

Sustainable Management of Natural Resources in Central Vietnam



Manual

Participatory Land Use Planning and Forest Land Allocation in Quang Binh province

December 2007
(2nd revised version)



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**Marianne Meijboom
and Björn Wode**

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Preface

This guideline on participatory land use planning and forest land allocation is developed by the “Sustainable Management of Natural Resources in Central Vietnam” (SMNR-CV) project, which is supported by GTZ and implemented by GFA and DED. Lessons learnt from field implementation in Thanh Thach commune, Tuyen Hoa district and Hoa Phuc, Minh Hoa district as well as lessons learnt from other projects are incorporated in this guideline.

This guideline provides:

1. step by step guidance in applying participatory approaches during the PLUP-FLA process,
2. a detailed description of the process of allocating forest land to groups of households and to entire villages,
3. clear linkages to governmental policies and procedures

We hope that this guideline can contribute to the effective allocation of forest land to individual households, groups of households and/or to the entire village in order to ensure tenure rights with the aim to enhance both forest management and livelihoods of the poor who depend on the forest resources.

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The technical procedures for participatory forest inventory are drawn from experiences of a CFM pilot implementation of the KfW6 project on Forest Rehabilitation and Forest Management in Quang Nam, Quang Ngai, Binh Dinh and Phu Yen and a pilot implementation in Dak Lak province supported by the Project on Rural Development Dak Lak province - GTZ. The selfless permission to apply and adjust the methodology to the context of Forest Land Allocation encountered in Quang Binh is herewith acknowledged.

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Björn Wode, Marianne Meijboom and Nguyen Van Hop

Abbreviations

CPC	Commune People Committee
CWG	Commune Working Group
DED	German Development Cooperation
DoNRE	Department of Natural Resources and Environment (at provincial level)
DPC	District People Committee
FAO	Food and Agriculture Organization
FIPI	Forest Inventory and Planning Institute (at central level)
FIPI-QB	Forest Inventory and Planning Centre in Quang Binh province
FLA	Forest Land Allocation
FPD	Forest Protection Sub-Department (at provincial level)
FPU	Forest Protection Unit (at district level)
GIS	Geographic Information Systems
GPS	Global Positioning System
GTZ	German Technical Cooperation
KfW	Kreditanstalt für Wiederaufbau
MARD	Ministry of Agriculture and Rural Development
MoNRE	Ministry of Natural Resources and Environment
NREO	Natural Resources and Environment Office (at district level)
NTFP	Non Timber Forest Product
PLUP	Participatory Land Use Planning
SFDP	Social Forestry Development Project
SFE	State Forest Enterprise
SMNR-CV	Sustainable Management of Natural Resources in Central Vietnam

Introduction

Forest resources are relative abundant in Quang Binh province and especially in the mountainous areas bordering Lao PDR where the “Sustainable Management of Natural Resources in Central Vietnam (SMNR-CV) Project” operates. In these areas local people depend on the forest resources for their livelihood. Therefore participatory land use planning (PLUP) and forest land allocation (FLA) is important to secure tenure rights over forest land resources with the aim to increase livelihoods and improve the management and protection of the natural resources. This guideline provides practical guidance and step by step elaborates PLUP-FLA procedures for the issuance of red book certificates for individual households, group of households or entire communities. The guideline does not detail planning tools for economic sectors and the issuance of contracts (green book certificates) for households to manage forest land that belongs to State Forest Enterprises (SFE) and/or Protection Forest Management Boards.

The guideline includes lessons learnt from other projects and the previous draft of the project PLUP-FLA guideline which was presented and discussed with stakeholders from the provincial, district and communal level in a workshop on the 7th of September, 2005 in Dong Hoi, Quang Binh province.

PLUP and FLA as detailed in this guideline are based on the technical guideline on PLUP of the General Department of Land Administration, the Decree 181/2004/ND-CP, Circular 29/2004/TT-BTNMT, Circular 30/2004/TT-BTNMT, the guideline on FLA of the Forest Protection Department and methodologies developed by former projects supported by FAO and GTZ. Furthermore the guideline incorporates information requested for by local stakeholders who are responsible for the implementation of PLUP and FLA in the field, including the Quang Binh Centre of Forest Inventory and Planning (FIPI-QB), the districts’ Natural Resource Offices (NREO) and the local authorities.

Due to the recent issuance of the national Circular 38/2007/TT-BTT¹, detailed forest inventories including volume calculations are specified as preconditions for the issuance of land use certificates which required a further adjustment of the previously applied methodology. Respective changes have been incorporated into the revised guideline.

This guideline is written for technical staff of organizations from provincial and district level that support local villages with PLUP-FLA, such as DONRE, DARD, and FIPI at the provincial level and the FPU, Economic Division and NREO at the district level. Furthermore the guideline can be used by governmental organizations who will supervise the PLUP-FLA process in the field and by commune workers as a reference to get an overview of the PLUP-FLA process and the necessary procedures. The guideline can also be used as reference document in PLUP-FLA training.

The guideline consists of two parts and several appendices. The first part describes the methodology and each of the 7 PLUP-FLA steps in detail. Part 2 gives practical guidance on the involvement of local villagers during the PLUP-FLA process. The appendices provide background information and several table formats which are needed for the effective implementation of PLUP-FLA.

¹ 38/2007/TT-BNN, dated 25/04/2007 on guidelines for procedures for forest allocation, forest rental and withdrawal to organisations, households, individuals and communities

Basic principles and overview of the steps in PLUP-FLA

This guideline on PLUP and FLA is based on the following principles:

- Harmonize government priorities for socio-economic development and environmental conservation with local community needs for food security and income generation
- In line with legal and administrative framework of Vietnam
- Fit and correspond to the provincial, district and commune socio-economic development plans
- Be simple and easy to be implemented with the local available resources at the commune and district levels
- Ensure equitable access to forest land and resources by all groups in the community (including women, ethnic minorities, the poorest and other disadvantaged people)
- Strengthen sustainable development of the whole commune and villages and minimise negative environmental impacts
- Be participatory and ensure that women, ethnic minorities, the poorest and other disadvantaged people fully participate in the PLUP and FLA process
- Be integrated into community development and consider all possible uses of the land (not merely focused on forestry and consider reforestation with timber species as the only management option)

These basic principles should guide the PLUP and FLA process. Both an overview of the activities and outputs per step in the PLUP and FLA process are presented in respectively figure 1 and figure 2.

Role of professional staff

Depending on the local situation, there are different organizations that could take the initiative and facilitate PLUP-FLA in the field. Professional staff of projects, from provincial and/or district organizations such as DARD, FPD, FIPI, FPU, DoNRE, and/or the Economic Division who support villages with PLUP-FLA can act as a facilitator to help villages to prepare their own land use plan which includes the plan for forest land allocation.

As stipulated in Circular 38/2007/TT-BNN, a consultant organization has to be selected by the Provincial and District People's Committees as main service provider.

The assigned consultant organization has to inform and permit the involved organizations, households, individuals and communities to take part in the process of defining the forest characteristics. By this, the Circular explicitly calls for a participatory approach to be followed during the entire process.

The consultant organization is defined as main responsible for the assessment of the forest status and together with forest owner and local authorities' representatives shall sign minutes of the forest assessment for submission for legal approval.

It is of major importance that the FLA plan is conform with the interests of the entire village and that the interests of disadvantaged groups such as the poor, the elderly and women are incorporated in the plans. Long term objectives of FLA, such as improved forest management and strengthened livelihoods can only be realized if FLA is carried out according to the interests of all villagers. The consulting organization should therefore ensure the participation of all groups during the whole PLUP-FLA process. Furthermore the role of the professional staff is to ensure that the PLUP-FLA is carried out according to Vietnamese law and follows the correct procedures and steps as stipulated in Circular 38/2007/TT-BNN.

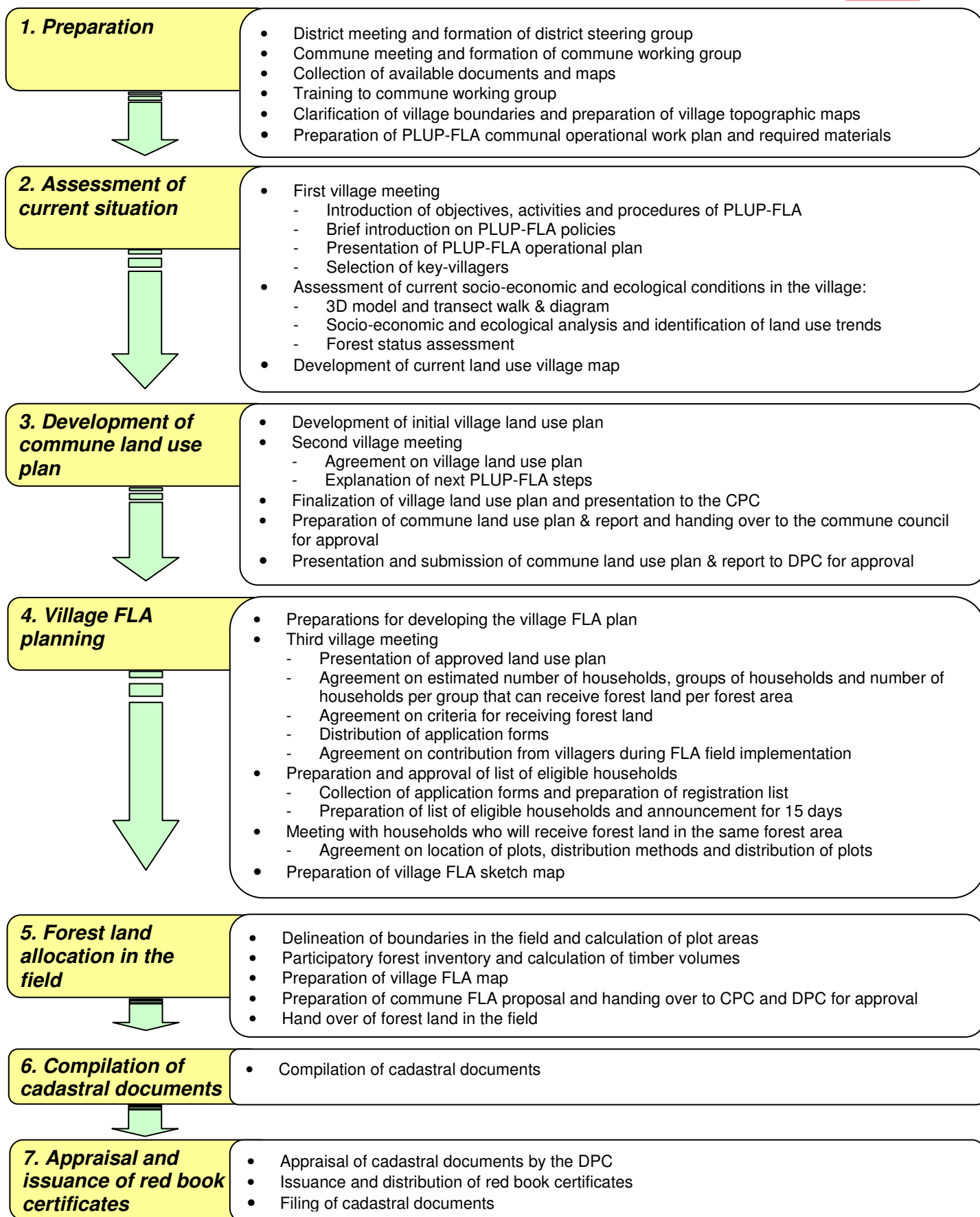


Figure 1: Activities of Participatory Land Use Planning and Forest Land Allocation

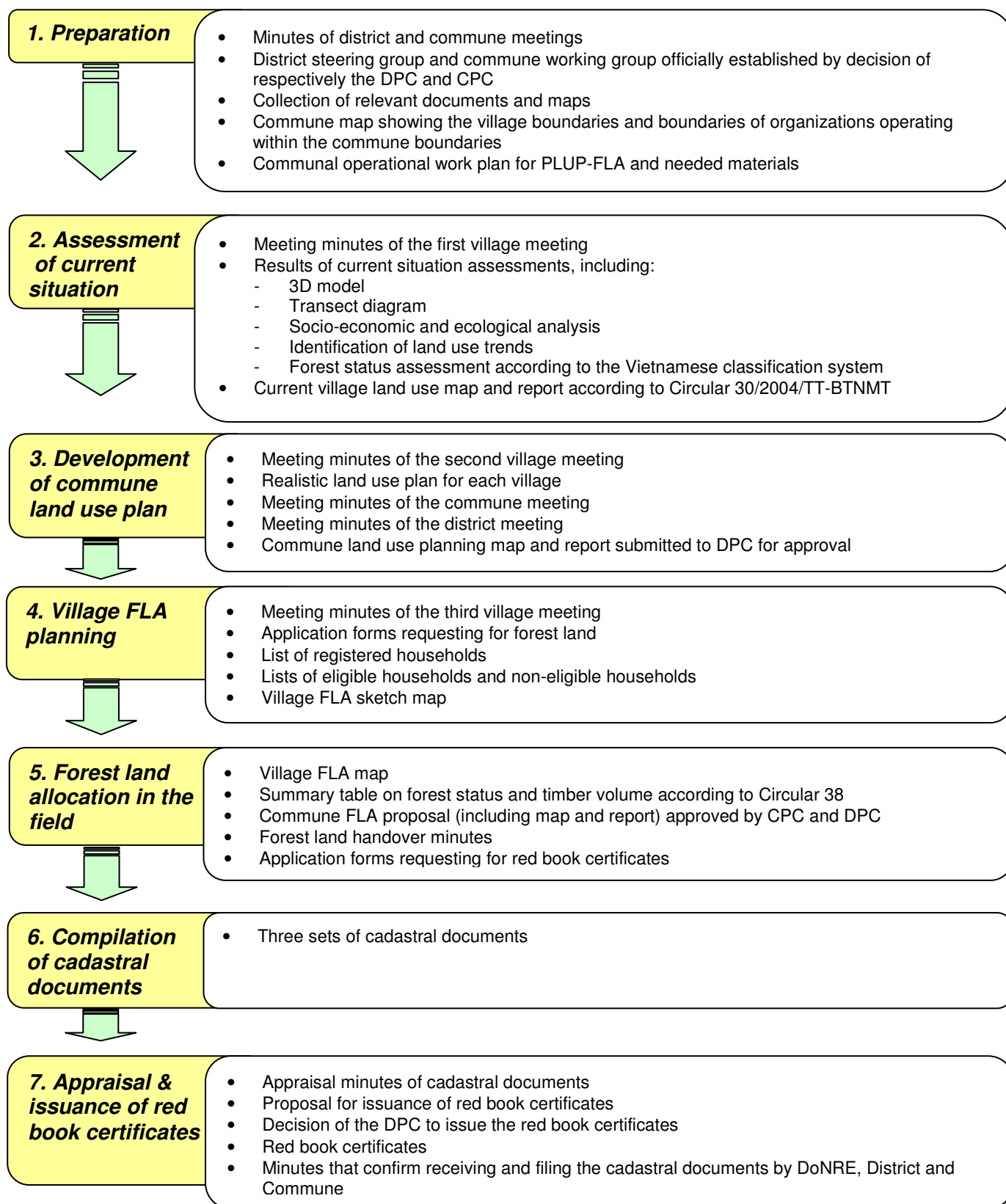


Figure 2: Outputs of Participatory Land Use Planning and Forest Land Allocation

Part 1: Methodology: Description of the 7 steps in PLUP-FLA

1.1 Step 1: Preparation

Activities in step 1: Preparation

1. District meeting and formation of district steering group
2. Commune meeting and formation of commune working group
3. Collection of available documents and maps
4. Training of commune working group
5. Clarification of village boundaries and preparation of village topographic maps
6. Preparation of PLUP-FLA communal operational work plan

During the preparation (Step 1) a number of activities need to be carried out before the actual PLUP and FLA can be conducted. Each of these activities is briefly described below.

District meeting and formation of district steering group

The following people should participate in the district meeting: the chairman or vice-chairman of the DPC and CPC's of the involved communes, Forest Protection Unit, Natural Resource Office, the Economic Division and representatives of State Forest Enterprises (SFE's), Protection Forest Management Boards, Special Use Forest Management Boards and other relevant organizations and the communal cadastral, agriculture and forestry staff.

The objectives of the district meetings are:

1. To agree on the methodology for PLUP-FLA implementation (steps and activities) in the district and communes
2. To agree upon the organizational structure to implement PLUP-FLA, including formation of the district steering group and the commune working group. The District People's Committee (DPC) is requested to assign staff to both groups.
3. To assign persons responsible for the collection of relevant documents and maps.
4. Preparation of a draft working plan, which includes an overview of the communes where PLUP-FLA will take place and the general time schedule.

Agreement on the PLUP-FLA methodology

The professional staff will give a presentation about the PLUP-FLA methodology. After this presentation the methodology can be further discussed and agreed upon by all meeting participants.

Organizational structure for PLUP-FLA implementation

The formation of a district steering group is useful especially when PLUP-FLA takes place in several communes within a district. The district steering board has an advisory role to the DPC, is responsible for steering all work related to participatory PLUP-FLA, ensures compliance with national and provincial laws and regulations, and maintains close co-operation with concerned sectors at provincial level.

Members of the district steering board include:

- Chairman/vice-chairman of the DPC - Head of the board
- Director of district's NREO - Vice-head

- Director of district's Economic Division - Member
- Director of district's Forest Protection Unit (FPU) - Member

The above members work part time for the board and are responsible for activities related to their assigned discipline. Other organizations or institutes such as state forest enterprises, women union, management boards of parks/protection forests could in principal also participate in this district board depending on the capacity and specific situation of the district. However, the board size should be kept small for effective communication and coordination.

Specific tasks of the district steering board are to:

- Monitor the PLUP-FLA implementation in the field
- Assign district technical staff to join the commune working group
- Provide guidance for communes and professional staff
- Verify commune's PLUP-FLA

The DPC should issue an official decision on the establishment of the district steering board.

At the commune level a commune working group will be established responsible for all operational aspects of PLUP-FLA. The specific members will be elected during the commune meeting.

Collection of relevant documents and maps

The assigned person at the district level should ensure that the following documents are collected: District economic development master plan, sector plans (infrastructure, production areas, SFE's, Protection Forest Management Boards, Special Use Forest Management Boards, etc), documents of relevant government projects/programs and other projects/programs in the area, administrative boundary map of the district, latest existing land use map, forest land allocation map and relevant government policies such as Decree 181/2004/ND-CP; Decree 163/1999/ND-CD; Decision 178/2001/QD-TTg; Decision 8/2001/QD-TTg; Revised Land Law 13/2003/QH11; Forest Protection and Development Law 25/2004/L-CTN, Circular 80/2003/TT/BNN-BTC, Circular 29/2004/TT-BTNMT, Circular 30/2004/TT-BTNMT, Circular 38/2007/TT-BNN, Quang Binh provincial guidelines on commune land use planning for period 2005 to 2015 by DoNRE (if available). If these maps/documents are not available at the district, these can be obtained at DoNRE and/or other relevant organizations. These maps and document are essential for the preparation of the land use plan and forest land allocation plan.

Meeting minutes should be written of the outcomes of this district meeting.

Commune meeting and formation of commune working group

After the district meeting, the first commune meeting (1/2 day) is organized with participants from the Commune People's Committee, village leaders, and representatives of SFE's, Protection Forest Management Board's, Special Use Forest Management Board's and other organizations if land within the commune boundaries falls under their jurisdiction.

The objectives of this commune meeting are:

1. To present briefly the methodology (steps, activities, procedures) to be used for PLUP-FLA in the commune. (The professional staff will provide this presentation).

2. Formation of the commune working group responsible for the PLUP-FLA implementation in the commune.
3. To assign a person responsible for the collection of relevant documents and maps at the communal level (including demographic data and production data, administrative boundary map, land use plan map if available)
4. Development of a work plan specifying activities related to the clarification of commune and village boundaries and sequence of villages for PLUP-FLA implementation.

