

Sustainable Management of Natural Resources in Central Vietnam



MANUAL

DEVELOPMENT OF VILLAGE FOREST PROTECTION AND DEVELOPMENT REGULATIONS IN QUANG BINH PROVINCE

March 2006



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PREFACE

This manual on the development of forest protection and development regulations is developed by the “Sustainable Management of Natural Resources in Central Vietnam (SMNR-CV)” project, which is implemented by GTZ and executed by GFA and DED. The methodology and the practical guidance as described in this manual has been tested in the field in two communes, Dong Hoa commune in Tuyen Hoa district, Thuong Hoa and Hoa Hop in Minh Hoa district. Lessons learnt from field implementation as well as lessons learnt from other and former projects in Quang Binh Province, including the “Forest garden Project” implemented by Flora and Fauna International on behalf of Counterpart International, the “Integrated Food Security Project” supported by GTZ and implemented by GFA, and WWF Indochina’s “Linking Hin Namno and Phong Nha through parallel conservation project” are integrated in this manual. A former draft of this manual has also been presented and discussed with stakeholders from the provincial, district and communal level during a workshop on the 7th of September, 2005.

The manual is written for staff of the FPD at the provincial and district levels and for technical staff at the commune level who can support villagers in developing Forest Protection and Development Regulations. The SMNR-CV project hopes that this manual will lead to the development of regulations that are effective in enforcing the sustainable management of natural resources to ensure that the natural resource base is maintained for present and future generations.

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List of abbreviations

CPC	Commune Peoples' Committee
CPI	Counterpart International
DED	German Development Cooperation
DPC	District Peoples' Committee
FFI	Fauna & Flora International
FPD	Forest Protection Department (at provincial level)
FPDR	Forest Protection and Development Regulations
FPU	Forest Protection Unit (at district level)
GTZ	German Technical Cooperation
MB	Management Board
NTFP	Non Timber Forest Products
SFE	State Forest Enterprise
SMNR-CV	Sustainable Management of Natural Resources in Central Vietnam
WWF	Worldwide Fund for Nature



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Finally I am grateful to Mr. Hans-Juergen Wiemer and Mr. Tran Ngoc Lan of the SMNR-CV project for their backstopping support and Ms. Pham Thi Lien Hoa who carefully translated this manual into Vietnamese.

I hope that this manual can contribute to the development of specific FPDR that can support the sustainable management of the natural resources in Quang Binh province and elsewhere in Vietnam.

Marianne Meijboom

DEVELOPMENT OF VILLAGE FOREST PROTECTION AND DEVELOPMENT REGULATIONS

MANUAL

INTRODUCTION

This manual for the development of forest protection and development regulations (FPDR) is based on a former manual developed by projects supported by WWF and GTZ in Quang Binh Province in the year 2002 and the manual incorporated in the Training Package on Community Forestry developed by the Social Forestry Development Project in Song Da in the year 2004. The development of FPDR is based on Circular 56/1999/TT-BNN-KL, dated 30 March 1999 and titled "Guiding the elaboration of the convention on protecting and developing forests in the communities, in the hamlets and villages in the plains and mountain areas". An earlier draft of this manual has been discussed with provincial and local stakeholders in a workshop in Dong Hoi held on 7 September, 2005.

The aim of this manual is to provide a comprehensive methodology and practical guidance for the development of FPDR in order to strengthen sustainable management of the existing forest resources in villages.

The manual is written for staff of the Forest Protection Department (FPD) and commune staff to help villagers in developing effective FPDR that reflect the specific conditions of the local situation in the villages. The development of detailed FPDR is not easy and requires a good understanding of forestry legislation and sustainable management, but more importantly requires good facilitation skills to help villagers to develop FPDR that are specific for their area. Therefore, it is recommended that Forest Protection Unit (FPU) staff and responsible commune staff will be trained for four days (two days technical training and two days field practice) in this methodology and in facilitation skills before going out to the field for supporting villagers with the development of FPDR¹.

The establishment of FPDR is a first step towards sustainable forest management at the local level. They need to be developed with local participation of poor and rich, young and old, men and women in order to ensure support for the regulations at local level. Without this support, the FPDR will not be applied and implemented properly.

This manual consists of two parts. Part 1 is a description of the methodology and Part 2 contains practical guidance to draft FPDR as described in step 2 of the methodology. Furthermore the manual includes a number of appendixes that provide background information for the development of the FPDR.

¹ For materials on facilitation skills see e.g. the Training of Trainers (ToT) Book, material for ToT participants – General guide for facilitation and planning. In: Training Package Community Forestry, 2004. GTZ/GFA Hanoi, Vietnam.

Basic Principles

This manual on FPDR is based on the following principles:

1. Fit within the legal and administrative framework and on the basis of the socio-economic development plan, land use planning and local forest protection and development planning
2. Be simple and easy to be implemented with the local available resources
3. Ensure that issues of all groups in the community (including women, the poor, ethnic minorities and other disadvantaged people) are respected and taken into consideration
4. Strengthen the sustainable management of forest land and mitigate negative impacts on the forest resources
5. Be participatory and ensure that women, ethnic minorities, the poor and other disadvantaged groups fully participate in the process to develop FPDR
6. Reflect local people's needs to access and use forest resources (and not merely focused on forbidding the extraction of forest products)

PART 1: METHODOLOGY

The development of FPDR involves six steps:

1. Preparation
2. Development of draft FPDR by a selected group of local villagers, with guidance from the FPU, communal forest extension worker and, where appropriate, the State Forest Enterprise (SFE).
3. A village meeting at which the proposed FPDR are presented and discussed with inhabitants of the village (at least one representative of each household should take part in this meeting).
4. Finalize FPDR document and submit for approval
5. Dissemination of FPDR at village level
6. Implementation, monitoring and evaluation of the regulations to ascertain whether or not they are being applied and/or need revision. This should involve an annual village meeting.

It is expected that the development of the FPDR will take about four days; one day preparation, two days for the development of the draft regulations and one day for discussing the draft regulations in a village meeting. Also time is required for the writing of the FPDR document for submission to the authorities. The time needed for authorities to approve the FPDR depends on the authorities and the contents of the regulations.

1.1 Step 1: Preparation

Before going to a village to develop the regulations, a few preparations may need to be made to make the meeting successful:

- Gather documents such as village or commune land use maps, land use plans, land allocation maps and communal socio-economic development plans.
- Review existing socio-economic data of the commune and village and existing data on the available forest resources
- Organize a meeting at communal level in which all hamlet leaders attend. During this meeting the forest guard and the communal forest extension worker can introduce their program to the commune authorities and hamlet leaders. In the same meeting, the dates for developing FPDR and the establishment of a FPDR development group should be scheduled. The FPDR development group could comprise about 20 to 30 people including the village leader (and traditional village leaders in ethnic minority villages), representatives of the mass organizations (Farmers Association, Women's

Union, Veteran Organization, Youth Union, etc.) and representatives of the different groups in the village (e.g. rich, poor and ethnic minorities). At least 30% of group members should be women as women and men often use different forest products and have different, complementary or conflicting interests. It is also of major importance that the poor are represented in the group that drafts the FPDR as the poor depend for a large extent on the forest resources for their livelihood.

- Copies of legislation (Circular 56/1999/TT-BNN-KL, Decision 245/1998/QD-TTg, Decision 8/2001/QD-TTg, Decision 178/2001/QD-TTg [only if forestland has been allocated], Decision 48/2002/QD-TTg, New Land Law 13/2003/QH11, Forest Protection and Development Law 29/2004/QH11, Decree 79/2003/ND-CP, and Decision no. 24/1998/QD-TTg). See also appendix 1 for an overview of relevant Government policies
- Gather information about programs and projects that support the establishment of tree plantations (e.g. Program 661) and/or provide tree seedlings for free or for reduced costs.

It is recommended that preparations begin at least one week in advance, so that the village leader and members of the group can prepare themselves and schedule their attendance.

1.2 Step 2: Development of draft FPDRs

The FPDR are drafted by a group of 20 to 30 people that represent the interests of the village, including rich and poor people, men and women, young and old and representatives of mass organizations.

The development of the draft regulations could be considered as the most important step in the process. The responsible forest guard should give a small introduction to the need for developing FPDR in villages where forest land is available. After this introduction the group should agree on what they would like to achieve with the FPDR. The group will then draw a sketch of the available forest resources of the village and analyze the problems related to forest protection and development per area. Further discussions will include the benefits and rights of villagers, and the formation of forest management groups to share responsibilities to manage allocated land that is relatively located far from residential areas. Discussions will be held also on where which species/which parts/which plants/animals (what) by whom (open access/restricted access), and when (throughout the year/restricted period) can be collected and 'how' (what kind of equipment; e.g. no guns) and 'how much' (e.g. restricted amount per household). Furthermore, the group should suggest how the regulations are to be implemented, and the procedure for fining, compensations and awarding. And finally the group should discuss how the FPDR can best be disseminated within the village and in neighboring villages.

Staff of the FPD and technical commune workers is expected to help villages with the development of FPDR. See box 1 for the roles that the FPD staff and commune members are expected to play.

Box 1: Roles of the Forest Protection officers and community members

This proposed methodology for the development of FPDR consumes a lot of time and resources, and asks for a high level of understanding of the functions of forests, forestry legislation, and sustainable management by the facilitator. The role of facilitator should be taken up by the Forest Protection Officers. They should assist the villages during the whole process from preparations to dissemination and monitoring of the FPDR. The facilitator's task is to be accepting and supportive. The facilitator should create an atmosphere of trust and safety in which people are willing to share information and to cooperate with each other. They should use simple language and speak slowly and should ensure that ideas of the poor, women and young people are incorporated in the FPDR. The FPDR should reflect all interests of the different groups in the village. The Forest Protection Officers should also make certain that the developed FPDRs respect the Vietnamese policies (see the overview of relevant policies in Appendix 1).

The major role of the village members is to organize the needed meetings and actively participate in these meetings. The Village Management Board should select the participants for drafting the FPDR and ensure that this group reflects the major groups of the village (both the better-off and the poor, men and women, young and old). Women and the poor are the main users of forest products and their presence is a prerequisite for the development of proper FPDR. A secretary should be appointed to take minutes of the meetings.

There are different approaches that can be used to develop FPDR. In situations, where villages have access to extended forest areas, FPDR can best be developed per zone based on the outcomes of the village resource mapping. The FPDR development group is then split up according to the number of identified zones and each subgroup develops regulations for a specific zone on all relevant topics, such as harvesting of timber/NTFPs, hunting, upland clearing and burning, fire prevention and control, cattle grazing, etc. After each subgroup has developed the regulations for a specific zone, the results are presented and discussed in a plenary group meeting. In the plenary group meeting, decisions will be made on the final (draft) formulation of the regulations for each specific zone.

In situations, where some villages have access to large forest areas while others have only limited access, FPDR can best be developed per topic. In this case first the topics will be defined which should be included in the FPDR and then the specific regulations per topic for the village will be identified, specifying the areas within the village, where the regulations should be applied. The FPDR development group is split up into subgroups to develop regulations on different topics. After each subgroup has developed the specific regulations on a topic, the results will be presented and discussed with the entire group. During the plenary meeting, decisions will be made on the final (draft) formulation per regulation for each topic.

Both approaches are effective to develop draft FPDR that reflect the actual situation in the village and take about two days.

A tentative agenda could for example be as follows:

Day one	
Time	Topic
Morning	Introduction
	Setting objectives
	Benefits and rights of villagers
	Village forest resources mapping
	Analysis of problems related to forest protection and development
Afternoon	Formation of forest management groups
	Designing regulations for forest development
	Summary and feedback
Day two	
Time	Topic
Morning	Agenda of the day and summary of previous day
	Selection of zones/topics for which regulations need to be developed
	Development of specific regulations per zone or per topic in subgroups
Afternoon	Presentation on developed specific regulations in plenary meeting
	Establishment of forest monitoring group
	Procedures for punishments and awarding
	Dissemination of FPDR
	Summary and closure

The main points during the meeting for the development of the draft FPDR, are thus:

1. Introduction and awareness raising about the need of developing FPDR
2. Setting objectives for FPDR
3. Benefits and rights of villagers
4. Village forest resource mapping
5. Analysis of problems related to forest protection and development
6. Formation of forest management groups
7. Designing specific regulations per zone or per topic (topics that could be included are forest development, harvesting of forest products (plants), upland clearing and burning, fire prevention and control, cattle grazing, stone exploitation, and hunting and harvesting of wildlife)
8. Establishment of forest monitoring group
9. Identification of the procedures for fining, compensations and awarding
10. Decide on how regulations will be disseminated in the village (e.g. copies and/or sign boards).

In part 2 of this manual, practical guidance is given for the development of the draft FPDR with clear steps for each point. The hamlet leader and the technical support staff should draft the FPDR based on the outcomes of the discussions (see also box 4 for the format of the FPDR). Below follows a brief description of each of the above mentioned points.

Introduction to the meeting and awareness raising about the need of developing FPDR

The first point during the development of the draft regulations is to introduce the objectives, steps, time that is required and the role that participants are expected to play. Furthermore some information can be provided about the need of developing FPDR. Information about forest functions will help to provide a better understanding about the urgent need for the establishment of regulations. Appendix 2 introduces the major functions that forests provide - regulatory functions, production functions, carrier functions

and information functions. Some of these functions are often overlooked because, although they are invaluable for daily life, they do not provide direct economic benefits.

Setting objectives for the FPDR

All people in a village should agree on the objective of the FPDR. It is important for the development of comprehensive regulations that local villagers have shared perceptions on the purpose of the FPDR and that they agree on what they want to achieve with the FPDR.

Benefits and rights of villagers

The FPDR should clarify the benefits and rights of (different groups of) villagers to exploit forest products (according to Vietnamese law). Also villagers (e.g. the poor) who do not have allocated forest land should have access to forest products needed for their livelihood. In this session access to forest products for these disadvantaged groups should be discussed. The FPDR should not focus merely on forbidding the use of forest products and forest protection, but enforce the sustainable use of forest resources. This means that exploitation of forest products should be based on the reproduction of the desired species to ensure the resource base. If exploitation takes place regardless the reproduction of the species, the species will simply disappear and no one can ever enjoy its products again.

