Towards Participatory Forest Management in Laos
—Laos Country Report 2003—

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Cover (upper left) Local people and cardamom, Ngoi District, Luang Phabang Province. Photo credit: HYAKUMURA Kimihiko

Cover (upper right) Swidden land and paddy field, Nambak District, Luang Phabang Province. Photo credit: HYAKUMURA Kimihiko

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Preface

HYAKUMURA Kimihiko
Coordinator of Laos Study, Forest Conservation Project, IGES
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During the second phase of the Forest Conservation Project, Institute for Global Environmental Strategies (IGES) launched in April 2001, research activities were focused on concrete measures to facilitate participatory forest management in the target countries and areas of Laos, Indonesia, and the Russian Far East.

Laos is a country in transition to a market economy, and specific features concerning the forestry sector there include (1) the development of mechanisms to implement a new legal system governing forestry, and (2) recent actions and trends in efforts to transfer the responsibility of forest management to the local people.

The promotion of participatory forest management will support the efforts of the government of Laos, especially its programs to clarify the responsibility of forest management, to implement the forest law, and to conduct an integrated village resource management program, which includes forest and land allocation, land-use planning, rehabilitation activities, and sustainable management of non timber forest products (NTFPs).

Field research was carried out at two sites for the purpose of developing guidelines: one in Savannakhet Province, an area rich in forests; and the other in Oudomxay Province a forest-poor area where swidden agriculture is practiced. The research included examining local administrative efforts.

The aims of this interim report are to disseminate the results of activities of the first and second fiscal years of this phase's research on Laos, and to provide the basis for discussions on developing guidelines for participatory forest management.

All papers in this report were peer-reviewed, and then revised based on the reviewers' comments. We believe that this process helped to ensure the quality of each chapter. We thank Mr. Soukkongseng Saignaleuth, Dean of Faculty of Forestry, National University of Laos, Associate Professor, Somsy Gnophanxay, Vice Dean of Faculty of Forestry, National University of Laos, Mr. Khamvieng Xayabouth, Coordinator of our project, Mr. Thong Et Phayvanh, Deputy Director, Provincial Agriculture and Forestry Office Savannakhet Province Mr. Matsumoto Satoru, Mekong Watch Japan, and other research collaborators for their assistance of our research activities. We are also deeply grateful to Mr. Greg Helten for proofreading and his assistance. A part of research could be conducted by the financial support from Sumitomo Foundation of Grant for Environmental Research Projects. It would not have been possible to publish this report without the marvelous cooperation and help of all the individuals and institutions concerned with our project, and we would like to express our appreciation to all of them.

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Local Forest Management and Strategies in Northern Laos Following Government Intervention

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Abstract: In Laos, land forest allocation has been conducting for swidden alleviation by the government. This policy sets the land use classification and it has probably influenced livelihoods and of local people depending fully on forests. In the report, we clarify the disparities between the governmental policies and local people's activities. The first research site is situated so close to the district center that the district officer visits frequently and the villagers likely observe the laws. However, some cultivation areas have been restricted because of the policy and the villagers must change and adapt the lives. In the second village, it is not so near from the district center and the village has not been given enough land for agriculture. This ends up land conflicts between villagers. The district office cannot provide appropriate solution of these difficulties and so the villagers have to live against the national policies. The government and the people must cooperate and make some new compromise agreements.

Key Words: Land forest allocation, Swidden agriculture, Village border conflict, Local resource management, Inter-village agreement.

1. Introduction

The first national assembly on forests in Laos was held in May 1998 to address deforestation and environmental problems in the country. Among the solutions produced was a plan to promote agricultural production and tree plantations, which included a land forest allocation (LFA) program.

LFA is administered mainly by each District Agriculture and Forestry Office (DAFO), but the program suffers from a lack of personnel and government funding, and staff often do not have enough time to fully discuss allocations with villagers. Besides this, when demarcations are decided, they do not always match up with the customary land classifications of the local people, and this sometimes causes conflicts between villages. This report examines two sample cases of these problems in the province of Oudomxay in northern Laos. One study site is a government-sponsored resettlement village, and the other is a village where government intervention changed the rules of the village. In both, the government influenced the livelihoods of the local people, and they have managed to adapt and survive in various ways.

This report first outlines the natural resource management policies at the national and local levels, while the case studies are described in the latter part.

2. Natural resource management

2.1 Research methodology for this chapter

The primary objectives of this chapter are to investigate the impacts of the Pakbeng DAFO intervention on natural resources and the villages themselves, and to examine the local peoples' perceptions of DAFO's work and its effects on natural resources. In order to meet these objectives, the research has gone through various steps, as described below.

Step 1: A review of central policy documents related to natural resource management, such as laws, regulations, decrees, research reports, country reports, etc., was mainly conducted at the Faculty of Forestry, National University of Laos.

Step 2: General data on the district was gathered during a one-day meeting with all DAFO staff in Pakbeng, where documents on strategy, policy, rules, laws, regulations, etc., were collected. These included policy documents from DAFO, ones used for the district and the villages, and the ones that DAFO adapted to suit the local conditions; these were sorted according to those that were effective and ineffective, along with the reasons why.

The following issues were reported by participants:

- Past activities, approach taken, achievements or failures, plus indicators and reasons why.
- Current activities (ongoing), approach taken, achievements or failures, plus reasons why.
- Future activities (not yet done) plus planned approach.

And the following issues were discussed:

- Problems
- Constraints
- Solutions

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Step 3: A village meeting was held, where the following data were collected:

- Existing village rules
- Development projects and activities from outside
- Documents provided by DAFO
- Activities that DAFO conducted, including their approaches
- Village production activities and ways to improve them
- Existing rules on forest use made by villagers themselves
- Land use
- Land allocation (where, when, who, how many, and how large). This information is available from the Provincial Agriculture and Forestry Office (PAFO), DAFO, and the village office.
- Forest conditions
- Area
- Ownership

And the following issues were discussed:

- Problems faced
- Causes
- Expected solutions

Step 4: Data analysis and report writing

Photo1: Making action map by the villagers
(Photo: T. Morimoto)

2.2 Context of the national policy on land forest allocation

The Lao government's rural development strategy recognizes the need for site-specific approaches to development and environmental conservation. Thus, within what remains of a relatively centralized planning system (by regional or international standards), the government is beginning to delegate various forms of land allocation and management to lower levels in the government hierarchy.