Formation of commune working group

The administration of PLUP-FLA is at the commune level, therefore it is recommended to carry out PLUP-FLA in all villages within the commune in the same time period and to establish a commune working group. The commune working group, responsible for all operational aspects of the PLUP/FLA process in the field comprises the following members:

- | | |
|--|----------------|
| • Chairman/vice-chairman of CPC | -Head of group |
| • Technical staff assigned from district level | -Group member |
| • Commune cadastral staff | -Group member |
| • Commune forest protection/agriculture and forestry staff | -Group member |
| • Village leaders | -Group member |

Official approval from the CPC should be obtained to establish the commune group to strengthen the effective implementation of PLUP-FLA in the field. Appendix 1 provides a sample of a decision for the official establishment of the commune working group.

Meeting minutes are to be prepared of the commune meeting.

Collection of available documents and maps

The assigned persons should collect the documents and maps as mentioned in the district and commune meetings. These documents and maps will be used in the next steps. The following documents and maps should be collected if available:

Documents:

- Data on current situation of land use and management (commune statistics)
- Demographic data and production data (commune statistics)
- District and communal socio-economic development master plans (if available)
- Sector plans (infrastructure, production areas, SFE's, Protection Forests Management Boards, Special Use Forest Management Boards, etc.)
- Documents of relevant government programs (such as the 5 Million Hectare Reforestation Program (Decision 661/1998/QD-TTg), and other projects working in the area)
- Relevant policies such as: Decree 181/2004/ND-CP; Decree 163/1999/ND-CD; Decision 178/2001/QD-TTg; Decision 8/2001/QD-TTg; Revised Land Law 13/2003/QH11; Forest Protection and Development Law 25/2004/L-CTN, Circular 80/2003/TT/BNN-BTC, Circular 29/2004/TT-BTNMT, Circular 30/2004/TT-BTNMT, Quang Binh Provincial guidelines on commune land use planning for period 2005 to 2015 by DoNRE, Circular 38/2007/TT-BNN, dated 25/04/2007 on guidelines for procedures for forest allocation, forest rental and withdrawal to organisations, households, individuals and communities

Maps:

- Topographic map of the commune

- Administrative boundary map according to Instruction 364/1999/CT-TTg (from CPC, DPC or DoNRE²)
- Latest existing land use map (preferable according to Circular 28/2004/TT-BTNMT)
- Forest land allocation map according to Decree 163/1999/ND-CP (if available)
- Existing land use plan map and overall plans for socio-economic development of the district and commune (if available)
- Result map from re-classification of three kind of forests from FIPI-QB or Forest Protection Department (FPD) from 2006

Training for commune working group

PLUP-FLA is a rather complex procedure and consists of many different steps. PLUP-FLA should be carried out carefully and applying the 7 basic principles. Therefore, the commune working group members and the village leaders need to be trained in the PLUP-FLA process. The training provides a brief overview of PLUP-FLA and lasts for six days (one day theory and five days practicing PLUP-FLA planning in the field).

The theoretical part should be provided by the responsible professional technician in cooperation with the district steering group and covers the following contents:

- Basic principles of PLUP-FLA and its practical implications
- Steps, activities and procedures in the PLUP-FLA process
- Policies and Decrees related to PLUP-FLA, including the guidelines for implementation of the Land Law (181/2004/ND-CP) and related policies, rights and benefits of households with allocated land (178/2001/QD-TTg) and options for FLA according to the revised Land Law (13/2003/QH11) and the Forest Protection and Development Law (25/2004/L-CTN). See Appendix 2 for an overview of relevant articles in related forest policies.
- Facilitation skills in order to develop the skills necessary to facilitate the village meetings (see Appendix 3)
- Use of equipment, such as compass and/or GPS receivers

After the training the commune working group (including all village leaders) will implement PLUP & FLA planning in one village together under close support and coaching from the professional staff. This PLUP-FLA planning in one village will take about 5 days. The FLA activities in the field are mainly conducted by the professional staff.

Clarification of village boundaries and preparation of topographic village maps

The administrative map of the commune (Instruction 364/1999 on guidelines and procedures for the clarification of administrative boundaries between villages, communes, districts and provinces) shows the boundaries of the commune and areas that fall under the management of different organizations within the commune area. There are normally no disputes on the administrative boundaries of the commune. If there are conflicts these should be reported to the DPC, PPC for clarification.

The boundaries between villages should be clarified to avoid any future land disputes. Boundaries between villages do not need to be approved by relevant authority levels and are not considered as administrative boundaries. The village boundaries are based on land use customs and need to be accepted by all villages. The professional staff should organize a meeting and invite the chairman of the commune, the communal cadastral officer, the communal forest extension worker, all heads of the villages and

² This map shows the approved administrative boundaries of communes, district and provinces

representatives of all organizations with allocated land in the commune area. During this meeting the boundaries of all villages are identified on the map. If all participants of the meeting agree upon the boundaries as identified on the map, the commune working group (including the communal cadastral officer) mark specific points in the field (for example through poles) to clearly define the boundaries in the field. It is important to mark the village boundaries in the field to avoid future disputes. The cadastral officer and the professional staff should record the coordinates of these specific points by GPS. Depending on the size of the commune, the number of villages and the number of points that need to be marked in the field, the clarification of boundaries can take from 1-10 days per commune.

The final commune map showing the village boundaries should be signed by all village leaders, the commune working group and the chairman of the CPC. This map will be the basis for making the village maps. If possible the village maps for the fieldwork for PLUP-FLA should have the same scale as the commune map as regulated in Circular 80/2003/TT/BNN-BTC (see table 1), but should have a scale of at least 1:5,000. Mostly maps of a scale of 1:25,000 or even 1:50,000 are enlarged up to a scale of 1:5,000. However, these maps need to be updated with information from the field to ensure the accuracy of the map.

Table 1: Commune map scales according to Circular 80/2003/TT/BNN-BTC

Commune area	Scale of commune map
Less than 100 ha	1 : 1,000
100 to 500 ha	1 : 2,000
500 to 5,000 ha	1 : 5,000
5,000 to 20,000 ha	1 :10,000*
More than 20,000 ha	1 : 25,000*

* If the commune has forest land and unused land of more than 5,000 ha then a current land use map and land use plan map has to be developed of a scale of 1:10,000 or 1:25,000. If the commune has less than 5,000 ha of forest land and unused land a scale of at least 1:5,000 is requested.

If maps are available from the interpretation of recent aerial photomaps that are checked on the site and have been approved by the provincial authorities, these should be used for the preparation of detailed maps (scale at least 1:5,000). It is recommended to make 3 copies of each village map for the land use planning activities in the next steps.

Preparation of communal PLUP-FLA operational work plan and materials

After the training, the professional staff and the commune working group will prepare detailed PLUP-FLA operational plans for all the activities related to the implementation of the PLUP-FLA, including the timeframe and budget for each village. This plan outlines the organizational arrangements and clarifies if PLUP-FLA will be executed village by village and defines the sequence of the villages, or if the commune working group will be split up in several teams to conduct PLUP-FLA in several villages at the same time. The commune operational plan is sent to the CPC for their consideration and approval and afterwards all the villages are informed about the plan.

The professional staff in cooperation with the commune working group will furthermore ensure that all equipment needed for PLUP-FLA is available such as stationery, copies of relevant documents, maps, compass, GPS etc., before PLUP-FLA takes place in the field.

Outputs of step 1: Preparation

1. Minutes of district and commune meetings
2. District steering group and commune working group officially established by decisions of respectively the DPC and CPC
3. Collection of relevant documents and maps
4. Commune map showing the village boundaries and boundaries of organizations operating within the commune boundaries
5. Communal operational work plan for PLUP-FLA

1.2 Step 2: Field assessment of current situation

Activities in step 2: Assessment of current situation

1. First village meeting
2. Assessment of current socio-economic and ecological conditions in the village
 - 3D model and transect walk & diagram
 - Socio-economic and ecological analysis and identification of land use trends
 - Forest status assessment
3. Development of current land use village map

In this second step, the socio-economic and natural conditions of the village will be assessed in the field in order to get accurate and updated information about the actual land use in the field. The collected secondary data will be used as a reference. The field assessment will provide the necessary data for PLUP in the next step.

First village meeting

After all preparations are finalized the first village meetings can be organized to start the implementation of the PLUP-FLA process. It is crucial that during this first meeting, representatives of all households take part in the meeting (preferably at least 30% women). This meeting will take about ½ day. The objectives of the first village meeting are:

- To explain the objectives, activities and procedures of PLUP-FLA
- To inform villagers about PLUP-FLA policies, especially about duties, rights and benefits of local people in PLUP-FLA
- To present the operational plan to carry out PLUP-FLA in the respective village
- To select a number of key villagers who will support the commune working group during the PLUP-FLA process in the village.

The village meeting should be organized by the commune working group in cooperation with the professional staff. This first meeting is very important and should be well prepared. Therefore the commune working group should discuss with the village leader in advance the contents of the meeting and prepare the venue and the agenda. The village leader can for example present the meeting contents while the professional technical staff can introduce the PLUP-FLA objectives, activities and procedures, and the options for FLA; as well as the policies related to PLUP-FLA and the rights and benefits of villagers. The village leader can further present the operational plan for the village and

facilitate the selection of about 6 to 8 key representatives of the village to support the commune working group to develop the LUP-FLA plan. Key representatives of the village need to be selected carefully based on a number of criteria:

- Good understanding of the village
- Respected by other villagers
- Motivated and interested
- Representing the interests of different groups in the village (the key representatives should thus include men and women, young and old, poor and better-off)
- Coming from different areas within the village

All villagers should agree with the selected key representatives.

During the meeting, sufficient opportunities should be provided for villagers to ask questions related to PLUP-FLA. Someone from the commune working group should write the minutes of this first village meeting. (See part 2 for further details for the organization of the first village meeting).

Assessment of current socio-economic and ecological conditions in the village

Activities to assess the current situation in the village include:

- Development of a 3-D model,
- Transect walk and diagram,
- Socio-economic and ecological analysis,
- Analysis of land use trends
- Forest status assessment

A 3-D model of the village should be an exact miniature copy of the village made by a mixture of clay and sawdust which can be kept and be used as a reference during the whole PLUP-FLA process. The 3-D model shows the infrastructure (road network), topography (hills, mountains, plains) residential areas, rivers and streams, agriculture crop areas, grazing areas, tree plantations, barren land, forests, etc distinguished by signs and colours.

A transect is a cross-section view of a particular agro-ecological system with a written description and analysis of its components. The transect is conducted by walking across the area observing and discussing the features with local informants.

During the transect walk, the PRA team systematically traverses an area with key informants, observing, asking, listening, discussing, learning about different zones, local technologies, introduced technologies, seeking problems, solutions and opportunities. The findings on soil quality, resources, land use, erosion, housing patterns, labour force allocation or any other aspect regarded relevant are noted on a transect diagram.

Transects consist of three parts: a walk to observe the features and land uses in the village, discussions with villagers and a diagram to record information about the land use systems.

The socio-economic and ecological analysis includes a comparison of current and potential land uses and helps to make informed decisions on priority land uses for the future.

The analysis of the land use trends includes a brief description of the changes in land use over the last 5 to 10 years.

The forest status assessment should be conducted by referring to the result map of the re-classification of three kinds of forest for the province, dated 2006. Anyway, the results have to be considered as preliminary only to be further adjusted based on the results of the forest inventory and calculation of timber volume. Therefore, a rough assessment is considered sufficient during this step. For the national classification system see Appendix 5.

See part 2 for step by step guidance on the assessment of the current socio-economic and ecological conditions in the village with participation of the local villagers.

Development of current land use map and report

The consulting organisation in cooperation with the commune working group prepare the first draft of the current village land use map and the report based on the 3-D model and the outcomes of the current land use assessment. Information that should be included in the map are the boundaries of different land tenures/occupants (boundaries of the village, boundaries of other sub-divisions within the village, other administrative boundaries if present such as boundaries with SFE's, Protection Forest Management Boards, Protected Area's, etc., land allocated to households and organizations), agricultural areas, non-agricultural land and unused land according to the different land use types as distinguished in the Land Law and also described in Circular 30/2004/TT-BTNMT.

The report about the current land use that is accompanying the map includes information about:

- Areas used for different purposes per land use type
- Land use changes over the past 5 to 10 years
- Analysis of land use changes per land type over the last 5 years
- Potentials and opportunities for land use in the future to increase sustainable management

Circular 30/2004/TT-BTNMT provides detailed guidelines about the requirements for the current land use report and includes table formats that need to be filled in. This report will be part of the land use planning report. Some of these forms refer to the outcomes of the implementation of the previous land use plan and can only be filled in when a land use plan was prepared for the last time period.

According to Circular 28/2004/TT-BTNMT, the commune has to prepare annual current land use reports and submit them to the DPC. This Circular also provides the templates for the report and tables that need to be prepared on an annual basis.

The aggregation of the village maps and reports to the commune map and report will be done after the land use planning has been finalized. For practical reasons it is easier to complete both, the assessment of the current situation and the development of a land use plan in one village first.

Outputs of step 2: Assessment of current situation

1. Meeting minutes of the first village meeting
2. Results of current situation assessment, including:
 - 3-D model and transect diagram
 - socio-economic & ecological analysis of the village
 - identification of land use trends
 - forest status assessment according to the Vietnamese classification system
3. Current village land use map and report according to Circular 30/2004/TT-BTNMT

1.3 Step 3: Development of commune land use plan

Activities in step 3: Development of commune land use plan

1. Development of initial village land use plan
2. Second village meeting
3. Finalization of village land use plans and presentation to the CPC
4. Preparation of commune land use plan and report and handing over to the commune council for approval
5. Presentation and submission of commune land use plan and report to the DPC for approval

The land use plan is the basis for developing a detailed FLA-plan and implementing FLA in the field. PLUP should be done very careful following a number of steps to avoid conflicts in the future. The land use plan should be based on the existing land use map, the 3-D model, the transect diagram, the socio-economic and ecological analysis, the identified land use trends and the forest status assessment of the village as prepared in the previous step to ensure that it is suitable and realistic under the present natural and socio-economic conditions.

In this guideline, the following definition of PLUP is used:

“Land use planning is the systematic assessment of the potential of land and the evaluation of alternatives for land use aiming at sustainable land use, improved land management and improved economic and social conditions. PLUP is carried out in a series of steps and is based on a dialogue and a balance of interest of all parties involved.” (SFDP-Son La)

Development of initial village land use plan

The commune working group will support the key representatives of the village to draft their village land use plan. Activities related to the development of the initial land use plan include:

1. Identification of development goals and specific objectives to reach sustainable land use, improved land management and improved economic and social conditions in the village.
2. Selection of suitable land use options and identification of areas & location of each proposed land use practice in the village

3. Identification of forest land areas and location proposed for allocation to individual households, groups of households and/or entire village
(See part 2 for step by step guidance to develop the initial village land use plan)

The goals and objectives set for the village should be based on the communal socio-economic development plan and based on the plans of organizations in different sectors for all the three types of land use (Agricultural land, non-agricultural land and unused land) recognized by the Vietnamese government. The objectives set for the village should be according to the law. For example, objectives set for forest land should be based on the type of forest land (production forest, protection forest and special use forest; see box 1). The areas belonging to these 3 forest types are identified at provincial level. Only forest land earmarked as production forest can be allocated to individual households or groups of households, while protection forest land and special use forest land are in general managed by management boards (according to Decision 8/2001/QĐ-TTg management boards have to be set up for special use forest and protection forest if the area is respectively larger than 1,000 ha and 5,000 ha). Larger areas of production forest are managed by State Forest Enterprises. All of these management boards can issue forest protection contracts or plantation contracts with individual households. Individual households are then paid on an annual basis for services rendered to the management boards. The number of households that will be or are contracted by the management boards depend on the plans of the respective boards.

Box 1: Categorization of forestland into production forest, protection forest and special use forest (Law on forest protection and development)

Special-used forests, which are mainly used for conservation of nature, specimens of the national forest ecosystems and forest biological gene sources; for scientific research; protection of historical and cultural relics as well as landscapes; in service of recreation and tourism in combination with protection, contributing of environmental protection, including:

- a. National parks
- b. Nature conservation zones, including nature reserves and species-habitat conservation zones;
- c. Landscape protection areas, including forests of historical or cultural relics as well as scenic landscapes
- d. Scientific research and experiment forests

Protection forest, which are mainly used to protect water sources and land, prevent erosion and desertification, restrict natural calamities and regulate climate, thus contributing to environmental protection, including:

- a. Headwater protection forests;
- b. Wind- and sand-shielding protection forests;
- c. Protection forests for tide shielding and sea encroachment prevention;
- d. Protection forests for environmental protection.

Production forest, which are mainly used for production and trading of timber and non-timber forest products in combination with protection, contributing to environmental protection, including:

- a. Natural production forests
- b. Planted production forests
- c. Seedling forests, including the selected and recognized planted forests and natural forests

For each area suitable land use options should be selected based on the outcomes of the transect walk & diagram, the socio-economic and ecological analysis and the forest status assessment; as well as the identified development goals and objectives for the village. Special attention should be given to the need of local villagers for using agricultural land (including forest land and grazing areas), non agricultural land and the need to cultivate the land classified as “unused land”. All options for land use should be considered and carefully assessed to select the best options reflecting the needs of the villagers (including women, ethnic minorities and other disadvantaged groups).

If forestland has been allocated in the past according to Decree 163/1999/ND-CP and red book certificates have been issued, the results should be assessed. If the actual use of allocated land differs from the intended use, (for example no management intervention because boundaries are unclear or households are not motivated to manage the forest land) then realistic targets should be set to overcome this situation. There are mainly three options for forest land allocation:

- Allocation to individual households,
- Allocation to a group of households
- Allocation to the entire village

The best option varies according to the specific situation, culture and site of forest land, see table below.

Table 2: Advantages, disadvantages and suitable conditions for different modalities of forest land allocation

	Beneficiaries of forest land allocation		
	Individual households	Groups of households	Village
Advantages	<ul style="list-style-type: none"> ▪ Clear benefits & responsibilities ▪ High interest to invest resources 	<ul style="list-style-type: none"> ▪ Relative easy boundary demarcation ▪ Shared protection ▪ Reduced costs for management activities 	<ul style="list-style-type: none"> ▪ Relative easy boundary demarcation ▪ Shared protection ▪ Reduced costs for management activities
Disadvantages	<ul style="list-style-type: none"> ▪ Protection is difficult ▪ Demarcation and maintenance of boundaries 	<ul style="list-style-type: none"> ▪ Shared responsibilities and benefits ▪ Lower interest to invest resources in forest development, management & protection 	<ul style="list-style-type: none"> ▪ Shared responsibilities and benefits ▪ Lower interest to invest resources in forest development, management & protection
Suitable situations	<ul style="list-style-type: none"> ▪ Near residential areas ▪ Relative small plot areas 	<ul style="list-style-type: none"> ▪ Relative farther from residential areas ▪ Larger plot areas ▪ Strong cohesion among group members ▪ Available forestland in the village is limited ▪ Forest land that hold resources of common interest to the group 	<ul style="list-style-type: none"> ▪ Relative farther from residential areas ▪ Larger plot areas ▪ Strong cohesion among villagers ▪ Available forestland in the village is limited ▪ Forest land that hold resources of common interest to the village ▪ Necessity to keep forest land available for disadvantaged groups, future generations and immigrants

The main advantages of allocation to individual household are clear responsibilities and benefits for the respective household, which motivates villagers to invest in their forest plot. Disadvantages include the high labour resources needed to protect the plot and to demarcate and maintain the boundaries. The major advantages of allocation to a group of households or village is the relatively easy boundary demarcation (and/or use of existing ecological boundaries) and the reduced inputs needed per household for protection and management. However, the shared benefits and responsibilities can be a disadvantage and result in a lower interest of households to invest in forest development, management and protection. Forestland allocation to individual households might be the best option if the plot of forest land is relatively small and close to the household and is easy to manage and protect on an individual basis. Allocation to a village or a group of households might be more suitable if the forestland is relative far away, if the available forest land is relatively small and/or if the forest land holds resources or other common interests for the whole group or village (e.g. water sources that are used/managed by the entire group or village) and cannot be allocated to organizations or individual households. Another reason to allocate forestland to an entire village can be to keep forest land available for people who are not able to manage a plot of forestland intensively but do need some forest products for their livelihood (e.g. the poor and/or elderly with limited labour resources and or for future generations and immigrants).