Village forest resources mapping

Village forest resource mapping documents the location of different forest resources in the village. The village map can be used as a tool for further discussions on the vegetation, useful species, type of forest land (protection forest/production forest/ special use forest), problems (livestock/over exploitation), current management and future management opportunities of each forest site. The discussion results will help to formulate the FPDR.

Analysis of problems related to forest protection and development

The FPDR should target the causes that lead to forest depletion in the village area. Forests can provide desired products such as timber, fuelwood, medicinal plants, etc in perpetuity if properly managed. However, taking large amounts of forest products results in decreased availability of species and increased workload, as people have to look longer and travel farther to find the same species or the same quantity. At this point of developing the draft FPDR the group will analyze the situation leading to overexploitation in the village forest area. The FPDR should address the specific situation of each village in order to ensure that forest resources are sustainably managed and maintained for present and future generations.

Formation of forest management groups

One of the major problems of managing forestland that has been allocated to individual households is the unclear boundaries of the individual plots. In many cases in Minh Hoa and Tuyen Hoa districts forestland has been allocated in long narrow strips from close to the household to over the hills. Sometimes these strips are 30 m wide and over 5 km long. Allocation of long narrow strips of forest land might be a good option to promote equity (all households receive a same area of forestland of similar status) but hampers the management and protection of the forestland located further away from the household as boundaries are unclear and/or not maintained. (The management of forestland allocated to individual households close to residential areas is in general carried out properly as management and protection are relative easy). The clarification and maintenance of the boundaries further away from the residential area is complicated and time consuming. Apart from the actual delineation also the maintenance of the boundaries is difficult. If strips along the boundaries are cleared for demarcation, the vegetation will soon grow back and the boundaries disappear. Therefore it is suggested to form forest management

groups to manage the forest land located at a certain distance from the residential area. These groups would ideally consist of people who have allocated forest land adjacent to each other. The size of the forestland managed by a group should follow as much as possible existing ecological boundaries and features to ease the demarcation.

Designing regulations on forest development

At this point the group will discuss which locations are suitable to set up tree plantations and under which conditions. Furthermore, the projects and programs (such as 661) that support the establishment of tree plantations by e.g. distributing seedlings are explained and discussed.

Designing specific regulations per zone or per topic

Topics that could be included are (these topics should also be considered if regulations are developed per site):

Harvesting of forest products (plants)

The regulations for the harvesting of forest products should provide information on what products can be obtained where, when, by whom, how and in what quantity (how much).

What? Answers to the question 'what' should include information on which species (use of species listed in Decision 48/2002/QĐ-TTg is prohibited (see Appendix 3) can be harvested and the conditions under which they can be harvested (for example, their stage of growth, mature/young, alive/dead, size (e.g. only rattan stems longer than 5 m), shape (e.g. only curved and diseased trees), density/spacing (e.g. only thinning), parts (branches, fruits, leaves, stems, flowers, roots, etc).

Where? All forest land in Vietnam is classified as production forest, protection forest or special use forest. Permitted uses depend on the type of forest, e.g. no exploitation is allowed in special use forests (see also Appendix 1). In addition to the type of forest, it is also necessary to know who is responsible for the forest management. Has the land been allocated to individual households, does it fall under the jurisdiction of a State Forest Enterprise (SFE) or a Protection Forest Management Board? Forest use can be further regulated in accordance with zoning, blocks, types of terrain and/or altitude.

When? Collection can be restricted to a certain season when the fruits are ripe and/or when specific animals are not breeding. Time limits can be by day(s), week, month, season, year, several years etc. A regulation could, for example, allow the collection of fuelwood only on Thursdays at a specific location.

Who? Who is allowed to use the forest resources of the village? Is use restricted to the inhabitants of the village or are outsiders also allowed to exploit forest products and, if so, under what conditions? The regulations should make clear who is allowed to use the forest resources. Is it everyone (open access), inhabitants of the village, group of households (forest users group) or an individual household?

How? This question refers to the exploitation methods. Several methods, such as: explosives and poisonous plants are disastrous for the environment and for species communities, while others, like the use of guns and big traps, are dangerous. It is useful to discuss what kind of tools are allowed for forest resource exploitation, for example, the size of net mazes for fishing and kind of traps for hunting. **How much?** Limiting the allowed quantity that can be taken can reduce the pressure on forest resources. The quantity allowed can be regulated by number or volume of plants/animals/products, by head loads, by baskets, etc.

The regulations should include current local forest management regulations. Some communities, especially ethnic minorities living in forest areas, often have their own specific forest management regulations in relation to issues such as the maintenance of sacred forests. FPDR form an opportunity for ethnic minorities to legalize their own regulations and to ensure that outsiders have to comply with them. See for example the regulations of the Macoong on the exploitation of cardamom in box 2.

Box 2: Cardamom exploitation by the Macoong (Bru-Van Kieu)

The Macoong, a branch of the Bru-Van Kieu minority group, has extended regulations on the exploitation of cardamom to ensure sustainable exploitation and to share benefits among the households. Under these regulations:

- Cardamom can only be exploited when it is ripe by the whole village at the same time, with the time and place for cardamom collection decided at a village meeting
- The villagers should be divided into several groups that go to different sites for exploitation
- Cardamom is exploited only in the area under the village management; if someone wants to exploit cardamom in an area that belongs to another village, the permission of the leader of that village must be obtained
- The exploitation of cardamom will take place when the fruits are ripe (July to August)
- Cutting the shrubs for exploitation is prohibited

Upland clearing and burning

Although clearing and burning of upland areas for agricultural production is discouraged by the Vietnamese Government, it is still practiced in remote areas. The cycle of burning land, cultivation and fallow is not a harmful practice as long as the fallow period is long enough for the soil to recover its fertility. However because of high population pressures the fallow period is often shortened resulting in lower yields or lower periods in which agricultural production is feasible.

Fire prevention and control

Forests are susceptible to forest fires, especially in the dry hot summer in Quang Binh. The fire prevention plan should be part of the FPDR. The fire prevention plan includes an agreement on individual responsibilities to prevent forest fires, the establishment of a fire prevention group and its responsibilities and fines and compensations applied in case forest fires occur.

Cattle grazing

The village forest map will be used as the basis for developing the regulations for cattle grazing. According to Vietnamese law cattle grazing in the forest is prohibited. Regulations on grazing should include discussions on e.g. the designation of a site for cattle grazing and compensations and fines in case cattle destroy planted forests or crops.

Stone exploitation

Regulations for stone exploitation are essential for villagers that are located in limestone areas. Limestone is good construction material and many villagers use stones for construction. Exploitation of the stones by the use of explosives can do a lot of damage and should be prohibited.

Hunting and harvesting of wild life

The regulations for hunting and harvesting wildlife should similarly to the regulations of harvesting plants include information on what products (animals) can be obtained where, when, by whom, how and in what quantity (how much). Appendix 3 shows the animals recorded in Quang Binh Province that fall under protection of Decision 48.

Box 3: Arem forest protection group

In Arem (Tan Trach commune, Quang Binh province) a forest protection group has been established to ensure the proper implementation of the forest protection and development regulations. This group consists of the village leader, the vice-village leader and the secretary of the youth union. The group:

- Checks and monitors the exploitation of forest products by households
- Raises awareness of and disseminates the forest protection and development regulations to the villagers and outsiders who stay in Arem village
- Mobilizes households to undertake the forest protection tasks according to the village's regulations
- Ejects outsiders from forest belonging to the village
- Confiscates and keeps the equipment of outsiders who illegally exploit the forest
- Keeps cattle out of the forest and explains to households that free grazing in the Phong Nha-Ke Bang National Park is prohibited
- Mobilizes villagers to take part in fire control activities and provides the necessary training in fire control techniques
- Assigns villagers to patrol fire-prone forest sites during the dry months (May to August) and mobilizes villagers to fight fires when necessary
- Settles violations and documents activities

Establishment of forest monitoring group

Apart from the technical aspects included in the forest use FPDR, attention should also be given to the organizational structure. This will ensure that the regulations are applied properly by the local villagers and by outsiders. It will probably be necessary to establish a control mechanism - for example, a guard, a forest protection group or a rotational guard duty. The functions of the guard/forest protection group, and its duties, rights and benefits, as well as the responsibilities of the villagers, should be spelled out (see for example the tasks set for the forest monitoring group of Arem village in box 3).

Procedures for punishments and awarding

The regulations should include a mechanism for the handling of violations of the regulations. (Note that the communal People's Committee but not village leaders can impose fines. However, village leaders can ask for compensations to up to 100,000 VND). Other ways of punishing violators of the regulation can for example be through warnings and or criticizing during village meetings or through the loudspeakers. People who apply the FPDR actively and disseminate knowledge on sustainable management should be praised during village meetings to promote the implementation of the regulations.

Dissemination of the FPDR

One of the lessons learnt from developing FPDRs is that local farmers are often not aware of the developed regulations. Therefore it should be discussed how the regulations will be disseminated within the village and be known to everyone. Possibilities for dissemination are e.g. the erection of a signboard, providing copies and/or agreements with all

households that they will follow and implement the FPDR. An advantage of a signboard is that everyone (including outsiders) is reminded of the regulations all the time.

1.3 Step 3: Village meeting

After the draft FPDR have been finalized, they should be presented to the whole village at a village meeting attended by at least one representative of each household. The group who drafted the FPDR (see box 4 for the format) should also present information on the relevance of the FPDR and the need for sustainable forest management to ensure the availability of forest products for present and future generations.

All villagers need to understand that the FPDR are a tool for them to support the management of their forest resources in a sustainable way. They need to be made to understand that they will be the beneficiaries, because the regulations will help them to ensure the availability of forest resources now and in the future.

The village leader will organize the meeting, while two people will act as secretary to write the minutes and revisions to the regulations. After that the draft FPDR will be presented and each article will be explained and discussed. An article is accepted if 75% of the participants in the village meeting agree with its contents. During this meeting, articles can be revised, deleted and/or new articles or sub-clauses can be developed. At the end of the meeting, the secretary will read all the accepted articles aloud.

Box 4: Format for FPDR

Part 1: Principles of the FPDR

This part includes the legal aspects of the FPDR, the specific objective of the FPDR for the village, the existing forest situation of the village and the local names of the areas for which the regulations are applicable.

Part 2: Specific regulations

The specific regulations cover the rights and benefits of the villagers and detailed regulations on the forest practices that are allowed and the practices that are not allowed related to harvesting of forest products (plants and animals) and stone exploitation in the different forest areas within the village area. This part also include the regulations related to forest development, grazing, upland clearing and burning and fire prevention and control. For all the specific regulations the required compensation is mentioned in case of violating the regulation.

Part 3: General regulations

The general regulations encompass the responsibilities and duties of the villagers with regard to forest protection and development activities and the general procedures for punishing violators and awarding those who actively implement the FPDR themselves and encourage others to comply with the regulations.

Part 4: Implementation

This part includes the formation, responsibilities and members of the "Forest monitoring group" and the "Forest fire prevention and control group" (often the same group) and the operational budget. Also it mentions here about the periods for evaluating the FPDR and the potential for revisions. Furthermore it includes the date when the regulations are valid.

1.4 Step 4: Finalize FPDR document and submit for approval

After the FPDR have been presented, discussed, adapted and approved at the village meeting, they need to be sent to the commune for approval. Before sending the regulations to the commune level for approval, they should be written in comprehensive wording and provided in a clear format. The language that should be used in the regulation must be simple, short and precise, while the use of forestry jargons, long and vague statements should be avoided. In this way all villagers are able to understand the contents of the FPDR. See also appendix 4 for the approved FPDRs of Da Nang village (Hoa Hop commune, Minh Hoa district) as an example.

1.5 Step 5: Dissemination of FPDR at village level

The way of dissemination of the FPDR depends on the outcomes of the village meeting on this topic. Dissemination of the FPDR can for example occur through broadcasting by loudspeakers, by leaflets, by signboards and by distributing copies of the FPDR. Text on signboards should be detailed and simple, and preferably include a map. See also the example in box 5.

Box 5: Village Forest Protection and Development Regulations Dong Phu hamlet, Dong Hoa commune

All people from the village and from outside have to comply with the following regulations:

- Timber logging is only allowed with written permission from the DPC
- Extraction of NTFPs is only allowed at Khu Ong Bang by villagers from Dong Phu
- No clearance and burning is allowed at Khu Ong Bang and Ong Nghia area
- No cattle grazing is allowed in new established plantations and at the cemetery area
- No hunting/catching of birds is allowed in the entire village area

Violators of the above regulations will be punished and can be requested a compensation of up to 100,000 VND by the village.

1.6 Step 6: Implementation, monitoring and evaluation

Once the FPDR have been approved by the district level, another village meeting needs to be convened to inform villagers that the regulations are to be implemented and strictly applied from that day onwards.

Implementation of the regulations needs to be strictly monitored in order to ascertain the degree of compliance and identify problems. Monitoring the effectiveness of FPDR involves monitoring both of violations and of commonly used species. The form below is an example that can be used to track violations against the FPDR.

Violation monitoring form

Date	Activity	Location	Name, address of violator	Fine/ compensation	Name of person(s) settling the violation	Remarks

Apart from monitoring the violations, it is also necessary to make assessments of the available forest resources in order to monitor the impact of the regulations. Appendix 5 provides relative simple techniques to execute resource assessments.

