m ropes will be used to mark the plot corners and the subplots. Explain that small sticks can be used to fix the corners.
6. Show how trees inside the sample plot will be measured and how trees outside will be excluded (trees that are standing at the border of the plot are measured if more than half of its cross section at the height of 1.3 m is inside the sample plot). Show the measurement tape and explain that this will be used to measure the DBH of trees inside the sample plot (if normal measurement tape is used the diameter has to be calculated after measuring the trees. Let villagers try out some measurements with the tape.

7. Explain that all trees with DBH>10 cm will be measured in the entire 20 x 25 m sample-plots. Regeneration, smaller trees and NTFPs (including medicinal plants, rattan, bamboo, forest vegetables and fruits, mushrooms, etc) will be measured in the smaller sub-plots of 5 x 5 m. For the presence of epiphytes write down the name of the epiphyte species, the tree species and the height it occurs). NTFPs will be measured-not by diameter but simply by counting the number of individual plants or stems (bamboo/rattan).
8. Show the sample plot form and explain how the form should be filled in.
9. Before finishing the exercise, make sure that everyone knows which group they belong to, who the group leaders are and which forest plot will be visited the next day together to practice sample plot measurements. After that each group can go to the specified location for further measurements. Each group should consist of minimal 5 persons.
10. Summarize the results and end the exercise.

Name	Main job	Other job
Recorder	To write information on the sample plot form	To estimate slope and canopy cover
Measurer	To measure diameters using the colored tape	To identify the tree species
Chalk person	To mark the trees with chalk	To decide whether each tree is suitable for timber
Rope person (x2)	To layout the plots with the 20 m and 25 m ropes	To layout the sub plots (5 x 5 m) and count regeneration
All	To assist with laying out the sample plot and the subplots	
5 people		

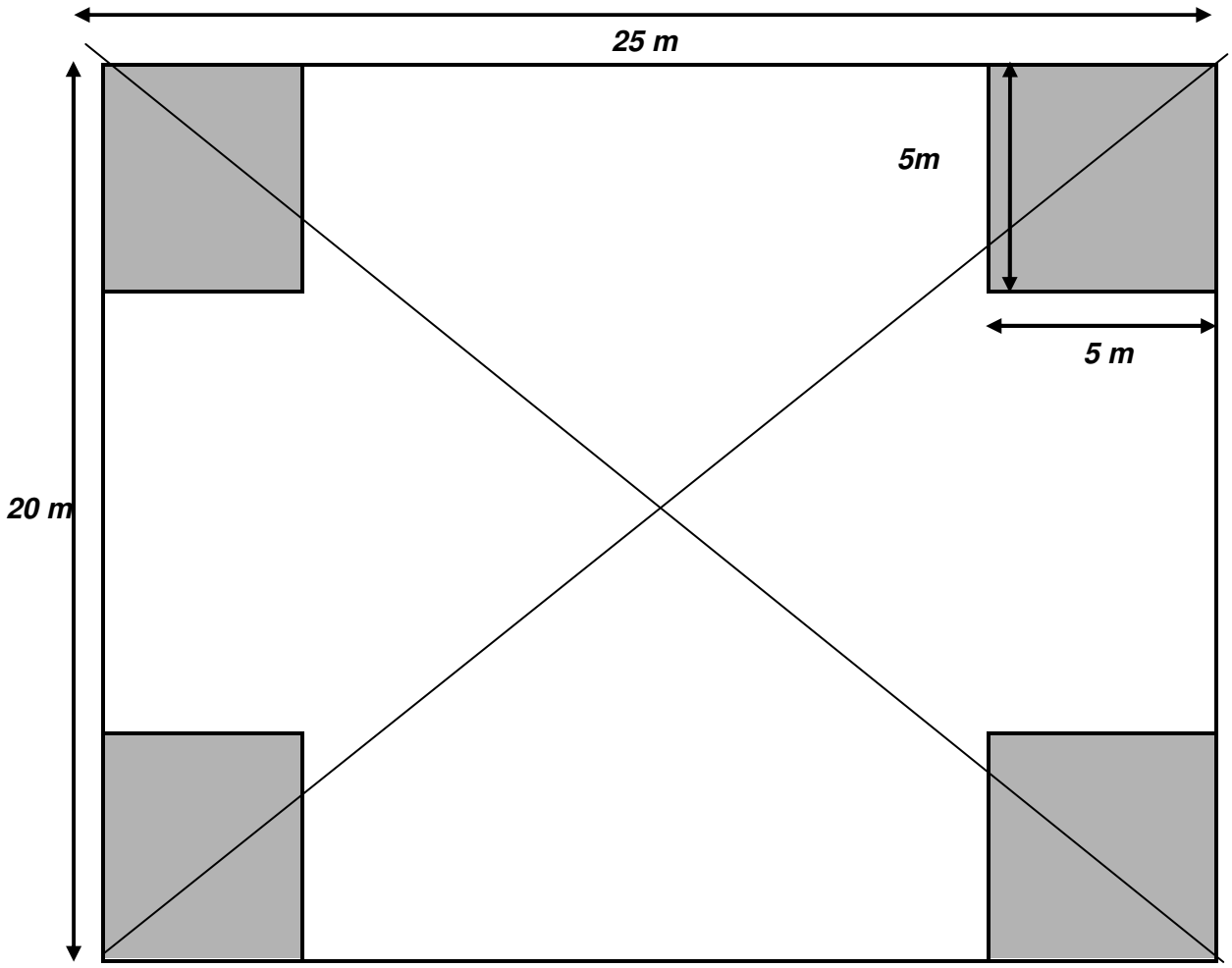
Designing a coloured DBH measure tape

The fieldwork is easier if a colored diameter measure tape is prepared in advance:

- DBH is measured in diameter classes represented by color bands (see table below) with a span of 5 cm.
- Diameter tapes are made out of durable plastic tape measures (cm scale) covered with colored masking tape or directly colored with permanent markers
- See the table below for the conversion of the original scale (girth) into DBH classes.

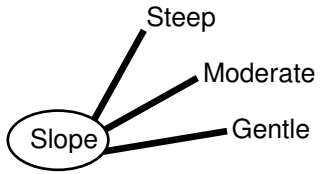
Diameter class	Max. Girth	Color
<5 cm	15.4	White
5 – 9.9 cm	31.1	Yellow
10 – 14.9 cm	46.8	Black
15 – 19.9 cm	62.5	Stripes
20 – 24.9 cm	78.2	Blue
25 – 29.9 cm	93.9	Dots
30 – 34.9 cm	109.6	Red
35 – 39.9 cm	125.3	Grey
40 – 44.9 cm	141.0	Waves

Figure: The lay-out of sample plots in the field



SMNR-CV

Sample plot form: trees DBH>10cm (entire 20*25 m sample plot)



Recorder…… Date…….. Name of the village……
User-group:…… Local name of inventory area..... Sample plot number……
Forest block: …….. Forest compartment: …….. Forest plot no:…….

Canopy coverage	Open	Big gaps	Light	Closed

Local tree name (mark timber species with asterisk)	☺ **DBH (cm) of healthy/straight trees**								☹ **DBH of trees without timber potential (poor form, diseased/infected trees)**							
	Black 10-15	**Stripes** 15-20	**Blue** 20-25	**Dots** 25-30	**Red** 30-35	**Grey** 35-40	**Waves** 40-45	**White** >45	**Black** 10-15	**Stripes** 15-20	**Blue** 20-25	**Dots** 25-30	**Red** 30-35	**Grey** 35-40	**Waves** 40-45	**White** >45

Sample plot form: Regeneration of trees and NTFPs (5 x 5 sample plots)

Recorder…… Date…… Name of the village……
User group:…… Local name of inventory area..... Sample plot number……
Forest block: …….. Forest compartment: …….. Forest plot no: ……

Species	Trees			NTFPs		Remarks
	Regeneration (< 1.3 m)	DBH classes		Young	Mature	
		White DBH< 5 cm	Yellow DBH 5-10 cm			

2.5 Exercise 5: Sample plot measurement

For the development of a CBFM plan it is essential to know the actual resource base. Based on the existing resources, management activities such as selective cutting, stand improvement and enrichment planting can be identified. Furthermore the data are useful for the monitoring an evaluation of the impacts of CBFM on the forest stand.

Objectives

- To measure the presence of trees and NTFPs in the sample plots
- To provide quantitative information for the CBFM plan and further monitoring & evaluation

Time needed 2 hours for measuring one sample plot + time to walk to the sample plot (time needed to measure all sample plots can take several weeks)

Material Sufficient blank sample plot measurements forms for trees and NTFPs and clipboards, (coloured DBH) measure tape, 20 m rope (2 ropes with knots 5 m from both ends), 25 m rope (2 ropes with knots at 5 m from both ends), copies of the plot layout description, chalk for tree marking, village forest map, compass, machetes and knives

Steps

1. Practice the sample plot measurement with all participants. Hereafter the group can be divided in small groups and several sample plot measurements can be carried out at the same time.
2. Walk to the area where the first sample plot will be laid out. Select an area about 10 m away from the forest trail that looks representative for a larger area.
3. Use the four ropes to lay out the sample plot of 20x25 m. Start in one corner to lay out the sample plot and sub plots. Try to get the plot corners as square as possible. Use the knots in the rope as a reference for the lay out of the subplots of 5X5m. Put sticks in all 4 corners of the sub-plot.
4. The recorder can now start to fill in his/her name, the date, name of village, etc. on the sample plot form. Continue with estimating the canopy density and the slope.
5. Start measuring trees of DBH> 10 cm in the entire sample plot using the colored tape measure.
6. The measurer should call out the species name and color (recorded with the tape measure). Also record whether the stem of the tree is healthy/straight and is a good timber species or whether the tree is poorly formed or diseased and not suitable for timber.
7. After measuring and recording the tree, mark it with chalk to avoid counting it again.
8. After measuring the trees of DBH>10cm. Start measuring the regeneration, small trees and NTFPs in the 5x5m sub plots laid out in the 4 corners of the larger sample plot. NTFP species include for example rattan, bamboo, medicinal plants, forest vegetables and fruits, etc. In short all useful forest products that are not timber. Only count the live NTFPs. Ignore plants without any use or plants that are dead or diseased. For epiphytes/climbers in the column of remarks it can be noted in which tree and at which height the species occurs.
9. After finishing the measurement for the entire 20x25 plot and the 4 subplots of 5x5 m. Go to the next location for laying out a sample plot and repeat the above steps.

2.6 Exercise 6: Data analysis

Data on itself have no meaning. Data become only valuable when they are analyzed and interpreted. It is very important to do the analysis in participation with local people. People need to be aware that this are their data from the field which they have collected themselves in order to increase the ownership of the data and later on of the management plans that are developed based on these data.

Objectives

- To compile and summarize sample plot data for each forest plot managed by a user group.
- To present the data in an understandable way for user-groups using histograms
- To discuss the implications of the data for forest management and forest product utilization

Time needed 3 hours (depending on the number of measured sample plots)

Material Sample plot summary forms (at least 1 per user group), calculators, A0 paper, markers, rulers with scale, completed sample plot forms (for trees and NTFPs)

Steps

1. Divide the group according to the user-groups (or zones) and ensure that each group has the filled in sample plot forms from the area under their management, and a summary form. (Or in case the forest land was allocated to the village, ensure that each group has the filled in sample plot forms of a specific zone and a summary form for that zone).
2. Ask each group to fill in the data at the top of the summary form showing: village, area (ha), user-group (or zone), number of plots, etc.
3. Ask each group to read out the names of all recorded tree species. Participants should agree on each tree species if it is suitable for timber or not. If a tree species is considered a good timber species an asterisk will be placed after its name on the sample plot forms. The facilitator can write the names of the timber species on a flipchart as a reference for all participants. Make sure everybody agrees with the list. (For Kinh people this proved to be very difficult as almost all species are used depending on the availability- a distinction between timber and non-timber species might be therefore sometimes not feasible).
4. Explain the summary form and let each user-group compile the data recorded from the completed sample plot forms. Start with the trees DBH>10 cm. First calculate the average number of timber trees per DBH class per sample plot. Multiply this by 20 to calculate the number of trees per ha. For the total number of trees in the area managed by the user-group multiply this number with the area (ha) under their management. Do this for all timber species that are healthy /straight, the poorly formed trees (no timber potential) and the other trees. Add the numbers in the rows to get the total for all trees.