Its land-use planning and land allocation program has been underway since 1989, with Province of Luangprabang as one of the pilot focal areas. There, in the districts of Xieng Ngern and Nan, the Lao-Swedish Forestry Program has provided funding and technical assistance in order to test the feasibility of the program for application across the whole country.

The land allocation policy (Decree 99 in 1992) was developed through a series of decrees and instructions on forest and agricultural land management. In 1996, the Instruction on Land Forest Allocation for Management and Use was issued to provincial governors, which provides for the allocation of temporary use rights to farmers for agricultural and barren hilly land. The policy supports the government's goal of protecting vital remaining forests and reducing poverty, particularly in the uplands, in order to halt expansion of shifting cultivation by 2005 (Mairi 2002).

Land forest allocation is a government policy on allocating natural resource use rights to individuals as well as communities. Furthermore, it promotes a permanent farming system and sets resource boundaries. In December 1994 the government issued Decree 186/PM (permitting private sector involvement, both business or Lao citizens, in investing in plantations or supporting communities in plantations on their own land, based on common agreement). Since then, further details on afforestation and forest conservation have been added to the policy. In addition, it has been undergoing a process of clarification in preparation for being implemented countrywide. The land allocation procedure follows eight steps (including preparation and consultation with village committees, data collection, village meetings, field measurements, village land-use planning, extension, and monitoring).

There are two forms of land allocation. The first is a simple process of agreeing upon the boundaries of forest and agricultural land in a village. The next step is a more detailed classification of land-use types and allocation of fields to households. District forest departments have the primary responsibility for allocating land, and to do so they organize a land allocation team, which includes staff from the District Agriculture and Forestry Office and other district financial and planning officers. Villagers are meant to be involved in the mapping and land allocation process through full consultation with the implementing officers. Typically, each village forms a committee, led by a popularly elected village head that oversees the process. Its members are village administrators (i.e., government employees), representatives of livelihood groups within the village, and representatives of large organizations, such as the farmer's and women's unions.

Allocation teams map and distribute paddy and swidden farmland to individual households, and allocate forestland to villages to be managed as common property. The size of the allocations is determined according to each household's available resources, including labor. At

the end of the process, the village committee and district authorities sign a land-use agreement that makes the village responsible for monitoring and implementation, under supervision of the district authorities. The committee creates and posts land-use maps in the village as a reference for ongoing natural resource management decisions.

A village forest volunteer assists the land allocation team and the farmers with forest classification and forest-use planning, and also serves as a channel of communication between the District Agriculture and Forest Office and the village to facilitate the collection and management of information. In practice, however, the follow-up steps of monitoring, assessing, and providing extension support remain high-priority challenges for the land allocation program (Viphakone 1999).

2.3 Natural resource management policy at the district level

2.3.1 Policy documents

All policies from the central government are first passed through PAFO for consideration and then assigned to DAFO for implementation. In reality, the district office are supposed to assess the possibility of implementation and adapt to suit local situations, but because of shortages in staff and capabilities, certain policies have not yet been implemented, with DAFO having simply distributed copies of the documents to villages.

Table 1: List of policies collected from DAFO.

No.	Description
1	Announcement on natural resource management
2	Instruction on natural resource use
3	Order of logging prohibition
4	Order of hunting prohibition in breeding season
5	Announcement on watershed management
6	Announcement on raising animals and fish
7	Announcement on raising animals for commercial purposes
8	Instruction for livestock management
9	Announcement on irrigation scheme management
10	Instruction on agricultural yields management
11	Instruction on natural pesticide production
12	Order of prohibition on transferring livestock to other nearby countries
13	Instruction on natural disaster protection
14	Agreement on furniture factory management
15	Announcement on livestock registration
16	Instruction on rice seed selection

Source: Interviews with DAFO staff by the author at Pakbeng DAFO, 15 August 2002.

2.3.2 Effective policies in Pakbeng District

The policies listed below were effective when implemented with the cooperation of the villages. People are able to follow or use them and fully participate in their implementation, working closely with DAFO staff, since it concerns income generation for their households. It should be noted, however, that these policies are only in effect in nine villages (accessible by road and close to the center of the district) because of shortages of government staff and financial support.

Table 2: List of effective policies collected from DAFO.

No.	Description	Reason
2	Announcement on raising animals and fish	There is a market and people are interested
3	Announcement on irrigation scheme management	Good participation from local people
4	Instruction on natural disaster protection	Good participation from local people
5	Agreement on furniture factory management	The system is clear, there are few factories, and access is easy
6	Instruction on agricultural yields management	Good participation from local people
7	Instruction on rice seed selection	Good participation from local people

Source: Interview with DAFO staff by the author at Pakbeng DAFO, 15 August 2002.

2.3.3 Ineffective policies in Pakbeng District

The policies are generally good in concept, but in practice, in order to be effectively implemented they require considerable input and many conditions met, such as sufficient capacity of the DAFO, technical and financial support, and participation of the local people. The following are the policies that could not be implemented and followed by DAFO and the villages. DAFO did not obtain enough input or exert enough effort on these policies, again, because of lack of funds and capacity. Local people could not follow these policies, as well, or did not want to, since they would negatively affect their current incomes. Moreover, low education and awareness proved to be the main constraints to effectively implementing them.

Table 3: List of ineffective policies collected from DAFO.

No.	Description	Reasons for being ineffective
1	Announcement on natural resource management	Covers the whole district. Lack of staff and financial support
2	Instruction on natural resource use	Covers the whole district. Lack of staff and financial support
3	Order on logging prohibition	Lack of good monitoring system
4	Order on hunting prohibition in breeding season	Lack of good monitoring system and awareness of local people
5	Announcement on watershed management	Covers the whole district. Lack of staff and financial support
6	Announcement on raising animals for commercial purposes	Lack of technical support and capital
7	Instruction on natural pesticide production	Low education level of local people
8	Order on prohibition on transferring livestock to nearby countries	Covers the whole district. Lack of staff and financial support
9	Announcement on livestock registration	Lack of participation by local people

Source: Interview with DAFO staff by the author at Pakbeng DAFO, 15 August 2002.