At least once per year an evaluation meeting should be held at the village level to discuss the following:

1. Activities of the forest monitoring group
 - Presentation of the activities carried out by the group
 - Presentation of the list of violators and violations that occurred during the last reporting period
 - Presentation on the given punishments to violators and the received compensations
 - Difficulties and recommendations
2. Results of the natural resource assessments
 - Presentation of the results on the natural resource assessments
 - Explanation for the causes of increased/decreased availability of forest products
 - Proposed activities to further protect and develop forest resources
3. Discussion on needed amendments of the FPDR

Based on the outcomes of the discussion on the activities of the forest monitoring group and the results of the forest resource assessments, the effectiveness of the FPDR can be assessed. If necessary, the regulations should be adapted to better reflect the local situation. During an annual evaluation meeting, the existing FPDR should be carefully analyzed. Answers should be sought on questions such as: What are the outstanding issues? What are the problems in executing the FPDR? Why are FPDR effective? Why not? Which articles need revision? Based on the outcomes of the evaluation the retention, alteration or deletion of every article, and the requirement for new articles, should be discussed. FPDR should be considered as a dynamic tool designed to support the villagers in the implementation of sustainable forestry practices. FPDR should never be regarded as a static document that harms local villagers.

PART 2: PRACTICAL GUIDANCE FOR THE DEVELOPMENT OF FOREST PROTECTION AND DEVELOPMENT REGULATIONS²

In Part 2 practical guidance is given for the development of the draft FPDR as described in step 2 of the methodology in Part 1. The draft FPDR should be developed by a group of 20-30 villagers that represent the village interests, including better-off and poor families, young and old, men and women and representatives of mass organizations.

² Several exercises are adapted from: Miagostovic, M., 2004. Forest protection and development regulations. Trainer guide. In: Training Package Community Forestry. GTZ/GFA Hanoi, Vietnam

2.1 Introduction to the meeting to develop draft FPDR

The design of village forest regulations can only become a success with the active participation of the local stakeholders. Therefore these participatory exercises are developed to encourage the full participation of local villagers for the development of FPDR that are specific to their local conditions.

For most of the people this participatory approach is new. It is therefore very important that they know what they can expect from the meetings and what is expected from them.

The main objectives on this exercise are to establish an atmosphere of co-operation and sharing, to introduce the steps involved in developing FPDR and to give an overview of the exercises that are needed to develop the draft FPDR.

Objectives

- To create an atmosphere of co-operation in which participants know what is expected from them
- Participants have an overview of the methodology and exercises for preparing the draft FPDR

Time needed 30 minutes

Material A0 with the methodology steps, tape, pins

Steps

1. Welcome all the participants and explain the objective of the meeting and provide an overview of the schedule for the development of FPDR. Introduce yourself and let all the participants also introduce themselves.
2. Ask participants to agree on certain ground rules-starting and finishing times, arrangements for lunch and other rules which might be necessary
3. Ask participants if they know why FPDR should be developed. Ask participants also about the importance of maintaining forests. If necessary explain about the functions forests fulfil (see appendix 2 on the functions of Vietnam's tropical forests).
4. Explain the steps in FPDR development as described in part 1 of this manual (previously prepared on A0)
5. Explain the basic principles for FPDR development and explain that the FPDR are for villagers and will be developed by the villagers. Explain that during the 2 days meeting the draft FPDR will be developed with inputs of all the participants. Their say is very important and everybody should respect each others contributions. It is essential that also the opinions of women, the poor and other disadvantaged groups are respected and incorporated in the FPDR to ensure that these groups are not further marginalised.
6. Ask participants if they have any questions and provide clarifications if needed.

2.2 Setting objectives for the FPDR

Before starting the designing of FPDR and deciding on how forest resources can be utilized and which restrictions should be applied, it is important to reach a common vision on what the village wants to achieve with the regulations. This will later help to identify specific regulations that will lead to achieving the objectives.

Objectives

- To agree upon the objectives of the FPDR

Time: 30 minutes

Material: A0 paper, colour cards, markers, and tape (or pins)

Steps:

1. Explain the objectives and the procedure of this exercise to the participants.
2. Ask participants to divide into small groups and ask them to discuss the purpose of designing FPDR and what they want to achieve with the FPDR (expected results). Ask each group to formulate an objective for the FPDR
(Allow 15 minutes for discussion and writing)
3. Ask each group to select a representative to give a presentation of their results to all participants.
4. Promote a short plenary discussion after all presentations highlighting the differences so that an agreement can be reached on the objectives of the FPDR.
5. Write the final formulation of the objectives on an A0. Explain that the objective of the FPDR will be part of the FPDR document and end the exercise

2.3 Benefits and rights of villagers

A discussion on the benefits and rights related to forest use and development is important to encourage villagers to manage their forest resources sustainably. The prepared village map is useful to clarify the benefits and rights of villagers for each forest area.

Objectives

- To clarify and discuss the benefits and rights of villagers for each forest area

Time needed 30 minutes

Materials A0 paper, markers, pencils or pens, tape.

Steps

1. Present the objective of the exercise, the time that might be required and the role of the participants.
2. Explain that the FPDR cover all forest land areas. The land owners are responsible to ensure that the FPDR are respected on their land. The following types of ownerships and management responsibilities can be distinguished.
 - a) Natural forest land and plantations managed by the village and/or commune
 - b) Forest land managed by SFE, Protection Forest Management Board and/or Special Use Forest Management Board
 - c) Forest land under protection contracts with individual households.
 - d) Forestry land allocated to individual households with red book certificates.
 - e) Forest land allocated to a group of households with red book certificates.
 - f) Forestry land where individual households invest to plant forest themselves.
3. Explain that the FPDR are of major importance for forest areas that fall under a)
4. Areas that fall under the jurisdiction of SFE or Management Boards are managed by the responsible organizations. Explain that villagers should respect the law that regulate the use of these areas (see e.g. Decision 8/2001/QĐ-TTĐ)
5. Explain to villagers that as for c), d) and e) benefits, rights and duties are clearly stipulated in protection contracts and Red book certificates. *(Explain the benefits, rights and duties if necessary)*

6. Explain that in the case of f), the investor has the rights to gain benefits from his plantation at the time of harvesting, but has to pay tax to the Government. The investor should ensure in this case that the FPDR are respected.
7. Discuss if the rights and benefits as stipulated by Vietnamese law are adequate to regulate the access to needed forest products. Pay especially attention to poor people or other disadvantaged groups in the village as they might have no official access to forest land.
8. In case some people in the village (e.g. the poor) do not have allocated forest land and do not have access to other forest areas, discuss how and under what conditions they can have access to the needed forest products (e.g. fuelwood).
9. Write down the rights and benefits of the villagers per area on an A0 and agree upon the formulation.
10. Summarize the results and explain that the statements will be part of the FPDR document. End the exercise.

2.4 Village forest resources mapping

The preparation of a simple forest resources map is useful to visualize the different locations of forest land, the status of the forest and the present uses. The map can also be used as reference during later discussions for designing the FPDR.

A short walk through the forest can help to check the data shown on the forest map. If needed the data on the map should be adjusted with data from the field.

Objectives

- To visualize the different forest areas, their location, their status and current uses in each forest land area

Time needed 2 hours

Materials A0 paper, markers, pencils or pens, tape.
If a 3D map is prepared on the ground, coloured powder and chalk of different colours will help to distinguish the different forest areas.

Steps

1. Present the objective of the exercise, the time that might be required and the role of the participants.
2. Ask participants (in plenary or small groups) to draw a sketch map of their village, including its forest areas. Start with drawing roads, rivers, a north/south orientation, residential areas, etc for the initial orientation.
3. Ask participants
 - to draw the location of their forest on the map.
 - to mark the forest areas that are classified as “Production”, “Protection”, and “Special-use” forest and include local names of each area;
 - to indicate the forest conditions and the locations of forest products such as timber, fuelwood, vegetables, rattan, mushrooms, bamboo, honey and other Non Timber Forest Products (NTFPs), grazing land and so on. (This information can be written on small pieces of paper first)
4. While making the map encourage discussions on the characteristics of each identified forest area, including useful present species and the forest status. Questions that could help to facilitate the drawing of the forest map, include:
 - Where are the boundaries of protection, production and special use forest?

- What is the status of the forest: barren land, poor forest, medium forest and/or rich forest?
 - Where do you go to harvest timber, fuelwood, rattan, bamboo, medicinal plants, etc.
 - Where is the grazing land for cows and buffaloes?
 - Which areas are suitable to set up tree plantations?
5. Ask one person to present the map to all the participants and adapt the map further if desired.
You may suggest after the completion of the map, to go for a short walk to visit the forest areas and check the boundaries and descriptions.
6. Often the prepared map includes many corrections. You may assign two or three persons to re-draw the final map to make it clearer. (The new map can be prepared in the evening (home work). Don't forget to leave A0 paper, markers and colour pencils for them to prepare the final map).
7. Summarize the results and explain that this map is very important for further reference during developing the FPDR. End the exercise. Leave the map on the wall as a reference for everyone.

Note: In case a current land use map is available, this map can be presented and used as reference for the discussions.

2.5 Analysis of problems related to forest protection and development

There might be issues/problems related to forestry protection and development within the village that are of concern to all. The aim of this exercise is to identify the main problems and to analyze their causes. This analysis forms the basis for the further development of specific FPDR that address the (causes of the) problems.

Objectives

- To identify problems related to forestry protection and development
- To identify the causes that forms the problems

Time needed 1 hour

Material A0 paper, markers, pins, colour cards, village resource map

Steps

1. Present the objective of the exercise, the time that might be required and the role of the participants.
2. Distribute to all participants a colour card and ask them to write at least one issue related to forest protection and development on a colour card (one issue per card) that they feel is most important and should be addressed in the FPDR.
3. Collect all the cards and group the cards according to the different mentioned problems.
4. Discuss the main problems as mentioned and prepare a list of the problems on an A0 paper.
5. Divide the group into small groups and ask each group to discuss per problem as listed:
 - Where does the problem occur (in all forest areas or in specific locations)?
 - Who causes the problem (villagers, outsiders, certain groups of people)?
 - Why does the problem occur?
 - When does the problem occur (whole year round, specific times of the year)?

(If there are many problems listed you can ask each group to discuss and analyze different problems.

6. Ask participants to write down their results according to the following table format:

Current problem analysis

Problem (what?)	Location (where?)	Time (when?)	Responsible persons (who?)	Causes (why?)

7. Ask a representative of each group to present their results and encourage the other participants to ask questions.
8. If the participants agree upon the analysis of the problems, summarize the issues in a few statements and write them down on an A0 paper.
9. Summarize the results and explain that the statements will be part of the FPDR document. End the exercise.

2.6 Formation of forest management groups

During this step stakeholders will decide if forest management groups should be formed to improve the management of forestland that is allocated to individual households, which is located at a certain distance from residential areas. At present this kind of forestland is not properly managed because of unclear boundaries.

Objectives

- To discuss and agree upon the formation of forest management groups
- To prepare a tentative plan for the formation of groups
- To discuss potential mechanisms to share responsibilities and benefits among members of the forest management groups

Time needed 1.5 hours

Material A0 paper, markers, pins, forest land allocation map, the village forest sketch map, list of main problems (table prepared in former exercise)

Steps

1. Explain the objectives, the time that might be required and the role of participants.
2. Guide a plenary discussion by asking farmers to discuss one at the time the following:
 - How is the forestland, allocated to individual households, located relative far away from residential areas managed?
 - What are the problems faced?
 - How can these problems be overcome?
 - What are the advantages and disadvantages of forming forest management groups?
3. If participants agree to form forest management groups, split the group up into smaller groups. Each group will represent a forest site as identified in the former exercise and discuss the formation of groups in more details. Ask each group to discuss the following:
 - How many groups could be formed to manage the forest site properly (making use of ecological features as boundaries)?

- Which households should ideally take part in the groups (if possible households that have allocated forest land adjacent to each other should be in the same group)?
 - What are the general responsibilities and benefits of each group?
 - How could the responsibilities and benefits be shared among the group members?
4. Ask a representative of each group to present the findings of the group.
 5. Allow all participants to ask questions after each presentation. Encourage and guide discussions.
 6. Prepare a final table (or text) in which all information of the different groups is presented.
 7. Wrap up and summarise the main outcomes of the exercise.

Note: Local people often do not want to form groups but prefer to manage forestland on an individual basis at first. However if local people acknowledge the advantages of forming groups and realize that individual management of forestland that is relative far away of residential areas is hardly feasible, they are in favour of forming forest management groups.

If groups are formed, the members of the groups should appoint a head and vice-head of the group, who will be coordinating the group. Furthermore, the group should discuss among themselves the responsibilities and benefit sharing mechanisms in more detail.

2.7 Designing regulations for forest development

During this step participants will decide which locations are useful to set up plantations. Furthermore information will be shared about government and other programs that support the establishment of tree plantations.

Objectives

- To discuss and agree upon the locations for forest development
- To explain about programs supporting tree plantations

Time needed 1 hour

Material A0 paper, markers, tape, forest land allocation map, the village forest sketch map, list of main problems

Steps

1. Explain the objectives, the time that might be required and the role of participants.
2. Explain the benefits and rights of people setting up tree plantations on allocated land (Decision 178/2001/QĐ-TTg)
3. Explain the support that people can receive to set up tree plantations (e.g. Program 661) including technical, financial and in-kind support (e.g. free seedlings or seedlings for reduced costs).
4. Discuss which areas are suitable for tree plantations. Locations with a high slope or with good natural forest are less suitable for plantations. Use the village forest land map as a reference.
5. Discuss briefly the tree species that are suitable for planting in the area. Explain that Eucalyptus has a negative impact on the soil fertility and water level and that planting Eucalyptus should be discouraged. Local species are much better for the environment and are of high value but have a slow growth rate. Discuss and share information about locations of tree nurseries that provide good quality seedlings.

6. Write the outcomes of the discussions that should be incorporated in the FPDR on an A0 paper and agree upon the general formulation.
7. Summarize the results and explain that the statements will be part of the FPDR document. End the exercise.

Note: In general people are very interested in setting up tree plantations as they acknowledge the high potential revenues. However, sometimes natural forest with a high density of tree seedlings is cleared to set up plantations, which is a loss of resources. Before setting up plantations an assessment in the field should be carried out to assess whether to set up plantations or to improve the existing stand by enrichment planting or by favouring existing plants (thinning, clearance of vines and other plants that compete for nutrients, sunlight and or water). Especially in areas with a steep slope, where the aim of the forest is to protect the watersheds the need for plantations should be carefully assessed. Natural forest that covers a high percentage of the ground is more effective for watershed protection than tree plantations that leave the ground between the stems relative barren.