During the preparation of the initial land use plan, the areas & location of forest land that will be allocated to individual households, to groups of households and/or to the entire village have to be identified.

Second village meeting

This village meeting is of major importance as the village land use plan will be discussed. It is therefore recommended that all households in the village should be represented in this meeting (preferably at least 30% women). The meeting will take about ½ day. Objectives of the meeting are:

- Agreement on the village land use plan including the general forest land allocation plan (location and areas to be allocated to individual households, groups of households and/or entire village)
- Explanation of next steps in PLUP-FLA

During the village meeting the results of the current land use assessment (including 3-D model, transect diagram, socio-economic and ecological analysis, forest status assessment, and land use trends) and the prepared village land use plan will be presented, discussed and agreed upon to ensure that the land use plan reflects the views of all groups within the village (including women and ethnic minorities and other disadvantaged groups). If needed the land use plan will be adjusted and incorporate the comments made during this meeting.

The commune working group can refer to the lessons learnt in FLA in Quang Binh province to explain the identification of forest areas that will be allocated to individual households, groups of households and/or the entire village, see box 2.

After all villagers reach an agreement on the prepared land use plan, explain that the commune working group in cooperation with the professional staff will finalize the plan and submit and present it to the CPC and DPC for approval. If approval from the DPC is obtained, the FLA activities can commence.

See further part 2 for further details on the organization of this village meeting.

Box 2: Lessons learnt in Forest Land Allocation in Quang Binh province

Prior to the issuance of the forest protection and development law (25/2004/L-CTN), it was not possible to allocate forestland to villages and therefore all forestland was allocated to individual households and/or organizations. In some cases in Bo Trach district, all forest land was allocated to a limited number of households because only a few household were interested in receiving forest land. This might create problems in the near future when all forestland is effectively managed and protected and households who did not receive forestland have no access to forest products for daily use (i.e. fuelwood). In general all households in a village, except those who do not want to take it should receive forestland. It is therefore important that the benefits and rights of forestland are very clearly explained prior to the actual allocation of land as well as the consequences and practical implications.

In some cases in Minh Hoa and Tuyen Hoa district forestland was allocated in long strips from land close to the household to over the hills. Sometimes these strips were 30 m wide and 5 km long. Allocation of long narrow strips of forest land might be a good option to promote equity but hampers the management and protection of the forestland located further from the household as boundaries are unclear and/or not maintained.

In some other cases several plots of forest land of different status have been allocated to individual households. In this case each household will have several plots at different sites. This method also takes equity as its major principle but complicates the management and protection of forest land in the field because boundaries of each plot are unclear and/or not maintained and a lot of time is spent on traveling to the different sites.

Based on lessons learnt in the field, the best practice for forest land allocation is to discuss first the current problems in forest management in the field and how these problems can be overcome before discussing who should get which plot of land. This will often result in forest allocation to individual households in areas that are located near residential areas, and forest land allocation to groups of households in areas that are further away and /or that are of interest to the entire village. For the actual land allocation, ecological boundaries (such as for example streams) or natural features (i.e. remarkable stones) should be used to demarcate plots in the natural forests as much as possible, because the establishment and maintenance of human induced boundaries is very time-consuming and complicated.

Finalization of village land use plans and presentation to CPC

The commune working group and the professional staff will work together to finalize the village LUP and ensure that the maps and documents are prepared conform with Circular 29/2004/TT-BTNMT, Circular 30/2004/TT-BTNMT, Circular 38/2007/TT-BNN and the Quang Binh Provincial guidelines on commune land use planning for 2005 to 2015 by DoNRE.

After all villages in the commune have finalized their village land use plan, all village leaders are invited to present their respective village land use plans to the CPC. During this meeting possible linkages in land use practices among villages will be discussed and agreed upon.

Preparation of commune land use plan & report and handing over to the commune council for approval

After the commune meeting the commune working group will combine all village land use plans and prepare the commune land use plan as stipulated by law (Circular 29/2004/TT-BTNMT, Circular 30/2004/TT-BTNMT, Article 24 of Decree 23/2006/ND-CP and the Quang Binh Provincial guidelines on commune land use planning for 2005 to 2015 by DoNRE). This plan includes a report and a land use map.

The scale of the communal land use map depends on the commune area (see the previously shown table 1). The communal report includes a number of table formats as provided in Circular 30/2004/TT-BTNMT including an overview of the proposed changes in land uses and areas (tables 1, 2, 5, 6 and 7), the proposed areas that will be taken back by the commune authorities (table 8), the areas of unused land that are planned to be put into use (table 9), the list of land use areas defined according to function and purpose in the land use plan (table 10), the areas under current land use and at the end of the planning period of the land use plan (normally 5 years) per land use purpose (table 11) and the phases for implementing the land use plan, changes certain land use purposes, withdrawal of land and bringing unused land into use (table 12 to 15). Apart from the report and tables describing the land use plan also a report needs to be incorporated about the current land use (see also Circular 30/2004/TT-BTNMT).

The report furthermore includes information about the forest status within the commune area and is an aggregation of the table formats 2, 3 and 4 as provided in Appendix 1.

After finalizing the land use plan map & report the commune working group will submit it to the commune council for approval.

Presentation and submitting of the commune land use plan to the DPC for approval

After obtaining approval from the commune council, the professional staff and the commune working group present the communal land use plan to the DPC for their comments, suggestions and approval. In this meeting, representatives of the following organizations should participate: NREO, FPU, Economic Division, organizations managing land in the commune area and other relevant organizations.

The commune working group and the professional staff will modify the prepared land use plan according to the comments and suggestions made during the district meeting and submit it to the DPC for approval.

Outputs of step 3: Development of land use plan

1. Meeting minutes of second village meeting
2. Realistic land use plan for each village
3. Meeting minutes of commune meeting
4. Meeting minutes of district meeting
5. Commune land use plan map and report submitted to DPC for approval

1.4 Step 4: Village FLA planning

Activities in step 4: Village FLA planning

1. Preparations for developing the village FLA plan
2. Third village meeting
3. Preparation and approval of list of eligible and non eligible households
4. Meeting with households who will receive forestland in the same forest area
5. Preparation of a village FLA sketch map

Preparations for developing village FLA plan

After the communal land use plan (including the areas & locations of forest land assigned for allocation to individual households, groups of households and/or the entire village) has been approved, the consulting organisation in cooperation with the commune working group and key villagers can start with the preparations to develop a FLA plan. This includes:

- Preparation of FLA communal work plan
- Estimation of the number of individual households who can receive forest land per location
- Estimation of the number of groups of households who can receive forest land per location
- Development of criteria for FLA
- Transparency of the current village land use map as prepared in step 2 (assessment of the current situation), which will be used as base map for the FLA fieldwork

Note: The maximum area to be allocated to an individual household shall not exceed 30 ha as stipulated in Article 22 of Decree 23/2006/ND-CP.

The current village land use map has to detail forest areas and forest status as completed during step 2. Colour pencils should be used to add and distinguish on the base map the geological features such as streams, rivers, riverbeds, streamlets, hills, limestone areas, mountains, etc. The map should be as detailed as possible to ease the field work.

The FLA communal work plan outlines the timeframe per village and the sequence of the villages.

The commune working group and the key villagers estimate the number of households, the number of groups of households and the number of households per group that are suitable to manage a certain area of forest land. A field check could help to make suitable estimations. These estimations are only an indication and will be agreed upon during the village meeting.

Criteria for FLA and the identification of eligible households and the identification of the location and size of the allocated land are:

- Location of household
- Former forestry activities at a certain site
- Dependency on forest land
- Number of main- and sub-labourers

These criteria will also further be discussed and agreed upon during the village meeting. Often the number of main and sub-labourers is considered as an important criterion because forest development, management and protection are labour intensive. However, especially the poor who have limited labour resources often depend on the forest resources for their livelihood. These households should not be excluded from FLA as this might lead to the further impoverishment of the poor. Therefore, the dependency on forest resources should be a more important criterion. The maximum land area that can be allocated per household is 30 ha according to Decree 163/1999/ND-CD.

Further preparation for the third village meeting include the announcement of the meeting (time & place), the division of tasks among the commune working group and professional staff and the development of an agenda to structure the meeting.

Third village meeting

During this third meeting, all households that would like to receive allocated forest land should participate. The meeting will take about ½ day. The aim of the third village meeting is to:

- Present the approved land use plan
- Present the benefits and rights of receiving forest land
- Agree on the estimated number of individual households who can receive forest land per location
- Agree on the estimated number of groups of households who can receive forest land per location
- Agree on the criteria for FLA
- Distribute application forms (see Annex 3 of Circular 38/2007/TT-BNN for reference)
- Agree on contribution from villagers during FLA field implementation

During the meeting the villagers will be reminded of their rights and benefits of receiving forest land.

The application form can be obtained from NREO or DoNRE and is included in Circular 38/2007/TT-BNN. The commune working group will explain during this meeting the application form and how it should be filled in.

It is expected that villagers are present during the FLA implementation in the field and delineate the plot boundaries. The CPC could also issue a regulation to mobilize villagers to support the FLA process in the field. (See further part 2 for detailed guidelines on the organization of this village meeting).

Preparation and approval of list of eligible households

The commune working group will collect all application forms and will prepare the registration list, which sums up the information from the application forms. It is useful to include the number of main labour and sub-labourers in this registration list to ease the preparation of the list of eligible households, especially if the number of labourers is considered an important selection criteria.

The commune working group will prepare the draft lists of eligible households and eligible group of households and the lists of non-eligible households and non-eligible households participating in groups. For the preparation of these draft lists, the commune working group will review the list of individual households registered to receive forest land and discuss the possibilities for land allocation to individual households. Depending on the criteria they will take into consideration the location of the household, accessibility

of the forest land, the dependency of the household on forest land, the status of the forest land, the available resources of the household (e.g. capital and labour) will determine the size and location of the forestland to be allocated. The lists of eligible households include the name of the household, the estimated area, the forest status, location and the use purpose. The required list of eligible households is included in Circular 29/2004/TT-BTNMT.

The commune working group will submit the list to the CPC and commune council for approval. After the list of eligible households has been approved by the CPC, the CPC will place both, the lists of eligible individual households and groups of households and non-eligible households at the CPC building and at the house of the village leader. The commune working group will announce to villagers that the lists are available for all to see. The lists will be available for 15 days and within these 15 days villagers have the opportunity to see the results and to raise objections.

Meeting with households who will receive forest land in the same forest block

After the list of eligible households is finalized, it is clear who will receive forest land in which forest block but the exact location of the plot is not yet clear. Therefore the commune working group should organize a meeting with all individual households that will receive forest land in the same block. During this meeting the following will be discussed:

- Location of plots
- Mechanisms to distribute the plots
- Distribution of plots

Often the plots within a block are different in forest status and/or accessibility. Several households are therefore often interested in the same plot of land while no one is attracted to other plots. Therefore is very important to reach consensus about the mechanisms for distributing the plots. The best mechanism depends on the local situation and conditions. There are different mechanisms to divide the plots:

Discussion: The best mechanism for the distribution and identification of the location of the forest land is through discussion. Discussion should be the starting point but often consensus cannot be reached by discussion alone.

Equal distribution: an equal distribution often results in long narrow strips of forest land of similar size and similar status that are difficult to manage. This is only a suitable solution when households are located along the road and the strips are not too long and not too narrow, see figure 4.

Drawing tickets: drawing tickets (all plots get a number, which is written on a small piece of paper and every household can pick a piece of paper) is an option when all households are entitled to a similar size of forest land. However it can lead to the situation that most households are not satisfied with the outcomes. Therefore households should be allowed to exchange tickets after the drawing if both sides agree. Drawing tickets is suitable when there are no clear linkages (in terms of access and/or former forest activities) between the households and the forest land.

Combination: A combination of the above described mechanisms is in most cases the best option. First identify existing linkages between households and the forest land in terms of access and former forest activities. Situations where a household receives forest land in the backyard of another household and/or where a household receives forest land where another household planted trees before should be avoided. In this way consensus

can be reached over the allocation of a few plots. Depending on the situation, drawing tickets and/or equal distribution of the plots can further resolve the distribution of forest land. See figure 5.

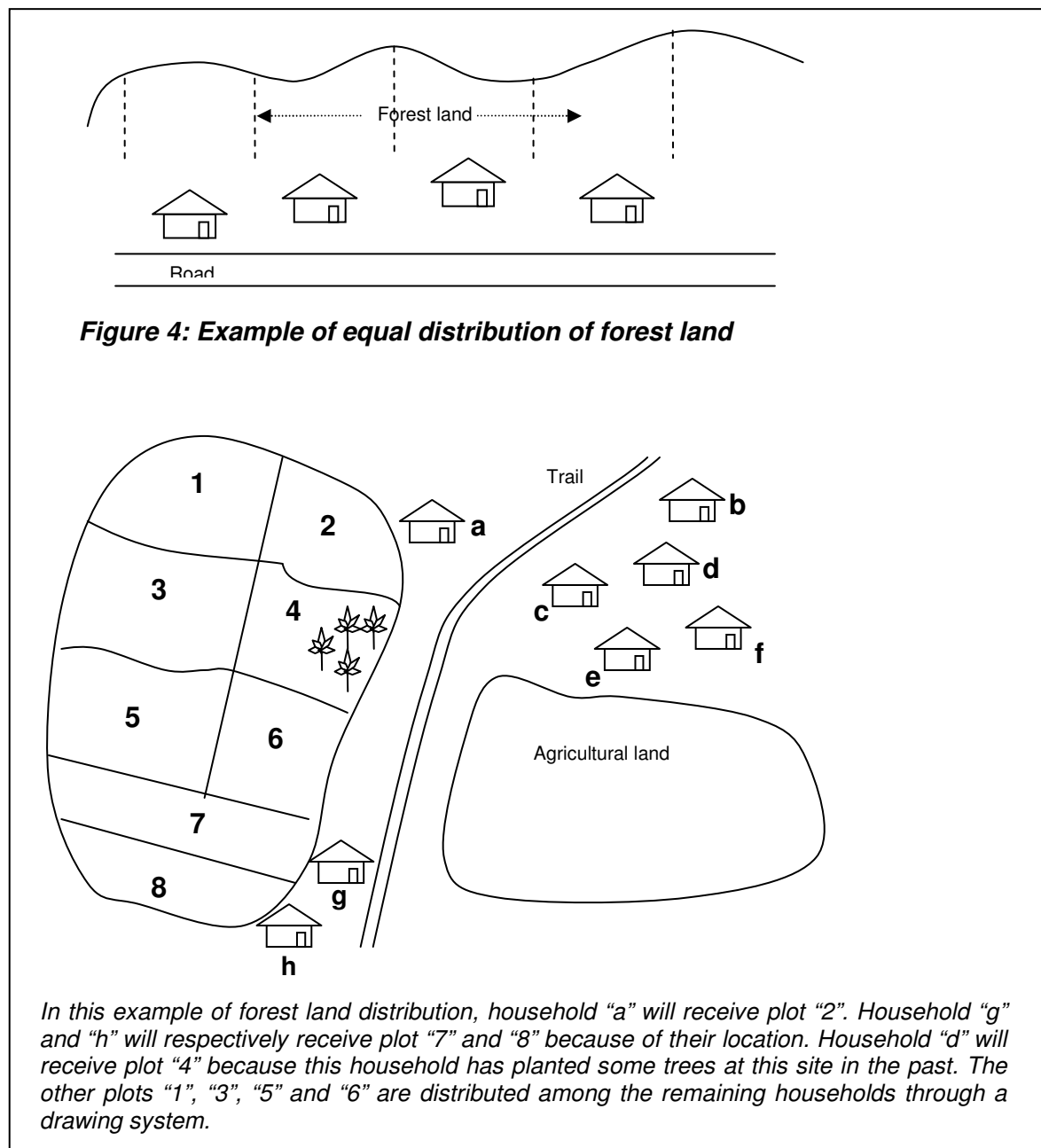


Figure 4: Forest land distribution through discussion, equal distribution and drawing tickets

If there are any conflicts among households about the plots of land to be allocated, this should also be solved during this meeting or in a separate meeting with the involved households and relevant authorities. After consensus is reached about the plot location in a forest block and distribution of the plots among the households, the households can start with the boundary demarcation in the field.

Preparation of village FLA sketch map

The commune working group with support from the consulting organisation will develop FLA sketch maps for each forest area as described in the paragraph above. The same exercise will be carried out for the allocation of forest land to groups of households. The commune working group will make a sketch of all the information on the current village land use map, showing the location and the name of the respective household. Activities related to the calculation of the plot area and the hand over of the forest land will be carried out in the next step.

Outputs of step 4: Village FLA planning

1. Meeting minutes of the third village meeting
2. Application forms requesting for forest land and list of registered households
3. Lists of eligible households and non-eligible households
4. Village FLA sketch map

1.5 Step 5: Forest land allocation in the field

Activities in step 5: Forest land allocation in the field

1. Delineation of boundaries in the field and calculation of plot areas
2. Participatory forest inventory and calculation of timber volumes
3. Preparation of village FLA map
4. Preparation of commune FLA proposal and handing over to CPC and DPC for approval
5. Hand over of forest land in the field

Delineation of boundaries and land use purpose in the field

In case the consulting organisation does not apply GPS/GIS technology, measurements need to be carried out by hand using compass, slope-meter and measure-tape or theodolite.

To determine the standing point at a site by use of compass is practicable where the geographical features are easy to identify and to relate to the map. From there, one can relate sites that are further away and more difficult to recognize on the map. If the plot to be allocated can be related to the map, the direction, the slope and the length and wide of the allocated plot should be recorded. The length and wide is needed to calculate the size of the allocated plot, and additionally the direction and slope is needed to demarcate the allocated site correctly on the map. The size of a plot is calculated as if it was located in plain areas (in reality the plot is often located on sloping land and the plot size is in reality larger), therefore the length measured on sloping land should be converted to calculate the corresponding horizontal image (see Appendix 5 for conversions).

The household and/or the group of households should be present in the field to help with the delineation and measurements of the plot.

When GPS hand receivers are applied, the standing point can be directly verified on the map and later entered into a digital database to calculate the area. In case no GIS

technology is applied area measurement has to be conducted manually by counting squares overlaid on the map.

Participatory forest inventory and calculation of timber volumes

As stipulated in Circular 38/2007/TT-BTT detailed forest inventories including volume calculations are specified as preconditions for the issuance of land use certificates. Consequently, a timber volume estimate alone as derived from the forest status is insufficient to comply with the new national policy frame.

Provincial and district People's Committees shall decide which consultant organization will carry out the inventory.

The assigned consultant organization must inform and permit the involved organizations, households, individuals and communities to take part in the process of defining the forest characteristics.

The main outcomes of the participatory forest inventory are as follows:

- Forest inventory data providing information on forest status, main tree species, stem number, volume, height estimates as stipulated in Circular 38/2007/TT-BTT
- Forest inventory results providing sound planning data for community-based forest management

The sample intensity is defined by Decision 2961 NN-KHQH/QD dated 1997 (FIPI) and is described in Box 3.

Main technical steps of the forest inventory comprise:

- Identification of forest inventory blocks with similar forest status and forest type based on village FLA map (preferably GIS database).
- Following a systematic distribution of sample plots a grid net is defined on the village FLA map to identify sample plot locations in the field.
- Data collection is jointly conducted by the community and consultant organization.
- The consultant organization is conducting data analysis for volume calculation including the development of specific volume functions for the local region.
- Volume estimates are developed by the use of two-factor volume functions as defined by FIPI³.
- Data on forest status and volume is described separately for each forest block following the forest status classification system stated in Decision 684/1994/QD-BNN of MARD.
- The outcome of the inventory has to be presented in form of a summary table form as provided in Annex 7 of Circular 38/2007/TT-BNN, dated April 2007.

Field work is jointly conducted by working group representatives (forestry technical cadres), consultant organisation and key farmers who are divided into measure teams of one technician and 2 community members each.