2.4 Land forest allocation process in Pakbeng

There are 12 steps in the land forest allocation process in Pakbeng, as follows:

1. Prepare tools needed for land forest allocation
2. Hold village meeting to disseminate the central policy on land forest allocation
3. Socio-economic data collection
4. Data analysis and conclusions
5. Establish land forest allocation committee in the village
6. Meet with all nearby village authorities to discuss village boundaries
7. Conduct topographic survey for boundary allocation
8. Classify land use based on land survey
9. Create a land-use map
10. Draw up a draft of rules on land use
11. Report the results of land forest allocation to all villagers
12. Monitoring

The last step in the process—monitoring—is done by sending what is called a document reminder to the villages quarterly. DAFO only allocates village boundaries and various types of land use to the village, while allocating agricultural land to households is the responsibility of the village land and forest committee.

Currently, the land forest allocation process has been completed in 41 out of 73 villages in the district of Pakbeng. It usually takes about two weeks in each village to go through the LFA process, but because of the shortage of DAFO staff, district education staff and soldiers are called in to assist. The team consists of one staff person from DAFO and one person each from the financial office, the education office, and the local military camp.

2.5 Facts and problems with natural resource management in Pakbeng District

The land forest allocation program has clarified the types of land use for the villagers in Pakbeng and provides some rules and instructions on those uses, along with other input from the government. It can't be assumed that the practice of shifting cultivation has been greatly reduced, but it is at least an initial step.

Villagers, sometimes even DAFO staff, seem unable to recognize and be clear about the definitions of *land-use types* and *management rights*, or the function of each type of land use. In interviews, they could not distinguish the differences between production land and agricultural land, protection and conservation land, and so on. In actual practice, excluding resettlement lands, there are two categories of land according to their use: agricultural land and conservation land.

There is less effective implementation of the forest and land allocation program in Pakbeng because of a lack of informed specialists, and other staff from non-related sectors have been pressed into service to assist with this job, particularly people from the local military and the education office. The result is that the work is done inefficiently, as clearly seen by the fact that local people do not follow the policies that DAFO assigned to them. In addition, there is less input into the village by DAFO. After the initial two weeks of conducting the LFA program in a village, there was no follow up. The only thing they did was to send copies of the document ordering the village to monitor the policy. Since, in this case, the village heads themselves are conducting shifting cultivation in protected areas, the question is who will monitor whom?

Although the participation of people at one of our case study sites, Village X, for example, was adequate, the rigidity of the three-plot, three-year rotation imposed by the government on agricultural land has pushed the limits of carrying capacity. Although the logic of this approach is that the comparatively high market access enjoyed by the village will increase the system's chances of success, the envisaged fallow period has proven ecologically unsustainable.

Besides this, the perception of ownership of forest and land differs between the villagers and the national context. Article 5 of the Forest Law states that every single unit of forest and land in Laos belongs to the state, and that the government's role is to manage and allocate those lands to organizations, communities, or households, based on the actual situation. Individuals, other than those from a government organization, have no use-rights without permission from the responsible sector (Government of Lao P.D.R. 1996), while villagers (particularly in the village situated to the west of Village A) believe that the forest and land belongs to the village as common property. They acquire forest, swidden, and fallow swidden areas primarily through occupation rights (*chap chong*). Access to these lands is based on consensus and mutual respect. In the LFA process, at the meeting for boundary demarcation between villages, there were only a few representatives (government staff) from the village, and they signed an agreement without approval from all the villagers. As a result, the villagers ignore the DAFO policy and continue with their traditional practices.

Land in Village B is not common property; it belongs to individuals. If a villager wants to use land, he must ask for permission and pay a fee in the form of money or livestock. Because of not being present at the meeting to consider this issue, this land was designated as protected area and common property, and the agricultural land was allocated to each family. The owners strongly disagreed with the policy because of their loss of power and property, which rendered it ineffective.

In Oudomxay, there were many cases of problems with the military and natural resource management. At the German Agro-Action project site (GAA), because of very good support of the project by the villagers, they were able to keep the hunting of wildlife by villagers under control, but not the military. In Village B, soldiers entered its protected area to gather wood and bamboo to construct their camp, and they used land there and in Village Pakbeng to cultivate their crops without consideration of the allocated land-use types, sending out the message that the land-use policy is applicable to villagers but not to soldiers. This type of occurrence reduces the local people's trust in the policy.

2.6 DAFO innovation in Pakbeng

Back in 1990 there was only one person responsible for DAFO in the whole district. A few years later, the office had four people on staff, with each responsible for one distinct section, namely, forestry, irrigation, agriculture, and livestock. Unfortunately, because of this small number of people, their work was mostly limited to administrative duties and not academically focused. Furthermore, their work was limited to the nine villages accessible by road and closest to the office.

In Pakbeng, however, the natural resources and the livelihood of people have tended to be better managed and improved, because the local government of Oudomxay realized that substantial degradation of natural resources leads to high local poverty levels. In light of this, the shortcomings of the Pakbeng DAFO urgently need to be improved. This fiscal year (2003), DAFO received a higher staff quota than expected. Presently, there are five new staff members who are ready to work in the field. Three of them recently graduated from the National University of Laos, and the other two from technical schools. DAFO's strategy is to develop and improve the local standard of living, starting from the district's center, and then expand out to the remote areas. Road construction will come to the each village first, followed by education, agriculture, and health services. The International Fund for Agricultural Development (IFAD), a United Nations agency,[1] has promised to be the major partner with DAFO in terms of technical and financial support, with the goal of completing this vital task in 2010.

DAFO plans to carry out the following objectives in the near future:

[1] The International Fund for Agricultural Development (IFAD), a specialized agency of the United Nations, was established as an international financial institution in 1977 as one of the major outcomes of the 1974 World Food Conference. The Conference was organized in response to the food crises of the early 1970s that primarily affected the Sahelian countries of Africa. The Conference resolved that "an International Fund for Agricultural Development should be established immediately to finance agricultural development projects primarily for food production in the developing countries." One of the most important insights emerging from the Conference was that the causes of food insecurity and famine were not so much failures in food production, but structural problems relating to poverty and to the fact that the majority of the developing world's poor populations were concentrated in rural areas.