2.8 Designing specific regulations per zone or per topic

Depending on the local situation it can be decided to develop specific guidelines per zone or per topic. The development of specific regulations per zone might be more appropriate when villages have access to large forest areas, while developing FPDR per topic might be more appropriate in other cases.

Objectives

- To develop specific regulations per zone or per topic that reflect the local situation

Time needed 2.5 hours

Material A0 paper, markers, tape, forest land allocation map, village forest resource map, list of main problems

Steps

1. Explain the objectives, the time that might be required and the role of participants.
2. Explain the two different approaches and decide if the specific regulations will be developed per topic or per zone
In case of developing FPDR per zone:
 3. Refer to the village resource map and agree upon the zones for which specific regulations will be developed.
 4. Divide the group into subgroups and let each group develop specific regulations per zone.In case of developing FPDR per topic:
 5. Refer to the list of main problems and facilitate a brainstorming on which topics specific regulations will be developed.
 6. Divide the group into subgroups and let each group develop specific regulations on a certain topic. Some groups can do more than one topic.For both developing FPDR per zone and per topic:
 7. Ask people to use the village resource map and the analysis of the major problems as a reference.
 8. Before starting the group work provide some specific questions per topic to support the development of the specific regulations. All topics need to be considered by each subgroup if the FPDR are developed per zone (in this case leave out the questions related to the location). Write these questions on an A0 for all to see.

Designing regulations for harvesting forest products (plants)

Relevant questions:

- For which species/ forest products do regulations need to be developed?
- Where/where not is harvesting allowed (location)?
- When/when not (time period) is harvesting allowed?
- How much (quantities) can be harvested of a certain product?
- Who/who not is allowed to harvest the product?
- How should the extraction be carried out (which modalities)?
- Are there any traditional regulations that should be included in the FPDR?

Note: Often participants only concentrate on the locality where forest products can be harvested. Depending on the local situation there could be more important details to be included in the regulations such as the quantity, the time and modality of the harvest.

Designing regulations for upland clearing and burning

Relevant questions:

- Where is burning and clearing allowed?
- What should be the size of the fire prevention belt?
- When is the right time for upland clearing and burning ?
- How should burning be carried out (techniques/modalities)?
- Who is allowed to clear and burn land?
- Who should be informed when land clearance and burning is carried out?
- Are there any traditional regulations that regulate clearing and burning that should be incorporated in the FPDR?

Note: The most destructive way of forest exploitation is to clear the forest for new agricultural land. The soils under tropical forests are poor in nutrients. The rich natural forest can exist on these poor soils only by recycling of the needed nutrients. Most nutrients are stored in the biomass (e.g. wood, leaves, fruits, and animals). When the biomass dies off and decays, the nutrients are reabsorbed again by the tropical forest. After conversion of the forest into agricultural land, cultivation on the poor soils is feasible only for a limited number of years. Long fallow periods are needed to restore the soil. When fallow periods are too short or when regeneration is not allowed, barren fields may result and pressure to clear yet more forest is created.

Designing regulations for fire prevention and control

Relevant questions:

- What should be immediately done in case of fire?
- Who is the main responsible for mobilizing the whole village in case of fire?
- Should a fire prevention and control group be established?
- What are the responsibilities of the fire prevention and control group?
- Should the fire prevention group be paid? Is there any funding for this? If not, how will they be paid or compensated for their work?
- How to deal with households who intentionally avoid participating in fire prevention and/or fire control activities?
- How to deal with households where only elderly people live? How to deal with households where only mother and child are present at the time of fire?
- What to do if the fire was caused by somebody on purpose? Who has the authority to intervene?

Note: Every year a forest fire prevention and control plan is designed according to the guidelines from the provincial FPD. The main points of this plan should be integrated in

the FPDR. The fire prevention and control regulations should be written in a format that is in compliance with the regulations of the Provincial FPD and Decision 245/1998/QĐ-TTg.

Designing regulations for grazing

Relevant questions:

- Is there any area in the village designated for grazing?
- If there is no area designated, which land/areas could be used for grazing?
- What are the modalities for grazing?
- What compensations should be paid if cattle damage crops in the agricultural fields or damage forest plantations (who should pay the fine, the owner of the cattle or the guardian)?
- What compensation should be paid for grazing in the forest areas?

Note: Grazing is another important threat to the forest, as numerous cattle are kept in communes located near forest. Cattle often graze freely in the tropical forests because local villagers do not practice stall-feeding. Free grazing and browsing creates the following problems:

- grazing limits the process of forest regeneration by promoting grasses
- regeneration is slowed by the consumption of e.g. tree seedlings, saplings and bamboo shoots
- the vegetation, and especially young trees, are trampled by the cattle
- new clearings are opened in the forest
- the cattle compete for food with wild ungulates and elephants

Designing regulations for stone exploitation

Relevant questions:

- Should the exploitation of stones be allowed within the village area?
- Where can the exploitation of stones be allowed?
- Under what conditions can stone exploitation be allowed?
- What are the modalities for stone exploitation?

Note: Limestone forests are susceptible to stone exploitation. Limestone is good construction material. Many villagers around limestone forests exploit the limestone rocks for house construction. In particular, the exploitation of limestone by the use of explosives does a lot of damage.

Designing regulations for hunting & harvesting of wildlife

Relevant questions:

- For which animal species/products do regulations need to be developed?
- Where/where not is hunting/fishing/harvesting allowed (location)?
- When/when not (time period) is hunting/fishing/harvesting allowed?
- How much (quantities) can be taken of a certain animal/ animal product?
- Who/who not is allowed to hunt/fish/harvest animals/animal products?
- How should the extraction be carried out (which modalities)?
- Are there any traditional regulations that regulate clearing and burning that should be incorporated in the FPDR?

Note: Over-hunting threatens the viability of an animal population. Apart from the consequences of a desired species becoming rare or even extinct, hunting also affects the survival of certain plant species. Plant species in tropical rain forests generally depend for up to 90% of their seed dispersal on animal species. Frugivorous primates (e.g. langurs, macaques and gibbons), frugivorous birds (e.g. hornbills) and frugivorous bats are

particularly effective seed dispersers. The disappearance of these animals directly influences the regeneration of plant species. Hunting and removal of predators, such as cats, snakes, eagles and owls can disrupt the ecological balance between predator and prey. Prey species, such as rats, mice, caterpillars may become plagues once their predators are removed from the wild.

Fishing is not that harmful as long as there is no over-fishing and no explosives used. While explosives might seem a very effective way to catch fish, they kill not only the fish you want to catch but also everything else. Fish reproduction is severely disrupted as the young fish and its food are destroyed as well. This causes a rapid reduction in the quantity of fish and weight of the fish available to catch. The same is true for the use of certain poisonous plants and electricity in fishing.

9. Ask each group to start discussions about the above topics and formulate regulations based on answering the above questions. The regulations should be detailed and reflect the local situation.
10. Ask a representative of each group to present their developed regulation to the whole group.
11. Encourage the other participants to ask questions and give comments. Facilitate discussions to reach an agreement on the specific regulation for each zone or topic.
12. Facilitate a plenary discussion on the compensations that should be paid if the regulations per zone or topic are violated.
13. Write down the final regulations on an A0 paper with the responding compensations that should be paid in case of violating the regulation.
14. Summarize the results, explain that these regulations will be part of the major content of the FPDR. End the exercise.

General note: The facilitator should provide background information if needed to the specific subgroups or during the plenary discussions if needed. Relevant information is written in the notes after the relevant questions per topic.

Local forest management practices that regulate the extraction of animals/animal products, plants or plant products, upland clearing and burning, etc. should be included in the regulations. It is important that traditional practices are incorporated into the FPDR to make them official. In this way, traditional management regulations have to be respected by other people and outsiders.

2.9 Establishment of forest monitoring group

At the village level a certain mechanism needs to be established that ensures that the FPDR are implemented and respected by both villagers and outsiders. A possibility is for example to establish a forest monitoring group or to appoint a guard who monitors the forest.

Objectives

- To discuss about the formation and responsibilities of a forest monitoring group
- To identify the amount and source of funding to finance the operation of the forest monitoring group;

Time needed 1 hour

Material A0 paper, markers, pins, list of main problems

Steps

1. Explain the objectives, the time that might be required and the role of the participants.
2. Discuss how the implementation of the FPDR can be ensured. In cases where forest land is allocated, discuss the role of different organizations (e.g. hamlet leader, Commune Peoples' Committee (CPC) and FPU) to support the forest owner to implement the FPDR.
3. Facilitate a plenary discussion on the formation of a forest monitoring group. Ask questions such as:
 - Is there a need for a forest monitoring group to ensure that the FPDR are respected?
 - What are the tasks and responsibilities of the monitoring group?
 - What are the rights and benefits of the monitoring group?
 - Is it necessary to carry out regular patrols?
 - Who should be part of the monitoring group?
 - How is the monitoring group funded? Does the group get a certain fee in cases of settling violations?
 - Who should be responsible to monitor and evaluate the effectiveness of the FPDR?
4. Write down the results of the discussion on an A0 paper and agree upon the general formulation.
5. Summarize the results; explain that the outcomes will be part of the FPDR. End the exercise.

2.10 Procedures for punishments and awarding

In this session, the participants will discuss about the procedures to enhance the implementation of the FPDR by punishing violators and awarding people who manage the forest well.

Objectives

- To formulate the rights of the village heads and the Forest Monitoring Group to punish violators of the FPDR and award those who manage the forest well;
- To identify general punishing and awarding procedures

Time needed 1 hour

Steps

1. Explain the objectives, the time that might be required and the role of the participants.
2. Explain to the participants that awards, punishments and compensations are necessary to encourage people to respect the FPDR.
3. Discuss if in the in the past compensations and punishments occurred in the village. Should these practices be continued and applied in the near future?
4. Discuss the mechanisms for punishments and write the outcomes on an A0.
 - How many warnings will be given before fining a person?
 - Should the level of the fine increase with the number of times a person violates the regulation?
 - Should a person who often violates the regulation be criticised openly during a village meeting and/or through the loudspeakers?
5. Discuss who has the right to impose fines and ask for compensations (village head and/or forest monitoring group). Explain that the village head can ask for compensations (but has not the right to fine) of up to 100,000 VND per case, because a village is not an administrative level. The first administrative level is the CPC who has the authority to fine up to 500,000 VND per case. Thus if according to the law a compensation is required of more than 100,000 VND, the case should be settled at a

- higher authority level (note that the level of compensation and fines should correspond to the law; a compensation imposed by the village level should be lower than the legal level of the administrative fine).
6. Discuss in cases of a village fine how the amount is calculated e.g. compensation (for the forest owner for the losses) + settlement fee (fee for monitoring group, person who detected the violation and/or hamlet leader) + amount to put into the village forest protection and development fund.
 7. Discuss about the necessity to set up a village forest protection and development fund. Part of the fines could be put in this fund, which can be used to finance the operation of the forest monitoring group. Who will keep the village fund? What are the procedures and how are the violations recorded and filed? How will the village funds be used? Who decides? Write down the outcomes on an A0 paper.
 8. Discuss the awards for people who identify violators and solve violation cases. In which cases should awards be given? In what forms are awards given e.g. praising during village meetings and/or over the loudspeakers, and/or financial awards. In case of financial awards discuss which percentage of the compensation fee is used as award and which percentage is put in the village's or commune's budgets. (Persons detecting violations/arresting violators could for example receive a certain percentage per case settled). Write down the outcomes on an A0 paper.
 9. Discuss briefly about the formulation of the outcomes of the discussions on punishments and awarding and agree upon the general formulation.
 10. Summarize the results, explain that the outcomes will be part of the FPDR and that now all the main contents of the draft FPDR have been developed. End the exercise.

Note:

It is very important to take into account the situation of disadvantaged groups such as the poor when applying a system of punishments and awarding. The FPDR should become a means for both the poor and rich to manage the forest resources sustainably. This means that the poor should have access to forest land and needed forest resources (see the session on right and benefits of villagers), while the better-off should be able to use the FPDR for improved protection of their forest land. A situation where the poor are further marginalized through denied access to forest land and fined if extracting forest products from land allocated to the better-off households should be avoided at all costs.

2.11 Dissemination of FPDR

Often villagers are not aware of the FPDR for their village area and neighbouring villages. For the implementation of the FPDR it is essential that they are known to all villagers and also to neighbouring villages (especially in cases when people from adjacent villages come to the area to exploit forest products). Therefore the aim of this session is to discuss and identify the best ways to disseminate FPDR within the village area and outside.

Objectives

- To identify and discuss the best ways to make the FPDR known within the village and neighbouring villages.

Time needed 45 minutes

Material A0 paper, markers, (pin board and pins) and tape

Steps

1. Explain the objectives, the time that might be required and the role of the participants.
2. Discuss plenary or in small groups the following questions:

- What are the best methods to disseminate the FPDR within the village area? (e.g. village meeting, copies of FPDR distributed to all households, signboards, use of loudspeakers, etc.)
 - What should be the design/text if village signboards are erected (map/text)? How many signboards would be needed and where should they be placed?
 - Who is responsible for the dissemination of the FPDR?
 - What resources are needed for effective dissemination?
3. Summarize the results and end the exercise. Explain that now all the points to draft the FPDR have been finalized and that the hamlet leader with support from the communal forestry extension worker and/or FPU staff will finalize the draft FPDR document based on the outcomes of the two days meeting. Set a date for the village meeting in which the draft FPDR will be presented to the entire village.

Appendix 1 Overview of forest-related policies³

Introduction

In the last decade several regulations have been issued to protect, conserve, manage and develop the forests of Vietnam. All these regulations aim to create a legal framework and to encourage people to participate actively in forest management, protection and development. The main targets of those regulations are organizations, households and individuals in mostly isolated areas to whom forestland is allocated or who are contracted to manage forestland by state agencies.