Calculations

Sample plot (A) 20 x 25m = 0.05 ha
Subplot (B) 4 x 5 x 5m = 0.01 ha
The average number of trees per sample plot multiplied by 20 is the number of trees per ha; the average number of the small and regeneration trees and NTFPs per 4 subplots multiplied by 100 is the number of plants per ha.
To get the totals for the entire area managed by a user-group, multiply the area (ha) managed by the user group with the number of trees per ha.

5. After each user group has completed the summary forms for the DBH classes >10 cm, continue with the summary forms for regeneration, young trees and NTFPs. Only include NTFP species that are valuable.
6. Let each user-group draw a histogram of the average number of trees per ha per DBH class (DBH class distribution figure). On the y-as are the number of trees (use for example a scale of 2 cm equivalent to 10 trees as everybody should use the same scale for comparison), while on the x-as are the DBH classes of 5 cm (make for example the bars 5 cm wide and 5 cm apart; all user-groups should use the same for comparison).
7. From the summary forms the average number of trees per ha can be derived and drawn on the histogram. Make sure the histograms are clearly drawn, let people write the DBH classes under each bar of the histogram and the total number of trees above the bar. Ask each user-group to write titles and labels to show what the histogram represents.
8. After participants finished drawing the histograms, allow some minutes for break and use this time to prepare a transparency showing the DBH-class distribution model of natural forest in Quang Binh province. The transparency has to exactly fit to the scale of the histogram as prepared by the participants.
9. Invite participants to present their poster. Each histogram should be presented by someone from the group which drew it. Let them explain how they prepared the histogram; what it shows and any particular issues or potentials which it indicates.
10. After this place the transparency showing the “DBH class distribution model over the histogram prepared by the groups, and introduce the idea of a forest structure model. After this, invite participants to explain what the histograms tell us about the forest resources in the plot/zone e.g. what is the available resource and what can be harvested? Some examples of questions are shown below.
11. Note down any important points on a separate piece of paper because these will be needed later during the planning stage.

Note:
According to Vietnamese legislation timber can be divided in 8 groups. Hard timber trees belonging to group I to III can be harvested when the DBH is > 60 cm, while trees belonging to group IV to VIII can be harvested when their DBH > 45 cm in Quang Binh Province.

Summary form: trees

Village name:…… User-group:…… Forest status:…… Area (in ha):……..…

Forest block:…… Forest compartment:…….. Forest plot no:…… Total number of sample plots measured:……

Species	Timber potential	DBH classes																					
		Black (10-15 cm)			Stripes (15-20 cm)			Red (20-25 cm)			Dots (25-30 cm)			Blue (30-35 cm)			Grey (35-40 cm)			Waves (40-45 cm)			White (> 45 cm)		
		Average of all sample plots	Average per ha	Total in plot managed by user-group	Average of all sample plots	Average per ha	Total in plot managed by user-group	Average of all sample plots	Average per ha	Total in plot managed by user-group	Average of all sample plots	Average per ha	Total in plot managed by user-group	Average of all sample plots	Average per ha	Total in plot managed by user-group	Average of all sample plots	Average per ha	Total in plot managed by user-group	Average of all sample plots	Average per ha	Total in plot managed by user-group	Average of all sample plots	Average per ha	Total in plot managed by user-group
Timber tress	Yes																						
	No																						
Other trees																							
All trees																							

Summary form sub-plots: Regeneration, young trees and NTFPs

Village name:…… Commune:…… Area (ha):……
User-group:…… Number of subplots measured:…… Forest status:……
Forest block:…….. Forest compartment:…… Forest plot:……

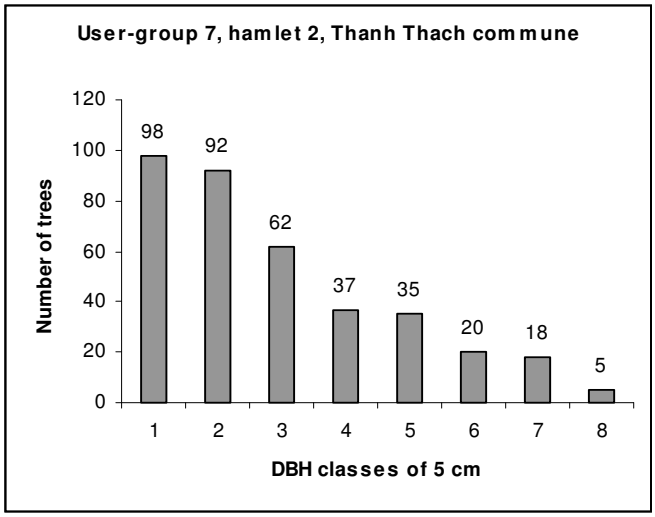
Species	Regeneration (< 1.3 m)			DBH classes					
				White (DBH < 5 cm)			Yellow (DBH 5-10 cm)		
	Average of all sample plots	Average per ha	Total in plot managed by user-group	Average of all sample plots	Average per ha	Total in plot managed by user-group	Average of all sample plots	Average per ha	Total in plot managed by user-group
Timber species									
Other species									
All trees									

NTFPs[5]	Young			Mature		
	Average of all sample plots	Average per ha	Total in plot managed by user-group	Average of all sample plots	Average per ha	Total in plot managed by user-group

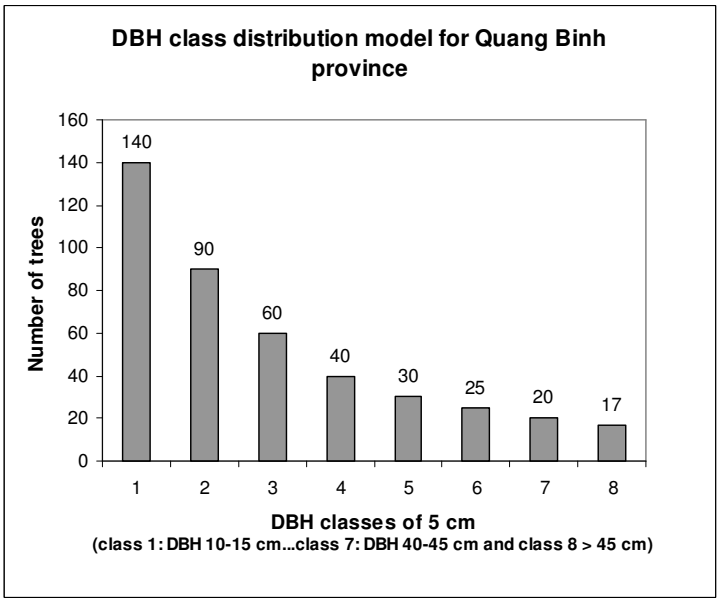
[5] Only mention major species that are valuable like rattan.

Example of comparison of the DBH class distribution figures

A finalized DBH class distribution figure of a user-group could look like this:

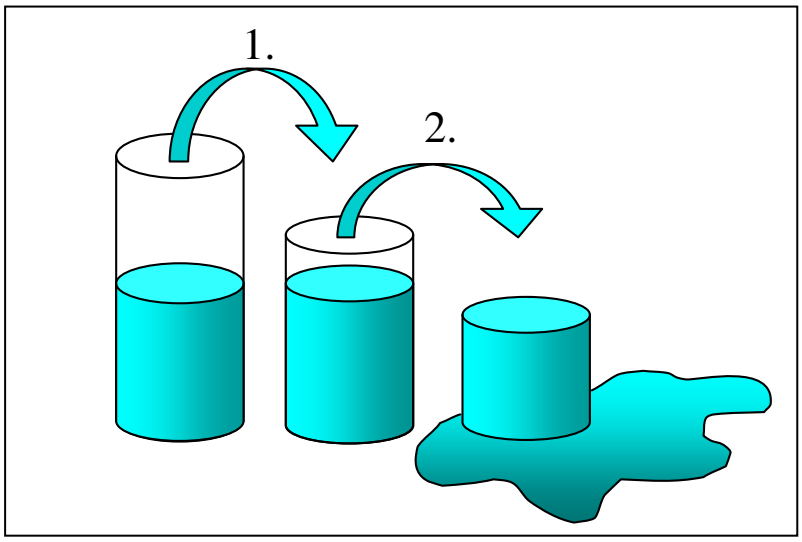


The above figure is then compared with the DBH class distribution model for natural forests in Quang Binh province, see figure below.



When the model for Quang Binh province is compared with the actual figures as obtained by user-group 7 in Thanh Thach commune it can be concluded that only a few trees are in surplus compared to the model: 2 trees per ha in the DBH classes 15-20 cm and 20-25 cm and 5 trees per ha in the 30-35 cm DBH class. This group can thus only harvest a few trees without harming the forest structure.

Tip for facilitating the discussion on the histograms



If participants find it difficult to interpret the histograms it might be useful to show the “water bottle” example. Prepare 4-5 plastic water bottles and cut them open at different heights representing the different stem numbers of the model histogram. Fill the tallest bottle around ½ full of water. Explain that this represents the smallest diameter class with many trees. When the trees grow bigger they will jump into the next diameter class – poor the water into the next smaller bottle. The bottle is already ¾ full. Again poor all the water into the next smaller bottle and let the surplus poor on the floor.. Explain that the bigger the trees the more space they need. Consequently in the last bottle not all trees find enough space – the water pours over. The water that spills over, is the amount of trees that can be harvested, as they would anyway die due to competition.

Young trees & regeneration
▪ What is the regeneration status of the forest? ▪ How does it compare with the ideal situation in terms of numbers? ▪ If the number is low, what is the possible cause? ▪ What could be done to improve the regeneration status? ▪ What will happen to the numbers of middle-aged trees in the future if the number of young trees is low?
Middle-aged trees
▪ What does the diameter distribution of middle-aged trees look like? ▪ Are there any diameter classes where there are fewer trees in one class than there should be? ▪ If so, what are the possible causes? ▪ What could be done to improve this? ▪ Are there any diameter classes where there are a surplus number of trees? ▪ What could be done to utilize these trees? ▪ What will happen to adult (timber-sized trees) if the numbers of middle-aged trees is too low? ▪ What can be done to avoid this?
Adult trees (timber trees)
▪ What is the status of adult (timber-sized) trees in the forest? ▪ Are there enough timber trees to be able to cut some over the next 5 years, or 10 years? ▪ If not, then why not? ▪ If there are enough timber trees for harvesting, then how many could be harvested per year? ▪ If not, then what can be done to increase the number of timber trees? ▪ What is the number of timber species in all size classes compared with the total number of trees? If timber species are low in numbers, then what is the cause? ▪ What can be done to improve the numbers of timber trees? ▪ What other operations can be done to improve timber quality?

2.7 Exercise 7: Identification of objectives, demands & availability, and problems & opportunities

The first in the preparation of a CBFM management plan is analyzing the existing situation compared to the desired situation, and to identify problems and opportunities.

Objectives

- To start writing the management plan by focusing on objectives, demands & availability, current problems & opportunities

Time needed 90 minutes

Material A0 paper, markers, colour pens, results from former exercises (including resource assessment analysis, sample plot measurement summary forms, and plot description forms), copies of the table on objective, demand & availability, problems & opportunities.

Steps

1. Present the objectives of the exercise.
2. Divide the group into the user-groups and ask each group to visualize how the forest plot they manage should look like in about 20 years time from now by making a drawing. Ask each group to write down words and phrases that describe their vision of their forest plot. (Or divide the group in sub-groups according to the number of zones and ask each group to develop a vision for a specific zone)
3. Ask each group to formulate an objective for the plot/zone that can be achieved in the coming 5 years and which will help to realize the vision.
4. Provide each group a copy of the table as given below and ask each group to fill in the names of the households participating in the user-group and the objective of the formulated objective for the plot (or fill in the zone name and number).
5. Ask each group which are the main products the group would like to get from the plot in the coming 5 years e.g. timber (small, medium and big timber) fuel wood, and NTFPs. For ethnic minorities, it is mostly useful to make a separate forest product assessment first and state the requirements for forest products per product (e.g. house, cow/animal shed, fence, furniture fuelwood) per household/per year and extrapolate for the whole village per year. For Kinh people this is complicated as the product requirements are very different from household to household and only a very rough estimate can be given.
6. In the next row, write down the names of the newly established households who need timber for house construction. According to Decision 134/2004/QD-TTg, new households are allowed to extract at maximum 5 m3 for house construction. However at present only people from ethnic groups are entitled to this.
7. For the availability copy the quantities for the entire plot as can be derived from the summary forms of the forest resource assessment. And also write down the number of trees that are in surplus compared to the DBH class distribution model of natural forests in Quang Binh province.
8. Describe the balance between demand and availability for timber (small, medium and big) fuelwood, and NTFPs in the next row. You might not know this exactly, but it will be possible to give an impression e.g. *"some timber is available for harvesting, but not enough to meet the total user group demand".*
9. Finally, try to list all the problems and opportunities in the plot:
   Problem usually means a shortage of a particular product e.g. *"insufficient timber to meet user-group demand";* or *"not enough of a particularly preferred species"* **Opportunity** usually means a potential surplus (either already available, or if some action is taken) which can be harvested e.g. *"plenty of bamboo culms are now available*"; or *"much small-sized trees are available at present which are growing well because they are properly protected."*

Ask a representative of each user-group to present their results and encourage the other participants to ask questions.