Following Circular 38/2007/TT-BNN, the functional district agency is responsible to make a written assessment of the forest quality during the appraisal of the results of the field

³ FIPI 1995: Hand Book on Forest Inventory, Agricultural Publishing House 1995

inspection with signatures of the representatives of the consultant organization who is specialized in the forest assessment (the consultant organization holds the main responsibility for the assessment of forest quality) and the representatives of Communal People's Committee and the households and individuals applying for forest allocation to ensure the contents of appraisal document is in line with the State's current regulations on forest allocation to households and individuals.

Box 3: Calculation of required number of sample plots for forest inventory in natural forests (>IIB) and plantations according to Decision 2961 NN-KHQH/QD issued in 1997 of FIPI

The number of sample-plots to calculate the timber volume of plots located in natural forests (status of IIB and above) depends on the size of the allocated plot:

- For plots smaller than 1 ha: There is no need to calculate the timber volume separately, but the volume of adjacent plots with the same forest status can be used.
- For plots of a size between 1 ha and 3 ha: Calculation of timber volume through establishing one sample-plot.
- For plots larger than 3 ha (maximum 30 ha): Calculation of timber volume is carried out through 3 to 6 sample-plots.

In each sample-plot of 500 m² (20x25 m), the DBH of all trees with a DBH >8 cm are measured and the height of 3 representative/average trees is measured. Timber volume is calculated as follows: Volume = $\pi/4 * dbh^2 * height * f$ (f is a correction factor and is 0.45 for natural forests and 0.5 for plantations).

The number of sample plots (100 m²) to calculate the timber volumes of plantations, depends on the age class of the stands:

- Age class I: No calculation of timber volumes, but only identification of tree species, year of plantation establishment, number of trees/ha (N/ha), average height (H), and an estimate of the diameter of the stem at ground level.
 - Age class II: 1% ratio of plantation area
 - Age class III and higher: 2% of plantation area
- (Number of sample-plots= size of plantation (in m²)*0.01 (for age class II)/100 (m²))

The age class differs per species:

- Hard timber species characterized by very slow growth with age class cycles of 15 years: Lat hoa, Lim, Sao Dau, etc.
- Hard timber species characterized by slow growth with age class cycles of 10 years: Gio, Xoan dao, Sau sau, Xa cu, etc
- Soft timber species and fast growing with age class cycles of 5 years: Mo, Thong, Sa moc, Phi lao, etc.
- Soft timber species and very fast growing with age class cycles of 3 years: Bach dan, Bo de, Keo, Xoan, etc.

The timber volume is calculated in the same way as under natural forest. However in plantations the measurements of only one average tree can be used to calculate the total timber volume of the sample-plot (the sample-plot size in plantations is only 100m²)

Preparation of village FLA map and calculation of plot areas

After all the forest land has been delineated in the field, the consulting organisation in cooperation with the communal cadastral officer will prepare a FLA map of the village and calculate the plot areas. This map should be at a ratio of 1:5,000. The following should be shown on this map: the numbers of forest unit and forest compartments and letters of forest plots (see box 4 for the division of forest areas on a map), the forest status according to FIP1, and the areas allocated to households, groups of households and organizations (including SFE's, Protection Forest and Special Use Forest Management Board's if present).

Box 4: Division of forest areas according to Decision 8/2001/QD-TTG

According to Decision 8/2001/QD-TTG forest areas are divided in forest units, forest compartments and forest plots:

Forest Unit is the largest unit and covers an average area of about 1,000 ha. Forest units are numbered from 1, 2, 3...n, within the province

Forest Compartment is the second largest unit. Each forest unit is divided in a number of forest compartments with an average size of 100 ha. Forest compartments are also numbered from 1, 2, 3 ...n. Forest inventories are carried out in forest compartments

Forest Plot is the smallest and is shown by a letter (a, b, c...z) on the map. The same forest status prevails in a forest plot. The forest status in forest compartments and/or forest units might differ.

The forest units, forest compartments and forest plots are numbered/lettered from North to South, and from West to East (top-down, left-right) on the map.

Mark the allocated land on the map of the different areas as follows:

- To individual households: areas are indicated by diagonal lines (45^o), spacing 0.5 cm
- To groups of households: areas are indicated by vertical lines, spacing 0.5 cm
- To organizations (mass organizations, businesses or the military): areas are indicated by horizontal lines, spacing 0.5 cm

For each of the individual plots allocated, the following should be indicated on the map:

Forest plot no - Forest status. Forest type
Plot size (ha)-name of owner (husband and wife)

The forest status is shown on the map by its classification accompanied by two letters (for a description of the forest status see also appendix 5):

- Forest status IA, IB (barren land)-TR
- Forest status IC (recovery and regeneration forest)-KN
- Forest status IIA, IIB, IIIA1, IIIA2, IIIB or IV (rich, medium and poor forests)-BV

Furthermore, the forest function classification system is indicated on the map as follows:

- S: Production forest
- P: Protection forest
- D: Special use forest

Thus, e.g. a plot of allocated land of 15 ha, located in plot a, existing of a plantation on production forest land is notated as:

a- IB- TR. S
15-Ho Van Hung/Ho Thi Nga

In cases where the plot size is too small to show all the necessary information on the map, several adjacent plots are combined into one, with a small explanation in the legend.

Preparation of commune FLA proposal and handing over to CPC and DPC for approval

The commune working group will check the village FLA maps to assess if it is in line with the formerly prepared commune land use plan. If the commune working group agrees with the results, the professional staff in cooperation with the commune cadastral staff will prepare a proposal for FLA in the commune, which includes:

- Communal FLA map (scale as stipulated in Circular 80/2003/TT/BNN-BTC). This map is an aggregation of the prepared FLA maps and shows the same information.
- List of households and groups of households eligible to receive forestland (including plot size, plot number (forest unit no, forest compartment no and forest plot no) timber volume and forest type
- Application forms requesting for forest land (see Annex 3 of Circular 38/2007/TT-BNN)
- Form with data on the allocated forest land per plot (see sample 6 in Appendix 1)
- Summary inventory table as stipulated in Circular 38/2007/TT-BNN.

The CPC will first assess the FLA proposal and submit it to the DPC for approval.

Handover of forest land in the field

After receiving the decision on forest allocation from District People's Committee, the Communal People's Committee is responsible for: Conducting the field forest allocation for households and individuals with the participation of the neighboring forest owners; making the minutes of participating forest allocation with signatures of the representatives of Communal People's Committee and the involved households and individuals (see Annex 5 in Circular 38/2007/TT-BNN for reference).

The handover minutes should be signed by the team leader of the commune working group, the receiving household (s) and the village leader. The minutes include the names of husband and wife of the household who receives the land, the location (forest unit no, forest compartment no, forest plot no), the size of the plot, timber volume, and the main function of the forest land for management (see sample 7 in Appendix 1). The receiving household(s) of the forest land should only sign these minutes when they agree with the mentioned size, timber volume, and main function for management and when they know the boundaries of the allocated land. At the same time of writing the handover minutes the involved households will fill in and sign the application form to request for a red book certificates. Both the minutes and the application form requesting a red book will be used for the further development of the cadastral documents.

Outputs of step 5: Forest land allocation in the field

1. Village FLA map
2. Commune FLA proposal (including map and report) approved by CPC and DPC
3. Forest land hand-over minutes and application forms requesting for red book certificates

1.6 Step 6: Compilation of cadastral documents

Activities in step 6: Compilation of cadastral documents

1. Compilation of cadastral documents

The cadastral documents should be carefully prepared as these documents form the basis for the appraisal to issue the red book certificates. All the needed documents should be prepared and should correspond correctly to each other.

Compilation of cadastral documents

The cadastral communal staff will compile all the cadastral documents as described in Circular 29/2004/TT-BTNMT. This includes 3 sets of all the cadastral documents, including:

1. Communal FLA map (scale as stipulated in Circular 30/2004/TT-BTNMT).
2. Cadastral logbook
3. Reference list
4. List of households and groups of households eligible to receive forestland (including plot size, plot number (forest unit no, forest compartment no and forest plot no) timber volume and forest type
5. Record book for monitoring land use changes
6. Other documents prepared during the PLUP-FLA process including meeting minutes, minutes of handover of forest land, reports etc.

Outputs of step 6: Compilation of cadastral documents

1. Three sets of cadastral documents approved by CPC

1.7 Step 7: Appraisal and issuance of red book certificates

Activities in step 7: Appraisal and issuance of red book certificates

1. Appraisal of the cadastral documents by the DPC
2. Issuance and distribution of red book certificates
3. Filing of cadastral documents

The last step of the PLUP-FLA process includes the issuance and distribution of the red book certificates and to ensure that all the cadastral documents are well kept at the regulated departments.

Appraisal of cadastral documents

Once all the cadastral documents have been prepared and approved by the commune authorities, the documents should be sent to the district level. At the district level, the district PLUP-FLA steering board will form an assessment team.

The assessment team will check in the field if the plot numbers correspond with the correct household owners, the size of the plots, the timber volumes and the suitability of the proposed forest use options. Furthermore the assessment team will also check if the

boundaries are clear. At least 1/3 of the allocated forest land should be checked in the field. After the appraisal by the assessment team in the field, the Natural Resource and Environment Office (NREO) will further check and assess the cadastral documents. At least 30% of the provided documents should be checked in detail.

After the appraisal of the maps in the field and the related documents, the district PLUP-FLA steering board and the assessment team will meet each other and discuss the appraisal results. If the results are accepted, the final appraisal minutes will be written for the approval for the issuance of the red book certificates. Based on these appraisal minutes NREO will draft a proposal for the issuance of red book certificates for eligible households to the DPC. Together with this proposal, NREO will submit to the chairman of the DPC the following documents:

- List of households registered to receive allocated forest land
- Minutes of meetings and approval of the district assessment team and PLUP-FLA Steering Board
- Proposal of NREO for issuance of red book certificates, including a list of eligible individual households and groups of households; and lists of non-eligible individual households
- Application forms for red books
- Red book certificates with the information as regulated (according to Decision 24/2004/QD-BTNMT), ready to be signed by the chairman of the DPC

Issuance and distribution of red book certificates

Based on the information provided to the DPC authorities, the DPC will consider and prepare a decision on issuance of the land use right certificates (see Annex 4 Circular 38/2007/TT-BNN). Based on this decision the DPC will sign the red book certificates for individual households, groups of households and/or organizations. The PLUP-FLA district steering committee will submit these certificates to the respective commune working groups, who are responsible to distribute the red book certificates to the village leaders for further distribution to the respective individual households and groups of households.

It is important that both the names of husband and wife are written in the red book certificates. Red book certificates can be used to e.g. receive loans from banks. By noting down the names of husband and wife, both men and women can have access to loans from banks if desired.

Households and individuals, after taking over the forest areas are responsible for identifying and marking boundaries of their allocated areas or contracted areas under the witness of the representatives of Communal People's Committee and the neighbouring forest owners (see Annex 6 in Circular 38/2007/TT-BNN for further details).

Filing of cadastral documents

The cadastral documents as prepared under step 6 and completed with the appraisal minutes, the proposal developed by the NREO and the decision on issuing the red book certificates by the DPC should be carefully archived for future reference and adjustment by different relevant institutions. Therefore 3 sets are made of all cadastral documents and archived by the following organizations:

- Centre for Cadastral Documents Archives of the Provincial Department of Natural Resources
- NREO for reference and adjustment in case of land use changes.
- Communal level by the cadastral staff for reference and adjustment in case of land use changes.

Outputs of step 7: Appraisal, approval and issuance of red book certificates

1. Appraisal minutes of cadastral documents
2. Proposal for issuance of red book certificates
3. Decision of the DPC to issue the red book certificates
4. Red book certificates
5. Minutes that confirm receiving and archiving of cadastral documents by DoNRE, District and Commune

Part 2: Practical guidance to involve local people during the PLUP- FLA planning process

	Step 2: Assessment of current situation		
	First village meeting – 2 hours (commune working group + representatives of all households in the village)		
Day 1	Collection of socio-economic data of the village (village leader)	Development of draft 3D model – ½ day (whole team)	Transect walk & identification of current land use – ½ day (whole team)
Day 2	Transect walk & identification of current land use – ½ day (whole team)	Transfer of field results on 3D model – ½ day (whole team)	
Day 3	Making current land use map – ½ day (professional + cadastral staff)	Calculation of areas per land use and filling in table (Circular 30) – ½ day (professional + cadastral staff)	
Day 4	Socio-economic & ecological analysis of current and potential land uses + identification of land use trends – ½ day (whole team)	Filling in tables about fulfillment previous land use plan (Circular 30) – ½ day (professional staff + cadastral staff + village leader)	
	Step 3: Development of land use plan		
Day 5	Discussions on draft land use plan – ½ day (whole team)	Preparation of land use plan map – ½ day (professional + cadastral staff)	
Day 6	Preparation of all tables and report - ½ -1 day (professional staff + village leader + cadastral staff)		
	Second village meeting – 2 hours (commune working group + representatives of all households in the village)		
	After approval of commune land use plan & report		
	Step 4: Village FLA planning		
	Preparation for village FLA planning – 2 hours (whole team)	Third village meeting – 2 hours (whole team + villagers interested in FLA)	

Figure 5: Tentative time schedule to develop village and commune land use plans

The above diagram shows the timeframe and activities to encourage the participation of the local villagers during the entire PLUP-FLA process. Below is a detailed description of all the mentioned activities.

Step 2: Field assessment of current situation

First village meeting

The first village meeting will be organized by the commune working group in cooperation with the village leaders. This first meeting is very important and should be well prepared in advance. The commune working group and the village leader should discuss in advance who should present the different subjects on PLUP-FLA, and agree upon the person who will write the meeting minutes.

Objectives:

- To explain the objectives of PLUP-FLA, activities and procedures
- Brief introduction on PLUP-FLA policies, especially about the duties, rights and benefits of PLUP-FLA
- To present the operational plan to carry out PLUP-FLA in the respective village
- To select a number of key villagers who will support the commune working group to develop the village LUP-FLA plan with the aid of PRA tools (3-D model and transect)

Time needed: 2 hours

Materials: A0 showing the steps related to PLUP-FLA and its outputs (prepared in advance), A0 paper, markers, tape

Steps:

1. Welcome all villagers and introduce the members of the commune working group.
2. Explain the objectives of the village meeting
3. Explain the objectives, activities and procedures of PLUP-FLA, and the outcomes of each step as described in the introduction of this guideline. Explain which activities have already been carried out (e.g. the formation of the district steering group and the formation of the commune working group).
4. Briefly explain the legislation related to PLUP-FLA (see Appendix 1 for the most important policies and articles related to PLUP-FLA) and explain the benefits and rights of people who have been allocated forest land.
5. Present the operational plan for PLUP-FLA in the village and explain that for the next activities (the development of a 3-D model, transect, development of land use map, and development of a draft land use plan) the support of selected key representatives of the village is required.
6. Explain that the selected six to eight persons should be based on a number of criteria, such as:
 - Good understanding of the village
 - Respected by other villagers
 - Motivated and interested
 - Represent the interests of different groups in the village (the key representatives should thus include men and women, young and old, poor and better-off)Agree upon the selection criteria and let the villagers assign the persons. Ensure that all villagers agree with the proposed men and women who will support the commune

- working group in the coming activities related to PLUP-FLA. Discuss the time and place to start the follow up activities with the selected persons.
7. End the meeting and thank villagers for their participation.

Development of initial 3-D model

A 3-D model is a miniature model of the village showing its topographic characteristics such as: mountains, hills, rivers, streams, infrastructure and land use, etc. A 3-D model helps villagers to visualize their village and is therefore very useful as reference for further discussions about the current land use and land use planning. The 3-D model should be an exact copy of the village in miniature because it will be the basis for developing the current land use map. The calculation of the areas per land use system is derived from this map. The selected 6-8 key-villagers will prepare the 3-D model with overall support from the commune working group.

Objectives:

- To develop a 3-D model of the village in miniature as a basis for further discussions on the current land use systems and land use plan
- To have a basis for drawing up the current land use map that will be used to calculate the specific areas under each land use option

Time needed: 3 hours

Materials: A0 paper, markers, 3 village topographic maps (scale of at least 1:5,000), wooden frame (size 1m x 1.5 m, 10 - 15cm high), colour powder (5 colours, 100g each), clay and saw dust (a mixture of clay and sawdust, reduces cracking of the clay), small pieces of bamboo for marking important features and small pieces of paper for noting names of different areas/land uses.

Steps:

1. Present the objectives of the 3-D model the exercise and the needed time. Explain that the participants are expected to make an exact model of their village in miniature based on their knowledge.
2. Mix the clay and sawdust (2:1) and put the mixture in the wooden frame. Start with making an outline of the village based on the topographic map and draw the boundaries of the village.
3. Continue by inviting participants to mark based on their memory main features of the village, such as rivers, roads, residential areas, agricultural land, hills and mountains, etc.

The following questions can help during the development of the 3-D model:

- Where are north and south?
 - Where are mountains and hills; and the rivers, streams and springs?
 - Where are main roads, residential areas, main buildings and the cemetery?
 - Where are agricultural areas (rice fields and other crop land), barren land, tree plantations, grazing areas and forest land areas?
 - Are there any areas within the village that are classified as “Production”, “Protection”, and/or” Special-use” forests? Can you indicate the location and the boundaries of these areas in the 3-D model?
 - Can you identify the areas with different forest conditions (forest status)?
4. Adjust and refine the 3-D model and ask farmers if they can recognize their houses, agricultural fields, the roads they use, etc. Adjust the model according to the results of

- the discussions. Note down the areas where disputes arise and check these areas in the field during the transect walks.
5. Complete the 3-D model by noting the names of major features and areas (mountains, rivers, residential areas, etc) on small pieces of paper pasted on small bamboo sticks and place them at the correct points in the 3-D model. Use colour powder to mark the residential areas, tree plantations, natural forest, rice-fields, crop land, barren land, grazing areas, rivers, etc.
 6. End the exercise and explain that this initial 3-D model will be updated with new information gathered during the transect walks. The 3-D model will be used as an important reference for developing the base map of the village and for the development of the land use plan.

Transect walk & diagram

A transect is a tool to better understand the actual land use in a village. Transects are done by walking through the village area covering either a part of or the whole village. A transect consists of three integral parts: a walk to observe the features and land uses in the area, discussions with villagers and a diagram to record information about the land use. By walking through the village area also new information may become apparent that will allow to adjust and to refine the 3-D model. After finalizing the transect walk & diagram, the 3-D model will be adjusted, refined and finalized and a base map will be prepared of the different land uses within the village area. The selected 6-8 villagers will make the transect walk & diagram with overall support from the commune working group.