However, farmers living in rich forest areas are often not aware of, or have difficulties interpreting, the regulations. Local farmers want to exploit forest products for their own consumption (for house construction, forest vegetables, fruits, medicinal plants, and so on) or to sell in order to obtain an additional income. They need to know where, when, how and which species can be purchased. This appendix gives a general overview of all the regulations related to forest management.

Classification of forests

The forests in Vietnam are classified into three categories according to their purposes:

1. Special use forests. These are used to preserve nature and typical national forest ecosystems, protect plant and animal genetic resources, provide sites for scientific research and for to preserve historical and cultural heritage and famous landscapes for recreation and tourism. (Phong Nha-Ke Bang National Park is classified as a special use forest.)
2. Protection forests. These are used for water protection and regulation, soil protection, prevention of erosion, reduction in the risk of natural disasters, climate regulation, and ensuring ecological balance and environmental security.
3. Production forests are used to produce goods for trade and processing, such as timber, other wood products, non-timber forest products (NTFPs) and wildlife products. They also contribute to the preservation and protection of the environment. (Law 29/2004/QH11; Law 13/2003/QH11).

All forests in Vietnam are classified into one of these three categories. Management and use depend on this classification system, and, accordingly, on the management plans of management bodies such as the SFEs, Protection Forest MBs and Special Use Forest MBs. Access to forests depends on whether the land is allocated, leased or contracted by an organization or individual.

Who is responsible for forest land?

In general, forest land is managed by several Management Boards (MBs): Special Use Forest MBs (including all protected areas); watershed protection MBs (management of protection forest); and State Forest Enterprises (SFEs). Decision 187/1999/QĐ-TTg was issued to reform the organization and management of SFEs and Circular 109/2000/TTLT/BNN-BTC provides guidance, while Decision 179/2003/QĐ-TTg deals with the ongoing reorganization, renovation and development of state owned agricultural and forestry farms. These regulations state that SFEs will be reviewed and that the forest land

³ Based on: Meijboom, M and Trinh Thang Long, 2002. Development of village forest use guidelines. Manual. WWF-GTZ, Dong Hoi, Vietnam

that SFEs are not able to manage effectively shall be handed over to local authorities for allocation to farmers.

Decree 163/ND-CP describes the allocation, leasing and contracting of forest land, while Circular 62/2000/TTLT/BNN-TCDC guides the implementation of land allocation/lease and the granting of forest land use rights. Decree 181/2004/ND-CP further guides the process and procedures that needs to be followed for the allocation of land. Since the issuance of Law 29/2004/QH11, forest land can also be allocated to villages. Decision 178/2001/QD-TTg describes the benefits accruing to and the obligations of households and individuals with allocated, leased or contracted forest, while joint circular 80/2003/TTLT-BTC guides the implementation of Decision 178/2001/QD-TTg. According to this circular the provincial and municipal People's Committees should issue detailed instructions on the benefit rates from forest products.

As a result of these regulations, several SFEs contracted households to protect the forest of the enterprise. Funding is provided under the 5 Million-Hectare Program (Decision 661/1999/QD-TTg) and made available by the provinces. The terms of tenure depend on the contract.

Land that is not allocated or under the management of a MB or another organization (e.g. SFE) falls under the management of the commune (Decision 245/1998/QD-TTg). The commune is encouraged to allocate all forest land to households and to develop FPDRs for each village (Circular 56/1999/TT-BNN-KL). These regulations should encompass all forest land of the village and include, for example, the regulations valid inside a protected area, watershed protection forest or SFE. In Quang Binh province, the FPD appointed a forest extension worker for each commune (8/2001/TT/KL) for a period of one year. The role of this person is to assist the communal People's Committee (PC), develop plans on forestry protection and management, to implement policies on land allocation, contracted forests, management and protection, and to look after the regeneration forest and afforestation for organizations, households and individuals. It also involves liaison with the fire control group and the establishment of FPDR, awareness raising and forest monitoring.

Forest use

The use of forest products depends on the type of forest land and its tenure. Exploitation of any products or the free grazing of any cattle in the core zone of a protected area is prohibited (Decision 8/2001/QD-TTg). People contracted to protect the forest within a protected area are not allowed to exploit forest products but are paid an annual fee for strict forest protection (Decision 178/2001/QD-TTg). Anyone who exploits products in special use forest and/or exploits species that are included in Decision 48/2002/QD-TTg is subject to a fine. The size of the fine depends on the crime (Decree 139/2004/QD-TTg).

The use of protection and production forest depends on the annual plan of the MB/SFEs. Local villagers who are contracted by the SFEs to manage protection forest have specific benefits and obligations. A general overview of what the obligations and benefits are is also provided in Decision 178/2001/QD-TTg. In general people will be paid an annual allowance for forest protection, regeneration and plantation in accordance with the contract signed by the MB. People are allowed to harvest dry fuelwood and NTFPs under the forest canopy. If the protection forest is natural forest, use of less than 20% of the dry, dead and exhausted trees which are below exploitation standards is permitted; use of bamboo and rattan products with the maximum exploitation capacity of 30% (forest

coverage 80%) and exploitation of bamboo sprouts is permitted (Decision 8/2001/QD-TTg).

On allocation of production forest land, funds may be available from the 5MHRP or other sources for the establishment of plantations (Decision 661/1998/QD-TTg). A harvesting plan has to be drawn up for the exploitation of forest products by the owner. If a plantation was established with financial support from the government, the harvesting plan needs to be approved by DARD or the FPD who issues a harvesting permit. After harvesting the FPU has to be informed. The forest owner only needs to report to the CPC and FPU, if the plantation is set up with own funds. For the harvesting of fuelwood and timber for domestic use, the forest owner just needs to report to the CPC. Government organizations also need to make a forest management plan, while households who received forestland and benefit according to Decision 178/2001/QD-TTg don't need to develop a forest management plan but only a harvesting plan (Decision 04/2004/Q-BNN-LN).

Villagers who do not have allocated forest land have access to forest land belonging to their village. Their forest use depends on the established local forest protection and development regulations.

If all forest land is allocated and there is no communal forest land left, people without allocated land have to buy the desired forest products or grow trees themselves.

If people have allocated land, exploitation for sale depends on the exploitation designs approved by DARD. DARD will issue a harvesting permit. After harvesting the FPU has to be informed.

If people have allocated land, exploitation for house construction (less than 10m³) is allowed after obtaining the permission of the district PC.

Forest management related regulations

Law 29/2004/QH11, dated 14 December 2004. Law on forest protection and development

Law 13/2003/QH11, dated 26 November 2003. Land Law

Decree 163/1999/ND-CP, dated 16 November 1999. Concerning allocating and leasing of forest land to organizations, households and individuals for long-term forestry purposes.

Decree 181/2004/ND-CP, dated. On guiding the implementation of the land law.

Decision 187/1999/QD-TTg, dated 16 September 1999. On the renovation of the organization and management system of State Forest Enterprises.

Decision 179/2003/QD-TTg, dated 3 September 2003. The governments program and plan for implementing the Resolution of the Politburo-the Party's Central Executive Committee of the IX Legislature in relation to ongoing organization, renovation and development of state owned agricultural and forestry farms.

Decision 661/1998/QĐ-TTg, dated 29 July 1998. On the target, task, policy and organization for the implementation of the project of planting five million new hectares of forest.

Decision 178/2001/QĐ-TTg, dated 12 November 2001. On the benefits and obligations of households and individuals assigned, leased or contracted forests and forestry land.

Decision 04/2004/Q-BNN-LN, dated 2 February 2004. Regulation on the harvesting of timber and other forest products (MARD)

Decision 40/2005/QĐ-BNN, dated 7 July 2005. Promulgating the regulation on exploitation of timber and other forest products (MARD)

Circular 80/2003/TTLT/BNN-BTC, dated 3 September 2003. Guiding the implementation of Decision 178/2001/QĐ-TTg of November 12, 2001 by the prime minister on the benefits and obligations of households and individuals, to which forest and forest land were allocated, leased or contracted.

Approval of proposal 8/2001/TT/KL, dated 5 April 2001. Approval for the proposal on organization of labor contracts regarding forest conservation and development in the communal areas. (Quang Binh PPC)

Decision 8/2001/QĐ-TTg, dated 11 January 2001. Management of special use forest, protection forest and production forest.

Decision 189/2001/QĐ-TTg, dated 12 December 2001. Upgrading Phong Nha Nature Reserve to Phong Nha-Ke Bang National Park.

Decision 245/1998/QĐ-TTg, dated 21 December 1998. On the exercise of state managerial responsibilities of various levels concerning forests and forests land.

Decree 79/2003/ND-CP dated 07/7/2003 regarding regulations on the implementation of democracy in commune.

Decision 48/2002/QĐ-TTg, dated 22 April 2002. On the revision and addition of precious and rare wild fauna and flora listed in Decree 18/HĐBT dated 17 January 1992 by the ministry council on the regulation of the protection and management of precious and rare forest plants and animals.

Decree 139/2004/ND-CP dated 25 June February 2004. On sanctions against administrative violations in the domain of forest management and protection and forest product management.

Circular 56/1999/TT-BNN-KL, dated 30 March 1999. Guiding the elaboration of the convention on protecting and developing forests in the communities, in the hamlets and villages in the plains and mountain areas.

Inter-ministerial circular No. 109/2000/TTLT/BNN-BTC, dated 20 October 2000. Guidance for implementation of the decision 187/1999/QĐ-TTg of 16 September 1999 by the Prime Minister on reform of organization and management mechanism of State Forest Enterprises.

Inter-ministerial circular No 62/2000/TTLT/BNN-TCDC, dated 6 June 2000. Guiding the implementation of land allocation/lease and provision of forestland use right license.

Appendix 2 Functions of Vietnam's tropical forests⁴

The Vietnamese government has given high priority to the conservation, protection and sustainable management of its forests. In 1945, 43% of Vietnam was covered with forests, according to the statistics (Decision 2490/QĐ/BNN-KL dated 30 July 2003) the forest cover was 35.8% in 2003. However this figure includes both plantations and natural forest. The cover of natural forests is estimated to be much lower (less than 10%). Vietnam has lost its natural forest as a result of, for example, clearing for agricultural land, war and uncontrolled logging. However, these days, the value of forest, not only in direct monetary terms related to timber and other forest products but also in terms of its role and functions in the wider ecosystem, is better understood and the Vietnamese Government has responded with policies and programs to encourage people to develop and protect forests. See table 1 for the functions of forests.

Table 1: Major functions of tropical forests⁵

<p>Regulatory functions</p> <ul style="list-style-type: none"> • Buffering of CO² • Climate regulation • Watershed protection and catchments • Erosion protection • Storage/recycling of organic matter • Storage/recycling of human pollution • Biological control • Migration habitat • Maintenance of biological diversity 	<p>Production functions</p> <ul style="list-style-type: none"> • Food/nutrition • Genetic resources • Medicinal resources • Raw material for manufacturing • Biochemicals • Fuel and energy • Fodder and fertilizer • Ornaments/pets
<p>Carrier functions</p> <ul style="list-style-type: none"> • National security • Habitat for indigenous people • Recreation/Eco-tourism 	<p>Information functions</p> <ul style="list-style-type: none"> • Aesthetic, spiritual/religious and cultural /artistic information • Historic information • Educational and scientific information

Regulatory functions

A number of regulatory functions can be distinguished. Functions such as buffering of CO², climate regulation, the storage/recycling of organic matter and the storage/recycling of human pollution are beyond the scope of this document and are not discussed.

⁴ Meijboom, M and Trinh Thang Long, 2002. Development of village forest use guidelines. Manual. WWF-GTZ, Dong Hoi, Vietnam

⁵ After de Groot, R.S., 1992. *Functions of nature in environmental planning, management and decision making*. Wolters-Noordhoff. The Netherlands

Watershed protection and catchments

Tropical forests stabilize floods in the raining season by reducing runoff. The enormous quantity of rainwater falling in this season is intercepted by the forest, by the different layers of canopy above the ground and by the extended network of roots under the ground. Only that proportion of the rain that is not absorbed by the standing vegetation slowly infiltrates into the soil and reaches the groundwater flow. This flow directs the surplus water to the streams and rivers. However, when hilly/mountainous forested areas are made barren through, for example, clearing, the enormous amount of rainwater runs directly from the mountainous areas to the lowlands, mostly unhindered by any vegetation. This causes sudden and very severe flooding, and the destruction of large amounts of agricultural land downstream. Forested uplands, by protecting downstream areas from flooding as well as by serving as irrigation water catchments areas, are thus the key to water resources management. Most of Vietnam's protected areas are located in upland areas and play a vital role in protecting watersheds and mitigating flood damage.⁶

Erosion control

Forests limit soil loss due to erosion or landslides. The different canopy layers and the humus layer minimize the impact of raindrops on the soil, and the extended network of roots limits the extent to which soil is carried away in runoff. In contrast, raindrops falling on bare ground loosen the soil, and runoff is increased. Heavy rain in bare, hilly areas may result in landslides. The eroded soil will be deposited in downstream areas and may cause adverse effects such as the silting up of watercourses.

Furthermore, contrary to common belief, tropical forest grows mainly on soils of extremely low fertility. Maintenance of the forest is possible only with extensive natural nutrient cycling, whereby nutrients stored in the biomass of the forest (e.g. plants: wood, leaves, fruits and animals) become available when the biomass dies off and decays. These released nutrients are reabsorbed by the forest. If the forest is cleared, for example for agriculture, the soil will only be sufficiently fertile to allow a few years cultivation. Thus, forest clearance will lead to soil erosion, leaching and reduced fertility.

Shifting cultivation, as practiced by several minority groups, can provide sustainable yields as long as the fallow period is long enough for the soil to regenerate. Current population pressures make this hardly feasible and the result is low yields and unsustainable practices.