10. End the exercise and explain that all the preparations have now been completed for the development of the CBFM activity plan.

Table: Objective, demands & availability, problems & opportunities

<table>
<tr><td>User group</td><td colspan="4"></td></tr>
<tr><td>Objective</td><td colspan="4"></td></tr>
<tr><td rowspan="5">Main products
Which products do you expect from the plot?</td><td rowspan="3">Timber</td><td colspan="3">Small timber DBH < 15 cm:</td></tr>
<tr><td colspan="3">Medium timber DBH 15-35 cm:</td></tr>
<tr><td colspan="3">Big timber DBH > 35 cm:</td></tr>
<tr><td colspan="4">Fuel wood:</td></tr>
<tr><td colspan="4">NTFPs:</td></tr>
<tr><td>House construction
Which new households need timber for house construction?</td><td colspan="4">Names of households:</td></tr>
<tr><td rowspan="5">Present availability of forest products in the plot</td><td rowspan="3">Timber</td><td>Small timber DBH < 15 cm:</td><td rowspan="3">Surplus</td><td></td></tr>
<tr><td>Medium timber DBH 15-35 cm:</td><td></td></tr>
<tr><td>Big timber DBH > 35 cm:</td><td></td></tr>
<tr><td colspan="4">Fuel wood:</td></tr>
<tr><td colspan="4">NTFPs:</td></tr>
<tr><td rowspan="5">Demand and availability balance
Can the available forest products fulfill the demands?</td><td rowspan="3">Timber</td><td colspan="3">Small timber DBH < 15 cm:</td></tr>
<tr><td colspan="3">Medium timber DBH 15-35 cm:</td></tr>
<tr><td colspan="3">Big timber DBH > 35 cm:</td></tr>
<tr><td colspan="4">Fuel wood:</td></tr>
<tr><td colspan="4">NTFPs:</td></tr>
<tr><td>Problems
What are the problems to meet the demands</td><td colspan="4"></td></tr>
<tr><td>Opportunities
What are the opportunities to meet the demands?</td><td colspan="4"></td></tr>
</table>

2.8 Exercise 8: Preparing the 5-year CBFM plan

The most important part of the CBFM plan is the objective and the activity plan. This is also the last step in the planning process before the final development of the village and commune CBFM plan to be submitted for approval to the commune authorities first and the district authorities afterwards.

Objectives

- To describe in detail the activities for each user-group that will be carried out during the 5-year management plan in the forest under their management (or forest management activities per zone-in case forest land is allocated to the entire village).
- To develop the village CBFM plan

Time needed 90 minutes

Material A0 paper, markers, results from the former exercises (table of goals, demand & availability analysis and problems & opportunities, histograms, etc.), copies of the format of the 5-year CBFM activity plan

Steps

1. Present the objectives of the exercise.
2. Divide the group into the user-groups (or sub-groups) and let each group think about the main activities that can be carried out in a plot (zone). These main activities can be categorized into 4 groups of activities:
   - Selective cutting of timber & NTFPs
   - Plantation/enrichment planting
   - Stand improvement
   - Protection
3. Ensure that each group has the tables prepared in the former exercise in front of them and provide each group with a copy of the table showing the activity plan.
4. Get each group to think about the problems and opportunities with different products they identified in the previous exercise. For every problem and every opportunity there will often be an activity to overcome or the problem or to make use of the opportunity.
5. For each activity try to get participants to break them down into a more detailed description. For example for timber harvesting write down if the timber is small, medium or big sized and if the trees that will be cut down are dead/diseased trees or healthy trees. Also clarify here the use purpose of the cutting, e.g. will the timber be used for domestic consumption or for marketing? Ask each user-group to describe for every activity:
   - How will it be done? (description)
   - How much will be harvested, how many will be planted or which area will be covered?
   - What is the current status of the forest land where the activity will take place? (Refer here to the forest land status according to the Vietnamese classification system as stated in the cadastral documents-see the results of exercise 2).
   - Who will do it? (responsibility)
   - When will it be done? (Put a cross in each year when the activity will take place)
6. Let each group work through the 4 main groups of activities of selective cutting, plantation/enrichment planting, stand improvement and protection, and let them discuss each of the activities in detail. For protection, it will usually be enough to refer to the developed Forest Protection and Development Regulations, but ask further questions to see whether the group feels these regulations are sufficient to protect their plot (zone) and if additional protection activities need to be carried out by the group members (villagers).
7. Ask a representative of each group to present their results and encourage the other participants to ask questions.
8. End the exercise and explain that this is the major part of the CBFM plan. All representatives of the group should discuss the plans with all members of their group and reach agreement on the plan (in case of forest land allocation to the entire village the CBFM plan should be discussed in a village meeting). After this, the village CBFM plan needs to be prepared that

compiles all the plans of all the user-groups in the village to be submitted to the commune authorities for approval.

5-year CBFM activity plan of the user-group

Village:…… Area:…… User-group:…… Number of participating households:…….
Forest status:……. Forest block:……. Forest compartment:…….. Forest plot:……..

Groups of activities	Activity	Description of activity	Forest status	Quantity	Unit	Year (20..- 20..)					Responsibility	
						1	2	3	4	5	Main	Support role
Selective cutting of timber and NTFPs	Selective cutting of timber trees											
	Selective cutting of NTFPs											
	Fuelwood collection											
Plantation/ enrichment planting	Tree plantation											
	Agro-forestry											
	Enrichment planting											
Stand improvement*	Thinning, pruning and protection of natural regeneration											
	Removal of vines/climbers/lianas and shrubs											
Protection	Prevention of illegal exploitation											
	Grazing											
	Fire prevention											

2.9 Exercise 9: Evaluation and closing

CBFM is relative new to Vietnam and entirely new to Quang Binh province. It would therefore be appreciated to get feedback from participants and stakeholders to improve the methodology for CBFM and also this manual. Furthermore an evaluation is useful to know if the training met the expectations of the participants and which follow-up steps are needed to apply CBFM in the field.

Objectives

- To see whether participants expectations have been met
- To identify improvements which could be made for the next training

Time needed 30 minutes

Material A0 paper, markers, expectations listed in the introduction

Steps

1. Tell participants that this is the last part of the training. Ask them to give their comments and tell them that these will be used to improve future CBFM plan development.
2. Refer to the list of expectations from the introduction session. Go through the list and ask participants if these were met.
3. Ask participants which follow up activities are needed and if further support is needed in elaborating the village and commune CBFM plans and its implementation.
4. Try to ask specific questions e.g.: From which session did you learn most? What did you learn that is new? Which parts of the training did you not understand?
5. Make notes of points raised.
6. Finally, thank participants for their participation and perhaps say a few words to describe what you think, has been most successful before closing the training.

Part III: Silvicultural techniques

This Part III provides background information on silvicultural techniques for the implementation of the CBFM plans and relates to step 5 as described in the first part of the manual.

The statement "Forest is gold if we know how to manage and protect it" from Ho Chi Minh clearly expresses the potential of increasing economic benefits from forest land. The here described silvicultural techniques can help to realize the objective of getting "gold" from forest land by managing natural poor and medium natural forest as well as from setting up plantations on barren land.

3.1 Natural forest management

Selective cutting of timber

If the forest is mature, trees can be harvested without harming the regeneration capacity of the forest if the following actions are taken into account:

Timber volume
Only cut down the number of trees per DBH class that exceeds the number of trees in the DBH class distribution model for Quang Binh province

Tree selection for exploitation
- Select commercial tree species that are most abundant
- Select as many species as possible so that cutting is not concentrated on only a few species (to avoid changing the stand position)
- Don't cut too many trees of the same species. The number of trees cut of a species should not exceed 20% of the total number of large trees of that species (leave these trees as seed trees)
- Select trees from a clump and leave solitary trees
- Select trees to be cut wide apart, e.g. spacing of at least 20 m, to prevent the creation of open places which can be invaded by undesired vegetation.
- Don't cut big trees on a steep slope as they could damage smaller trees downhill or increase erosion

Selection of seed trees to promote natural regeneration
Seed trees are the mother trees which provide the seeds for further natural regeneration. Seed trees should be well protected and never be cut down. There must be at least 10 seed trees within a one-hectare area around the tree selected to be cut. Seed trees must be:
- Commercial species
- Medium to large size
- Have a good form (straight) and be in good condition (healthy)
- Capable of good seed production

Tree marking
Trees to be cut and seed trees are marked on the ground. For trees marked to be cut, the direction of the cut that destroys the least number of regeneration is painted on the tree. Seed trees are marked with 2 dots on opposite sites of the stem at 1.3 m and two dots on opposite sites of the stem below the cutting height (used for checking as these spots will still be visible if the tree is actually cut). After the trees have been marked, the FPU and CPC will check the trees proposed for exploitation.
Vine cutting

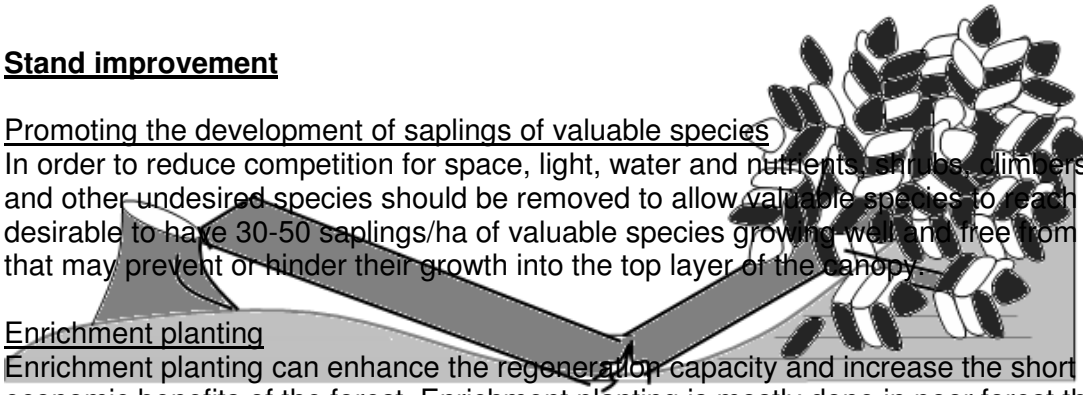
Cutting of vines around trees that are marked to be cut is done at the same time as tree marking (or at least 1 month before harvesting the tree). Vine cutting helps to:

- Reduce risks to the safety of the people felling the tree
- Reduce felling damage (vines can bind crowns together)
- Reduce post felling competition for space and sunlight
- Increase the availability of light reaching the understorey, thereby preparing the seedlings for the post-logging environment.

Cutting of trees

- Cut the tree near the ground (about 15 cm above the ground) to minimize wasting valuable timber
- Avoid felling a tree over a ditch, hillock, or another log as the stem might crack and become useless
- Do not fell trees down the slope to avoid damage to other trees. Cut trees along the contour lines.
- Do not fell trees near streams or rivers in order to protects the banks from erosion and to ensure clean water
- Select a direction for tree falling that minimizes damages to other trees
- Do not fell trees in strong winds as the direction of the falling tree might be altered, which could cause risks to workers and damage to other trees.

Figure 1: Wrong logging might cause cracks in the stem and loss of valuable timber



Stand improvement

Promoting the development of saplings of valuable species

In order to reduce competition for space, light, water and nutrients, shrubs, climbers, lianas, vines and other undesired species should be removed to allow valuable species to reach maturity. 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.

Enrichment planting

Enrichment planting can enhance the regeneration capacity and increase the short and long term economic benefits of the forest. Enrichment planting is mostly done in poor forest that has a low regeneration capacity of valuable species or in forest areas with large gaps (at least 2,500 m2 without trees). 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

- Reasonable quick to adapt to the site (less than 6 months)
- NTFPs such as rattan are also suitable for enrichment planting and can increase the socio-economic benefits on the short-term.