- Expand the irrigation scheme to a more suitable area
- Replace poppy with other crops
- Stop the practice of shifting cultivation by allocating agricultural land to local people
- Disseminate successful results from science experiments
- Increase paddy area as much as possible
- Create a village development plan based on its potential
- Manage the watershed area
- Encourage local participation by enhancing the ability of the women's union to get more involved in project activities

2.7 Natural resource use regulation at the village level

There are many village rules in both village A and X (see 3-1 and 3-2), but most of them do not address natural resource use. They rely on regulations from the upper hierarchy to manage the village's natural resources, particularly from DAFO. This includes the Agreement of the Minister of the Ministry of Agriculture and Forestry (MAF) No. 730/AF, Degree 63 of the Forestry Law regarding the duties and rights of the village authority (MAF 1996), and DAFO regulations on the use of Village A's resources, land, and forest.

The success of effectively implementing these rules depends, in part, on the density of the population. In Village A, people do not have any problem following the DAFO forest and land-use regulations because there are only 12 households conducting agricultural activities in the village area. The other 24 households cultivate their crops on the other side of the Mekong River, which belongs to a village in the Ngeun District of Sayaburi Province, because the land allocated by DAFO is too far from their houses.

The villagers do not strictly adhere to certain forest rules, however, particularly the restrictions on felling trees and bamboo for house-building. These materials they still take freely from the nearby forest. This is because the villagers do not clearly understand the definitions and differences between protected area, reserve forest, production forest, and regeneration forest. Moreover, outsiders (the military in particular) also engage in harvesting these materials for their own construction needs. Because of the difficulty in accessing the productive forest, the village authority allowed them to harvest in the protected area. Furthermore, villagers from nearby villages would not acknowledge the village boundaries, because they were not included in the decision-making process.

People in Village X don't follow the regulations either, because the villagers have no choice. The land that used to be their swidden area was re-assigned as protected area for the Houaykasane watershed. And the land they have available for agricultural production is not large enough and has poor soil conditions. Additionally, DAFO didn't consider the existing land tenure system in this village. In fact, most of the land in the village belongs to only two owners, and if anyone wants to cultivate land, they have to ask for permission and pay a fee in the form of money or a domestic animal. The LFA policy eradicated this system without any compensation to the owners, and thus they strongly disagreed with it.

3. Case study

3.1 Village selection

The province of Oudomxay is situated in the north of Laos, and is famous for its large swidden areas. People here engage in swidden cultivation and other agriculture for cash income. In this report, the two ways that the villagers commonly use to generate income, vegetable growing and animal husbandry, will be discussed below.

3.2 Methodology

Several methodologies were utilized in this study.

Key informant interview

In order to clarify the situations in the villages, several general questions were prepared for the village head and deputies. After basic information was collected, the villagers were asked to gather to discuss matters with the research members.

Semi-structured interview

In addition, in order to better understand their way of life, household interviews were conducted with half of the families. A checklist of key questions was prepared in advance.

Wealth ranking

The criteria of the wealth for the villagers were investigated, and the households were divided into the three groups: rich, medium, and poor. The criteria varied in each village, but the people most often pointed out house materials, workforce, livestock, and legacies as measures of wealth.

3.3 Village A

3.3.1 General description

Village A is located near the Mekong River, about 380 meters above sea-level. The other side of the river is mountainous and belongs to the neighboring province.

The population here is 293 people that live in 36 houses, and they belong to the Khamu ethnic group, which accounts for 58 percent of the people in the province (IRAP 1996). This is a resettlement village, built in 1995 with encouragement from the local government to get people living in the upper mountain areas to come down to live on the flatlands. There has been only one sanitation project built so far, a toilet construction project by the World Bank in 2002.

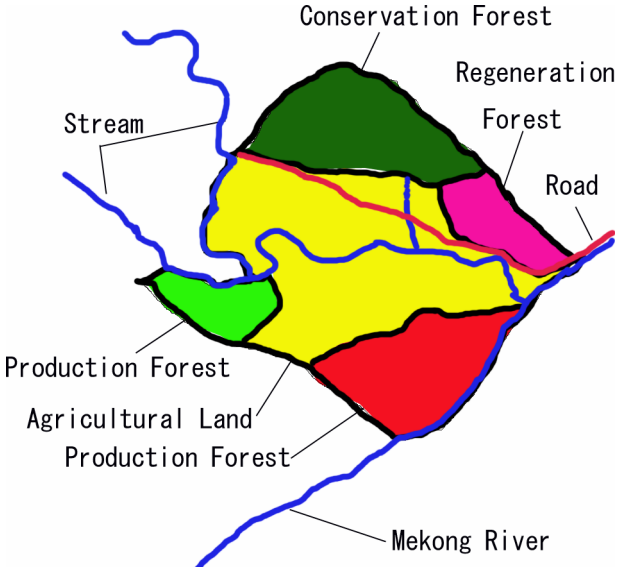
The people's main source of income comes from raising vegetables such as pumpkins and sesame. They also

gather NTFPs (non-timber forest products).

Table 4: Land classification in Village A.

Land Use	Hectares
Conservation forest	122.8
Protection forest	74.8
Production forest	38.9
Regeneration forest	39.5
Agricultural land	245.7
Settlement	1.0
Graveyard	0.5
Paddy field	1.0
Total	524.2

Source: DAFO census 1999.



Map.1 LFA Map of Village A
Source: DAFO 1999

3.3.2 History of the village

Villagers here previously lived in the upper mountain, far from the present location, about an eight-hour walk north. In 1995 half the villagers came down to settle here along the Mekong River, under the encouragement of DAFO, who wanted to reduce the shifting cultivation and opium growing that they traditionally practiced. Nowadays in the old village, there are no longer any opium farms operating. The government officially demarcated the borders of the new village under the LFA process in 1999.

3.3.3 Changes in production system

The main activity in Village A is swidden agriculture to grow glutinous rice. The villagers cultivated anywhere they wanted to before the LFA was instituted, but they now they utilize the agricultural lands allocated. For the last seven years, these lands have been cultivated without any fallow periods.