Biological control

Forests provide the habitat for predators, pollinators and seed dispersers. For example, predators on rats (such as cats and snakes) need bushes/woodlands for shelter and reproduction. Without this, predators cannot survive. Rat plagues have already devastated vast areas of rice and jute crops in Vietnam. For example, in summer 2002, Long An province 30% of the summer/autumn rice crop and 80% of the jute crop was destroyed by rats.⁷

Migration habitat

Several bird species, such as the endangered black-faced spoonbill (*Platalea minor*), use Vietnam as a refuge for wintering. In some years one quarter of the total global population of this species winters in northern Vietnam. Other threatened bird species that are non-breeding visitors include the Japanese Paradise-flycatcher (*Terpsiphone atrocaudata*),

⁶ Watershed protection depends on a number of factors, including seasonal pattern and intensity of rainfall, watershed size and slope, soil compaction and water infiltration, and the moisture retention capacities of soils.

⁷ *Vietnam News*, 5 August, 2002. Hunting has also drastically decreased the number of predators.

Fairy Pitta (*Pitta nympha*), Greater Spotted Eagle (*Aquila clanga*), Imperial Eagle (*Aquila heliaca*), Nordmann's Greenshank (*Tringa guttifer*) and Greater Adjutant (*Leptoptilos dubius*).⁸

The survival of several migratory bird species is at risk because of hunting and the destruction of the migration habitats.

Maintenance of biodiversity

Biological diversity encompasses genetic diversity, species diversity and ecosystem diversity. Usually the word biodiversity is used to express the number of existent species in an area. At present, about 1.7 million species have been described. However many more species are still not described by science. There are at least 4 million species existing in the world, while a figure of 13 million is the most widely accepted estimate⁹. Extinction is a natural process. However, species are now disappearing at an alarming rate as a result of human impacts. According to WWF's living planet index, which gives an indication of the trends in the populations of hundreds of birds, mammals, reptiles, amphibians and fish over the last 30 years, the present rapid loss of species is comparable with the great mass extinctions that have, so far, occurred only five or six times in the Earth's history.¹⁰

Biodiversity is important because it is the umbrella covering several forest functions, such as the production of timber and NTFPs, storage of genetic resources, education and research, and spiritual/religious/cultural information. Biodiversity supports global life and, therefore, the maintenance of biodiversity is of global importance. In Vietnam, a number of species are on the edge of extinction because of human pressure. Several regulations have been issued to protect species that are threatened by extinction. The Vietnamese Government recently issued Decision 48/2002/QĐ-TTg, and is a signatory to CITES¹¹, which regulates the trade in endangered plants and animals. Furthermore, 359 animal species are listed in the country's list of threatened species, Vietnam's Red Data Book¹², and several hundreds of animal and plant species are included in the IUCN red list of threatened species¹³.

Production functions

Tropical forests need to be conserved to ensure the continuing availability of genetic resources and of plant and animal products. Plant and animal resources will be depleted and collapse if forests are not conserved and/or sustainably managed. Tropical forests provide a number of products useful to humans - food (fruits, vegetables, bulbs, tubers, etc.), timber and other raw materials, medicinal plants, animals used for meat or medicinal purposes, ornaments (such as feathers and orchids), pets (such as several species of tropical birds), fodder, fertilizer, fuelwood, etc. Some of these products have been severely exploited and are becoming rare or even locally extinct. These products may disappear totally or become only available at very high prices.

Genetic resources

⁸ For more information, see the website: birdlifevietnam.com

⁹ Blackmore S., 2002. Progress in taxonomy. In: *Science* Vol. 298, No. 5592, p. 365

¹⁰ WWF Living Planet Report, 2002

(www.panda.org/news_facts/publications/general/livingplanet/index.cfm)

¹¹ Vietnam became a signatory to CITES (Convention on International Trade in Endangered Species of wild fauna and flora) in 1994.

¹² Red Data Book of Vietnam 2002, Volume 1: Animals. Science and Techniques Publishing House

¹³ 2004 IUCN red list of threatened species.

The unique flora and fauna of Vietnam need to be conserved because they may contain genetic resources useful in the development of pharmaceutical drugs, or the improvement of cultivated plants and domesticated animals. All cultivated and domesticated plants and animals have wild ancestors - for example the common wild boar (*Sus scrofa*) is the ancestor of the domesticated pig, and the red jungle fowl (*Gallus gallus*) is the ancestor of the domestic chicken. Both species are common in Vietnam. Such domesticated species could be improved by cross-breeding with wild species to increase their resistance to diseases, resistance to unfavorable climatic conditions, yield, etc.

Food/nutrition

The tropical forests in Vietnam provide numerous popular foodstuffs for humans. Speciality food restaurants serving serow, wild pig, deer, porcupines, turtles and snakes are gaining in popularity. Forest vegetables, fruits, mushrooms, tubers (yam), bamboo shoots, honey and others are widely consumed and traded on local markets.

Medicinal resources

Vietnam has a long tradition of using medicinal plants; about 3,000 plants¹⁴ are used for medicinal purposes. The first records were made in the 14th century by Nguyen Ba Tinh (better known as Tue Tinh). Nowadays, most medicines are based on the active compounds extracted once from medicinal plants.

Vietnam also has a long tradition of using animals for medical purposes. At present, bear gall is extremely popular. The gall is used directly or mixed with wine. Other animals used for medicinal purposes include primates, porcupines, pangolins, tortoises/turtles and snakes. Many people in Vietnam and throughout Asia use animals for medicinal purposes although there is no scientific evidence as to the efficacy of such medicines compared with that of other non-animal based treatments.

Raw materials for manufacturing

Timber is traditionally the most valuable product of tropical forests. Vietnam provides a number of valuable timber species, such as Po mu, Mun, Hue (*Fokiennia hodginsii*, *Diospyros saletti*, *Dalbergia cochinchinensis*)¹⁵, all of which have been seriously depleted. Other raw materials for manufacturing include rattan and bamboo.

Biochemicals

Wild plants and animals can supply a variety of chemical compounds, of which rubber is probably the most well-known. Rubber is widely planted in Vietnam for commercial production.

Fuel and energy

Fuelwood is another important product extracted from forests. It is estimated that 70%¹⁶ of the total energy consumption in Vietnam is derived from fuelwood and other biomass. (Other biomass includes agricultural residues from crops (straw, husks, stalks), residues from saw milling, and residues from perennial crops (rubber and coconut).

Fodder and fertilizer

Several plant species, such as species from the family Moracaceae, are collected to provide food for pigs, cattle, and domesticated deer. Domesticated cattle often graze

¹⁴ Figure presented by Nguyen Van Tap, Institute of Materia Medica, Ministry of Health.

¹⁵ The book *Vietnam Forest Trees*, from the Forest Inventory and Planning Institute (Agricultural Publishing House Hanoi, 1996) gives a good overview of the timber species of Vietnam and its uses.

¹⁶ UNEP newsletter, May 1997

freely in the forests. Species of Leguminosae are often used as green manure, especially in isolated areas where the supply of chemical fertilizers is not reliable.

Ornaments

A number of animal and plant species are kept for decoration or as pets. Several species of the orchid family are very popular decorations. Birds, such as laughing rushes and the hill myna, are valued for their singing/speaking, while other birds, such as parrots, are kept because of their colorful feathers.

Carrier functions

National security

The remaining forests in Vietnam are located along its borders with China, Lao PDR and Cambodia. The forests of Vietnam provide a function in maintaining the national security as they form a bufferzone in border areas and hamper invasion from bordering countries. The forests were used strategically during past wars in which Vietnam has had to engage.

Habitat for indigenous people

Tropical forests provide a habitat for indigenous people. The 54 ethnic minority groups in Vietnam live mostly in isolated, mountainous and forested areas. Without the forest, minority groups cannot practice their traditional way of life. Loss of forests is, therefore, also a loss in cultural diversity.

Eco-tourism and recreation

Tropical forests are interesting for recreation and for tourism. In Vietnam, several National Parks, such as Cuc Phuong, Yok Don, Bach Ma and Cat Tien, attract numerous tourists every year. Phong Nha-Ke Bang National Park in Quang Binh province attracts numerous local tourists interested in its caves. Eco-tourism has the potential to provide financial benefits for local people.

Information functions

Cultural, aesthetic and spiritual value

Tropical forests possess cultural, aesthetic and spiritual value. Ethnic minorities maintain sacred forests. Kinh people also value forests for their information functions. For many, tigers are symbols of strength, agility and wisdom. Unfortunately, many people in Asia believe that these characteristics of the tiger can be refined from its bone and sinew. As a result, the populations of tiger are being destroyed because of its own fable.¹⁷

Historic information

Undisturbed tropical forests have developed over thousand of years and, therefore, contain much information on the evolution of plant and animal species. Tropical forests contain information on the development of the natural heritage of the country.

The tropical forests of Vietnam contain much information about the recent past. The hill stations in Bach Ma National Park are reminders of the French colonial period, while the legendary Ho Chi Minh trail through the Greater Annamites will always provide a remembrance of the American war.

Education and scientific research

¹⁷ www.forevertigers.com

A number of animals are endemic to the Truong Son mountain range. Since the discovery of giant muntjac (*Megamuntiacus vuquangensis*)¹⁸ and saola (*Pseudoryx nghetinhensis*)¹⁹ by scientists, Vietnam has received more international attention from biologists. This has led to the scientific cataloguing of more previously unknown species, such as the Truong Son muntjac (*Muntiacus truongsongensis*) and the Annamite striped rabbit (*Nesolagus timinsii*).²⁰ In 1999, the first images of the Vietnam Javan rhino (*Rhinoceros sondaicus anamiticus*), thought to be extinct in Vietnam for several decades, proved its existence.²¹ Furthermore three species of bird (the golden-winged laughing thrush, the black-crowned barwing and the chestnut-eared laughing thrush)²² and 30 new species/sub-species of amphibians and reptiles have been described during the last five years in Vietnam.²³ Quang Binh province harbours a number of rare primate species, such as the Ha Tinh langur (*Trachypithecus laotum hathinhensis*), black langur (*Trachypithecus laotum ebenus*) red-shanked Douc langur (*Pygathrix nemaeus nemaeus*) and the white-cheeked gibbon (*Hylobates leucogenys siki*).²⁴ Little is known of these species and more research is needed.

With greater insight into existing species, population dynamics and the whole ecosystem, it might also become possible to extract forestry products in a regulated, sustainable way, so that the survival of the whole biodiversity system is not jeopardized. As mentioned above, research may also contribute to the identification of species that might provide genetic resources for the production of drugs and/or the improvement of cultivated and domesticated species.

Conclusion

The tropical forests in Vietnam fulfill several important functions that are often overlooked because they do not provide direct monetary income. In recent years, Vietnam has experienced several severe floods and droughts, while rat plagues have consumed large parts of the rice yield in several provinces. At the same time, the country's forest cover has also been reduced drastically, and the quality of natural forest has been degraded by conversion to agricultural land and uncontrolled logging. The two, natural disasters and forest loss, are most likely linked. It is crucial to start the conservation and the sustainable management of Vietnam's forest now in order to protect the natural heritage of Vietnam and the livelihoods of its people.

¹⁸ Schaller, G.B. and E.S. Vrba, 1996. Description of the giant muntjac (*Megamuntiacus vuquangensis*) in Laos. In: *Journal of Mammalogy*. Vol.77, No. 3, p.675-683.

¹⁹ Vu Van Dung, Pham Mong Giao, Nguyen Ngoc Chinh, Do Tuoc, Arcander, P. and J.

MacKinnon, 1993. A new species of living bovid from Vietnam. In: *Nature*. Vol. 363, p. 443-445.

²⁰ Surridge, A.K., Timmins, R.J., Hewitt, G.M. and D.J. Bell, 1999. Striped rabbits in Southeast Asia. In: *Nature*. 400:726.

²¹ For more information, visit the websites:

http://www.worldwildlife.org/news/pubs/javan_rhinos/index.htm and the Cat Tien National Park's web-site at http://www.blakup.demon.nl/cat_tien

²² For more information, visit the website: <http://www.birdlifevietnam.com>

²³ Thomas Ziegler, 2002. Herpetologisch Neues aus einem der letzten Tieflandfeuchtwalder Vietnams (in German)

²⁴ Amongst others: Timmins, R.J., Do Tuoc, Trinh Viet Cuong and D.K. Hendrichsen, 1999. *A draft assessment of the conservation importance and conservation priorities of the Phong Nha-Ke Bang proposed National Park, Quang Binh Province, Vietnam*. Fauna & Flora International-Indochina Program, Hanoi, Vietnam

Appendix 3 Flora and fauna of Quang Binh included in Decision 48/2002/QĐ-TTg

A number of species recorded within Quang Binh province along the Lao border are presented as threatened on several national and international lists. This appendix provides an overview of the species included in Decision 48/2002/QĐ-TTg and which, as a result, receive special protection by law.