In case of enrichment planting, no seedlings should be planted within 5 m from a commercial tree or sapling that has the potential to reach the upper canopy. Regular tending (removal of competitive plants at the site) of the seedlings is necessary and should be done until the seedlings reach 2-3 m to minimize the competition of other vegetation. If this is not done, the efforts at enrichment planting will be simply wasted.

Thinning

The purpose of thinning is to remove undesirable trees (e.g. crooked, diseased, 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.

How to select the trees for thinning?

Trees need sunlight, water, nutrients and space. When there are too many trees in the area trees have to compete with each other thus for sunlight, water, nutrients and space which hampers the growth of the tree. In overstocked forests trees that belong to non-commercial/useful species or trees that are diseased/dead should be removed in a thinning. Also poorly formed trees are less valuable than well formed trees. Poorly formed trees are for example trees with a forked stem, broken top, or with a sweep, lean and/or crooked stem see the figures below.

Figure 2: Examples of poorly formed tree stems

For the selection of the trees that need to be removed to let other trees grow better, it is necessary to imagine how the forest will further develop after the removal of certain trees. See below some examples:

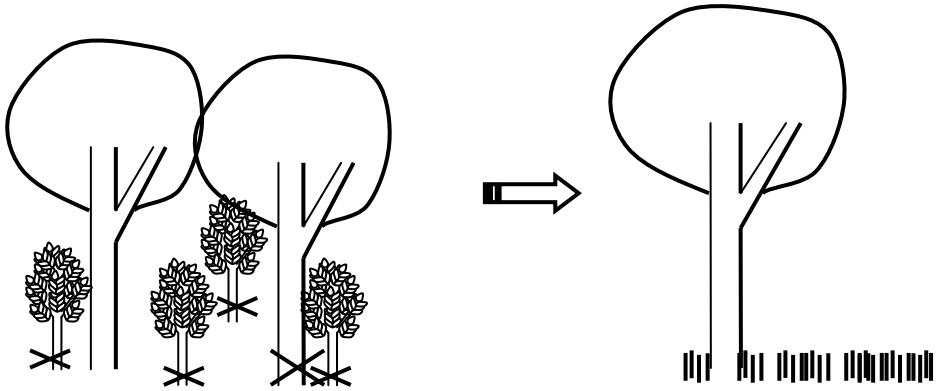


Figure 3: Too much thinning creates large gaps for grasses to invade. Grasses will compete with young tree seedlings and attract grazers.

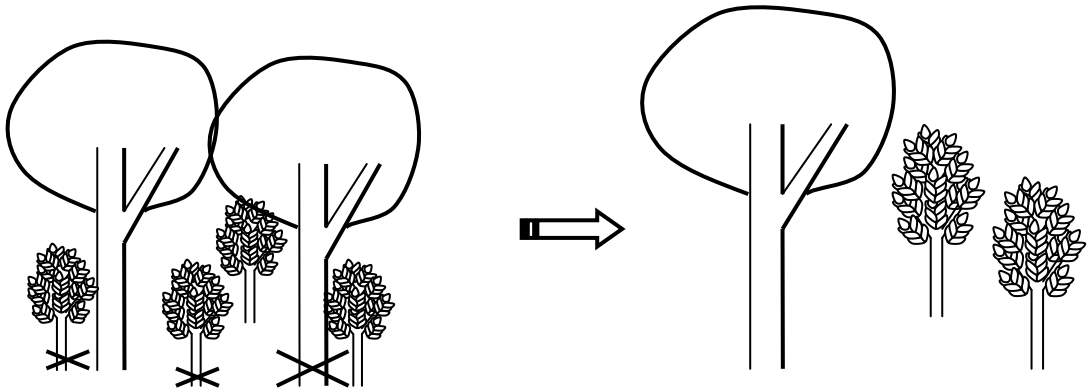


Figure 4: Leave some young trees for growing up

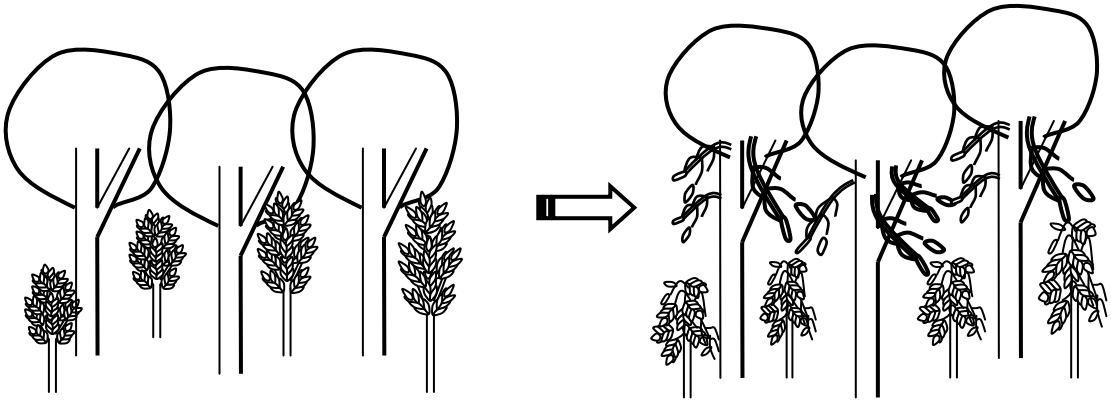


Figure 5: No thinning in overstocked forests leads to reduced forest growth

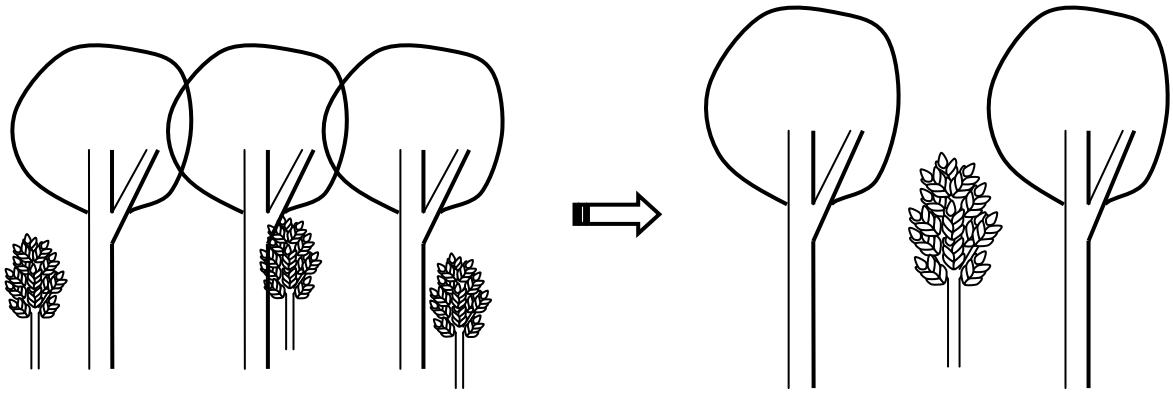
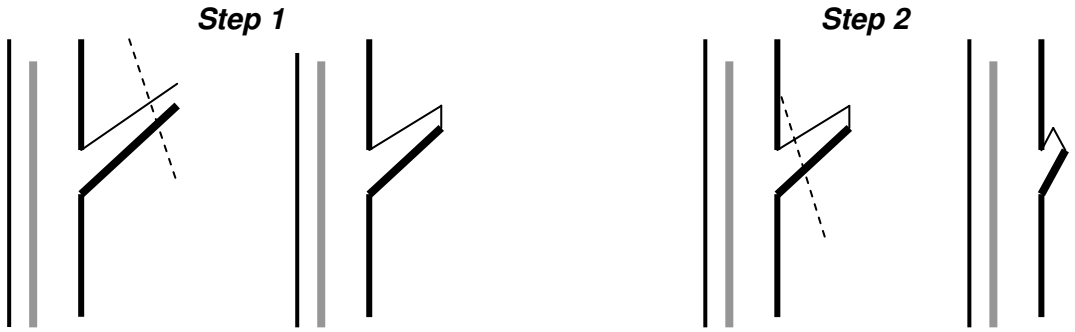


Figure 6: Correct thinning enhances forest growth

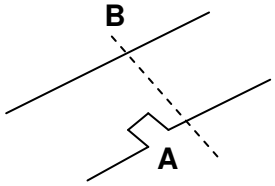
Pruning

Pruning is the removal of branches that hinder the development of a good tree form, as well as to hasten the growth of the stem and to reduce fire hazards.

The cutting off the branches is done near the stem at the branch collar in order to minimize the size of the cut and to minimize negative impacts on the stem. Heavy branches are cut in two steps. The first step is to remove the weight of the branch to prevent the bark from being ripped off the trunk at and below the branch collar. While the second step is the actual target cut and removes the remaining stub, just at the outside of the branch collar tissue.



The removal of big branches (step 1) is done in two cuts:
A) The **first** cut is an undercut about 1/4 through the branch made upward from the bottom of the branch about one or two inches farther out than the branch collar (see cut A as marked in the figure below).



B) The **second cut** (marked B in the figure) is a downward cut just outside the undercut that actually removes the entire branch, eliminating the weight of the branch before making the final natural target cut.

Figure 7: Pruning

Pruning Rule of Thumb (to recognize branch collars)

Hold your hand out in front of you. Put your four fingers together and spread out your thumb.

Now pretend your doctor said you had to lose your thumb and you had two choices for removal: 1) you could cut it at the knuckle near your palm, or 2) you could cut it in line with your index finger to the wrist (think of the size of that wound!). Chances are you would choose to cut it at the thumb knuckle (we would!).

In this example, a cut at the thumb knuckle would represent a natural target prune to protect the branch collar. A cut along the finger line to the wrist would represent a flush cut. It is not too difficult to see the difference in the wounds that would occur.

(***Douglas L. Airhart & Guy Zimmerman III)***

In pruning the following precautions should be taken:

- Do not prune branches to more than 50% of the total tree height or do not remove more than half of the crown, otherwise the growth will be affected.
- Do not prune young trees (DBH< 5cm)
- Prune during the winter season to allow trees to recover in the growing season.
- Dead branches can be removed at any time
- Use sharp tools to avoid breaking branches and damaging the tree stems

3.2 Establishment of tree plantations

Selection of species

The selection of species depends on the aim of the plantation. Most local people are interested in fast growing tree species that can be harvested in 8-10 years such as Eucalyptus and Acacia. The negative environmental impacts of Eucalyptus, especially the deterioration of the soil and the high consumption of soil nutrients and deep underground water, are presently well-known and therefore the establishment of Eucalyptus plantations is not promoted. At present plantations with the fast growing hybrid acacia is encouraged but it remains to be seen if the soil and water is not negatively impacted by this species after a number of rotations. Therefore it is recommended to set up mixed plantations with fast growing species to increase relative short term benefits with slower growing native species such as Lat hoa (*Chukrasia tabularis*), Tram do (*Aquilaria crassna*) or others in order to mitigate the negative impacts on the environment. A problem that is often faced in the establishment of mixed plantations is that seedlings of native species are not available or difficult to obtain. Seeds/seedlings often have to be found in the wild and transplanted at the desired site.

Site preparation

Site preparation is time consuming and exists of clearing the existing vegetation (mainly grasses and shrubs) of the land. Often the site is also burnt to speed up the clearing process and to kill seeds of grasses and other undesirable plants in the top layer of the soil. However through burning also many nutrients are lost and therefore burning is not recommended.

For the set of tree plantations on hills covered with shrubs, it is recommended to practice strip clearing according to the contour lines of the hills. Strip clearing is the removal of a “strip” of vegetation for example of 5 m wide and leaving another strip of natural vegetation of for example 5 m wide. This will reduce the negative impacts of soil erosion that might occur if the whole area is entirely cleared. Afforestation in strips should only be carried out in shrubland or in very young forest as exists for example after slash and burn cultivation and not in poor, medium or rich forests with big trees because there is a lack of sunlight for the development of small trees in these forests.