One problem in this village is that there is not enough arable land available to be allocated to everyone, and many villagers couldn't produce enough food for themselves. So the people in Village A visited the village across the Mekong River by themselves in order to request the land rental, and it was accepted. The first reason that the people across the river allowed villagers from Village A to cultivate their land is that their own settlements are so far away that they seldom visit these areas. Second, by renting their land to the people from Village A, they can make 20,000 kip (U.S.$2) per hectare. The other reason is that the people in Village A have relatives in the village across the river, which helps build mutual trust at the personal level and makes it easier for those in Village A to submit their offers to rent land. Since the request was accepted, 24 out of the 36 families have cultivated there for the last three years. In addition, they have gathered non-timber forest products (NTFPs) around the new swidden areas, which are the major source of income in Village A.

But in January 2002, the District Agriculture and Forestry Office in the province of Xaignaburi allocated these same areas as "regeneration forests," and thus the villagers haven't been allowed to conduct swidden agriculture there since 2003. This will lead directly to even less arable lands available for the villagers, and they will likely utilize the nearby forest to enlarge their agricultural lands. The vil-

lagers gathered and discussed this issue, and they decided to try new activities to generate cash. In fact, they bought corn seeds from the Agricultural Promotion Bank in Hun District, with some advice from DAFO, with the aim of reducing the amount of swidden area. Out of 36 families, 15 families started planting corn this year, and they intend to grow sesame as a cash crop next year.

Photo2: Corn husking; a new income generation activity in this village
(Photo: T. Morimoto)

3.3.4 Forest management system

Since it is a new resettlement village, the land classifications used by the villagers are much the same as those which DAFO demarcated in the LFA. In fact, while they know the names of land use decided by DAFO, it seems that they do not care for such strict classifications. For example, they never utilize the "conservation forest," because they have enough forests around their houses, and it is too far away to practically gather fuel wood and vegetables. This type of forest use is called "haphazard sustainable use" under the three categories of sustainable utilization suggested by Inoue (1997).

3.3.5 Local marketing system

The main commodities of the village are bought by middlemen, who come from the center of Pakbeng irregularly around harvest time and export the products to other provinces and other countries such as Thailand and China. Good accessibility to the village enables the traders to come frequently to buy their products, and the villagers rely on them because they have no other means to ship products out of the village.

3.3.6 Problems and issues in Village A

There are two serious problems in the village. One is the recent prohibition of swidden agriculture across the river, as mentioned above, and the other is with the village boundaries. This is due to the history of the village's establishment. This is a resettlement village, and when the new village was built, the adjacent village had to provide parts of their territories and lost some of their land in the process.

In Village A, the conservation forest is situated along the village's northeast border and so far away from their settlement that the people usually utilize the nearer forests, seldom going out to the conservation forest to gather fuel wood or NTFPs. What occurred, however, is that in 2000 and 2001 the people in Village B, next to Village A, intruded into their conservation forest to conduct swidden agriculture against the warnings of the villagers from A. Village B was built as a settlement for army families in 1990, and is situated within Village C, northeast of Village A. Hence, Village B does not have clear village boundaries. The border between Village A and Village C was once demarcated under mutual agreement in the course of the LFA process. But lately, the population in Village B has increased, and they have expanded their territories and begun conducting swidden agriculture in the conservation forest of Village A along the village boundary. In fact, it is difficult to protest the activities of the armies, because, topographically, the village boundaries are mostly far away from the residents in Village A.

In this case, the villagers in A went to consult with DAFO and asked them to help solve the land-use conflict. The following day some of the villagers and five DAFO staff from the forestry section went to the adjacent village and again confirmed the village boundary with the other villagers. Subsequently, they stopped utilizing Village A's land, and the problem appears to have been solved. Afterwards, instead of cash, the villagers in A invited the DAFO staff for a meal and offered them goat meat and *lao-hai* (rice wine pot), an indication that the collaboration with DAFO and the villagers worked well to solve the inter-village problem together.

Although this particular village boundary issue was solved, another border conflict occurred with the village northwest of Village A after that village's head person changed. The new boss was not content with the village boundaries as they were set, although the village border had already been officially demarcated, and requested an enlargement of his village's lands against the warnings of the people in A.

The people in the village of Moksouk, situated in the southwest, are also potential intruders. They lack enough agricultural lands for themselves, as well, and want more. They too lost some of their territory to build the resettlement village of A, whose areas once totally belonged to the adjacent villages. As mentioned above, the villagers in A rarely monitor or manage their village boundaries because they are too far away. This may induce the adjacent villagers to intrude on their territories. But since they haven't done anything yet, the villagers in A have not called for action yet to prevent any conflicts.

3.4 Village X

3.4.1 General description

Village X is about 16 kilometers from the center of the district. It lies on the mountain ridge along the district

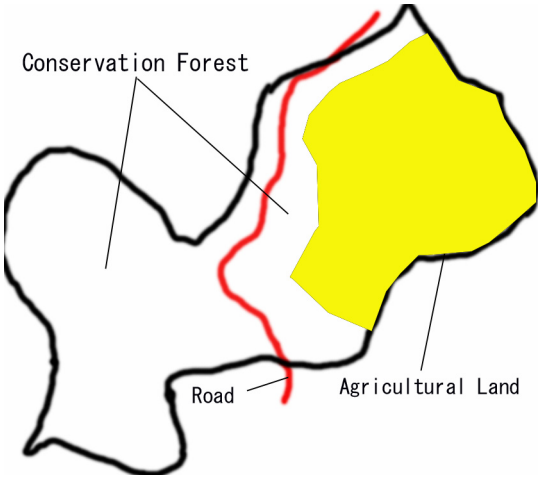
road, which is accessible almost all year round. It takes about four hours on foot or about one-and-a-half hours by truck. The land on the southern side of the road, which was the old village before LFA, was re-classified as a watershed protection area, and the opposite side as the village's agricultural land.

The village population is 480, divided into 58 houses, and they belong to the Khamu ethnic group, the same as in Village A. The LFA process has not been finished yet, as is often the case in this district because of the lack of funds and personnel.