Objectives:

- To identify the different land use types and their characteristics
- To evaluate and assess the potential and effectiveness of land use
- To identify opportunities for future land use

Time needed: 3 hours

Materials: A0 paper, markers, blank transect diagram forms, 3-D model, topographic map (base map), pens, GPS hand receiver, list of information needed to update the 3-D model

Steps:

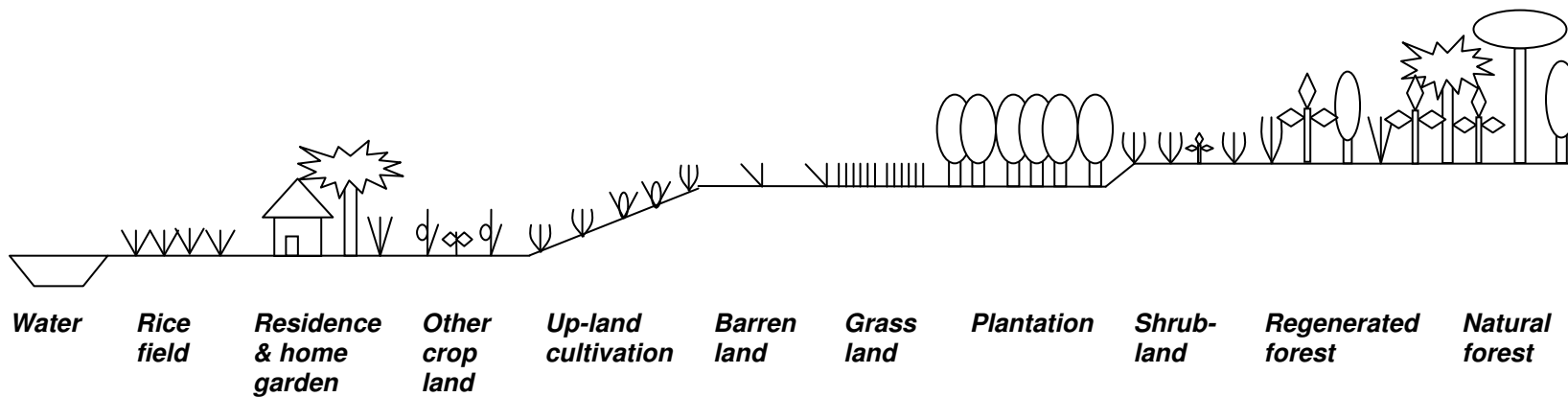
1. Present the objectives of a transect and the required time. Explain that the villagers are expected 1) to make 2-3 walks through the village, 2) to discuss on their land use, 3) to record information in the transect diagram and 4) to note down the needed information to update the 3-D model.
2. Identify 2 or 3 walks through the village area for the transect. These walks should cover and cross all major land use forms as identified in the 3-D model and also cover the unclear boundary areas.
3. Explain the transect diagram and explain the list of information that should be collected to complete the 3-D model. The different land uses should be written in the first row of the transect diagram and land use information needs to be collected, including:
 - Name of location: the local names of the area in the village that correspond to the land use
 - Slope: steep, moderate, gentle slope or flat

- Crops, flora and fauna: list the agricultural crops or the dominant and important plant and animal species
 - Land tenure: who is using the land? Is their tenure secured?
 - Management: which management practices are used?
 - Potentials & best practices: which land use gives the best result on this land use system, what are the potentials for improvement?
 - Problems: what are the major problems encountered?
 - Opportunities and solutions: what are the opportunities and solutions to overcome the identified problems and achieve higher potentials?
4. Divide participants into 2 or 3 groups (depending on the number of walks) each group walking a transect, and agree on a time and place to meet again.
 5. While walking the transect, ask villagers about local names of areas, current land use, land tenure, management, potentials and best practices, opportunities and solutions. Document the information on the transect diagram.
 6. Where the locations of current land use practices are unclear (as discussed in preparing the 3-D model) check them in the field using GPS.
 7. Go back to the meeting room and discuss the results of the transect walks and prepare a final transect diagram.
 8. Modify and finalize the 3-D model, (including the names marked on bamboo sticks) with the new, updated information collected during the transect walk.
 9. Explain that the professional staff and the cadastral staff will further develop the current village land use map and fill in the information in tables according to the government regulations. The support of the key-villagers is again required for the socio-economic & ecological analysis after the map and tables are finalized.

Note:

In practice this exercise is done in two parts. The first part is the explanation of the transect and the transect walk, the second part is conducted in the meeting room to present and finalize the transect diagram and to modify the 3-D modal

Transect diagram



Name of location
Soil & water

Slope

Crops, flora & fauna
Land tenure

Management

Potentials & best practices
Problems

Opportunities & solutions

Preparation of current land use map, calculation of areas and filling in of tables

The current land use map, the calculation of the areas under each land use practice and the transfer of the acquired data into tables is the task of the cadastral staff in cooperation with the professional staff.

Objectives:

- To prepare a village land use map
- To calculate the areas and fill in the tables related to current land use areas according to Circular 30/2004/TT-BTNMT

Time needed: 1 day Indoor; Ground-truthing depending on forest area

Materials: Village topographic map showing the area where forestland allocation will take place (in case GPS receivers are used, UTM base maps are required or GPS receivers with VN 2000 datum), colour pencils, GPS hand receivers, hand-held compass, 3-D model, Circular 30/2004/TT-BTNMT

Steps:

1. Prepare a current land use map based on the final 3-D model, use pencils to draw the boundaries of each unique land use area, such as paddy land, cash crops, barren land, tree plantations, secondary forests, natural forests, etc.
2. After a first draft map has been produced based on the results of the 3-D model the boundaries of each land use type have to be verified in the field by use of GPS receivers. It is essential to have key farmers as guides to identify areas defined on the map.
3. The application of GPS receivers requires that either the map is produced in UTM coordinate system or the GPS to be adjusted to VN2000 coordinate system⁴.
4. The GPS waypoints can either be copied into the map by hand or can be added into a GIS database in case sufficient resources (computer and MapInfo software) and capacities (staff trained in the application of GIS technology) are available.
5. The accuracy of the land use map is of utmost importance to ensure that land allocation results will result in a sustainable conflict-free solution as basis for sustainable forest development.
6. Colour each land use area on the map by using a distinctive colour.
7. Calculate the area of each unique land use. In case GPS waypoints were copied by hand into the map use a transparency with squares to be placed over the land use map (at a scale of 1:5000, a 2 x 2 cm square is equal to 1 ha) and count the squares in each area. In case a GIS database has been developed separate layers for each land use type should be developed and polygons for each separate area demarcated for area calculation. Write the area of each zone on the map.
8. Fill in the tables related to the current land use areas as provided in Circular 30/2004/TT-BTNMT

Note:

It takes about 2-4 days to get accurate data about all the land use practices in the village.

⁴ GPS hand receivers have a function to customize a map datum and such GPS can be rented from government Departments in Vietnam

Socio-economic & ecological analysis and identification of land use trends

The analysis of the socio-economic & ecological conditions and the identification of the land use trends of the village is important for the development of a suitable land use plan and to optimise the land uses. This analysis will be carried out by the key-villagers with support from the commune working group and professional staff.

Objectives:

- To analyse demographic data
- To identify the ecological impacts of different present and potential land use practices
- To analyse the existing level of social equity to land access
- To identify land use trends

Time needed: 3 hours

Materials: Copies of the cost-benefit analysis and ecological impact sheets as provided below (one copy for each main land use practice), A0 paper, markers

Steps:

1. Ask the village head to provide the statistical data of the village including: village population, population growth rate, number of men and women (labourers), number of better-off households, number of medium households, number of poor households, ethnic minorities, data about different kinds of agriculture crops with their respective areas, productivity (local potential production in kg per ha) and production (actual production over the last year in kg per ha), average food production per capita per year (rice equivalents⁵), land tenure ship and data about animal husbandry.
2. Discuss if these data reflect the actual situation in the village. If not, adjust the data and interview some more villagers if necessary.
3. Analyse the demographic data and assess if the population in the village is growing, stable or declining. If it is expected that the population will grow over the coming 5 years, areas should be set aside for new house construction and arable land. Discuss the location and area that needs to be set aside for the growing population (if available).
4. List of each crop and tree species (including the cultivation practices to grow it), the positive and negative impacts on the soil, water, erosion, pollution, etc. Ask farmers about their experiences in growing the crops/trees over long periods at the same site to facilitate the discussion on ecological impacts.
5. Discuss and analyse the social equity to access land (quality and quantity). Identify difficulties and propose solutions that should be taken into account during the land use planning.
6. Assess which crops/trees and current land use practices are most suitable in terms of economic profit, social equity and ecological impact. Prioritise the land use practices.
7. List potential crops, agro-forestry systems and tree species that are not yet grown in the area but might have potential. Repeat step 4, 5, 6 and 7 and make a socio-economic, environmental analysis. Prioritise the potential land use practices.
8. Write the results of the economic, ecological and social analysis of both the current and potential land use practices on A0 paper and hang the results on the wall.
9. For the identification of land use trends: Agree upon the main land use practices: for example: residential area, agricultural crop land, paddy rice land, barren land, forest plantation & natural forest land. Write down of each land use practice the current area (ha). The total sum should be that of the entire village area. Do the same for 5 years

⁵ In Vietnam the Government has standard criteria to convert production of other staple crops (cassava, maize, etc) into rice; 370 kg of rice equivalents is considered as sufficient per person per year

ago and 10 years ago. Make estimates if there are no official data available. Now it will be clear which land use practices increased and decreased over the last 5 to 10 years.
10. End the exercise and explain that now all the preparation exercises before the actual land use planning have been completed.

Note:

In case villagers are not familiar with potential land use options under agro-forestry, afforestation and/or natural resource management, the professional staff has to introduce a range of suitable land use options which can further be assessed.

Ecological impact analysis sheet

Land use practice:.....

Village: Commune:.....

<i>Item</i>	<i>Ecological impacts</i>			
	<i>Positive impacts</i>	<i>Neutral impact</i>	<i>Negative impacts</i>	<i>Unknown</i>
Impact on soil				
Impact on water				
Impact on erosion				
Use of pesticides				
Use of fertilizers				
Impact to neighbouring sites				
.....				

Step 3: Development of commune land use plan

Development of draft village land use plan

The preceding exercises, including the preparation of a 3-D model, the transect and listing of areas under current land use practices were all necessary to prepare and develop a suitable land use map. In this exercise, the selected villagers with support from the commune working group will prepare an initial land use plan that will be discussed with the entire village during a village meeting.

Objective:

- To develop a land use plan based on the developed 3D model and transect diagram

Time needed: 3 hours

Materials: A0 paper, markers, current land use map, 3-D model, transect diagram, outcomes of the socio-economic analysis of the village, list with current land use practices and their respective areas, copies of the forms as included in Circular 30/2004/TT-BTNMT

Steps:

1. Present the objectives of the exercise, the time required and explain that the participants are expected to prepare the initial land use plan.
2. Identify the land use objectives of the village based on existing district and communal socio-economic land use plans and based on actual needs of the villagers (including the poor and disadvantaged groups).
3. Examine the current land use map and 3-D model and discuss all different land use practices starting from the residential areas to the boundaries of the village.
The following guiding questions are proposed for the development of the land use plan:
 - Is the current land area for a given land use practice sufficient? If not, can the area be expanded and where?
 - Can the economic benefits from the land use be increased?
 - What are the negative ecological impacts of the current land use? Can these negative ecological impacts be overcome or reduced?
 - Is the current land use socially acceptable? Do poor and disadvantaged groups have sufficient access to land? How is the land distributed in terms of quality, quantity and accessibility?
 - How can the problems identified in the transect diagram be overcome?
 - How can the opportunities and solutions identified in the transect diagram be realized?
 - How will the land areas classified as “unused land” be put into use?
 - Is there any land area that needs to be given back to the commune authorities?
 - Which forestland area should be allocated to individual households, groups of households and/or village? (Explain again the advantages of allocating forest land to individual households that is located relative near residential areas; the allocation of forest land more far away to groups of households and the allocation of forest land that holds common interest (such as water resources) to the whole village; explain also the need for using ecological boundaries.)
 - What are the phases for land use implementation, changing certain land use types, withdrawal of land and bringing unused land into use?
4. Based on the outcomes of the discussions and the priorities and objectives set by the village, identify and list all the suitable land use options per site.
5. Select the most suitable land use option for each site based on economic, ecological and social considerations. Refer to the correct land use options as described in the Land Law (13/2003/QH11).
6. Check if all the information needed to fill in forms 1, 2, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14 and 15 as stipulated in Circular 30/2004/TT-BTNMT are available.
7. Explain that the professional staff in cooperation with the cadastral staff and with support from the village leader will finalize the village land use plan map and the tables related to the land use plan report.

Preparation of the village land use planning map and filling in tables related to the land use report

The cadastral staff and professional staff will prepare the village land use plan. For the development of the land use report and filling in the land use plan tables as stipulated in Circular 30/2004/TT-BTNMT the support of the village leader is also needed.

1. Prepare the village land use plan on a overlay transparency (scale at least 1:5,000) and use colour pens to mark the areas that are proposed for a specific land use option (use the same colours for the land use practices as were used on the base map as prepared earlier).
2. Fill in the tables as required in Circular 30/2004/TT-BTNMT.

Note:

Allocation of forest land to a village or group of households is suitable if forestland is relative far away from residential areas, if the available forest land is relative small and/or if the forest land holds resources or other common interests for the whole group or village (e.g. water sources that are used/managed by the entire group or village) and cannot be allocated to organizations or individual households.

Second village meeting

The village land use plan affects all households in the village. Therefore the land use plan should be presented and discussed with the entire village. This meeting should be carefully prepared because it is likely that there will be a large number of participants.

Objectives:

- To agree upon a final village land use plan and forest land allocation plan
- To explain the next PLUP-FLA steps

Time needed: 2 hours

Materials: 3-D model, base map of current land use situation, village land use plan map, transect diagram

Steps:

1. Welcome all villagers and explain the objectives of the village meeting.
2. Explain how the land use plan was developed and describe the different exercises that were used to analyse the existing situation. Present the results of the analysis of the existing situation, including the base map and the transect diagram.
3. Present the land use plan and discuss each proposed land use practice, starting from the residential areas towards the village boundaries. Ask the villagers if they agree with the proposed land use options for each site. Encourage discussions and ask individual villagers (including men and women, young and old, poor and better-off) about their ideas about the initial land use plan
4. Explain the different options for forest land allocation (allocation to individual households, groups of households and entire village)
5. Show on the map and/or 3D model, the areas that have been identified for allocation to individual households, groups of households and/or to the entire village. Encourage discussions and ask individual villagers (including men and women, young and old, poor and better-off) about their ideas on this general forest land allocation plan.
6. Finish the discussion and summarize the results, listing the modifications that will be made in the proposed land use plan.
7. Explain the next steps in PLUP-FLA. The FLA plan will be made after the approval of the land use plan and the application forms will be distributed in the next village meeting (see Annex 3 of Circular 38/2007/TT-BNN for reference).
8. Thank the villagers for their participation and close the village meeting.

Note:

Ensure that prior to the meeting the maps of the current land use situation and land use plan, and the transect diagram are hung on a wall that is accessible to villagers and also ensure that villagers can see and study the 3-D model. Members of the commune working group and the key villagers should have an open receptive attitude towards comments and suggestions of villagers and not be defensive about the results and/or the initial land use plan. The village meeting gives villagers the opportunity to know and discuss the village land use plan and it should be clear that changes and modifications can be made.

Forest land allocation options (apart from allocation to economic sectors and organizations) are: land allocation to individual households, land allocation to group of households and land allocation to the entire village. Land allocation to individual households is most appropriate for forestland that is located near residential areas, where forest management is relative easy. Allocation to forest user groups is more appropriate for land relative far away from residential areas (for example more than one hour walking distance) since management and protection of these areas is more complicated and the maintenance of human induced boundaries practically impossible. Therefore in these areas plot boundaries should be based as much as possible on ecological boundaries and features in the landscape. Finally allocation to the village might be the best option if the forest land is too far and/or inaccessible, and/or if the forest holds resources or other common interests of importance to all villagers (e.g. water sources that are used by the whole village). Another reason to allocate some land to the entire village can be to “save” some areas for people who are not able to manage a plot of forest land but need forest resources for their livelihood (e.g. the poor and/or elderly with no labour resources) and/or for future generations and immigrants.

Step 4: Village FLA planning

Preparations for the development of a village FLA plan

The professional staff in cooperation with the commune working group and the selected key-villagers prepare a draft general FLA plan of the village which outlines the estimated number of individual households and the estimated number of groups of households that can receive forest land.

Objective:

- Preparation of a general village FLA plan

Time needed: 2 hours

Materials: village land use map, forest status map, topographic village map, 3-D model approved land use plan

1. Present the land use plan and show the key-villagers the areas that have been approved for allocation to individual households and groups of households.
2. Discuss on the forest area that has been approved for allocation to individual households, the estimated number of individual households that can receive forest land. Discuss also if every household should receive the same plot size or that some households should receive larger/smaller plots depending on e.g. forest status and/or accessibility.

3. Discuss about the selection criteria for FLA. Criteria can for example be the location of the household, former forest activities in a certain area, dependency on forest land, number of main and sub-labourers, etc.)
4. Discuss per forest area that has been approved for allocation to groups of households, the estimated number of groups and the estimated number of households per group. Answer questions such as:
 - Where are the ecological boundaries/ecological features (streams/watercourses, hills, valleys, etc) that can be used to demarcate plot boundaries of forest land that will be allocated to groups of households and/or the village?
 - How many plots are there to be managed by groups of households making use of ecological boundaries?
 - How many households should ideally be involved in the management of each of these plots? (The sizes of each forest plot will differ because use it made of ecological boundaries. Depending on its size, the plot will be managed by larger or smaller groups).
5. Discuss about the criteria for participating in a group of households that receive forest land.
6. Write the outcomes of the discussions on an A0 and make a sketch map of the forest areas showing the local name of the forest land and the estimated number of individual households and/or groups to receive the land.
7. Summarize the results and end the exercise.

Note:

Every forest management group does NOT need to be of the same size (a small group can manage a small forest area, whereas a bigger group could manage a larger size) if this is more suitable and better reflects the situation in the field. Participation in forest management groups should be on a voluntarily basis and based on the interests of local people. Groups can for example be based on kin or on neighbouring households. Once a household decided to participate in a forest management group, the household is bound to the responsibilities set for the group.

Third village meeting

In the third village meeting, all villagers who are interested in receiving forest land should participate.

Objectives:

- Presentation of the approved land use plan
- Presentation of the benefits and rights of receiving forest land
- Agreement on the estimated number of individual households who can receive forest land per location
- Agreement on the estimated number of groups of households who can receive forest land per location
- Agreement on the estimated number of households that can participate in a group per location
- Agreement on the criteria for FLA
- Distribution of application forms
- Agreement on contribution from villagers during FLA field implementation

Time needed: 3 hours

Materials: Approved land use plan and map, sketch map and A0's as prepared in the former exercise, application forms

Steps:

1. Welcome all villagers
2. Present the approved land use plan and show the areas that have been approved for allocation to individual households and groups of households.
3. Explain the benefits and rights of receiving forest land according to Decision 178/2001/QĐ-TTg (see note below).
4. Show again the areas that have been approved for allocation and show the numbers of estimated individual households that can receive forest land per location as discussed with key-villagers. Agree upon the estimated numbers. Explain that the proposed number is only an indicator and not fixed.
9. Explain that the areas to be allocated to groups of households will be managed by these groups. Explain the proposed functions and tasks of the forest management groups in general. Explain that after the groups are formed, the groups should sit together and decide among themselves whom to appoint as the head and vice head of the group. The group should also discuss the organizational and operational arrangements of the group.
5. Discuss the number of groups and discuss the number of households proposed to participate in these forest management groups. Agree upon the estimated numbers. Explain again that the proposed number is only an indicator and not fixed.
6. Present the criteria for FLA as discussed with the key-villagers and agree upon the criteria.
7. Verify if everything is clear for the villagers, and clarify issues if needed.
8. Hand out the application forms for FLA and explain the forms.
9. Explain the next steps of FLA implementation and agree upon the contributions from the villagers during FLA implementation in the field
10. Explain that the commune working group in cooperation with the professional staff will select the eligible households. Explain that the list of eligible and non-eligible households with the respective land areas will be hung in the CPC building and be available at the village leader for 15 days. In these 15 days villagers have the opportunity to see the results and request modifications.
11. Thank the villagers for their participation and end the meeting

Note:

According to Decision 178/2001/QĐ-TTg people are allowed to collect NTFPs (fuel wood, rattan, bamboo, medicinal plants, vegetables, mushrooms, etc) from their allocated forest land but need written approval from the DPC for natural timber harvesting. In case of setting up tree plantations on allocated forest land, landowners are expected to pay tax when harvesting timber. In return forest land owners are expected to manage and protect the allocated forest land effectively.

Participatory Forest Inventory

Objectives:

- To provide a practicable methodology for participatory forest inventory which will provide technical sound data for a) the calculation of stem number and volume figures for the process of forest land allocation and b) the development of Village Forest Management Plans.
- Furthermore, the methodology can be utilised as an effective tool for monitoring and reporting of the forest status and the impact of the applied management during a repeated inventory.

- Two alternative inventory methods are provided depending on available resources (GPS receivers, GIS based mapping, computer-based data analysis) and field level capacities (trained technicians from district level).

Time needed: 7-10 days depending on forest area and forest status

Materials: Village FLA map, Hand-held compass, GPS receiver, tape measure 30m, set of two ropes (20 m rope with a knot at 10 m) with loops at the ends, height measure tool (e.g. Blume-Leiß), adjusted girth & diameter class measure tape, slope measure tool (see Appendix 7 for instructions), tally sheets (format provided in Appendix 1, Sample 4), clipboard and pencils, chalk.