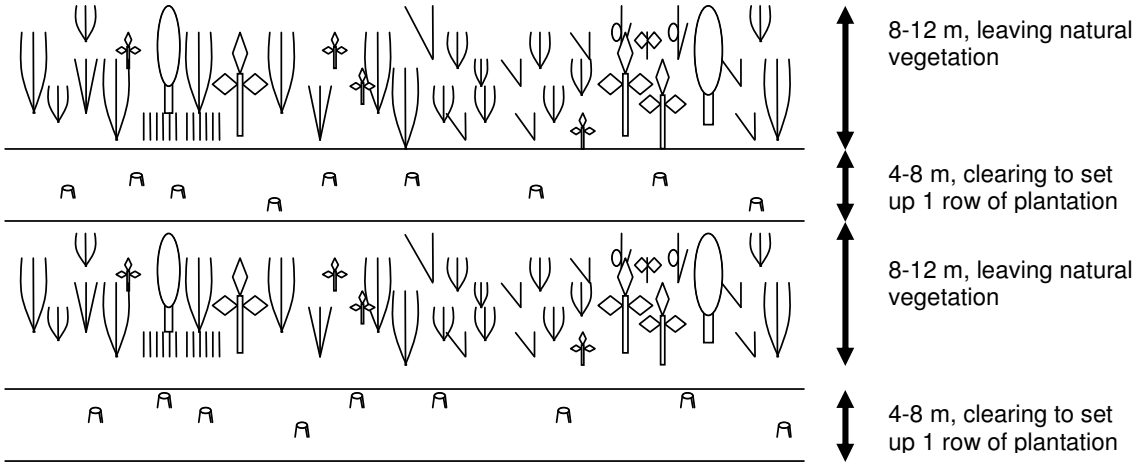


Figure 8: Example of strip clearing

Digging holes

After the site has been prepared holes should be dug to plant the seedlings (normally 40 cm x 40 cm x 40 cm). In order to increase the survival rate of the seedlings, the seedlings should be planted as quick as possible and therefore the digging of holes should be done before the seedlings are transported to the area. Depending on the species holes should be made of about 40 cm deep/40 cm wide and at a certain density. Place the topsoil from the hole on the upper slope next to the hole and the subsoil at the other site. The best density for hybrid Acacia is 1.5 x 1.5 m, while for Lat Hoa the density is 2 x 2.5 m. (The vegetation around the planting hole should be totally cleared).

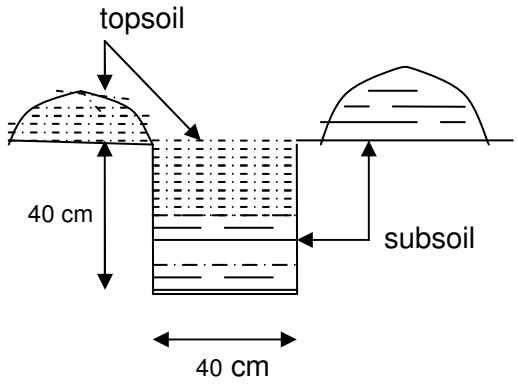


Figure 8: Preparation of a planting hole

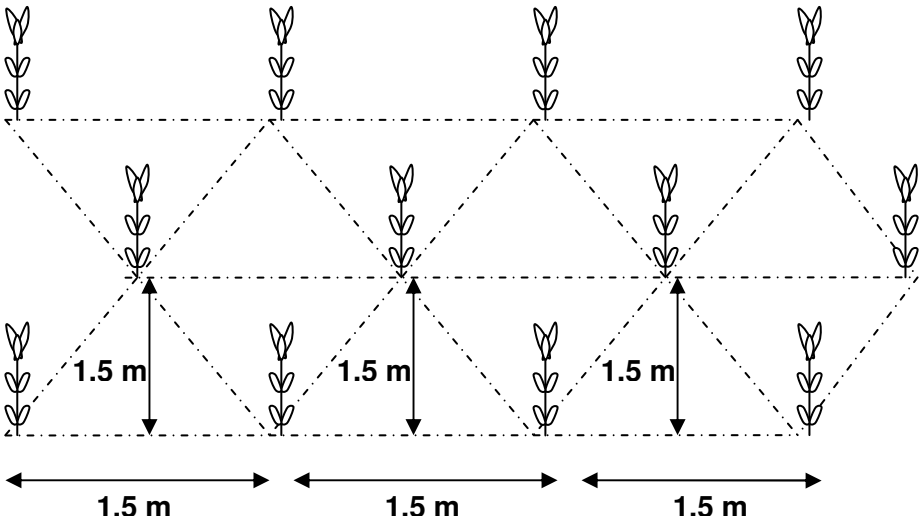


Figure 9: Planting density of hybrid Acacia

Selection of seedlings

Good quality seedlings are a prerequisite for a successful tree plantation. Good quality seedlings have a symmetrical and dense crown, have a strong woody stem and have a dense root system. The ratio of the roots and upper parts of the plant should be 1:1 up to 1:2 but this is difficult to verify in a poly bag.

Planting seedlings

Remove the poly bags before planting and place seedling in the hole. Put the top soil (eventually mixed with NPK) first followed by the former subsoil on top in the hole and press firmly on the soil. Make a shallow depression to collect water. Place mulch around the seedling and water. Don't leave the poly bags in the field! If cattle eat the poly bags they can die of it!

Maintenance of tree plantation

Often check the tree plantation and remove weeds around the seedlings to reduce competition in the rainy season. However in the dry season weeds should be left intact as experience has shown that the survival rate of the seedlings increases in areas where the ground cover is kept.

Further reading

Community Forestry Training Package, 2004. Social Forestry Development Project Song Da, GTZ/GFA, Hanoi Vietnam

Community Forest Management Planning, Facilitator's Field Guide, 2005. Project on Rural development Dak Lak (RDDL), GTZ/GFA, Dak Lak, Vietnam.

Community Forest Management - Technical guidelines, 2006. Bao Huy. Extension and training support project for forestry and agriculture in the uplands (ETSP), Helvetas, Hanoi, Vietnam

Guidelines for simple silvicultural practices in community forests in Vietnam, 2006. Bao Huy, ETSP, Helvetas, Hanoi, Vietnam

Community Forest Management – Training of trainers, module 3, 2006. ETSP, Helvetas, Hanoi, Vietnam

Vietnamese-German Financial Cooperation Smallholder Forestry Project, Training Manual, Volume 1 and Volume 2, 2005. G. Kuchelmeister and Le Quoc Huy (eds). KFW/GFA/GWB. Margraf Publishers, Weikersheim, Germany.

Village Forestry Handbook, 2001. Forest Management and Conservation Program (FOMACOP), Ministry of Agriculture and Forestry, World Bank and the government of Finland, Lao PDR

Village Forestry Training Manual, 2001. FOMACOP, Ministry of Agriculture and Forestry, World Bank and the government of Finland, Lao PDR

Appendix 1: Decisions for the establishment of Forest Management Boards

Decision for the formation of the Commune Forest Management Board

Peoples' committee of
……..

No:……/QD-UB

Socialist Republic of Vietnam
Independence- Freedom-Happiness
----------o0o----------

Date:

Decision of the peoples' committee of ……

On the "Formation of the Commune Forest Management Board"

The Peoples' Committee of……. ….Commune decides to:

Article 1: To establish the Commune Forest Management
Members of the Commune Forest Management Board include:

1. Head: Mr. / Mrs……., Chairman/vice-chairman
2. Vice-head: Mr. / Mrs……., Forest Protection Unit
3. Member: Mr. / Mrs……., Communal Forestry staff
4. Member: Mr. / Mrs……., ……..

These members of the Commune Forest Management Board have been elected in a commune meeting on date……

Article 2: The Commune Forest Management Board is established for a period of 5 year, from ……to……

Article 3: The tasks of the Commune Forest Management Board include:

- To monitor and evaluate the implementation of CBFM in the villages
- To assess, review and approve the submitted proposals for selective cutting for thinning (trees with DBH < 20 cm) and house construction
- To assess, review and submit harvesting proposals for commercial logging (DBH > 20 cm) to the district authorities
- To assess, review and submit 5-year CBFM plans to the district authorities
- To ensure that CBFM activities are carried out according to Vietnamese law (including the payment of taxes in case of commercial timber extraction)
- ……..

Article 4: The CPC of…….commune and the people mentioned above are responsible for the implementation of this decision.

CC:
- Members of Commune Forest Management Board
- CPC of ……..commune
- Forest Protection Unit
- Office of Natural resources and Environment

On behalf of the CPC
Chairman

(signature & stamp)

Decision for the formation of the Village Forest Management Board

Peoples' committee of
……..

No:……/QD-UB

Socialist Republic of Vietnam
Independence- Freedom-Happiness
----------o0o----------

Date:

Decision of the peoples' committee of ……

On the "Formation of the Village Forest Management Board"

The Peoples' Committee of……. ….Commune decides to:

Article 1: To establish the Village Forest Management Board in village:……
Members of the Village Forest Management Board include:

5. Head: Mr. / Mrs……., Village leader
6. Vice-head: Mr. / Mrs……., ……..
7. Member: Mr. / Mrs……., ……..
8. Member: Mr. / Mrs……., ……..

These members of the Village Forest Management Board have been elected by villagers of village……. in a village meeting on date……

Article 2: The Village Forest Management Board is established for a period of 5 year, from ……to……

Article 3: The tasks of the Village Forest Management Board include:

- To monitor and evaluate the implementation of CBFM in the villages in cooperation with the commune forest management board
- To collect, aggregate and submit proposals for selective cutting for both house construction and commercial purposes to the commune forest management board
- To keep a logbook of the implemented CBFM activities (including plantation establishment, and number of trees and volume of timber cut for domestic and commercial purposes)
- To assist user-groups in the preparation of CBFM plans and harvesting proposals
- To submit 5-year CBFM plans to the commune forest management board
- ……..

Article 4: The CPC of…….commune and the people mentioned above are responsible for the implementation of this decision.

CC:
- Members of Village Forest Management Board
- CPC of ……..commune
- Forest Protection Unit

On behalf of the CPC
Chairman

(signature & stamp)

Appendix 2: Example of a communal CBFM plan

SOCIALIST REPUBLIC OF VIET NAM
Independence - Freedom - Happiness
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COMMUNITY BASED FORESTRY MANAGEMENT PLAN
OF THANH THACH COMMUNE, TUYEN HOA DISTRICT
QUANG BINH PROVINCE

June 2006

TUYEN HOA DPC

THANH THACH CPC

SOCIALIST REPUBLIC OF VIET NAM

Independence - Freedom - Happiness

No. : **/TT-UB** *Thanh Thach date, July 2006*

SUBMISSION ON

«Approval for Community Based Forestry Management Plan of Thanh Thach commune»

To : **- Tuyen Hoa DPC**
- Economic Division of Tuyen Hoa District

Over the last few months, CBFM plans for Thanh Thach commune were developed with assistance from the SMNR-CV project and in participation with the FPU, Thanh Thach CPC, the village heads and the local people.

Last year forest land was allocated to individual households and groups of households for their management in Thanh Thach commune. In order to manage this forest land effectively, each group of households developed its own CBFM plan with technical support from the SMNR-CV project, Thanh Thach CPC and the FPU. Each CBFM plan is based on the results of forest inventories (forest status), Vietnamese forest legislation and interests of each group. The CBFM plans of the user-groups are aggregated per forest compartment. The village CBFM plan is an compilation of the CBFM plans per aggregated user-group, while the communal CBFM plan is an aggregation of the village CBFM plans. For your consideration we have included here the following files:

1. An overview of the present forest land areas and forest land tenures in Thanh Thach commune
2. An overview of the aggregated forest user-groups
3. A map of the locations of the forest blocks, forest compartments and plots showing the locations of the forest land under the management of the aggregated groups.
4. The priorities for CBFM in Thanh Thach commune
5. The village CBFM plans
6. The aggregated CBFM plan of Thanh Thach commune
7. The results of the forest resource assessments in Thanh Thach commune

In order to realize the CBFM plans in the field and thus enhancing effective forest management, forest development and forest protection, we, Thanh Thach CPC, would like to suggest the DPC and the Economic Division of Tuyen Hoa District to review and to approve our communal CBFM plan (please see the attached files for details).