Table 5. Land classification in Village X.

Land Use	Hectares
Conservation forest	316.84
Protection forest	94.0
Production forest	0
Regeneration forest	0
Graveyard	2.5
Agricultural land	312.2
Settlement	2.0
Total	727.54

Source: DAFO census



Map 2. LFA map of Village X.
Source: DAFO 2000

Note: In the LFA map made by DAFO, there are only two land-use classifications, namely, conservation forest and agricultural land, while there are more classifications listed in the DAFO census.

3.4.2 History of the village

Village X is adjacent to Village Y, which was once located in the watershed. The provincial and district government provided an alternate water supply in order to encourage the villagers living in the watershed forests to leave these areas. DAFO re-allocated all the areas in and around Village Y as watershed, because there is a hydropower dam below the village that was constructed by a Chinese company in 1995. In 1998 the villagers in Village Y moved and formed the new Village X. Some families went to Village Z, which is to the west of Village X.

3.4.3 Changes in production system

Before the LFA process, only two individuals owned all the land in this village. The rest of the villagers had no arable land and had to borrow land for cultivation from the two owners. Although the Land Law stipulates that all land belongs to the state, the village territories were possessed personally at that time. After the LFA process, all the lands became common property and the usufruct of the land was provided to the villagers, totally changing the system of land ownership.

While DAFO prohibited cultivation in the watershed areas, it allocated more areas originally belonging to the adjacent villages in order to compensate for the loss of agricultural land. The village borders were demarcated with the participation of the adjacent village heads, but discussions on the boundary issue were insufficient, and land-use conflicts have sometimes occurred. Now, the villagers pay compensation (50,000 kip per hectare) for the use of agricultural lands of neighboring villages to avoid conflict.

They traditionally cultivated their lands for six to ten years, and then let them lie fallow for over ten years. They know that land used within the ten-year fallow period does not produce good soils, and thus they leave these areas alone. In addition, while the Land Law (Lao P.D.R. 1997) states that any agricultural land that people do not cultivate for over three years must be given back to the district, they continue to stick to their customary ways, even after the LFA process.

In order to restrict the villagers' swidden practice in the watershed, the local government provided them with

grocery shops as an off-farm activity to produce cash income. Unfortunately, this plan failed because of a lack of capital, and outsiders from Pakbeng came in to run the business. So the majority of the villagers returned to their former areas and began conducting swidden agriculture again.

Table 6. The relationship between birthplace and swidden area used in Village X.

Birthplace	Swidden area used	Rich	Middle	Poor
X	X	3	3	1
	Y	0	0	1
	Other	1	1	3
Y	X	0	0	0
	Y	1	5	3
	Other	2	0	1
Other	X	0	0	0
	Y	0	0	0
	Other	2	0	1

Source: Household interviews by the author in October 2002.

Table 6 illustrates the birthplace of the head of each household and the swidden area that they use. Almost half of all the families interviewed were selected at random from each wealth rank. Villagers from Village Y, which was allocated as a watershed protection area in the LFA process, became a part of Village X after the resettlement. As can be seen, the wealth rank is not an indication of the difference between swidden areas used—a household's use of a swidden area is usually related to the head's birthplace (X-X, 54%; Y-Y, 75%). Although swidden practice is not allowed in Village Y, which is allocated as conservation area, in reality they have no alternative but to cultivate there. This is an example of the disparity between the Forest Law and local land use practices. The villagers always place an emphasis on their livelihood and, sometimes, neglect the law. In this case, they do not have enough agricultural lands within the village and thus go back to cultivate in the forests around their old village. Because DAFO has not provided appropriate solutions for them, they cannot help but utilize the conservation areas.

3.4.4 Customary forest management system

Formerly, the majority of the village land was used for swidden cultivation with a rotation of 16 to 20 years without any restriction. They would slash-and-burn the areas and conduct swidden until the soil fertility became low, usually for six to ten years, and then fallow them for over ten years. In this way the villagers' land use practices do not correspond with the Land Law, as mentioned above. Presently, due to the government intervention, half of the village land was allocated as a watershed protection area where no activity is allowed (Lao P.D.R. 1996). DAFO arranged to allow some areas to be used as swidden farms, but this has not proved sufficient for the villagers. DAFO also provided some permanent agricultural lands that originally belonged to the adjacent villages, which then led to land conflicts, and thus they went back to the swidden areas that they used before the LFA process.

3.4.5 Local marketing systems

The main income sources of this village are animal husbandry, NTFPs, and tree cutting. It is so far away from the district market that they do not grow vegetables for cash income. They usually go to the market to sell their livestock, while middlepersons from outside visit to buy their NTFPs.

3.4.6 Development project and activities coming from outside

This village had a water supply and sanitation project from IFAD constructed in 2000, including the installation of five water pumps. So far there has been no forest-related project launched yet in Village X.

3.4.7 Problems in Village X

There are two serious land-use problems here, as mentioned above.

(1) Cultivation in the arable land belonging to the next village

Under the LFA process, conducted in February 2000, DAFO designated the former agricultural lands in the west of the village as watershed. Instead, the new areas, which previously belonged to the two villages nearby, were re-allocated to Village X because the arable lands were too small for the population. Now, the villagers pay compensation (50,000 kip per hectare) for use of the agricultural lands in the neighboring villages to avoid conflicts, but they don't have to pay until they stop cultivating the areas. They use the lands for about six to ten years, and then leave them fallow for over ten years. Again, because they know the lands within the ten-year fallow period do not produce good soils, they leave these areas alone.

(2) Swidden agriculture in the watershed

In regard to conducting swidden agriculture in the watershed area, the villagers know that cultivation in the preservation forests is illegal, but they have no choice because agricultural lands are in short supply. In order to prevent swidden in their conservation forest, the villagers

created their own village rules on 25 May 2001. According to them, if anyone cultivates in the watershed forests, they must pay a fine of 50,000 to 70,000 kip ($5 to $7) to the village. But in fact, this measure is a dead issue, because they continue cultivating in the preservation forests without any penalties, and DAFO doesn't have the funds to monitor the forests and can't prevent their illegal farming.