Instructions on the development of an adjusted girth & diameter class measure tape

Class width [Diameter]	Min. Girth per Class	Colour Band
08-14,9	25,13	yellow
15-19,9	47,12	black
20-24,9	62,83	stripes
25-29,9	78,54	blue
30-34,9	94,25	dots
35-44,9	109,96	saw
>45	141,37	red

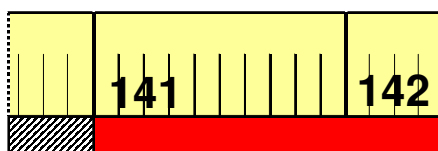


Figure 6: Design sample for adjusted girth & diameter class measure tape

Preparation:

1. Develop sample plot grid net/transect line: Sample intensity is ranging from 1-1,5%, depending on the heterogeneity of the forest in the respective forest block following Decision 682/QĐ and QP N6-84 by MARD dated 1 August 1994. Sample plots are oriented along a systematic grid net as overlay on the existing village mapping information. The following calculations have to be completed (manually or computer-based by use of the Excel inventory database in the worksheet “Transect line”):

- Sample area= $\frac{\text{Forest block in square meter}}{100 \times \text{sample intensity}}$
- Number of sample plots= $\frac{\text{Sample area}}{\text{Plot size}}$
- Grid net distance= $\frac{\text{Forest block in square meter}}{\text{Number of sample plots}}$

Option A with GPS hand receiver - The grid net distance has to be entered in MapInfo as a new layer and placed over the forest block area. Each grid net point represents one sample plot. All grid net points have to be entered as waypoints into a GPS hand receiver in order to identify the points in the field. Grid net coordinates can also be derived manually by copying the location directly from the map.

Option B without GPS hand receiver – Use a transparency to draw the grid net with the calculated grid distance (refer to the scale of the map for the correct distance). Lay the transparency over the respective forest block and draw transect lines by connecting grid net points in lines. Locate the transect lines so that they cut the contour lines (running up or down the slope). Explain that depending on the location at the slope (e.g. foot hill, shoulder, rim) the growth and yield of the same forest can differ to a great extent and that therefore the transect lines always have to run up- or downhill to get a representative sample of all different sites. The starting point of the transect line should be easily recognisable in the field. A compass bearing should be used to follow the transect line in a more or less straight direction when implementing the inventory.

2. Plot measure teams have to be defined before going to the field and should include farmer(s) who will receive the respective forest block. A measure team consists of one technician and two farmers and are responsible for the following tasks:

Measure team job description

Name	Main job	Support to technician
Recorder (Technician)	Option A mark GPS waypoint Option B find plot location on transect line Measure slope Record tree data Measure tree height	Mark transect and plot starting point
1 st Measurer (Farmer)	Measure tree girth and diameter class (colour) Define tree species and timber potential Chalk tree	Layout transect line (top point) Support technician to measure tree distance for tree height calculation
2 nd Measurer (Farmer)	Measure tree girth and diameter class (colour) Define tree species and quality Chalk tree	Layout plot line (20m) Remove ropes after completed measurements

Steps:

1. Follow the transect line/GPS waypoint to locate the first temporary sample plots.
2. Mark the starting point of each sample plot with red oil paint for the appraisal mission of the forest land allocation.
3. The technician is responsible for recording tree data and guiding the farmers during plot layout and tree measurement.
4. Sample plots are designed in a rectangular shape of 500m² (20x25m) and temporarily marked by nylon ropes as shown in the following figure.

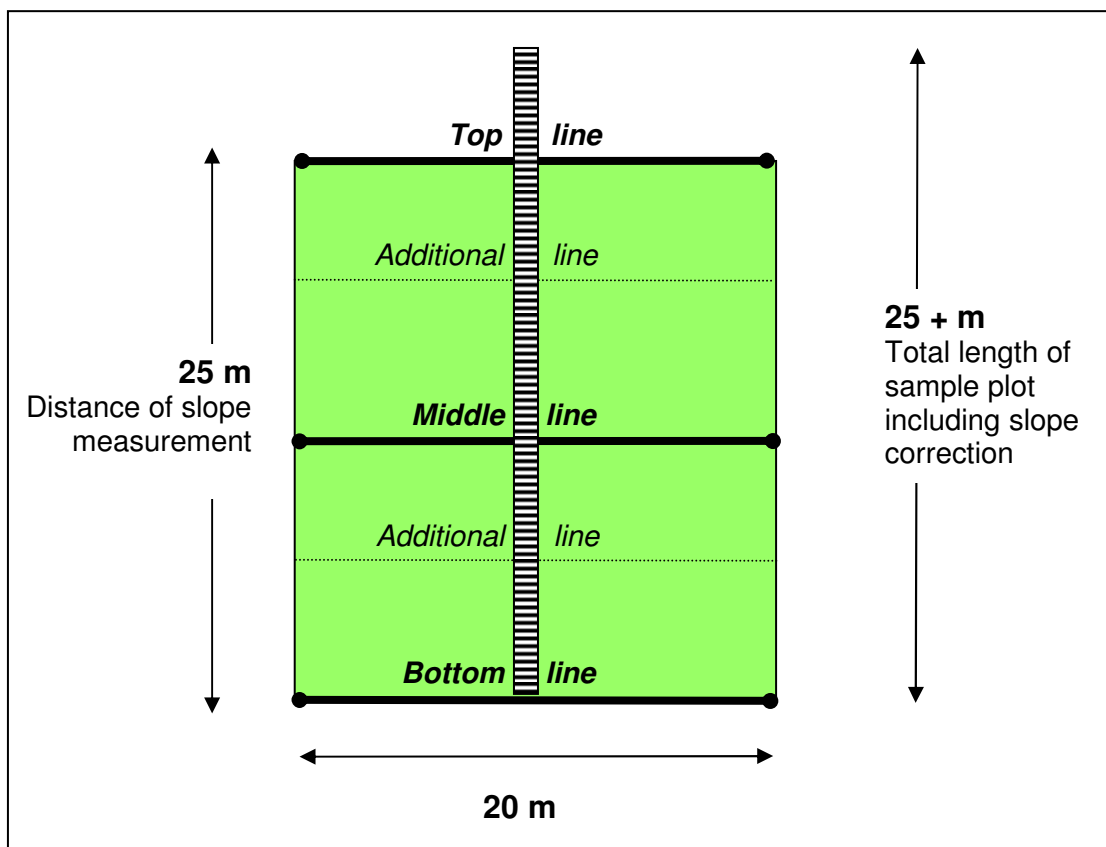


Figure 7: Sample plot layout

5. One farmer is lying out a straight 25m line using the 30m measure rope. The technician is directing him.
6. In mountainous areas a slope correction is required for accurate measurements. In this case, a slope measurement is conducted from the starting point of the plot and is targeting one persons face at the uphill side of the plot in 25m distance. The additional length (slope correction table on the slope measure tool) is added to the total plot length following the transect line.
7. Bottom and top plot boundaries are located by use of 20 m nylon ropes laid out rectangular (90° right angle) to the transect line. Depending on the visibility of the forest two or more additional lines have to be laid out inside the sample plot area to identify whether border trees have to be measured or have to be excluded.

8. Inside the sample plot all trees > 8cm diameter at breast height are recorded with tree name (local or scientific name), girth, colour diameter class and three quality groups as stipulated in Circular 38/2007/TT-BNN:
 - **A quality:** trees showing good growth, with a long branch-free stem without diseases or defects.
 - **B quality:** trees showing normal growth, showing few areas with defects, diseases. 50-70% of stem volume with economic potential.
 - **C quality:** trees showing poor growth, crooked or infested or hollow stems. Only < 50% of stem volume with economic potential.
9. After measuring and recording a tree, it is marked with chalk to avoid double counting.
10. Tree height measurement is carried out by use of a Blume-LeiB measure tool by the technician for three trees per sample plot. One farmer is supporting the technician during the distance measurement by holding the measure rope at the tree stem. The total tree height is measured. A more or less equal coverage of tree measurements from 8 to 60cm dbh should be reached at the end of the inventory.
11. The worksheet “height measurements” in the Excel inventory database is showing the actual distribution of the tree height measurements over the diameter classes from 8 to 60 cm diameter classes.
12. Data compilation for forest allocation is carried out without participation of farmers as the calculations are too scientific for local people to follow.
13. For every forest type height equations have to be calculated prior to data entry by analysing the height measurements conducted in the field.
14. A non-linear regression analysis is conducted to develop a diameter-height equation by applying the logarithmic equation from the Forest Inventory and Planning Institute (FIPI)⁶ as described below:

$$\text{LnH} = \text{LnA} + \text{B} * \text{LnD}_{1.3}$$

$$\text{H} = e^{\text{LnA} + \text{B} * \text{LnD}_{1.3}} = 2,718282^{\text{LnA} + \text{B} * \text{LnD}_{1.3}}$$

Whereas: LnH = Logarithmic tree height
 A, B = Variables A, B
 LnD_{1.3} = Logarithmic diameter at breast height in meter

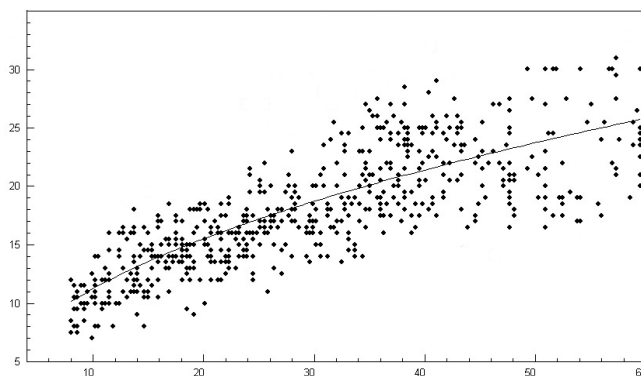


Figure 8: Sample of a diameter/height regression with added trend line

⁶ Forest Inventory and Planning Institute (1995) Forest Inventory Hand Book , Agricultural Publishing House, Hanoi

15. Regression analysis is carried out by use of specific software (e.g. DataFit). Results (Variables A, B) are entered into the Excel worksheet “Inventory analysis” prior to the calculation of stand figures.
16. All stand characteristics are automatically calculated by the Excel forest inventory database. Standing volume is calculated by use of the Volume function $V = g * h * f_{1,3}$ whereas the form factor is defined as 0,45 for natural forests as stipulated in Circular 38/2007/TT-BNN.
17. Inventory analysis results are provided by the Excel database in form of a result table as shown below:

Sample of a result table of the inventory data analysis

Hectare figures (ha)	
Stem number [ha]	922
Volume [ha]	123,0
Basal area [m ²]	17,9

Stand figures (block)	
Block size [ha]	128,67
Sample plots [#]	38
Average diameter [cm]	14,6
Average height [m]	13,8
Stem number [block]	118.580
Volume [block]	15.827

18. Assessment of forest status is based on the results of the inventory by applying the classification system as stipulated in Decision 682/QĐ and QP N6-84 of MARD dated 1 August, 1994 as described in appendix 5.
19. Inventory results have to be compiled in form of a summary table as provided as Sample 4 in which the inventory results have to be detailed for each unit, compartment and block following the forest management units of Vietnam (for a detailed definition see Box 4).

Appendix 1: Reporting formats for FLA procedures

The list and samples included in this appendix are based on the existing legal guidelines for FLA of the government of Vietnam.

No	Documents to be prepared per step	No	Samples
1.	Application for forest allocation		Sample A
	Step 1		
2.	Decision for the formation of a commune working group	3	Annex 2, Circular 38/2007/TT-BNN
3.	Decision for the formation of a district steering group	3	Sample 1
	Step 2		
4.	Data about the current status of forest land	3	Sample 2
5.	Classification of forest land	3	Sample 3
6.	Data about the forest volumes per plot	3	Sample 4
7.	Minutes of first village meeting	3	Sample 5
8.	Current village land use map and current land use report	1	Circular 30/2004/TT-BTNMT
	Step 3		
9.	Minutes of second village meeting	3	Sample 5
10.	Minutes of commune and district meeting	3	Sample 5
11.	Commune land use plan and report	3	Circular 30/2004/TT-BTNMT
	Step 4		
12.	Minutes of the third village meeting	3	Sample 5
13.	Application forms for requesting forest land		Annex 3 Circular 38/2007/TT-BNN
14.	Registration list for households to receive forest land	3	
15.	Lists of eligible and non-eligible households	3	
16.	Data about allocated forest land area per forest plot	3	Sample 6
	Step 5		
17.	Commune FLA proposal	3	
18.	Application forms requesting for red book certificates		Circular 29/2004/TT-BTNMT
19.	Minutes of handover of forest land		Sample 7
	Step 6		
20.	Minutes of appraisal on the applications for FLA by the CPC and community working group	3	Sample 8
21.	Sets of cadastral documents	3	Circular 29/2004/TT-BTNMT
	Step 7		
	Appraisal minutes of cadastral documents	3	Annex 4 Circular 38/2007/TT-BNN
	Proposal for issuance red book certificates	3	
22.	Decision of the DPC to issue red book certificates	3	Annex 5 Circular 38/2007/TT-BNN Circular 29/2004/TT-BTNMT

Sample 1: Decision for the formation of the PLUP-FLA commune working group

People's Committee
.....
No.:...../QD-UB

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Date :

DECISION OF THE PEOPLE'S COMMITTEE OF

On "Formation of Commune Working Group"

PEOPLE'S COMMITTEE OF

Based on the Organizational Law of DPC, DPCo., dated 26/6/1994

Based on the Land Law No. 25/2003-QH11

Based on Decree No. 181/2004/ND-CP of the Government

DECIDES

Article 1: To establish the commune (ward/town) Commune Working Group (CWG), including:

1. Mr/Mrs. Chairman/Vice-chairman of CPC.....
2. Mr/Mrs. Commune cadastral worker,
Secretary
3. Mr/Mrs..... FPU worker, member
4. Mr/Mrs..... Member
5. Mr/Mrs..... Member
6. Mr/Mrs..... Member
7. Mr/Mrs..... Member
8. Mr/Mrs..... Member
9. Mr/Mrs..... Member
10. Mr/Mrs..... Member

Article 2: The CWG undertakes the following tasks:

- Classification, appraisal, verification, discussion and recommendation of every application for FLA for the CPC that will submit to the authorized level for approval.
- Openly inform the applications for FLA for feedbacks of local people, verify and come with solutions for the applications under complaints.
-
-

Article 3: The administrators of DPCs, Chairman of CPCs (ward, town) and the people mentioned above are responsible for implementing this decision./.

Cc:

- Members of CWG
- CPC (ward, town)
- District DoNRE
- FPU
- Archiving

On behalf of PC.....
Chairman

Classification of available forest land

Village.....Commune.....District.....

...
(Unit : Ha)

Sheet No.: :.....

Item	Total area (ha)	Classification according to purpose of use		
		Production forest	Protection forest	Special use forest
Total				
1. Land with forests				
a. Natural timber forests				
- Rich				
- Average				
- Poor				
- Recovered				
b. Mixed forests				
c. Planted forest				
d. Bamboo forest				
2. Barren land				
- Grass (IA)				
- Shrubs (IB)				
- With regenerated trees (IC)				
- Lime stone mountains with regenerated trees or scattered grass/shrubs				

Date:

Surveyed by :



Sample 5: Summary of Characteristics of Forest to be Allocated

(Attached to Decision No.dated byPeople’s Committee)
(Extracted from Circular No. 38/2007/TT-BTT dated 25April 2007 by MARD)

Province:.....
District:.....
Commune:.....

No	Location			Forest area	Forest Type	Forest state	Standing volume	Tree spacing	Watershed Category	Vegetation Cover	Tree Height	Tree Species	Year of planting
	Unit	Compartment	Block										
	2	3	4	5	6	7	8	9	10	11	12	13	14
01													
02													
03													
04													
05													
06													
07													
08													
09													
10													
Total													

Consultant organization: (1)

Date:.....

Prepared by.....

Head of consulting organization (2)

(Seal and sign)

1. Consultant organization is the agency carrying out the measurement, counting and definition of forest characteristics.
2. This form is summarized for each individual commune and attached to Decision on forest allocation.
3. Column 10 shows which category of watershed area the forest belongs to, i.e. very critical, critical or less critical.
4. Column 13 shows major composition of tree species if it is natural forest.
5. Column 14 shows year of planting if it is plantation forest.

Sample 6: Minutes of village meeting

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MINUTES OF VILLAGE MEETING

Today, date, at:hminutes

Place: Village.....commune.....District.....

Implementing the policies and guidelines of Quang Binh PPC and the plans of DPC, CPC regarding the FLA to individual households, individuals, groups of households, village communities and organizations for the purpose of long-term protection and management, today, at village:

Gathering in this meeting are households and the FLA commune working group to conduct the village meeting:(time) to discuss and agree upon

I. Participants:

1. Representatives of the commune:

Mr/Mrs. Position:.....

Mr/Mrs. Position:.....

2. FLA commune working group:

Mr/Mrs. Position:.....

Mr/Mrs. Position:.....

Mr/Mrs. Position:.....

Mr/Mrs. Position:.....

3. Village:

Mr/Mrs. Position:.....

Mr/Mrs. Position:.....

Mr/Mrs. Position:.....

Mr/Mrs. Position:.....

and representatives of(no.) of households/total of households in the village.

II. Meeting content:

.....
.....
.....

III. Results/outputs:

.....
.....
.....

The meeting is closed at: on the same date and minute of the meeting is read aloud./.

Representative of VMB
(Signature, Full name)

Minutes written by/meeting secretary
(Signature, Full name)

Sample 8: Minutes of handover of forest land

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MINUTES OF HANDOVER OF FOREST LAND

Implementing the governmental policies for allocation of forest land and natural forests to individual households, groups of households, communities and other organizations;

Today, date:

At village..... Commune/ward.....District.....

We have measured and allocated forest land to the forest user as follows:

1. Representatives of forest land allocator:

Mr/Mrs.:..... Chairman of CPC.....
Mr/Mrs.:..... Commune cadastral worker.....
Mr/Mrs.:..... Village head.....
Mr/Mrs.:..... Member of CWG.....

2. Representative of forest land receiver: (Forest user)

Mr/Mrs:

(name of the husband and wife or representatives of the group in case land has been allocated to a group of households)

Address: Village, group.....Commune/ward.....District.....

The two sides have measured, demarcated the land patch, area, forest status and forest volume; have made an assessment of the status, growth and development situation of the planted forest area and regenerated forest under delineated which have been invested. Mutual discussion and agreement have been reached upon to allocate (in the field) the plot for:as forest user, specifically:

No. of plot allocated Total area..... ha.

(No of plot allocated for use by a group of households.....) Total area.....ha.

The minutes of village meeting is read out aloud for final agreement and signatures.

Forest user	Representative of VMB	Representative of FLAWG
<i>(Signature, Full name)</i>	<i>(Signature, Full name)</i>	<i>(Signature, Full name)</i>

On behalf of CPC
Chairman

(Signature, stamp)



Sample 9: Sketch of the Location of Forest Land Plot Received (copy from Forest Land Allocation Map)

(attached to the handover minutes and red book certificate)

Sheet No.: :.....

Full name of forest user/head of forest user group:.....

Village.....Commune(ward).....District

Area of plotha; belonging to forest unit.....compartment.....Plot.....

According to the cadastral map of the village no. Plot no.