To
- As above
- For filing

On behalf of Thanh Thach CPC
Chairman

1) Overview of the present forest land areas and forest land tenures in Dong Hoa commune, Tuyen Hoa district

	Thanh Thach	***Village 1***	***Village 2***	***Village 3***
Total area of natural land (ha)	3,200	1,232.06	1,32.32	935.62
Total area of forest land (ha)	2,84.84	1,151.94	960.2	872.7
Total area of Special Use Forest (ha)	0	0	0	0
Total area of Protection Forest (ha)	0	0	0	0
Total area of Production Forest (ha)	2,984.84	1,151.94	960.2	872.7
- Natural forest (ha)	2317.6	784..8	707.8	825
Total area of fallow land and barren hills (ha)	396	146.5	112	137.6
- Area for plantation (ha)	415.8			
- Area for natural regeneration (ha)	434.2			
Total area managed by forest user groups (ha)	2,717			
Number of households with red book certificate	62	22	17	23
Number of forest user groups with red book certificate	167	60	52	55
Number of aggregated user-groups	39	13	14	12
Number of households	408	158	131	119
Ethnic group	Kinh	Kinh	Kinh	Kinh
Main income sources	Agriculture and migration labour			

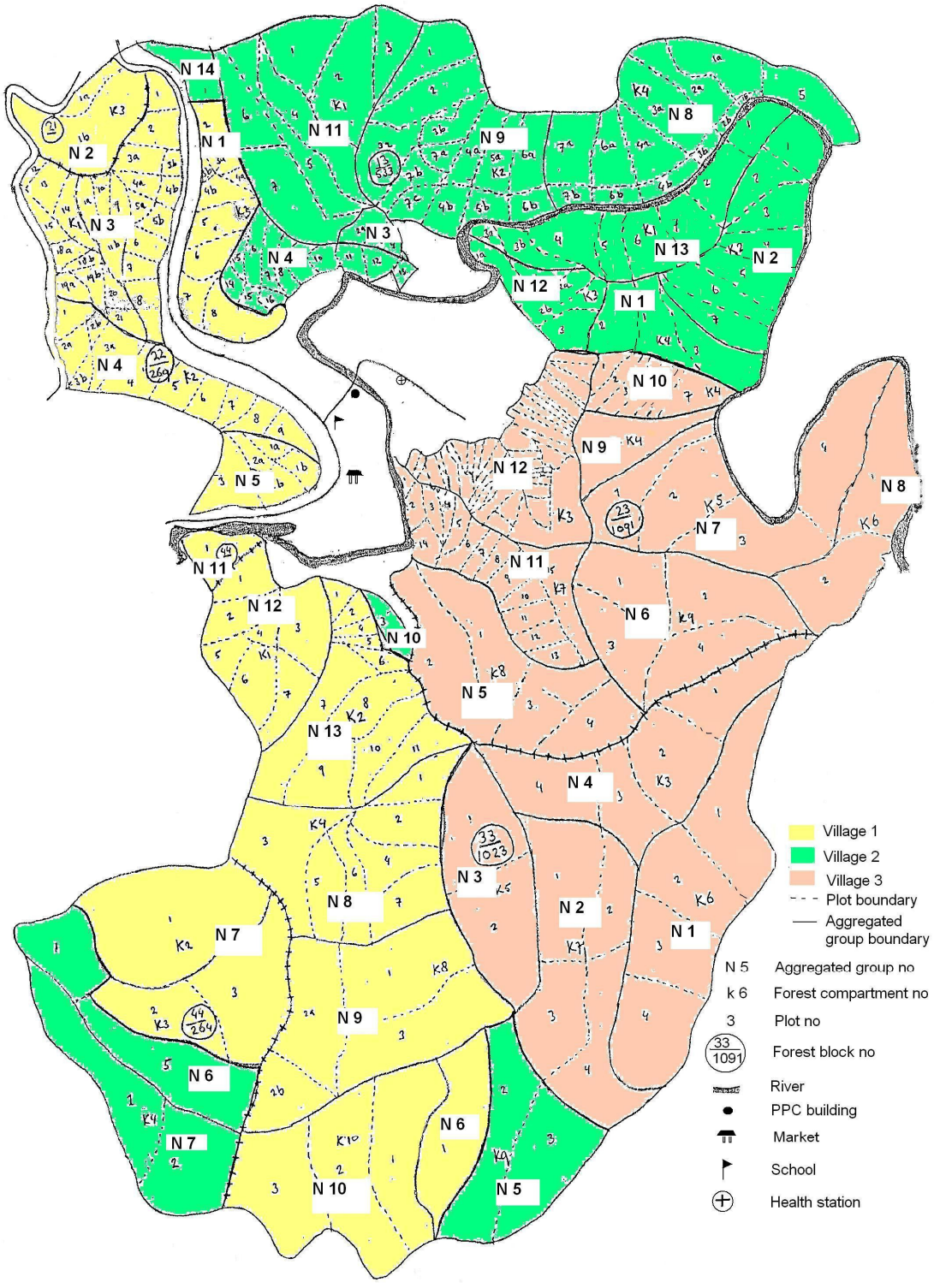
Địa danh quản lý sử dụng rừng theo nhóm

Thôn 1

TT	Nhóm (trưởng nhóm)	Địa danh			Diện tích (ha)
		Tiểu khu	*Khoảnh*	*Lô*	
1	Thanh, Viên, Định, Mạnh, Kiểu, Hoá, Hồng	13	3	2, 3a, 3b, 4a, 4b, 5a, 6a, 7a, 8a	39.5
2	Nguyễn Văn Thập	21	3	1a, 1b	32
3	Ngoài TK (k1 - TK22)	22	1	1, 2, 3a, 3b, 4a, 4b, 5a, 5b, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18a, 18b, 19, 20, 21	93.5
4	Hoàng Minh, Cường, Đàn, Háo, Phương, Cai, Kiêm, Hiến, Viên	22	2	1, 2a, 2b, 3a, 3b, 4, 5, 6, 7, 8, 9	59.3
5	Hoàng, Lâm, Thuận	22	3	1a, 1b, 2a, 2b	25
6	Nguyễn Thị Nghiêm	33	9	1	39
7	Mậu, Sơn, Duẫn	44	2, 3	1, 2, 3	128
8	Điền, Diệu, Chương, Sáng, Thọ, Lân, Vi	33	4	1, 2, 4, 6, 3, 5,7	105
9	Lường, Thức, Đinh	33	8	1, 2a, 2b, 3	120
10	Hải, Nhân,nghĩa	33	10	1, 2, 3	111
11	Nam	44	1	1	10.2
12	Năng, Thanh, duy Binh, Sang, Soi, Văn, Trường	33	1	1, 2, 3, 4, 5, 6, 7	60.8
13	Thành, Lương, Tuỵ, Tuấn, Lý, Mậu, Hiệp, Liệu, Hoà, Bồng	33	2	1, 2, 3, 4, 5, 6, 7, 8, 9, 10	103
Tổng					**925**

Thôn 2

TT	Nhóm (trưởng nhóm)	Địa danh			Diện tích (ha)
		Tiểu khu	*Khoảnh*	*Lô*	
1	Đình, Lương, Huỳnh,	23	4	1, 2, 3	43
2	Nhung, Bang, Đào, Liệu, Cung, Sung	23	2	1, 2, 3, 4, 5, 6, 7	76
3	Thiệp, Huỳnh Hợi, Nghinh	13	1	1a, 2a, 3a, 4a,	8.7
4	Đường, Cúc, Chung, Nghi, ngo,, Minh, Tiến, Phong, Lâm, Hùng, Thanh, Thắng	13	3	5, 6, 7, 8, 9, 10, 11, 12, 13, 14	35.6
5	Thuỷ, Kiền	33	9	2, 3	71
6	Đính, Báu	44	3	1, 5	55
7	Điệp, phương	44	4	1, 2	68
8	Lộc, Bích, Thông, Tươi, Tụng, Chính, Sáu	13	4	1a, 1b, 2a, 2b, 3a, 3b, 4a, 4b, 5, 6a, 6b, 7a, 7b	112
9	Đường, Lân, Khẩn, Lạng, Đồng, Cam	13	2	1, 2, 3a, 3b, 4a, 4b 5a, 5b, 6a, 6b	112
10	Chương	13	2	7a, 7b, 7c	4
11	Thức, Bá, Tân, Gia, Lân, Hoàn, Diện	13	1	1, 2, 3, 4, 5, 6, 7	124
12	Thu, Ba, Nhuận	23	3	1a, 1b, 2a, 2b, 3	27
13	Liệu, Khiển, Xoài, Trường, Xuân, Tâm, Định	23	1	1, 2, 3a, 3b, 4, 5, 6, 7	74
14	Diệu	13	3	1	8.5
Tổng cộng					**810.3**



3) Map of Thanh Thach commune showing the locations of forest blocks, forest compartments and plots under management of aggregated user-groups

4) Overview of the priorities for effective forest management, development and protection

In Thanh Thach commune, Tuyen Hoa district

	Activities	Priority			Remarks
		High	Medium	Low	
Selective cutting of timber and NTFPs	Selective cutting of timber trees including diseased and dead trees as well as healthy timber trees	x			Local people are more interested to invest their time, labour and other resources in forest management if they can obtain benefits from their inputs. Allowing the selective cutting of trees based on the actual forest status (i.e. leaving enough mother trees and other trees for regeneration) and based on the approval of the DPC and FPU (as stipulated in Decision 178 and Decision 40) has therefore a high priority.
	Selective cutting of NTFPs			x	NTFPs should be exploited according to the Forest Protection and Development Regulations issued by the villages
	Fuel wood collection			x	Local people do not focus on fuelwood collection from their allocated forest land
Tree plantation & enrichment planting	Establishment of new tree plantations	x			Tree plantations will increase the economic benefits from forest land.
	Enrichment planting		x		Enrichment planting with trees in poor forest will help to accelerate regeneration and increase the economic benefits of the forest.
Stand improvement	Thinning, pruning and protection for natural regeneration		x		Thinning and pruning will be applied in medium or secondary forest to reduce competition and to enhance natural forest growth.
	Removal of vines/climbers/ lianas and shrubs			x	Removal of non valuable shrubs and vines/ climbers/ lianas will be carried out to promote the growth of valuable trees.
Protection	Prevention of the exploitation of timber and other forest products	x			Illegal timber exploitation is still occurring in all of three villages. Patrolling by villagers will help to stop the illegal exploitation. However support from the FPU is needed.
	Grazing	x			There is not enough area designated for grazing in the commune. Therefore many people are concerned about establishing tree plantations. It is thus important that the articles related to grazing of the FPDR are strictly applied.
	Use of fire			x	Forest fires are not considered as a threat because of the natural status of the forest. Furthermore local people are aware and conscious about using fire in the forest.

5) CBFM plan of Thanh Thach commune

Groups of activities	Activity	Description of activity	Quantity	Unit	Compart-ment	Block	Forest status	Year (2006- 2010)					Responsibility	
								1	2	3	4	5	Main	Support role
Selective cutting of timber and NTFPs	Selective cutting of dead/diseased timber trees	Cutting diseased, fallen and dead trees for house construction	350	m^3	1,5,6,7 9,10 3, 1,2,3,4 4,8,9	33 44 13 23	IIA – IIIA1	21	61	77	92	99	Groups	CPC, FPU
	Selective cutting of healthy timber trees	For domestic use	161	m^3	1,3,10, 5,6,7 1,2,3,4 3, 8,9	33 44 13 23	IIIA1 IIB/IIIA1 IIB IIIA1	0	23	34	48	56	Groups	CPC, DPC, FPU
		For marketing	none											
	Selective cutting of NTFPs	Selective cutting of NTFPs when NTFPs are ripe and/or mature	2420.9	ha	Almost all	13, 23, 22, 33, 44, 21	IC, IIA, IIB, IIIA1	x	x	x	x	x	Groups	CPC, FPU
	Fuel wood collection	Fuel wood collection of dead branches and through silvicultural activities such as thinning and pruning.	2243	ster	Almost all	13, 23, 22, 33, 44, 21	IC, IIA, IIB, IIIA1	373	393	452	502	523	Groups	CPC, FPU