3.5 Conclusion

Government policy does not always correspond to local realities in rural areas all over the world. In the two cases examined, the local people have sought solutions for making a living. The former example is one of a village relying on the government, while the latter is secretly against it. It is necessary to willingly have mutual understanding between local people and the government in land-use planning. It will reduce the disparities between realities and policies. In addition, it is better for government policies to be flexible enough to be able to be suited to local conditions.

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A Study of Changes in Livelihoods and Forest Management in Namo District, Oudomxay Province, Laos

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Abstract: This report was generated as part of the IGES Forest Conservation Project in Laos, which aims to develop a strategy for sustainable forest management and poverty alleviation using participatory approaches. It examines the livelihood systems of target villages in slash-and-burn cultivation areas in northern Laos and analyzes the changes in livelihoods and forest management brought about by various development interventions.

The participatory action research (PAR) method is applied to investigate selected aspects of slash-and-burn communities, including their livelihoods, forest use and management, and institutions. Dynamic analysis of these aspects highlights the impacts of development interventions and, specifically, land and forest allocation on people's livelihoods and forest management systems.

The study concludes that the impacts of development interventions are felt differently among different groups within a village and between villages. Participatory and demand-driven approach to community development has positively affected the livelihoods, while limited consideration for villagers' needs has provided little incentive for them to engage in livelihood-enhancing activities. The experience with the land forest allocation program is mixed; it has achieved its policy goal of stabilizing slash-and-burn cultivation, but negative impacts were felt by villagers in the form of limited land availability, shortened rotations of slash-and-burn cultivation, and restricted land ownership. Institutions have played a critical role in making these changes in livelihoods and natural resource management.

keywords: sustainable forest management, livelihoods, institutions, land and forest allocation program, Laos.

1. Introduction

1.1 Purpose of the research in the district of Namo

This report was developed as part of the IGES Forest Conservation Project in Laos, whose aim is to develop a strategy for sustainable forest management and poverty alleviation using participatory approaches. The objective of the study was to examine the livelihood systems of target villages in slash-and-burn cultivation areas in northern Laos and analyze the changes in livelihoods and forest management that were brought about by various development interventions, especially the program of land and forest allocation.

Due to the limited scope of the study, the research focused on the district of Namo in Oudomxay Province, the focal point for rural development and slash-and-burn stabilization designated by the government of Laos. Nevertheless, the study is expected to offer insight into the potential impacts of development interventions in other slash-and-burn areas with similar environmental and socio-economic conditions.

1.2 Methodology

This study consists of basic data collection in the field and an analysis of livelihood systems. Field research was conducted in two target villages in Namo District in the province of Oudomxay in northern Laos in 2002.

The field research applied the participatory action research (PAR) method, which emphasizes local knowledge and enables local people to make their own appraisal, analysis, and plans (World Bank, 1996). The agriculture and forestry offices at the district and provincial levels (DAFO and PAFO, respectively) also participated. Basic data were collected through interviews with households as well as village meetings using participatory tools such as community mapping and wealth ranking. An emphasis of the analysis was placed on selected aspects of slash-and-burn communities—their livelihoods, forest use and management, and institutions. Dynamic analysis was facilitated by using existing research results from past projects in the target villages.[1]

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[1] Dynamic analysis was made possible by the research results from the IUCN's Non-Timber Forest Product Project (1996–1999) in the village of Nampheng as well as the Community Development Project (1994–1997) in the village of Huaiohn, conducted by Quaker Service Laos. In addition, collaborative research was conducted in September 2002 between the authors and the IUCN Team, who had conducted the participatory socio-economic survey in Nampheng in 1996.

1.3 Reasons for selecting the target villages

This study was carried out in the district of Namo in Oudomxay Province as part of the IGES Forest Conservation Project in Laos. The area is designated as the Lao government's focal point for rural development, and thus various development initiatives are being undertaken. Among them are attempts to rehabilitate forests degraded by unsustainable slash-and-burn cultivation and to develop sustainable land-use systems (e.g. government-led land and forest allocation). The IGES Forest Conservation Project aims to contribute to such efforts by developing guidelines for sustainable forest management through participatory approaches.

At the initial stage, basic surveys were conducted in a number of villages in the district of Namo, and the survey data were analyzed. As a result, Nampheng and Huaiohn were selected as representative villages in degraded forest areas for the following reasons:

1. both have relied on slash-and-burn cultivation as their main economic activity,
2. both have faced or still face land use and forest management problems,
3. development activities have been initiated by the government and various development agencies (donors, non-governmental organizations, United Nations agencies, etc.) to address forest degradation and poverty.

A program of land and forest allocation (LFA) has already been conducted in the village of Nampheng, but not in Huaiohn, which enables a comparative study on its impacts (see Figure 1).

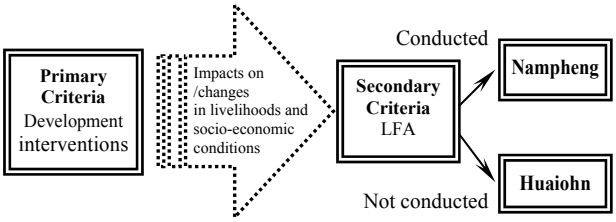

Figure 1. Village selection criteria
(prepared by the authors).

2. Namo District

2.1 Background

The district of Namo is situated in the northern part of Oudomxay Province and shares borders with the province of Luang Namtha to the west and China to the north. It is located 52 kilometers from the provincial center along the national road, No.13 North. Road conditions are good in the dry season but can get rough in the rainy season. It is a mountainous district, where the elevation ranges from 700 to 1,050 meters. The total area is 379,000 hectares, of which 259,046 hectares (68%) are covered with forest.