Place

Date:

Technical staff

Appendix 2: Relevant articles in forest related policies

Decision 178/2001/QĐ-TTg

On the benefits and obligations of households and individuals assigned, leased or contracted forest and forestry land

Article 5: Households and individuals assigned protection forests for management, protection and regeneration zoning off:

1. To be provided with funding by the State for performance of the task of managing, protecting and zoning off forests for regeneration according to current regulations.
2. To harvest secondary forest products, flowers, fruits, oil, resin... in the course of protecting and zoning off forests for regeneration according to current regulations.
3. To exploit dry and dead timber trees, fallen and broken trees as well as diseased trees according to the exploitation designs approved by the provincial/municipal Agriculture and Rural Development Services and the permits granted by the latter. The above-mentioned forest products may be freely circulated upon the completion of all the procedures
4. To exploit bamboo with the maximum exploitation intensity of 30% when the forest coverage reaches 80% of the assigned land area according to the current regulation on exploitation of forest products; to enjoy the entire value of forest products after paying taxes.
5. To exploit timber by the mode of selective cutting with the exploitation intensity of not more than 20% when the protection forests are allowed for exploitation (except for animals and plants on the lists of precious and rare forest plants and animals promulgated by the Government, and lists of animals and plants provided for in the appendix to the Convention on International Trade in Endangered Species of Wild Fauna and Flora-CITES) according to designs approved by the provincial/municipal Agriculture and Rural Development Services and exploitation permits granted by the latter. The exploitation must comply with the current regulation on exploitation of forest products. Households and individuals shall enjoy 85-90% of the exploited products after paying taxes, the rest shall be remitted into the State budget.

Article 6: Households and individuals assigned forestry land without forests but falling under the protection forest planning:

1. To be provided with funding by the State for forest planting and tending according to current regulations.
2. To use perennial agricultural plants as major trees for planting in the protection forests or inter-planting with perennial native forest trees according to afforestation designs approved by the provincial/municipal Agriculture and Rural Development Services.
3. To enjoy 100% of products exploited from supporting trees, inter-planted trees and forest thinning products according to designs approved by the provincial/municipal Agriculture and Rural Development Services, and to ensure the forestry coverage degree of over 0.6 after thinning.
4. To use no more than 20% of the forestry land area without forests for agricultural production and aquaculture.
5. To exploit timber by the mode of selective cutting with the exploitation intensity of not more than 20% when the protection forests are allowed for exploitation according to designs approved by the provincial/municipal Agriculture and Rural Development Services and exploitation permits granted by the latter. The after-tax value of exploited products shall be divided according to the following proportions: households and individuals shall enjoy 90-95%, the remainder shall be remitted to the State budget.
6. In cases where households and individuals invest capital by themselves in forest planting; they shall enjoy 100% of products when forests reach exploitation ages but can annually

exploit no more than 10% of the area already afforested by forest owners according to current technical processes and regulations.

Article 7: Households and individuals assigned by the State natural forests subject to production forest planning:

1. To inter-plant agricultural, and pharmaceutical plants, graze cattle and exploit their forest resources according to the regulation on management of production forest.
2. To make the fullest use of products in the course of applying silvicultural measures according to current processes and regulations
3. To exploit forest products to meet the family needs (except for the animals and plants on the lists of precious and rare forest animals and plants' by the Government and lists of animals and plants provided for in the appendix to the Convention on International Trade in Endangered Species of Wild Fauna and Flora - CITES). If wishing to build new houses for households separation or replacement or overhaul of their dwelling houses in communes where exist forests, the concerned households or individuals shall have to file applications with the commune People's Committees for certifications and further submission to the district People's Committees for consideration, approval and granting of permits for exploitation of not more than 10cm³ of log for each household. The must be subject to the commune administrations guidance and supervision. All acts of taking advantage of exploitation of housing timber for trading are strictly prohibited.
4. When forests are exploitable, households and/or individuals shall file applications for exploitation with the commune People's Committees for consideration and submission to the provincial/municipal Agriculture and Rural Development Services for approval and granting of exploitation permits. The exploitation must comply with current regulations on forest product exploitation. Depending on the present conditions of forests when they are assigned to households or individuals, the after tax value of major forest products shall be divided according to the following proportions:

a/ For timber forests:

- Depleted secondary forests: Households and individuals shall enjoy 100%.
- Forests restored after milpa farming or exploitation of timber trees with the common diameter of under 20 cm: Households and individuals shall enjoy 70-80%, the rest shall be remitted into the State budget.
- Forests with average or rich reserves of more than 100 m³/ha: From the time of assignment to the time of exploitation thereof, each year households and individuals shall enjoy 2%, the rest shall be remitted into the State budget.
- Forests with average or rich reserves of more than 100 m³/ha: From the time of assignment to the time of exploitation thereof, each year households and individuals shall enjoy 2%, the rest shall be remitted into the State budget.

b/ For bamboo forests: They are allowed for exploitation according to current technical processes and' regulations. After paying taxes, households and individuals, shall enjoy 95% of the forest products' value, the remaining 5% shall be remitted into the State budget.

Article 9 - Households and individuals assigned forestry land without forests but falling under the production forest planning, for afforestation:

1. To be supported by the State with capital for afforestation according to current regulations.
2. If receiving support capital from projects for afforestation, to enjoy the benefits provided for in the regulations of 'such projects.
3. If investing their own capital in afforestation, to have the right to decide by themselves on afforestation purposes and modes (zoning off for regeneration or planting new forests),

select trees for planting and planting techniques; and have the right to decide on their own exploitation and use of forest products.

4. All products exploited from forests shall be freely circulated.
5. To use part of forestry land without forests for agricultural production or aquaculture, which, however, must not exceed 20% of the assigned land area.

Article 10: Households and individuals leased forestry land without forests but falling under the production forest planning, for afforestation:

1. To have the right to decide by themselves on afforestation purposes and modes (zoning off for regeneration' or planting new forests), select trees for planting and planting techniques; and have the right to decide by themselves on the exploitation and use of forest products.
2. If households and individuals receive support capital from projects for afforestation, they shall enjoy the benefits provided for in the regulations of such projects.
3. All products exploited from forests shall be freely circulated.
4. To use part of forestry land without forests for agricultural production or aquaculture, which, however, must not exceed 20% of the leased land area without forests.

Article 23: The proportion of forest products' value to be remitted into the State budget according to the provision of this Decision shall be left for communes and used mainly for management, protection and development of forests. The proportion of forest products' value to be paid to the contracting party shall be used as follows:

1. For special-use forest management boards, protection forest- management boards and other State organizations: It shall constitute a revenue source and be used mainly for forest management, protection and development.
2. For State enterprises: It shall-constitute a revenue source from forestry business activities in direct service of forest management, protection and development:

Decision 08/2001/QĐ-TTg

On management of special use forest, protection forest and production forest

Article 19: Classification of protection forest based on crucial levels

1. Very crucial protection areas are located on upstream slopes or near by the rivers, lakes or on the areas that are endangered of strong erosion, or have high demand on water regulation, having strong sand movements, threat from sea waves on production and life in urgent need of protection and therefore it need to be established as protection forest in order to ensure the forest coverage of over 70%.
2. Crucial protection areas are located on the medium slopes, erosion and water regulation area, having lower threat by sand movements and sea waves; and where that have sufficient conditions to combine forestry production development and at the same time have requirement on land utilization and protection and therefore it need to be established as protection forest in combination with production so as to ensure the minimum forest coverage of 50%;

MARD should issue specific regulation on criteria of crucial and less crucial protection areas.

Article 20: Organization of protection forest management

1. It is depending on scale and level of importance of each protection forest zone to set up Management board, in the special case if each protection forest of more than 5000 ha is allowed to set up Management board, operating as economic public utility unit with receipts. The protection forest management board is the forest owner, is allocated

- with forest land and granted with land use tenure certificates, responsible for management, protection and development of the allocated forests;
2. Protection forest of 30.000 ha and over has a forest protection station belonging to the protection forest management board and technically directed by the provincial forest protection agency.
 3. Protection forests of less than 5000 ha (concentrate or fragmented) does not have the management board but to be allocated to other organizations, households and individuals for management, protection and development. Budget for this task comes from Provincial Budget. In case the forest owner is not yet identified, People's Committees of communes will be responsible for forest management, protection and development, and should have plan submitted to competent state agency for step-by-step allocation of forest and land to the said forest owners.
 4. Staff number of the protection forest management board is based on the allocated area – 1 tenured staff per 1000ha and each management board should have a minimum of 7 full-time staff.

Decree 163/1999/ND – CP

Concerning allocating and leasing of forest land to organizations, households and individuals for long-term forestry purposes.

Article 13. Quotas of assigned and leased forestry land

1. Quotas of forestry land assigned to households shall be decided by the provincial People's Committees but must not exceed 30 hectares.
2. Quotas of forestry land assigned to organizations according to projects shall be approved by the competent State agency (ies)
3. Quotas of forestry land leased to organizations according to projects shall be approved by the competent State agency(ies), Quotas of forestry land leased to households and individuals shall depend on their land-leasing applications .
4. For uncultivated land, bare hills, coastal sand land and sea-encroaching land, the quotas of land assigned to households for forestial use shall be decided by the provincial People's Committees, depending on the local land fund and their production capacity, ensuring the implementation of the policy to encourage and create favorable conditions for the exploitation and use of these types of land for forestial purposes.

13/2003/QH11

Land Law

Article 9: Land users

The land users stipulated in the law include:

3. Communities of inhabitants including Vietnamese community living in the same village and similar communities of inhabitants who have the same customs and habits or the same bloodline; they are allocated with land or issued with land use certificate by the government;

29/2004/QH11

Law on forest protection and development

Article 3: Term interpretation

In this law, the following terms are construed as follows:

.....

13. Village population community means all households and individuals living in the same village, hamlet or equivalent unit.

Article 29: Assignment of forests to village population communities

1. The conditions for assignment of forests to village population communities are prescribed as follows:
 - a. The village population communities have the same customs, practices and traditions of close community association with forests in their production, life, culture and belief; are capable of managing forests; have demand and file applications for forest assignment;
 - b. The assignment of forests to village population communities must be in line with the approved forest protection and development planning and plans; and match the capacity of local forests funds.
2. Village population communities shall be assigned the following forests:
 - a. Forests which they are managing or using efficiently;
 - b. Forests which hold water sources in direct service of the communities or other common communal interests and cannot be assigned to organizations, households or individuals.
 - c. Forests which lie in the areas adjoining villages, communes or districts and cannot be assigned to organizations, households or individuals and must be assigned to village population communities for the sake of communal interests
3. The competence to assign forests to and recover forests from village population communities is prescribed as follows:
 - a. The People's Committee of rural or urban districts, provincial towns or cities shall, basing themselves on the approved forest protection and development planning and plans as well as the provisions of Clauses 1 and 2 of this Article, decide on forest assignment to village population communities;
 - b. The People's Committee of rural or urban districts, provincial towns or cities shall have the competence to recover forests from village population communities according to the provisions of Points a, b, d, e, f, h and i, Clause 1, Article 26 of this Law or when such communities move to other places.

Article 30: Rights and obligations of village population communities with assigned forests

1. Village population communities with assigned forests shall have the following rights:
 - a. To have the forest use rights recognized by competent State bodies for stable and long term corresponding to the forest assignment term;
 - b. To exploit and use forest products and other forest yields for public purposes and domestic use for community members; to conduct combined forestry-agricultural-fishery production according to this Law's provisions and forest management regulation;
 - c. To enjoy their labour fruits and investment results from the assigned forest areas;
 - d. To be provided with technical guidance and capital supports according to the State's policies for forest protection and development and benefit from forest protection and improvement works;
 - e. To be compensated for their labour fruits and investment results for forest protection and development according to the provisions of this Law and other relevant law provisions when the State issues forest recovery decisions.
2. Village population communities with assigned forests shall have the following obligations:
 - a. To formulate forest protection and development rules compatible with this Law's provisions and other relevant law provisions, submit them to the People's Committees

- of rural or urban districts, provincial towns or cities for approval and organize the implementation thereof;
- b. To organize forest protection and development, periodically report to competent State agencies on changes of forest resources and activities related to forests under the guidance of commune/ward/township People's Committees;
 - c. To fulfill financial obligations and other obligations under law provisions;
 - d. To return forests when the State issues forest recovery decisions or upon end of the forest assignment term;
 - e. Not to divide forests among their members; not to convert, transfer, donate, lease, mortgage, provide guarantee or contribute business capital with, the value of the use rights over the assigned forests.

Appendix 3: Facilitation skills

(Copied from the Training Package on Participatory Agricultural Extension Methodology-GTZ-SNV)

What is facilitation?

Facilitation is a way of guiding discussions; field experiments or training that improves the learning effect within the group. It is based on the principle that adults learn best from own experiences and from discussing about their experiences. Technical knowledge is offered by the facilitator according to the demand of the farmers and discussed in a participatory way.

Mostly, the group is to draw conclusions or to agree about next steps. Especially in this step, the facilitator should leave the full stake to the group and not impose own ideas.

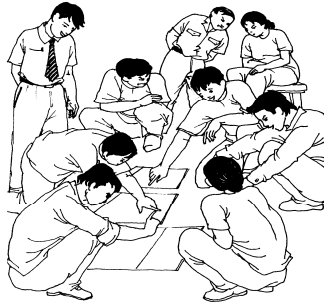


The key competencies of a good facilitator

- 1. Group moderation** This is the most frequent task of a facilitator to guide a group to exchange ideas and experiences in order to come up with joint results, conclusions, or work plans.
Good facilitation requires to pay attention to group dynamics, and to integrate the weaker group members, mostly women or poor people.
- 2. Communication** Group moderation builds upon personal communication skills. Among them, asking proper questions and listen actively are the most important ones.
- 3. Technical knowledge** Additional to farmers' experiences and knowledge, the facilitator should contribute specific technical knowledge – however, not imposing but offering and proposing solutions; not in a top-down but in a participatory way, respecting farmers' interests and demands.
- 4. Personal attitude** An authentic and positive attitude towards the farmers is the most important base for good facilitation. A person who thinks that farmers are lacking education and do not understand can never be a good facilitator.

How to do facilitation

1. Group moderation



Moderate the group discussion

Clarify with the group what is the task or objective.
Pick up the contributions from the group and help structuring different ideas.
Invite also weaker group members, especially women, to give their ideas, and encourage the group to consider them seriously
Mediate conflicting positions.
Use different methods for visualization, e.g. small cards, pictures, A0 paper, black board, 3-D models etc.
Help the group to define conclusions and/or action plans.

2. Communication



Ask questions and listen actively

Ask questions for getting information, clarifying situations and opinions, encouraging people's participation, managing group processes, or help people to raise awareness, or enhance learning processes.
Ask preferably open questions: How? Why? When? Who? What?
Use questions to foster analytical thinking: Strong points? Weak points? So, what is the conclusion?
Listen actively.
Give feedback, and invite participants to give feedback

3. Technical knowledge



Contribute technical knowledge

Figure out what technical knowledge is demanded by the farmers.
Make examples or practical demonstrations.
Ask for the local knowledge and how it might be integrated.
Prepare easy understandable handouts.
Do not impose your ideas, but offer your knowledge as a contribution to a learning process. Discuss with the farmers in which way they might apply the technical know how.

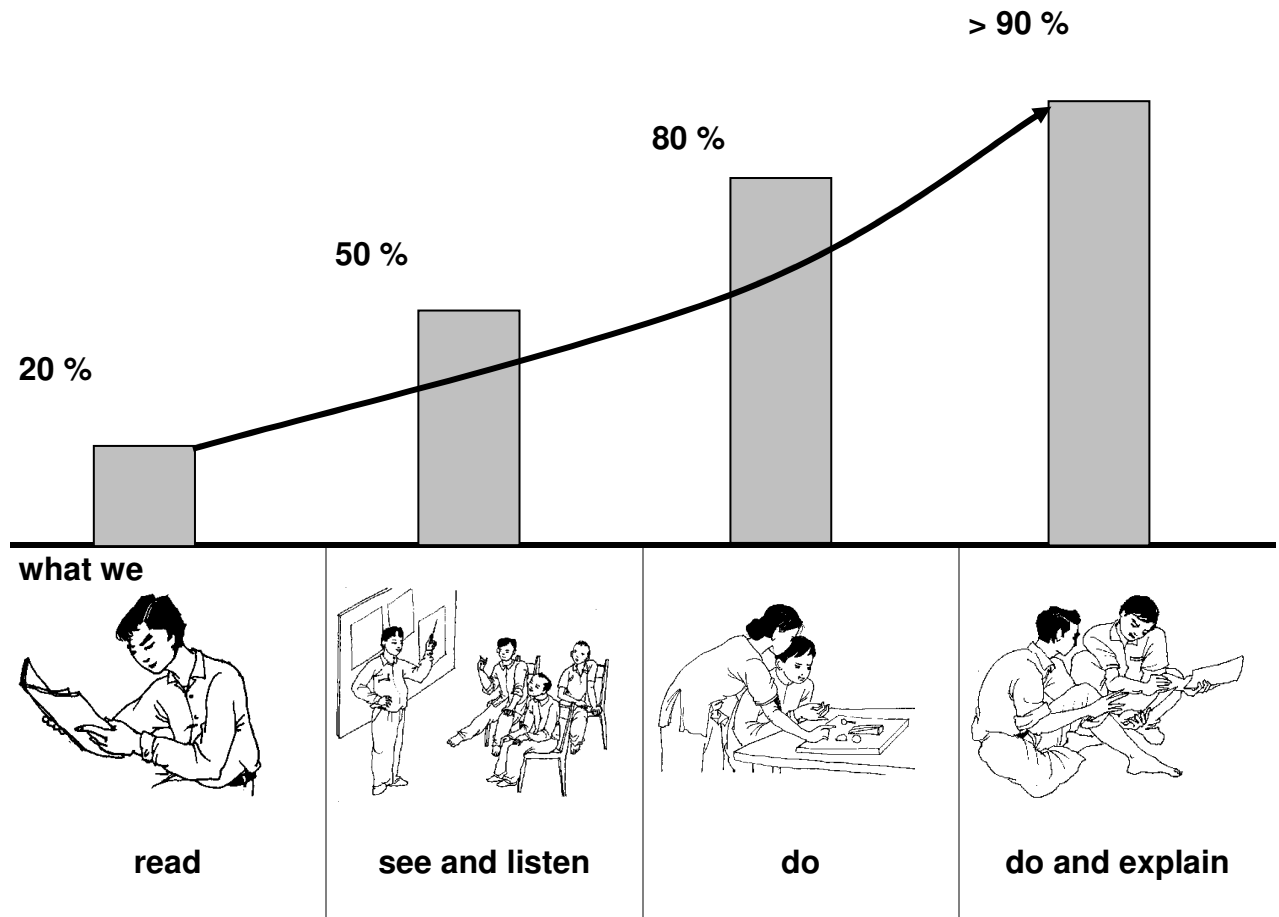
4. Personal attitude



Convey empathy

Show your full respect to the people.
Listen actively to the people's experiences and needs.
Try attentively to understand their view points, feelings, and situation.
Give positive and helpful feedback.
Be respectful and interested in their local experiences
Build up mutual understanding and trust, and encourage participants to respect mutual comments, especially of weaker group members and women. This is the most important base for good facilitation.

We remember ...



Therefore, the principles for effective training are to...