Groups of activities	Activity	Description of activity	Quantity	Unit	Compart-ment	Block	Year (2006- 2010)					Responsibility	
							1	2	3	4	5	Main	Support role
Plantation/ enrichment planting	Tree plantation	Plantation near residential areas, where are low capacity of natural regeneration.	240	ha	Almost all	13, 23, 44, 22	15.5	43	56	59.5	66	Groups	CPC, FPU
	Enrichment planting	Enrichment in poor forest near residential area.	102.5	ha	Almost all	13, 23, 44, 22	1.5	17.5	25.5	31	27	Groups	CPC, FPU
			15730	tree			1360	2570	3550	4150	4100	Groups	CPC
Stand improvement	Thinning, pruning and protection of natural regeneration	Thinning and pruning will be applied in medium or secondary forest to reduce competition and to enhance forest growth.	353.5	ha	Almost all	13, 23, 22, 33, 44, 21	11	64	74	98.5	106	Groups	CPC, FPU
	Removal of vines/climbers/lianas and shrubs	Removal of non valuable shrubs and vines/ climbers/lianas to promote the growth of valuable tree seedling and saplings in poor forest.	176.5	ha	All	13, 23, 22, 33, 44, 21	0	28	37	54	57.5	Groups	CPC, FPU
Protection	Prevention of illegal exploitation	Each participating household must patrol the entire forest area at least once per quarter.	2666.6	ha	All	13, 23, 22, 33, 44, 21	x	x	x	x	x	Groups	CPC, FPU
	Grazing	According to the approved FPDR.	2666.6	ha	All	13, 23, 22, 33, 44, 21	x	x	x	x	x	Groups	CPC, FPU
	Fire prevention	According to the approved FPDR.	2666.6	ha	All	13, 23, 22, 33, 44, 21	x	x	x	x	x	Groups	CPC, FPU

6) CBFM plans of all villages in Thanh Thach commune

Village 1

Groups of activities	Activity	Description of activity	Quantity	Unit	Plots	Compart-ment	Block	Forest status	Year (2006- 2010)					Responsibility	
									1	2	3	4	5	Main	Support role
Selective cutting of timber and NTFPs	Selective cutting of dead/diseased timber trees	Cutting diseased, fallen and dead trees for house construction	121	m^3	1 1, 2, 3 1 1 2, 3 1,2,4,5, 6,7	9 10 1 2 3 1	33 33 44 44 44 33	IIIA1 IIIA1 IIIA1 IIIA1 IIIA1 IIIA1	6	19	26	33	37	Groups 3, 5, 6, 7, 8, 9, 10, 13	CPC, FPU
	Selective cutting of healthy timber trees	For domestic use	61	m^3	1, 2 1 1 2, 3 1,2,,5,7	10 1 2 3 1	33 44 44 44 33	IIIA1 IIIA1 IIIA1 IIIA1 IIIA1	0	9	12	19	21	Groups 3, 5, 6, 7, 8, 9, 13	CPC, DPC, FPU
	Selective cutting of NTFPs	Selective cutting of NTFPs when NTFPs are ripe and/or mature	699.4	ha	Almost all	3 3 1,2,3 1,2,4,8 ,9,10 1,2,3	13 21 22 33 44	IB-IIIA1	x	x	x	x	x	All groups except 1, 2 , 4 (no NTFPs)	CPC, FPU
	Fuel wood collection	Fuel wood collection of dead branches and through silvicultural activities such as thinning and pruning.	877	ster	Almost	3 3 1,2,3 1,2,4,8 ,9,10 1,2,3	13 21 22 33 44	IB-IIIA1	144	152	174	201	206	All groups	CPC, FPU

Groups of activities	Activity	Description of activity	Quantity	Unit	Plots	Compart-ment	Block	Forest status	Year (2006- 2010)					Responsibility	
									1	2	3	4	5	Main	Support role
Plantation/ enrichment planting	Tree plantation	Plantation near residential areas, where are low capacity of natural regeneration.	81.5	ha	Almost all	3 3 1,2,3 2	13 21 22 33	Bare land (Ia, Ib)	5.5	16	19	20	21	All groups	CPC, FPU
	Enrichment planting	Enrichment in poor forest near residential area.	28.5	ha		3 3 1 2,4,8	13 21 22 33	Poor	0.5	5.5	9.5	8	5	All groups	CPC, FPU
			6000	tree		3 3 1 2,4,8	13 21 22 33	Poor	500	1000	1350	1600	1550	All groups	CPC
Stand improvement	Thinning, pruning and protection of natural regeneration	Thinning and pruning will be applied in medium or secondary forest to reduce competition and to enhance forest growth.	143.5	ha	Almost all	Almost all	13 21 22 33 44	Poor	5	26.5	30	38	44	All groups	CPC, FPU
	Removal of vines/climbers/lianas and shrubs	Removal of non valuable shrubs and vines/climbers/lianas to promote the growth of valuable tree seedling and saplings in poor forest.	68	ha	Almost all	Almost all	13 21 22 33 44	Poor	0	12	14	20	22	All groups	CPC, FPU
Protection	Prevention of illegal exploitation	Each participating household must patrol the entire forest area at least once per quarter.	872.3	ha	All plots	3 3 1,2,3 1,2,4,8 ,9,10 1,2,3	13 21 22 33 44	Poor	x	x	x	x	x	All groups	CPC, FPU
	Grazing	According to the approved FPDR.	872.3	ha	All plots	3 3 1,2,3 1,2,4,8 ,9,10 1,2,3	13 21 22 33 44	Poor	x	x	x	x	x	All groups	CPC, FPU

CBFM plan of village 2

Groups of activities	Activity	Description of activity	Quantity	Unit	Plots	Compart-ment	Block	Forest status	Year (2006- 2010)					Responsibility	
									1	2	3	4	5	Main	Support role
Selective cutting of timber and NTFPs	Selective cutting of dead/diseased timber trees	Cutting diseased, fallen and dead trees for house construction	126	m^3	3 5 1, 2 1a, 2a, 3a, 4a, 5, 6a, 7a	3 3 4 4	33 44 44 13	III a1 III a1 III a1 III a1	6	26	28	32	34	Groups 2, 5, 6, 7, 8, 9, 10, 11, 13	CPC, FPU
	Selective cutting of healthy timber trees	For domestic use	9	m^3	3 5 1, 2 1a, 2a, 3a, 4a, 5, 6a, 7a	3 3 4 4	33 44 44 13	III a1 III a1 III a1 III a1	0	7	12	15	17	Groups 2, 5, 6, 7, 8, 9, 10, 11, 13	CPC, DPC, FPU
	Selective cutting of NTFPs	Selective cutting of NTFPs when NTFPs are ripe and/or mature	791.7	ha	Almost all			IIB - IIIA1	x	x	x	x	x	All groups	CPC, FPU
	Fuel wood collection	Fuelwood collection of dead branches and through silvicultural activities such as thinning and pruning.	819	ster	Almost all			IIB - IIIA1	147	149	160	176	187	All groups	CPC, FPU
Plantation	Tree plantation	Plantation near residential areas, where are low capacity of natural regeneration.	68.5	ha	1a, 2a, 3a, 4a, 5 – 16 1b, 2b, 3b, 4b, 6b, 7b 3b, 4b, 5b, 6b, 7c, 1ab – 3 1 – 7	1 3 4 2 3 1	13 13 13 13 23 23	IA, IB	4	13	19	17.5	15	All groups	CPC, FPU

Groups of activities	Activity	Description of activity	Quantity	Unit	Plots	Compart-ment	Block	Forest status	Year (2006- 2010)					Responsibility	
									1	2	3	4	5	Main	Support role
Enrichment planting	Enrichment planting	Enrichment in poor forest near residential area.	32.5	ha	Almost all				0.5	5	8	10	9	All groups,	CPC, FPU
			5380	tree	Almost all				460	1020	1250	1350	1300	All groups	CPC
Stand improvement	Thinning, pruning and protection of natural regeneration	Thinning and pruning will be applied in medium or secondary forest to reduce competition and to enhance forest growth.	99	ha	1 - 3 1 – 7 1 – 7b 1 – 7 1 – 7 1	4 2 2 1 1 3	23 23 13 13 23 13	Ic, IIb	4	16.5	22	28.5	28	All groups,	CPC, FPU
	Removal of vines/climbers/lianas and shrubs	Removal of non valuable shrubs and vines/climbers/lianas to promote the growth of valuable tree seedling and saplings in poor forest.	44.5	ha	1 - 3 1 – 7 1 – 7b 1 – 7 1 – 7 1	4 2 2 1 1 3	23 23 13 13 23 13	Ic, IIb	0	6.5	10	14.5	13.5	All groups	CPC, FPU
Protection	Prevention of illegal exploitation	Each participating household patrols the entire forest area at least once per quarter.	865.3	ha	All plots				x	x	x	x	x	All groups	CPC, FPU
	Grazing	According to the approved FPDR.	865.3	ha	All plots				x	x	x	x	x	Groups	CPC, FPU
	Fire prevention	According to the approved FPDR.	865.3	ha	All plots				x	x	x	x	x	All groups	CPC, FPU

CBFM plan of village 3

Groups of activities	Activity	Description of activity	Quantity	Unit	Plots	Compart-ment	Block	Forest status	Year (2006- 2010)					Responsibility	
									1	2	3	4	5	Main	Support role
Selective cutting of timber and NTFPs	Selective cutting of dead/diseased timber trees	Cutting diseased, fallen and dead trees for house construction	103	m^3	1 – 4 1 – 4 1, 2 1- 4 1 – 4 1 – 4	6 7 5 3 8 9	33 33 33 33 23 23	III A1 III A1 III A1 III A1 III A1 III A1	9	16	23	27	28	Groups 1 - 6, 8	CPC, FPU
	Selective cutting of healthy timber trees	For domestic use	9	m^3	1 – 4 1 – 4 1, 2 1- 4 1 – 4 1 – 4	6 7 5 3 8 9	33 33 33 33 23 23	III A1 III A1 III A1 III A1 III A1 III A1	0	7	10	14	18	Groups 1-6, 8	CPC, DPC, FPU
	Selective cutting of NTFPs	Selective cutting of NTFPs when NTFPs are ripe and/or mature	547	ha	Almost all			IIB - IIIA1	82	92	118	125	130	Groups	CPC, FPU
	Fuelwood collection	Fuelwood collection of dead branches and through silvicultural activities such as thinning and pruning.	90	ster	1 – 15 37	7 3	23 23		6	14	18	22	30	All groups	CPC, FPU

Groups of activities	Activity	Description of activity	Quantity	Unit	Plots	Compart-ment	Block	Forest status	Year (2006- 2010)					Responsibility	
									1	2	3	4	5		
Plantation/ enrichment planting	Tree plantation	Plantation near residential areas, where are low capacity of natural regeneration.	41.5	ha	all	3, 4	23	Ic, IIA and IIB	0.5	7	8	13	13	Groups	CPC, FPU
	Enrichment planting	Enrichment in poor forest near residential area.	4350	trees	all	5, 6, 7, 8, 9	23	IIA, IIB, IIIA1	400	550	950	1200	1250	Groups	CPC
Stand improvement	Thinning, pruning and protection of natural regeneration	Thinning and pruning will be applied in medium or secondary forest to reduce competition and to enhance forest growth.	99	ha	1 – 4 1, 2 1 – 8 37	5 6 4 3	23 23 23 23	Ic, IIb	4	16.5	22	28.5	28	Groups	CPC, FPU
	Removal of vines/climbers/lianas and shrubs	Removal of non valuable shrubs and vines/climbers/lianas to promote the growth of valuable tree seedling and saplings in poor forest.	44.5	ha	1 – 4 1, 2 1 – 8 37	5 6 4 3	23 23 23 23	Ic, IIb	0	6.5	10	14.5	13.5	Groups	CPC, FPU
Protection	Prevention of illegal exploitation	Each participating household must patrol the entire forest area at least once per quarter.	865.3	ha	All plots				x	x	x	x	x	Groups	CPC, FPU
	Grazing	According to the approved FPDR.	865.3	ha	All plots				x	x	x	x	x	Groups	CPC, FPU
	Fire prevention	According to the approved FPDR.	865.3	ha	All plots				x	x	x	x	x	Groups	CPC, FPU

Overview of the available regeneration and timber trees in different tree classes