Species	English name	Vietnamese name	Decree 48 2002
Mammals			
<i>[Aonyx cinerea]</i>	Oriental Small-clawed Otter	Rái cá vuốt bé	IB
<i>Arctictis binturong</i>	Binturong	Cây mực	IB
<i>Bos gaurus</i>	Gaur	Bò tót	IB
<i>Canis aureus</i>	Golden Jackal	Chó rừng	IIB
<i>Catopuma temmincki</i>	Golden Cat	Beo lửa	IB
<i>[Chrotogale owstoni]</i>	Owston's Banded Civet	Cây vằn	IIB
<i>Cuon alpinus</i>	Dhole	Chó sói	IIB
<i>Cynocephalus variegatus</i>	Malayan Flying Lemur	Chồn dơi	IB
<i>Elephas maximus</i>	Asian Elephant	Voi	IB
<i>Hylobates leucogenys</i>	White-cheeked Gibbon	Vượn đen má trắng	IB
<i>Hylopetes alboniger</i>	Particoloured Flying Squirrel	Sóc bay đen trắng	IIB
<i>Lutra lutra</i>	Eurasian Otter	Rái cá thường	IB
<i>[Lutrogale perspicillata]</i>	Smooth-coated Otter	Rái cá lông mượt	IB
<i>Macaca arctoides</i>	Bear Macaque	Khỉ mặt đỏ	IIB
<i>Macaca assamensis</i>	Assamese Macaque	Khỉ mốc	IIB
<i>Macaca mulatta</i>	Rhesus Macaque	Khỉ vàng	IIB
<i>Macaca nemestrina</i>	Pig-tailed Macaque	Khỉ đuôi lợn	IIB
<i>Manis javanica</i>	Sunda Pangolin	Tê tê đen	IB
<i>Megamuntiacus vuquangensis</i>	Giant Muntjac	Mang lớn	IB
<i>Naemorhedus sumatraensis</i>	Southern Serow	Sơn dương	IB
<i>Nesolagus timinsii</i>	Annamite Striped Rabbit	Thỏ vằn	IB
<i>Nycticebus coucang</i>	Slow Loris	Cu li lớn	IB
<i>Nycticebus pygmaeus</i>	Lesser Slow Loris	Cu li nhỏ	IB
<i>Panthera pardus</i>	Leopard, Panther	Báo hoa mai	IB
<i>Panthera tigris</i>	Tiger	Hổ	IB
<i>Pardofelis marmorata</i>	Marbled Cat	Mèo gấm	IB
<i>[Pardofelis nebulosa]</i>	Clouded Leopard	Bào gấm	IB
<i>Petaurista petaurista</i>	Red Flying Squirrel	Sóc bay trâu	IIB
<i>Petaurista philippensis</i>	Red Giant Flying Squirrel	Sóc bay lớn	IIB
<i>Prionailurus bengalensis</i>	Leopard Cat	Mèo rừng	IB
<i>[Prionailurus viverrinus]</i>	Fishing Cat	Mèo cá	IB
<i>[Prionodon pardicolor]</i>	Spotted Linsang	Cây gấm	IIB
<i>[Pseudoryx nghetinhensis]</i>	Vu Quang Ox	Sao la	IB

SPECIES	English name	Vietnamese name	Decree 48 2002
<i>Pteropus vampyrus</i>	Large Flying Fox	Dơi ngực lớn	IIB
<i>Pygathrix nemaeus</i>	Red-shanked Douc Langur	Chà vá chân nâu	IB
<i>Semnopithecus francoisi</i>	Francois's Leaf Monkey		IB
<i>Trachypithecus laotum hatinhensis</i>	Hatinh Langur	Voọc gáy trắng	IB
<i>Trachypithecus laotum ebenus</i>	Black Langur	Voọc đen tuyền	IB
<i>Tragulus javanicus</i>	Lesser Malay Mouse-deer	Cheo cheo Java	IIB
<i>Ursus malayanus</i>	Sun Bear	Gấu chó	IB
<i>Ursus thibetanus</i>	Asiatic Black Bear	Gấu ngựa	IB
<i>Viverra megaspila</i>	Large-spotted Civet	Cây giông sọc	IIB
<i>Viverra zibetha</i>	Large Indian Civet	Cây giông thường	IIB
<i>Viverricula indica</i>	Small Indian Civet	Cây hương	IIB
Birds			
<i>Aceros nipalensis</i>	Rufous-necked Hornbill	Niệc cổ hung	IIB
<i>Aceros undulatus</i>	Wreathed Hornbill	Niệc mỏ vàng	IIB
<i>Anorrhinus tickelli</i>	Brown Hornbill	Niệc hung	IIB
<i>Buceros bicornis</i>	Great Hornbill	Hồng hoàng	IIB
<i>Copsychus malabaricus</i>	White-rumped Shama	Chích choè lửa	IIB
<i>Falco peregrinus</i>	Peregrine Falcon	Cắt lớn	IIB
<i>Falco severus</i>	Oriental Hobby	Cắt bụng hung	IIB
<i>Falco tinnunculus</i>	Common Kestrel	Cắt lưng hung	IIB
<i>Garrulax canorus</i>	Hwamei	Hoạ mi	IIB
<i>Garrulax chinensis</i>	Black-throated Laughingthrush	Khướu bạc má	IIB
<i>Garrulax leucolophus</i>	White-crested Laughingthrush	Khướu đầu trắng	IIB
<i>Garrulax maesi</i>	Grey Laughingthrush	Khướu xám	IIB
<i>Garrulax monileger</i>	Lesser Necklaced Laughingthrush	Khướu khoang cổ	IIB
<i>Garrulax pectoralis</i>	Greater Necklaced Laughingthrush	Khướu ngực đen	IIB
<i>Garrulax perspicillatus</i>	Masked Laughingthrush	Liều điếu	IIB
<i>Gracula religiosa</i>	Hill Myna	Yúng	IIB
<i>Ketupa ketupu</i>	Buffy Fish Owl	Dù di Kétupu	IIB
<i>Lophura diardi</i>	Siamese Fireback	Gà lôi hông tía	IB
<i>Lophura edwardsi</i>	Edwards's Pheasant	Gà lôi lam mào trắng	IB
<i>Lophura hatinhensis</i>	Vietnamese Pheasant	Gà lôi lam đuôi trắng	IB
<i>Lophura imperialis</i>	Imperial Pheasant	Gà lôi lam mào đen	IB
<i>Lophura nycthemera</i>	Silver Pheasant	Gà lôi trắng	IB
<i>Loriculus vernalis</i>	Vernal Hanging-Parrot	Vẹt lùn	IIB
<i>Microhierax caerulescens</i>	Collared Falconet	Cắt bụng nhỏ	IIB
<i>Microhierax melanoleucos</i>	Pied Falconet	Cắt nhỏ bụng trắng	IIB
<i>Ninox scutulata</i>	Brown Hawk Owl	Cú vọ lưng nâu	IIB
<i>Otus bakkamoena</i>	Collared Scops-owl	Cú mèo khoang cổ	IIB
<i>[Phodilus badius]</i>	Oriental Bay Owl	Cú lợn rừng	IIB
<i>Polylelectron bicalcaratum</i>	Grey Peacock-pheasant	Gà tiền mặt vàng	IB
<i>Psittacula alexandri</i>	Red-breasted Parakeet	Vẹt ngực đỏ	IIB
<i>Psittacula eupatria</i>	Alexandri Parakeet	Vẹt ma vàng	IIB
<i>Psittacula finschii</i>	Grey-headed Parakeet	Vẹt đầu xám	IIB

SPECIES	English name	Vietnamese name	Decree 48 2002
<i>Psittacula roseata</i>	Blossom-headed Parakeet	Vẹt đầu hồng	IIB
<i>Rheinardia ocellata</i>	Crested Argus	Trĩ sao	IB
<i>Tyto alba</i>	Barn Owl	Cú lợn lưng xám	IIB
<i>Tyto capensis</i>	Grass Owl	Cú lợn lưng nâu	IIB
Reptiles			
<i>Bungarus candidus</i>	Malayan Krait	Rắn cạp nia	IIB
<i>Bungarus fasciatus</i>	Banded Krait	Rắn cạp nong	IIB
<i>Cuora trifasciata</i>	Chinese Three-striped Box Turtle	Rùa hộp ba vạch	IB
<i>Elaphe radiata</i>	Radiated Ratsnake	Rắn sọc dưa	IB
<i>Hieremys annandalei</i>	Yellow-headed Temple Turtle	Rùa rặng	IIB
<i>Indotestudo elongata</i>	Elongated Tortoise	Rùa núi vàng	IIB
<i>Naja naja</i>	Asian Cobra	Rắn hổ mang	IIB
<i>Ophiophagus hannah</i>	King Cobra	Hổ mang chúa	IB
<i>Ptyas korros</i>	Indochinese Rat Snake	Rắn ráo	IIB
<i>Ptyas mucosus</i>	Common Rat Snake	Rắn ráo trâu	IB
<i>Python molurus</i>	Asiatic Rock Python	Trăn đất	IIB
[<i>Python reticulatus</i>]	Reticulated Python	Trăn gấm	IIB
<i>Trimeresurus albolabris</i>	White-lipped Pit Viper	Rắn lục mép	IIB
<i>Trimeresurus mucrosquamatus</i>	Checker-backed Pit Viper	Rắn lục cườm	IIB
<i>Varanus salvator</i>	Common Water Monitor	Kỳ đà nước	IIB
Butterflies			
Papilionidae spp.		Bướm các loại	IIB
Fish			
<i>Anguilla bengalensis</i>		Cá chình	IIB
Plants			
<i>Azelia xylocarpa</i>		Gỗ đỏ, gỗ cà te	IIA
<i>Anoectochilus chapaensis</i>		Giải thủy sa mạc	IA
<i>Anoectochilus lylei</i>		Giải thủy lyle	IA
<i>Anoectochilus roxburghii</i>		Giải thủy roxburgh	IA
<i>Anoectochilus sp.</i>		Giải thủy	IA
<i>Aquilaria crassna</i>		Trầm hương, Dó bầu	IA
<i>Burretiodendron sp.</i>			IIA
<i>Cinnamomum pathenoxylon</i>		Vù hưng	IIA
<i>Cosciniun fenestratum</i>		Dây vàng dấng	IIA
<i>Cycas pectinata</i>		Thiên tuế lược	IIA
<i>Cycas siamensis</i>		Thiên tuế xiêm	IIA
<i>Dalbergia cochinchinensis</i>		Cắm lai nam bộ, Trắc bông	IIA
<i>Dendrobium nobile</i>		Thạch học, Hoàng thảo	IIA
<i>Diospyros salleti</i>		Thị Salet	IA
<i>Disporopsis longifolia</i>		Song song bào	IIA
<i>Excentrodendron hsienmu</i>		Nghiến	IIA
<i>Fibraurea sp.</i>		Nam hoàng	IIA
<i>Fokienia hodginsii</i>		Pơ mu	IIA
<i>Garcinia fagraeoides</i>		Trai	IIA
<i>Markhamia stipulata</i>		Thiến đình lá be	IIA

SPECIES	English name	Vietnamese name	Decree 48 2002
<i>Paphiopedilum concolor</i>		Vân hài	IA
<i>Pterocarpus macrocarpus</i>		Giáng hương quả to	IIA
<i>Sindora siamensis</i>		Gụ lâu, gỗ mật,	IIA
<i>Stephania japonica</i> var. <i>discolor</i>		Dây môi	IIA
<i>Stephania sinica</i>		Tiết dê, dây leo quắn	IIA
<i>Stephania</i> sp.			IIA
Total			125

Decree 48/2002/QĐ-TTĐ:

I: Endemic species with scientific and economic special values, threatened to extinction.

II: Species with high economic values, overexploited and threatened to extinction. (A-Plants, B-Animals).

The list is derived from the following documents and might not present all the relevant plant and animal species of Quang Binh province:

Do Tuoc and Truong Van La, 1999. Dự án bảo tồn liên quốc gia Hin Nậm Nô-Phong Nha-Kẻ Bàng. Chuyên đề động vật rừng vùng đệm Phong Nha-Kẻ Bàng, Quảng Bình.

Eames, J.C., Lambert, F.R. and Nguyen Cu, 1994. A survey of the Annamense Lowland, Vietnam, and its implication for the conservation of Vietnamese and Imperial Pheasant *Lophura hatinhensis* and *L. imperialis*. In: *Bird Conservation International*. No 4: 343 - 382.

Le Xuan Canh et al., 1997. *A Report on Field surveys on Biodiversity in Phong Nha - Ke Bang Forest, Quang Binh Province, Central Vietnam.* UNDP - WWF Indochina-Report. Hanoi, Vietnam.

Nguyen Xuan Dang, Pham Nhat, Pham Trong Anh and D.K. Hendrichsen, 1998. Kết quả điề tra nghiên cứu khu hệ thú ở Phong Nha-Kẻ Bàng. Flora and Fauna International, Hanoi.

Pagel, T., 2002: Über das Naturschutzprojekt des Zoologischen Garten Köln in Phong Nha - Ke Bang (Vietnam), insbesondere die Avifauna. Gefiederte Welt. Cologne Zoo.

Timmins, R.J., Do Tuoc, Trinh Viet Cuong and D.K. Hendrichsen, 1999. A preliminary assessment of the conservation importance and conservation priorities of the Phong Nha-Ke Bang proposed National Park, Quang Binh Province, Vietnam. Fauna & Flora International-Indochina Program, Hanoi, Vietnam.

VRTC-WWF, 1999. Results of the complex zoological-botanical expedition to the Ke-Bang area. Final Report. WWF Indochina-VRTC, Hanoi, Vietnam.

Ziegler, T., and H.W. Herrmann, 2000. Preliminary list of the herpetofauna of the Phong Nha - Ke Bang area in Quang Binh province, Vietnam. In: *Biogeographica*. Vol. 76, No 2, p.49-62

Appendix 4: Example of approved FPDR²⁵

SOCIALIST REPUBLIC OF VIETNAM
Independence - Freedom - Happiness

REGULATION
on FOREST PROTECTION AND DEVELOPMENT

Đa Nang Village, Hoà Hợp Commune
Minh Hoá District, Quảng Bình Province

Minh Hoá: 6/2005

²⁵ The FPDR of Da Nang village, Hoa Hop commune have been developed with support from the SMNR-CV project

**HOÁ HỢP CPC
ĐA NẰNG VILLAGE**

**SOCIALIST REPUBLIC OF VIETNAM
Independence - Freedom - Happiness**

Đa Nặng date, 25 June 2005

**REGULATION
ON FOREST PROTECTION AND DEVELOPMENT
of Đa Nặng Village**

Based on the Law of Forest Protection and Development (29/2004/QH11) and Circular 56/1999/TT/BNN-KL: Guiding the elaboration of the convention on protecting and developing forest in the communities, in the hamlets and villages in the plains and mountainous areas, and based on other relevant documents, the people of Đa Nặng village, Hoa Hop commune have developed FPDRs and have committed themselves to implement the FPDR as follows:

Natural and socio-economic conditions of the village

Location:

- The village borders Xuân Hoá commune in the East
- The village borders Trung Hoá commune in the South
- The village borders Đa Thịnh village (Hoa Hop commune) in the North
- The village borders Sơn Hoá commune in the west

Area of the village is 493,6 ha

Đa Nặng village includes the following areas of forestry land:

- Area of forest and forestry land is 353 ha
- Area of natural forest is 348 ha
- Area of afforestation is 5 ha

Socio- economic conditions:

Mainly, the villagers generate their incomes from agricultural and forestry production. The benefits from small business is relative low. In recent years, local people started forestry development activities to generate additional income.