- facilitate the exchange of experiences among the participants (e.g. small working groups, group discussions)
- create opportunities to gain new experiences (practical exercises, field trips)
- reflect about experiences and what we can learn from it (reflection sessions and feedback)

Appendix 4: Different land use types according to the Land Law (2003)

No.	Land use	Code
1	Total area of agricultural land	NNP
1.1	Land for agricultural activities	SXN
1.1.1	Annual crop land	CHN
1.1.1.1	Paddy rice land	LUA
1.1.1.1.1	Paddy rice land for 2 crops/year (2 crops /year in case of fallow then fallow period is not more than 1 year)	LUC
1.1.1.1.2	Remaining rice land	LUK
1.1.1.1.3	Dry rice land	LUN
1.1.1.2	Grazing land	COC
1.1.1.2.1	Planted grassland for grazing	COT
1.1.1.2.2	Natural grassland with maintenance for grazing	CON
1.1.1.3	Other annual crop land	HNK
1.1.1.3.1	Flat annual crop land	BHK
1.1.1.3.2	Annual crop upland	NHK
1.1.2	Perennial crop land	CLN
1.1.2.1	Perennial industrial tree land	LNC
1.1.2.2	Perennial fruit tree land	LNQ
1.1.2.3	Other perennial tree land	LNK
1.2	Forestry land	LNP
1.2.1	Production forest land	RSX
1.2.1.1	Natural production forest land	RSN
1.2.1.2	Production forest land with plantations	RST
1.2.1.3	Production forest land for natural regeneration	RSK
1.2.1.4	Newly planted production forest land	RSM
1.2.2	Protection forest land	RPH
1.2.2.1	Natural protection forest land	RPN
1.2.2.2	Planted protection forest land	RPT
1.2.2.3	Protection forest land for natural regeneration	RPK
1.2.2.4	Newly planted protection forest land	RPM
1.2.3	Special use forest land	RDD
1.2.3.1	Natural special use forest land	RDN
1.2.3.2	Planted special use forest land	RDT
1.2.3.3	Special use forest land for natural regeneration	RDK
1.2.3.4	Newly planted special use forest	RDM
1.3	Aquatic land	NTS
1.3.1	Salty and semi salty surface land	TSL
1.3.2	Fresh water surface land	TSN
1.4	Land for producing of salt - marsh	LMU
1.5	Other agricultural land	NKH

No.	Land use	Code
2	Off - farm land	PNN
2.1	Land for house construction	OTC
2.1.1	Land for house construction in rural area	ONT
2.1.2	Land for house construction in urban area	ODT
2.2	Regularly used land	CDG
2.2.1	Land for government offices and public buildings	CTS
2.2.1.1	Land for state offices, working offices of other organizations	DTS
2.2.1.1.1	Land for state working offices	TSO
2.2.1.1.2	Land for other kind of offices	TS1
2.2.1.2	Land for public sites	DSN
2.2.1.2.1	Land for public sites without a business purpose	SNO
2.2.1.2.2	Land for public sites with a business purpose	SN1
2.2.2	Land for military purposes	CQA
2.2.2.1	Military land	QPH
2.2.2.2	Security land	ANI
2.2.3	Land for production activities and for off-farm business	CSK
2.2.3.1	Land for industrial area	SKK
2.2.3.2	Land for processing and business activities	SKC
2.2.3.3	Land for mineral exploitation	SKS
2.2.3.4	Land for producing construction materials and ceramic products	SKX
2.2.4	Land for public use	CCC
2.2.4.1	Land for roads	DGT
2.2.4.1.1	Land for roads without a business purpose	GT0
2.2.4.1.2	Land for roads with a business purpose	GT1
2.2.4.2	Land for irrigation systems	DTL
2.2.4.2.1	Land for irrigation systems without a business purpose	TL0
2.2.4.2.2	Land for irrigation systems with a business purpose	TL1
2.2.4.3	Land for electricity and communication cables installations	DNT
2.2.4.3.1	Land for electricity and communication cables installations without a business purpose	NT0
2.2.4.3.2	Land for electricity&communication cables installations with a business purpose	NT1
2.2.4.4	Land for cultural activities	DVH
2.2.4.4.1	Land for cultural activities without a business purpose	VH0
2.2.4.4.2	Land for cultural activities with a business purpose	VH1
2.2.4.5	Land for health service centre	DYT
2.2.4.5.1	Land for health service centre without a business purpose	YT0
2.2.4.5.2	Land for health service centre with a business purpose	YT1
2.2.4.6	Land for education	DGD
2.2.4.6.1	Land for schools without a business purpose	GD0
2.2.4.6.2	Land for schools with a business purpose	GD1
2.2.4.7	Land for sport activities	DTT
2.2.4.7.1	Land for sport activities without a business purpose	TT0
2.2.4.7.2	Land for sport activities with a business purpose	TT1
2.2.4.8	Land for market	DCH
2.2.4.8.1	Free allocation land for market construction	CH0
2.2.4.8.2	Other market construction land	CH1
2.2.4.9	Land areas with historical relics	LDT
2.2.4.10	Waste storing land	RAC
2.3	Land for churchyard/church/pagoda and cemetery	TTN
2.3.1	Land for church	TON
2.3.2	Land for pagoda	TIN
2.4	Land for churchyard, cemetery	NTD

No.	Land use	Code
2.5	Land of rivers, streams and other areas with water surface to be used regularly	SMN
2.5.1	Land of rivers, canals, streams	SON
2.5.2	Land area with water surface	MNC
2.6	Other land areas for off - farm purpose	PNK
2.6.1	Individual owned land without business activity	CTN
2.6.2	Land for building of temporary houses and camps	NTT
2.6.3	Land for agricultural services in urban area	DND
3	Unused land	
3.1	Unused flat land	BCS
3.2	Unused mountainous land	DCS
3.3	Barren rocky land	NCS
4	Sea surface land	
4.1	Sea surface land for aqua culture production	MVT
4.2	Sea surface with mangrove forest land	MVR
4.3	Sea surface land for other purposes	MVK

Appendix 5: Classification of forest status

The classification of the forest status as described below is derived from Decision 682/QĐ and QP N6-84 of MARD dated 1 August, 1994.

Classification of natural forests

Forests are classified into 4 groups:

- Group I: bare land
- Group II : young/regenerated forests
- Group III: secondary forests, affected forests
- Group IV: primary forests

Group I:

Land without forests or with no forests at the moment, only covered with grasses, shrubs or scattered trees and bamboos with a cover of less than 0,30%. Depending on the status, this group is divided into:

- IA: is characterized by a vegetation of grasses and shrubs.
- IB: is characterized by a vegetations of shrubs, and some scattered timber trees or bamboos.
- IC: is characterized by a number of regenerated timber trees and the same species as under IA and IB. Forests classified as type IC only apply to land with regenerated timber trees of more than 1 m high and more than 1,000 trees/ha.

Group II:

Recovered forests with pioneer trees with a small diameter. Based on the status and origin, these forests are classified as:

- IIA: Forests that are recovered after slash-and-burn practices. It is characterized by pioneer trees with high light requirements, quick growth, even-aged and by one single storey.
- IIB: Forests that are recovered after being completely exploited; majority of these forests include young tree/plant communities of species that have a relatively high light requirements, complex species composition, uneven-aged and unclear dominancy of species.

Under the forest canopy of this forest status, there might be some timber trees but with limited volume. Classified into this type is only forest with an average DBH of less than 20 cm.

Group III:

Forest, that is secondary forests and/or affected forests. Forest that has been exploited by people at different levels, which affected the structure and composition of the primary forest. Depending on the level of exploitation and the regeneration capacity of the forests, forests of this group are classified into 2 types:

- IIIA: is characterized by forests that have been under tremendous exploitation and little timber remains for harvesting. The primary structure of the forests has been completely affected and is basically changed. Forests of this type are divided into three sub-types:
 - IIIA1: For forests which have been exploited until depletion, the forest canopy is fragmented, some high and large trees at the over storey might remain but these are of poor quality and climbers, shrubs and bamboos are prevalent.
 - IIIA2: For forests which have been over-exploited but which is already recovered. It is characterized by trees belonging to the middle storey and the majority of them have a diameter of 20- 30 cm. Forests have 2 storeys or more, of which the upper storey

has an scattered canopy, which is mainly formed by middle storey trees, while some scattered big and strong trees are growing over this canopy.

- IIIA3 : Forests which have been exploited or developed from forests of type IIIA2. Forest canopy is relatively closed with 2 or multi story stands. It is characterized by (and differs in this aspect from the forest status of type IIIA2), a higher quantity of trees with some trees having a big diameter (above 35 cm) suitable for timber harvesting.
- IIIB: is characterized by forests under selective cutting for precious and good timber but the primary forest structure is not yet remarkably affected; the production capacity of this forests is still high; forests are rich in volume and many trees have lateral roots.

Group IV

Mature primary and secondary forests which have not been exploited. The forests have a stable structure, multi-storey, with different diameter classes but sometimes lack a middle storey and/or under storey. Forests of this group are classified into two types:

- Type IVA – Primary forests
- Type IVB – Recovered secondary forests

Classification of bamboo forests

Classification of bamboo forests is divided in *Nua* bamboo forest, *Vau* bamboo forest and *Tre/Luong* bamboo forest.

***Nua* bamboo species**

- Forests consisting of only *nua* bamboo are classified as follows:
 - Status N.1 – (small *Nua* bamboo): Diameter < 2 cm; N/ha > 10.000 poles. *Nua* bamboo forests recovered after slash-and-burn practices or after being depleted or exhaustedly exploited.
 - Status N.II – (medium *Nua* bamboo): Diameter = 3 to 4 cm, are classified into 3 levels based on the density:

+ N.IIA	Low	10.000 – 15.000 poles /ha.
+ N.IIB	Average	15.000 – 20.000 poles /ha.
+ N.IIC	High	> 20.000 poles /ha.
 - Status N.III- (big *Nua* bamboo): Diameter > 5 cm; are classified into 3 levels based on the density:

+ N.IIIA	Low	5.000- 10.000 poles/ha.
+ N.III B	Average	10.000- 15.000 poles/ha.
+ N.III C	High	> 15.000 poles/ha.
- *Nua* bamboo forests mixed with timber trees:
 - Status of bamboo forest mixed with timber trees (*nua* bamboo dominates), is described by the bamboo status followed by a letter representing the main timber species. For example: N.IIIA + Re
 - Natural timber forest mixed with *nua* bamboo
 - Status of natural forest with *nua* bamboo (forest dominates) is described by the status of the natural forest followed by a letter representing the bamboo species. For example: IIIA3 + N

***Vầu* bamboo species**

- Status VI: *Vầu* bamboo regenerated forests are classified into 3 types:
 - V.IA - Status of degraded *Vầu* bamboo forests is called “*Vầu* đĩnh”: D: 2 -4 cm and density (N/ha) is 5,000 to 10,000 poles.
 - V.IB - Status of *vầu* bamboo forests recovered after slash-and-burn practices: D = 4- 6 cm and density (N/ha) is 1,000 to 3,000 poles.

- V.IC - Status of *vau* bamboo forests recovered after serious exploitation: D = 6- 8cm; density 1,000 to 5,000 poles per ha.
- Status V.II: Status of *vau* bamboo forests of D = 8 to 10 cm; density of 2,000 to 3,000 poles per ha; two sub-types:
 - V.II – Pure *vau* bamboo forests
 - V.II + G – *Vau* bamboo forests mixed with timber trees

When classifying forest areas, dominant timber trees need to be identified and replace the symbol G by the names of the species. For example: VII + Re (Re is the Vietnamese name for *Cinnamomum* sp.)

- Status V.III: Status of *vau* bamboo forests which have not yet been exploited, with a diameter of more than 10 cm. This status is often divided into 3 sub-types:
 - V.III: Pure *vau* bamboo forest, with a high density of more than 4,000 poles/ha
 - V.III + G: Status of *vau* bamboo mixed with timber trees, with a density of about 3,000 poles/ha
 - G.V.III: Status of timber trees mixed with *vau* bamboo, with the *vau* density of more than 4,000 poles/ha (G stands for timber, this symbol will be replaced by the abbreviation of the timber species).

***Tre, luong* bamboo species**

- For *tre/luong* bamboo species, the classification is divided in pure bamboo stands and once mixed with timber trees. The forests consisting of only *tre/luong* bamboo are classified according to the *Tre/luong* bamboo species, diameter class and density.

Diameter classes:

Class I	3-5 cm.
Class II	6-9 cm.
Class III	>9 cm.

Density classes (N/ha):

Class 1 (low)	1,000- 2,000 poles/ha.
Class 2 (average)	2,000- 3,000 poles/ha.
Class 3 (high)	> 3,000 poles/ha.

- Status of the *tre/luong* bamboo forest is described as the name of bamboo-diameter class- density of poles. For example: T-II-3: T stands for *Tre gai* bamboo, the diameter class is II and the density is more than 3,000 poles /ha. For forests consisting of a mix of bamboo species and timber species, the forest status classification is similar to that of *Nua* bamboo as described above.

Classification of plantations

Plantations are described by species; if a plantation consists of mixed species then the status of these mixed species is described, followed by the age class.

Classification of five age classes:

- Class I Young
- Class II Pole
- Class III Nearly mature
- Class IV Mature
- Class V Over mature (old)

The age classes differ per species depending on the growth rate, hard timber species

- Bo de: 2 years - 1 Age class
- Eucalyptus 3 years - 1 Age class
- Pine, Sa mộc 5 years - 1 Age class

For example a pine (*thong*) plantation of 10 years old is described as “Th.II”

The age classes differ per species:

Appendix 6: Plot size and survey area for forest inventories

The sample plot sizes and forest areas as mentioned in this appendix are derived from Decision 682/QĐ and QP N6-84 by MARD dated 1 August 1994.

Survey areas

Natural forests

- Rich and medium forests: area that needs to be measured is 1.5% of the total area of the forest.
- Poor and recovered forests: area to be measured is 1 % of the total area of the forest
- Bamboo and other forests: area to be measured is 0.5 % of the total area of the forest

Plantations

- Age class I : area to be measured by 0.5 % of the area of the forest
- Age class II : area to be measured by 1 % of the area of the forest.
- Age class III : area to be measured by 2 % of the area of the forest

Regeneration areas

Forest of status Ib and Ic: area to be measured is 0.2 % of the total area of forest

Sample plots

Natural forests

- Sample plot should have a surface of 500 m² (in rectangular form of 20 x 25 m)

Bamboo forest

For scattered bamboo forest :

- Sample plot has a surface of 100 m² (in square form of 10x10 m or in round form with a radius of 5,6 m)

For *giang* bamboo forest :

- Sample plot of 25 m² (5x5m)

For bamboo forests growing in clumps, the plot size is based on the area of 6 continuous clumps.

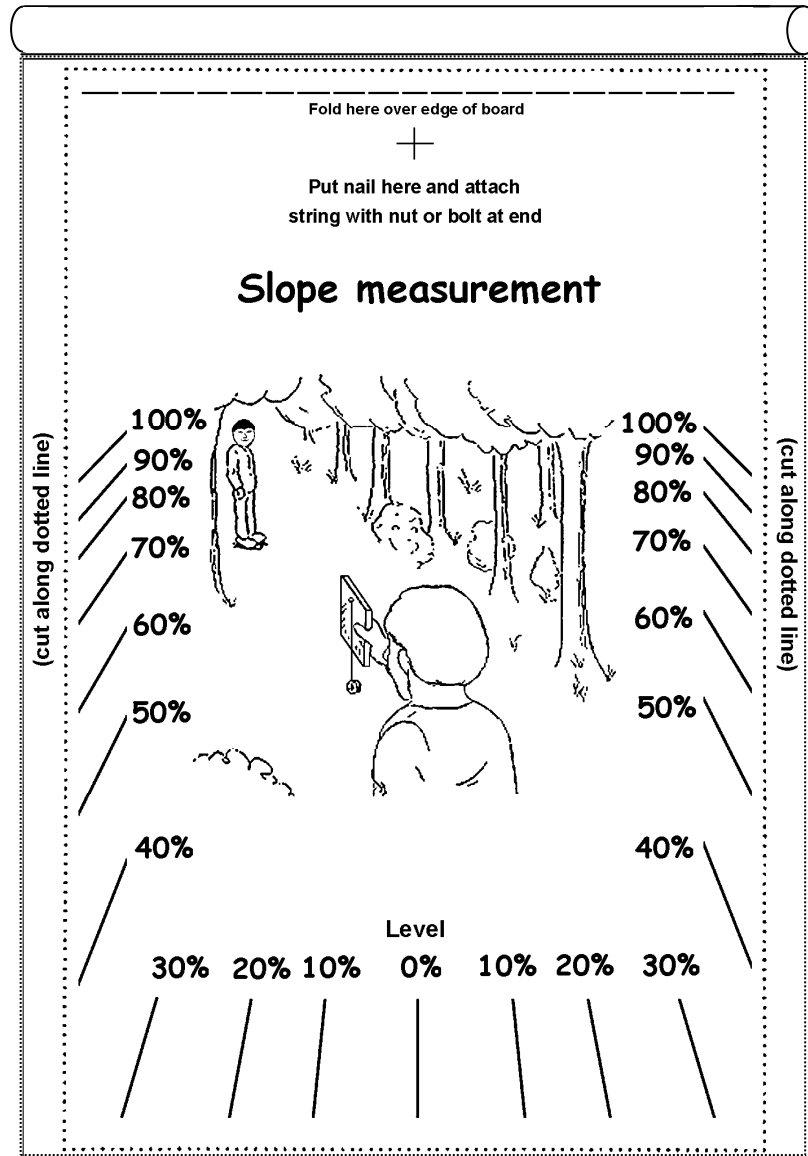
Note: *Sample plots and transects must be representative for the whole area including the different topographic locations in a survey area. Sample plots should therefore be selected at the foot, top and sides of the hills/mountains in order to get a comprehensive picture of the whole survey area.*

Appendix 7: Conversion of length on sloping land to a horizontal image

The presented conversions are derived from the forest inventory curriculum issued by the Vietnam Forest University in 1992.

Length on sloping land (m)	Length 20 m	Length 25 m
Slope (°)		
10	19.70	24.62
11	19.63	24.54
12	19.56	24.45
13	19.49	24.36
14	19.41	24.26
15	19.32	24.15
16	19.23	24.03
17	19.13	23.91
18	19.02	23.78
19	18.91	23.64
20	18.79	23.49
21	18.67	23.34
22	18.54	23.18
23	18.41	23.01
24	18.27	22.84
25	18.13	22.66
26	17.98	22.47
27	17.82	22.28
28	17.66	22.07
29	17.49	21.87
30	17.32	21.65
31	17.14	21.43
32	16.96	21.20
33	16.77	20.97
34	16.58	20.73
35	16.38	20.48
36	16.18	20.23
37	15.97	19.97
38	15.76	19.70
39	15.54	19.43
40	15.32	19.15

Appendix 7: Slope Measurement Tool



Instruction for preparing the slope measurement tool:

- Print out the slope measure tool and glue the page on a piece of carton or veneer board and cut it along the dotted line.
- The top has to be cut precisely along the bold dotted line.
- Print out the slope correction table and glue it on the other side of the measurement tool.
- Fix a plastic straw on the top line of the tool
- Drill a hole through the “+” at the top of the tool and attach a fine string with a nut or bolt at the end exceeding the size of the measurement tool.

Slope Correction Table

Slope	Plot length	Slope	Plot length
%	25 m	%	25 m
15	25,25	70	30,50
20	25,50	80	32,00
25	25,75	90	33,75
30	26,00	100	35,25
35	26,50	110	37,25
40	27,00	120	39
45	27,50	130	41
50	28,00	140	43
60	29,25	150	45



- Note: The table provides corrected distances for 25m horizontal distances, as function of the slope, e.g. the distance correction for a horizontal distance of 25 meters, with a slope of 40% is 27 m.

Appendix 8: Guidelines for the development of a land use plan and forest land allocation map

The following are the minimum requirements that should be shown on the land use plan map and the forest land allocation map (Technical guidelines from FIPI dated 1997).

Name of map: Land use plan map or forest land allocation map

Location: village, commune, district, province

Forest classifications according to functions:

- Protection forest
- Special use forest
- Production forest

Land use planning:

- Protected areas
- Protection forest
- Forest plantations
- Agricultural land
- Grazing land
- Construction land
- Land for fruit tree plantation
- Land for annual crop
- Water surface land

Forest land allocation (FLA):

- FLA for households, groups of households, communities and organizations, etc
- Forest land which has not been allocated or is not allowed to be allocated

Land use planning	Colour
Natural forests	Green
Planted forests	Orange
Barren land	White
Rocky/lime stone mountains without trees	Grey
Agricultural land	Yellow
Grazing land	Brown red
Residential land	Brown
Water surface	Blue
Forest area to be protected (conservation and protection)	Dark green
Rivers, streams, ponds	Dark blue
Road	Red
Railway	Black and white
Boundaries between villages, communes and districts	Black
Name of village, rivers and mountains	Black
Name of the area	Black
Parameters written in plots	Number, status, land use plan, area, name of household/forest user

Forest land allocation	Lines
– To households	Crossing lines
– To groups of households, communities	Vertical lines
– Social organizations	Horizontal lines

The following symbols are used to describe forest land:

Production forest: SX

Protection forest: PH

Special use forest: DD

Boundaries that should be clarified on the map include:

- Commune boundary
- Village boundary
- Forest status boundaries
- Boundaries of plots/forest users
- Boundaries identified according to the land use plan