Village 1

Forest user group	Area (ha)	Regeneration (sample plots of 25m2)			Average number of trees per sample plot, per ha and total number of trees per forest area managed by the forest user groups in different tree classes (based on forest inventories in sample plots of 500m2)								
		Number of saplings DBH < 7cm			Young and small trees DBH 7-15 cm			Medium sized trees DBH 15-35 cm			Large trees DBH > 35 cm		
		Average per sample plot	Average per ha	Total in forest area	Average per sample plot	Average per ha	Total in forest area	Average per sample plot	Average per ha	Total in forest area	Average per sample plot	Average per ha	Total in forest area
1	39.5	2.8	1,100	43,450	13.3	266	10,507	1.7	34	1,343	0	0	0
2	32	4.2	1,680	53,760	12.25	245	7,840	5.75	115	3,680	0	0	0
3	93.5	2.5	1,000	93,500	11.25	225	21,038	1.3	26	2,431	3.6	72	6,732
4	59.3	2.8	1,120	66,416	7.5	150	8,895	0	0	0	0	0	0
5	25	3.2	1,280	32,000	8	160	4,000	3.5	70	1,750	1.6	32	800
6	39	5.5	2,200	85,800	11	220	8,580	8.8	176	6,864	3.9	78	3,042
7	128	3.1	1,240	158,720	15.4	308	39,424	10	200	25,600	3.4	68	8,704
8	105	3.8	1,520	159,296	14.8	296	31,021	7.4	148	15,510	2.5	50	5,240
9	120	3	1,200	144,000	14	280	33,600	8.5	170	20,400	2.7	54	6,480
10	111	3.6	1,440	159,120	27	540	59,670	12.3	246	27,183	6.5	130	14,365
11	10.2	3.1	1,240	12,648	21	420	4,284	11	220	2,244	5.8	116	1,183
12	60.8	5.3	2,120	128,896	10.5	210	12,768	8	160	9,728	4	80	4,864
13	103	2.6	1,040	106,600	8.7	174	17,835	4.6	92	9,430	2.3	46	4,715

Village 2

Forest user group	Area (ha)	Regeneration (sample plots of 25m2)			Average number of trees per sample plot, per ha and total number of trees per forest area managed by the forest user groups in different tree classes (based on forest inventories in sample plots of 500m2)								
		Number of saplings DBH < 7cm			Young and small trees DBH 7-15 cm			Medium sized trees DBH 15-35 cm			Large trees DBH > 35 cm		
		Average per sample plot	Average per ha	Total in forest area	Average per sample plot	Average per ha	Total in forest area	Average per sample plot	Average per ha	Total in forest area	Average per sample plot	Average per ha	Total in forest area
1	43	4	1,600	68,800	25	500	21,500	2	40	1,720	0	0	0
2	76	3.5	1,400	106,400	10	200	15,200	5	100	7,600	1	20	1,520
3	8.7	1	400	3,480	0.4	8	70	0	0	0	0	0	0
4	35.6	0.7	280	9,968	0.2	4	142	0	0	0	0	0	0
5	71	3.5	1,400	99,400	8.8	176	12,496	7.8	156	11,076	4.3	86	6,106
6	55	4.1	1,640	90,200	10.6	212	11,660	8.6	172	9,460	2.6	52	2,860
7	68	3.6	1,440	97,920	9.8	196	13,328	6.9	138	9,384	4.2	84	5,712
8	112	3.8	1,520	170,240	10.7	214	23,968	7.2	144	16,128	4.4	88	9,856
9	112	4.5	1,800	201,600	10.6	212	23,744	6.8	136	15,232	2.6	52	5,824
10	4	4.3	1,720	6,880	9.6	192	768	6.3	126	504	2.4	48	192
11	124	3.3	1,320	163,680	8.6	172	21,328	6.3	126	15,624	2.1	42	5,208
12	27	2.4	960	25,920	8	160	4,320	4	80	2,160	0	0	0
13	74	2.4	960	71,040	2	40	2,960	6.75	135	9,990	1.75	35	2,590
14	8.5	2.5	1,000	8,500	6.5	130	1,105	7.3	146	1,241	1.2	24	204

Village 3

Forest user group	Area (ha)	Regeneration (sample plots of 25m2)			Average number of trees per sample plot, per ha and total number of trees per forest area managed by the forest user groups in different tree classes (based on forest inventories in sample plots of 500m2)								
		Number of saplings DBH < 7cm			Young and small trees DBH 7-15 cm			Medium sized trees DBH 15-35 cm			Large trees DBH > 35 cm		
		Average per sample plot	Average per ha	Total in forest area	Average per sample plot	Average per ha	Total in forest area	Average per sample plot	Average per ha	Total in forest area	Average per sample plot	Average per ha	Total in forest area
1	120	7.5	3,000	360,000	6.4	128	15,360	3.4	68	8,160	1.2	24	2,880
2	117	9.4	3,760	439,920	10.5	210	24,570	7.2	144	16,848	4.3	86	10,062
3	66	9.1	3,640	240,240	9.7	194	12,804	7.2	144	9,504	4.1	82	5,412
4	98	9.3	3,720	364,560	9.8	196	19,208	7.4	148	14,504	4.2	84	8,232
5	107	9.2	3,680	393,760	8.9	178	19,046	6.8	136	14,552	4	80	8,560
6	95	8.6	3,440	326,800	8.3	166	15,770	5.7	114	10,830	3.6	72	6,840
7	112	2.6	1,040	116,480	5.2	104	11,648	1.3	26	2,912	0	0	0
8	59	2.5	1,000	59,000	5.1	102	6,018	1.5	30	1,770	0.5	10	590
9	24	2.5	1,000	24,000	4.8	96	2,304	1.2	24	576	0	0	0
10	21	2.4	960	20,448	4.1	82	1,746	0.7	14	298	0	0	0
11	62	0.7	280	17,304	0	0	0	0	0	0	0	0	0
12	59	0.5	200	11,780	0	0	0	0	0	0	0	0	0

Appendix 3: Forms and proposals for selective cutting of timber

Application form – harvesting for domestic purposes

Village:	Commune:
User-group (name of head):	Number of households participating:
Forest Block:	Forest Compartment:
Plot no:	Forest status:
For what domestic purpose do you want to use the timber (mark the product √):	
New house construction □ New kitchen □ New animal sheds □ Furniture □	Repairing house □ Repairing kitchen □ Repairing animal sheds □ Other (specify):……..
In case of new house construction, what is (are) the name(s) of the new established household(s): 1,……. ……. 2,…… 3,…….. Total volume (m3) requested for new house construction:	
Number of trees	Diameter class
	10-20 cm
	20-30 cm
	30-40 cm
	>40 cm
In case of other domestic purposes:	
Number of trees	Diameter class
	10-20 cm
	20-30 cm
	30-40 cm
	>40 cm
Proposed time frame for harvesting timber:	

Date: On behalf of the user-group,

Mr./Mrs:……

Application form – harvesting for marketing purposes

Village:			Commune:	
User-group (name of head):			Number of households participating:	
Forest Block:			Forest Compartment:	
Plot no:			Forest status:	
Trees that the user-group would like to harvest (write down the number of trees per DBH class):				
Species (Kinh name)	DBH class			
	10-20 cm	20-30 cm	30-40 cm	>40 cm
Total number of trees:				
Total estimated timber volume:				
Proposed time frame for cutting timber:				

Date: On behalf of the user-group,

Mr./Mrs:……

Village proposal for the selective cutting of timber for domestic purposes

Village:	Commune:	Number of user-groups:
Timber requested for new house construction		
New established households that need timber for house construction (names of households and user-group):		
1. …… 2. ……	3. …… 4. ……	5. …… 6. ……
Total estimated volume for household construction:……m3		

Household	Number of trees per DBH class				Location of forest land			Forest status
	10-20	20-30	30-40	>40cm	Block	Compartment	Plot	

Timber requested for other domestic purposes

User-group	Number of trees per DBH class				Location of forest land			Forest status
	10-20	20-30	30-40	>40cm	Block	Compartment	Plot	

Proposed time frame for timber harvesting:

Date: On behalf of the Village Forest Management Board,

Village leader

Village proposal[6] for the selective cutting of timber for marketing purposes

Commune :		Village:				Number of user-groups:			
User-group	Species (Kinh name)	Number of trees per DBH class				Location of forest land			Forest status
		10-20	20-30	30-40	>40cm	Block	Compartment	Plot	
Proposed time frame for timber harvesting:									

Date: On behalf of the Village Forest Management Board,

Village leader

[6] The CFMB will check if the village proposal is in line with the approved 5-year CBFM plan and prepare the commune proposal for selective harvesting for marketing purposes. This communal proposal is an aggregation of the village proposals

Approval form for the selective cutting of timber for domestic purposes

Based on the village proposal for the selective cutting of timber for domestic purposes, dated….
Based on the approved village CBFM, dated……..
Based on Decision 178/2001/QD-TTg
Based on Decision 40/2005/QD-BNN

The Commune Forest Management Board of …. commune approves the selective cutting for domestic purposes in ……..village as follows:

For new house construction:

The following households are permitted to extract timber for new house-construction as follows:

Name of household	Number of trees per DBH class				Location of forest land			Max. Volume
	10-20cm	20-30cm	30-40cm	>40 cm	Block	Comp	Plot	

For other domestic purposes:
The following user-groups are permitted to extract timber for other domestic purposes such as repairing of house, construction/repairing kitchen, construction/repairing animal sheds, etc. as follows:

User-group	Number of trees per DBH class				Location of forest land			Max. Volume
	10-20cm	20-30cm	30-40cm	>40 cm	Block	Comp	Plot	

Trees to be cut for house-construction and for other domestic purposes need to be marked by the responsible households/user-groups by:……..(date).

The FPU and the VFMB will supervise and check the marked trees and timber extraction.

Date: Commune Forest Management Board

(head)

Approval form for the selective cutting of timber for marketing purposes

Based on the commune proposal for the selective cutting of timber for marketing purposes, dated….
Based on the approved commune CBFM plan, dated……..

Based on the field assessment of the FPU, dated……
Based on the assessment of the Economic division, dated……
Based on Decision 178/2001/QD-TTg
Based on Decision 40/2005/QD-BNN

The DPC of …. district approves the selective cutting for marketing purposes in ……..commune as follows:

Village ……[7]

User-group	Species	Number of trees per DBH class				Location of forest land			Max. Volume
		10-20 cm	20-30 cm	30-40 cm	>40 cm	Block	Comp	Plot	

Village ……

User-group	Species	Number of trees per DBH class				Location of forest land			Max. Volume
		10-20 cm	20-30 cm	30-40 cm	>40 cm	Block	Comp	Plot	

Trees to be cut for domestic use and “seed trees” need to be marked by the responsible households/user-groups by:……..(date).

The FPU and the VFMB will supervise and check the marked trees and timber extraction.

Date: On behalf of the DPC

(chairman’s signature & stamp)

[7] Insert for every village in the commune a table indicating the timber that can be harvested for marketing purposes.

Appendix 4: Record books

Village record book of timber extraction for new house construction

Village:…….. Commune:…….. Year:……

	DBH class				Forest land location			Payment *(if any)*	Date	Signature
	10-20 cm	**20-30 cm**	**30-40 cm**	**>40 cm**	**Block**	**Compartment**	**Plot**			
	Annual allowable timber extraction							*(total expected)*		*(from CFMB)*
Household	***Actual timber extraction for new house construction***							(*actual)*		*(from households)*
Total (year):										
Balance *(allowable extraction – actual extraction)*										*(from VFMB)*

Village record book of timber extraction for other domestic use

Village:…….. Commune:…….. Year:……

	DBH class				Forest land location			Payment *(if any)*	Date	Signature
	10-20 cm	20-30 cm	30-40 cm	>40 cm	Block	Compartment	Plot			
	Annual allowable timber extraction							*(expected)*		*(CFMB)*
User-group	***Actual timber extraction for domestic use***							(*actual)*		*(head of user-group)*
Total (year):										
Balance *(allowable extraction – actual extraction)*										*(VFMB)*

Commune record book of timber extraction for marketing purposes - 1

Commune:…….. Village:…….. Year:……

Number of user-groups:…….. Number of user-groups extracting timber for marketing:……

User-group	***Species***	***Forest land location***			***Annual allowable timber extraction***				***Actual timber extraction***				***Balance (Allowable - actual timber extraction)****			
		Block	**Comp**	**Plot**	**10-20 cm**	**20-30 cm**	**30-40 cm**	**>40 cm**	**10-20 cm**	**20-30 cm**	**30-40 cm**	**>40 cm**	**10-20 cm**	**20-30 cm**	**30-40 cm**	**>40 cm**

* Provide the number of trees and indicate if the balance is positive "+" or negative "-"

Approved annual allowable extraction:

Date:….. …….
(Signature of head of CFMB)

Agreement on actual timber extraction:

User-group 1: ……. Date: ……
User-group 2: ……. Date: ……
User-group 3: ……. Date: ……
(Signatures of heads of involved user-groups)

Commune record book of timber extraction for marketing purposes - 2

Commune: ………………….. Village: ……………………   Year:……………

Number of user-groups: ………..

Number of user-groups extracting timber for marketing:……………….

User-group	***Species***	***Volume***	***Tax + payment***	***Date***	***Signature*** *(head of group)*	***Signature*** *(head of CFMB)*