**CHAPTER I
GENERAL REGULATIONS**

Article 1: General description:

The FPDRs are developed by the village to regulate forest protection and development activities and include the rights and responsibilities of the villagers with regard to forest protection and development activities in the village.

Article 2: Subject of application:

All households, individuals in the village and outsiders as well as other social or economic organizations working and/or located in the village area must apply the FPDR and are responsible for applying and implementing the FPDRs if they have any operations or activities related to forestry land or forest resources.

CHAPTER II SPECIFIC REGULATIONS ON FOREST PROTECTION AND DEVELOPMENT IN THE VILLAGE

Article 3: Regulations on the exploitation of forestry products. Forbidden activities.

- If there is no permit issued by the Forest Protection Station and the Commune People's Committee, people are not allowed to exploit timber in the forest areas of **Cầu Pheo 3, Ông Thừa, Mùn Tún, Ông Sơn and Ông Đường**. These forest areas have been allocated and are under the management of households, groups of households or individuals.
- The limestone forest areas located in the South of the Ho Chi Minh highway, including **Lèn Khởi, Lèn Ông Vân, Lèn Phú Cả, Lèn Nước Lạnh và Lèn Đập Hùng Ai** have not been allocated to local households, therefore, all villagers and the Village Management Board are responsible for its protection and management. There is not any timber exploitation allowed.
- *Any violators of the above regulations will be punished and can be requested to pay a compensation of 10,000 to 80,000 VND by the village (depending on the level of damage). If the damage is severe, minutes of the forest damage will be made by the village forest protection group and the case will be handed over to the relevant authorities to take action in accordance with the regulations of the law.*

Article 4: Regulation on the exploitation of forest products. Permitted activities

The villagers are allowed to exploit the following forest products in areas of **Cầu Pheo 3, Ông Thừa, Đập Mùn Tún, Đập Ông Sơn and Ông Đường**:

- NTFPs such as palm leaves, rattan, Cardamom, bamboo, bamboo shoots which exists in the forest areas under management of the villagers and allocated by the Government.
- The villagers are allowed to use the diseased and dead trees, wood and dead branches as well as other invalid trees during tending and thinning.
- When the forest is mature and ready for exploitation, or when the forest owner needs some timber for construction or upgrading his house, the forest owner should submit his request to the CPC for consideration and approval. The CPC will support the forest owner to get official permission for the exploitation.

Article 5: Regulation for clearing and burning upland. Forbidden activities.

Burning and clearing activities are not permitted in areas of **Cầu Pheo 3, Ông Thừa, Đập Mùn Tún, Đập Ông Sơn và Ông Đường, Lèn Khởi, Lèn Ông Vân, Lèn Phú Cả, Lèn Nước Lạnh and Lèn Đập Hùng Ai**.

People who want to clear and burn hills for stimulating grass growth, need to get permission from the Village Management Board and the CPC. This kind of activity is only permitted in **Len Khoi** area.

Article 6: Regulation for burning upland. Permitted activities.

Households are allowed to burn upland for cultivation activities in areas 1. that fall under their management, 2. that have been assigned for agriculture or mixed garden lands (according to the land use plan) and 3. that are located near the residential areas along the Ho Chi Minh highway, under the following conditions:

- Regulated time for burning is from 5 a.m to 7 am in the morning and from 17 p.m to 19 p.m in the afternoon. (It is not permitted to burn upland at other times of the day.)
- Before burning, a fire prevention belt of at least 4m wide needs to be established.
- A person should watch the fire and avoid that the fire spreads to other areas outside the assigned burning area.

- The village head needs to be informed about the place and time of burning by the owner.

Article 7: Regulation for grazing. Permitted activities.

Local people are permitted to graze their cattle in **Lèn Khởi**, which is selected by the village as grazing area. In other forest areas with big trees, one person is allowed to herd 5 animals at the maximum.

- It's necessary for the local people to look after their cattle in afforestation areas with trees more than 4m in height.
- The villagers are encouraged to increase the grazing area and establish more grass fields in accordance with the regulations of the village.

Article 8: Regulation for grazing. Forbidden activities.

Local people are not allowed to graze their cattle in forest areas from **Co Đo** to **Khe Hạnh**. Furthermore, it is not permitted to let cattle graze in the following areas: 1. forest with young trees and smaller than 4m and 2. regeneration forest.

- *Any violators of the above regulations will be punished and can be requested to pay a compensation of 10,000 per animal. The amount of compensation will double if violators repeat their actions. Violators have to compensate the forest owner for all damages caused by their cattle.*
- *In case the violator does not come to get their cattle, and the forest owner has to look after and feed their cattle, the violator has to compensate 10,000 VND/day/animal for the forest owner.*

Article 9: Regulation for hunting wild animals.

All villagers are not permitted to do any hunting, trapping, trading and transporting of wild animals, such as tortoises and other rare wild species.

It is permitted to exploit some animals and animal products such as honey and common birds like pigeons and red bulbul because they do not belong to "not allowed hunting animals".

Violators of the above regulations will be punished and can be requested to pay a compensation of 10,000 to 80,000 VND/time by the village. If the damage is severe, minutes of the forest damage will be made by the village forest protection group and the case will be handed over to the relevant authorities to take action in accordance with the regulations of the law.

Article 10: Regulation for fire prevention.

All villagers should be highly aware of the danger of causing forest fires when using fire in forest areas, especially in the dry season. When someone realizes there is a forest fire, he/she has to inform the Fire Prevention and Control Group in the village as quick as possible. If fire (smoke) is used for honey collection, the user must put off the fire before he/she moves to another place.

All villagers in good health from **16 to 60** years old must participate in fire prevention and fire control activities (except for disabled people).

Article 11: Regulation for fire control

- The group of fire prevention and control is established by the village. This group will be managed by the village head, head of the youth union and the head of local army group.
- The village head (at present Mrs. Cao Thị Thiết) is mainly responsible for running this group and mobilizing the villagers to take part into fire prevention and fire control activities if fire occurs .

– Loud speakers or a drum will be used to inform and mobilize people to take part in forest fire control activities.

– In case, the fire is serious (covering areas of 500m² or larger), the village management board will inform the CPC in order to get better support resources.

People from 16 to 60 years who do not take part in fire control activities in case of fire, will be given a warning in a village meeting and can be requested to pay a compensation of 10,000 to 20,000 VND if they can not prove that they were in a difficult situation when the fire occurred. People who caused a forest fire have to pay for all damages and labor costs for extinguishing the fire (labor costs according to the regulated payment rate at the time of the forest fire). In case of causing serious fire (from 1000 m² or larger), minutes will be written by the Village Management Board and the case will be brought to the CPC for settlement.

Article 12: Regulation for afforestation

– All villagers, from 16 to 60 years old should take part in planting activities including planting programs, planting trees during Tet, etc.

People, who are in the regulated age but do not participate in tree planting activities, will be given a warning in a village meeting and can be requested to pay a compensation of 10,000 to 20,000 VND if they cannot prove that they were in a difficult situation when others got involved in these activities.

Article 13: Regulation for watershed protection

Ong Đường forest area is a watershed protection area and therefore no forest exploitation/extraction activities are permitted (except for the extraction of NTFPs) in order to avoid any bad impact to the watershed protection forest.

Violators of the above regulations will be punished and can be requested to pay a compensation of 10,000 to 80,000 VND.

Article 14: Regulation for compensation

If any forest damage occurs, the forest protection group of the village will write minutes and agree upon the compensation amount. This amount should not exceed 80,000 VND per case. In case the violator cannot pay in cash, the violator has to compensate in kind. The value of those items is not higher than 85,000 VND.

The forest protection group of the village is responsible for making records, to update the checking book of received compensations and to report on the status in village meetings.

Article 15: Regulation for awards

– The person (s), who discovers and informs the village's forest protection group about illegal forest exploitation activities, is awarded with about 30% of the compensation amount paid for that specific case.

– The village's forest protection group is awarded about 20% of the compensation amount paid for that specific case.

– 50% of the paid compensation is delivered to the forest protection fund of the village.

CHAPTER III IMPLEMENTATION

Article 16: Regulation for implementation

- All villagers and mass organizations in the village are responsible for the effective implementation of the FPDRs under the direction of the village head, the 9 heads of the forest user groups and the head of the fatherland association.
- All villagers in the village are requested to follow all articles mentioned in the FPDRs.
- This FPDRs will be amended or revised if at least 40 households (50% of the total number of households) submit their request for amendments of the FPDRs.

Article 17: Implementation effect.

This FPDRs will take effect 5 days after the date that the regulations have been publicly announced to the villagers and after getting approval from Minh Hoa DPC. All previous village regulations, which contradict this FPDRs, are outdated and invalid.

The Head of village

Representative of Hoá Hợp CPC

Appendix 5 Monitoring the impact of FPDR

The FPDR promote sustainable management of the forest resources. But how do we know if the actions undertaken and the regulations developed and applied really lead to sustainable management and ensure the availability of resources for future generations? For most species and resources the effects of over-exploitation are clearly visible in the seedling and small sapling stages. A marked reduction in flower and fruit production, resulting from mature plants being killed during earlier harvestings, is also a sign of over-exploitation. Regular monitoring can help to identify and limit such impacts.

Monitoring involves four steps:

1. Identification of transect lines
2. Recording and counting of commonly used plant species in different height classes within 5m of the transect line (height classes are species dependent, the last class should include the standard height of a mature plant)²⁶.
3. Grouping of transect results by forest type and presentation of the data in size-class histograms.
4. Annual (depending on the species) surveys to monitor changes.

Monitoring form for commonly used timber species

Name of species	Frequency of observed height (m) in different classes						
	Class 1 (<1m)	Class 2 (1-2m)	Class 3 (2-4m)	Class 4 (4-7 m)	Class 5 (7 -10m)	Class 6 (10-15m)	Class 7 (>15m)

The size-class distribution, as presented in figure 1, shows more small trees than large trees and an almost constant reduction in the number of trees from one size-class to the next. This type of size-class distribution is characteristic of shade-tolerant primary species which flower and fruit regularly (annually). A distribution like this represents the ideal of a stable, self-maintaining population. This type of distribution is the target for sustainable forest resources management.²⁷

²⁶ A more accurate but also more complicated method is the measuring of diameter at breast height (DBH) of trees with DBH>10 cm, while seedlings and saplings are recorded in height classes in regeneration plots.

² Peters, M.P., 1994. *Sustainable harvest of non-timber plant resources in tropical moist forest: an ecological primer*. The full text can be downloaded from the website: <http://www.bsponline.org>
Some species, such as species with sporadic or irregular fruiting/seeding and species that are light-demanding early pioneer species, display other class-size distribution patterns.

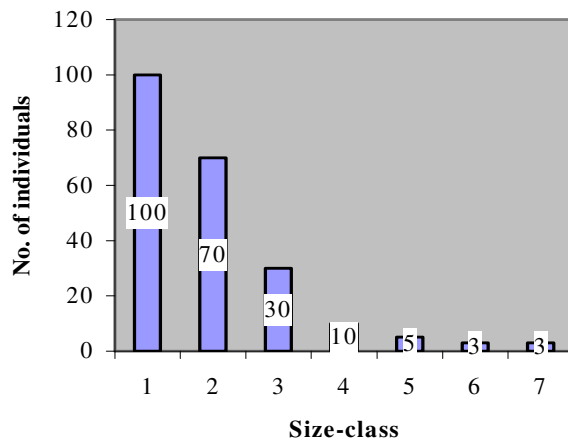


Figure 1: Ideal size-class distribution pattern of tropical tree species

It is important to note that the tree species frequently used in the village might not have the distribution pattern shown in figure 1. For example, species might have been over-exploited and display one of the hypothetical distributions shown in figures 2, 3 and 4. A size-class distribution as shown in figure 2 can be the result of excessive harvesting of fruits or seeds, damage to seedlings or lack of pollinators or seed-dispersers. In figure 3, only a few mature trees are left and these are not regenerating. The opposite is demonstrated in figure 4, where the plant species get no chance to become mature. A few young individuals are left. If nothing is done, species as presented by figure 3 and 4 will certainly disappear in the near future.

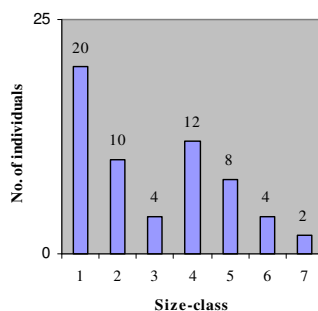


Figure 2: Size-class distribution with interrupted regeneration

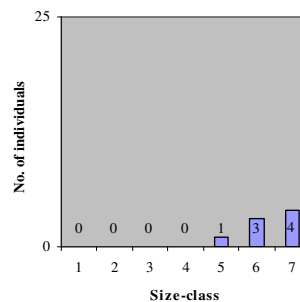


Figure 3: Size-class distribution of severe interrupted regeneration

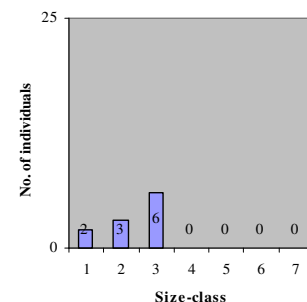


Figure 4: Size-class distribution with no maturing trees

Sustainable harvesting is only possible if the size-class distribution is similar to the ideal pattern. If this is not the case, the species need protective measures (such as selective weeding) to increase the survival and growth of young plants, or to stimulate the productivity of mature trees by reducing competition. Cutting and removing woody vines from crowns of mature trees can often also increase their productivity. Seedling establishment can profit from the removal of vines, as more sunlight infiltrates to the understory.