There are three main ethnic groups in the district—the lowland Lao (*Lao Loum*), midland Lao (*Lao Thuen*), and upland Lao (*Lao Seung*)—which include the following twelve ethnic minority groups:

- *Taidum* (lowland Lao)
- *Taignang* (lowland Lao)
- *Kamou-ou* (midland Lao)
- *Kongsad* (midland Lao)
- *Hmong Dang* (upland Lao)
- *Landtand* (upland Lao)
- *Tailue* (lowland Lao)
- *Kamou-lue* (midland Lao)
- *Phounoy* (midland Lao)
- *Hmong Lai* (upland Lao)
- *Ekor* (upland Lao)
- *Phouxang* (upland Lao)

There are 93 villages in the area, and the majority of the people belong to the *Kamou-Lue* ethnic group. They rely on crop production and livestock raising for their livelihood. About 75 percent of the population practices slash-and-burn cultivation, using more than 3,000 hectares annually, and a fraction of these slash-and-burn communities also produce lowland rice. The remaining 25 percent grows other crops such as chilli, sesame, and *mak kha* (*Alpinia malaccensis*).[2]

2.2 Forestry-related projects conducted in Namo District

Many communities in Namo District rely on forest resources for their livelihoods, specifically non-timber forest products (NTFPs), and thus have attracted the interest of the government (forestry authorities at the central and provincial levels) as well as other development agencies that provide support to community development and sustainable forest management (Table 1).

[2] Interview with Somechanh THAVIVANHAK, Head, Office of Planning, Namo District, 17 June 2002.

Table 1. Forestry-related projects implemented in Namo District (1994–present).

No.	Project name	Duration	Activities
1	Quaker Service Laos (QSL)	1994–1997	•Irrigation construction •Community development activities •Livestock raising extension •Tree planting for fuelwood •Land and forest allocation
2	IUCN	1996–1999	•Conservation and NTFPs extension •Social infrastructure (clean water, schools) •Rice bank •Land and forest allocation •Training in harvesting and marketing of NTFPs
3	FIAT	1998–2000	•Farmer training in irrigation development
4	GAA	2000–2002	•Conservation and NTFP (cardamom) extension
5	SIDA	2001–2005	•Research and experimentation on NTFPs, agricultural crops, and raising livestock •Support for extension activities
6	IUCN	2002	•Follow-up data collection •Project impact assessment

Source:Interview with Sykham SYPHAKHOUN, Acting chief of DAFO, Namo District, 24 September 2002.

3. The village of Nampheng

3.1 Background

3.1.1 Demographic data

The total population of Nampheng is 288 (of which 147 are female), comprising 51 households. With the improved sanitary and nutritional conditions, the infant mortality rate has decreased, leading to an increase in population. Continuous flow of immigrants has also added to the increase in the village population.

3.1.2 Village history

The village of Nampheng was established in 1973. Initially, there were about 13 households, and most of them were *Kamou,* who are animist. Between 1991 and 1993, the population slowly increased through immigration from other villages, attracted by the village forests that are rich in natural resources. Immigrants came from the village of Houaychang in Paktha District, Oudomxay Province (now belonging to Bokeo Province), the villages of Huaiohn and Nathong in Namo District (*Kamou-Lue*), and the village of Kongsavy in Xaisomphan District, Phongsaly Province (*Hok* ethnic group). In 1996, the IUCN (The World Conservation Union) conducted a baseline survey, and at the end of 1997 the project organized an NTFP marketing group. Although it ended in 2000, the villagers have continued to manage and harvest NTFPs, mainly bamboo shoots and cardamom, through the marketing group.

3.1.3 Accessibility

The village of Nampheng is located in the northern part of Namo District, 22 kilometers along the national road from the district center. It is situated near the Laos-China border and shares borders with the province of Luang Namtha to the west. Nampheng is accessible by the national road, No. 13 North, in both dry and rainy seasons. Public transportation and commercial trucks pass through the village, which facilitates communication and NTFP trading.

3.1.4 Infrastructure

As a result of various development initiatives from the government and other development agencies, the infrastructure of the village has largely improved, and currently includes one school for grades one to three, one electric generator, one village meeting hall, three water taps, and a rice bank.

3.1.5 Land forms

The Nampheng River flows through the village, and north of the river are dense forests growing on steep slopes. Large tracts of land are demarcated as conservation forest, while cardamom is planted in the remaining areas. The southern part of the village is covered with mixed deciduous forests on gentle slopes, which are used for slash-and-burn cultivation as well as for collecting NTFPs. Parts of the riverbanks are used for paddy-rice cultivation.

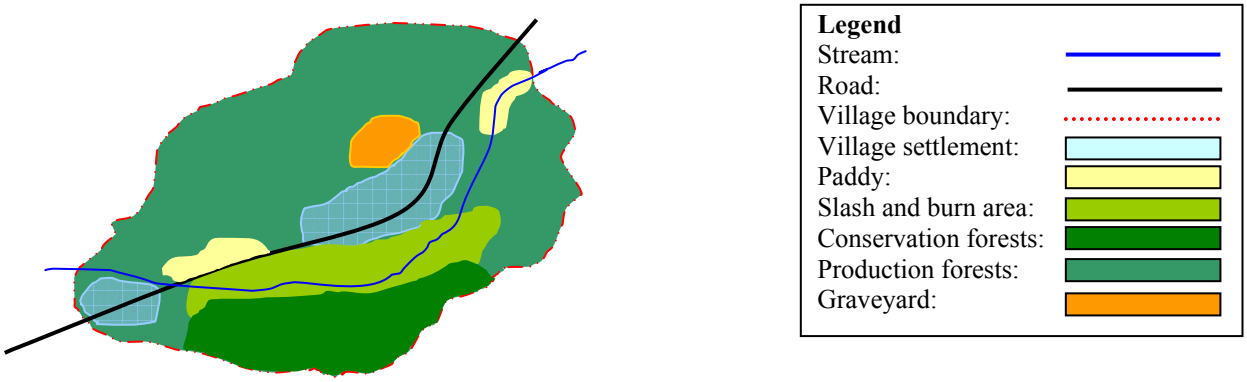

Figure 2. Map of the village of Nampheng, Namo District, Oudomxay Province.
Source: Social mapping with villagers of Nampheng (September 2002).

3.2 Development projects

Nampheng is an exemplary village in the district in terms of the many varied development initiatives that have been implemented there since 1997, as shown in the following table:

Table 2. Development projects implemented in the village of Nampheng (1997–present).

No.	Project name	Duration	Activities
1	IUCN NTFP marketing project	1996–2002	• Bamboo shoots marketing group • Conservation and NTFPs extension • Cardamom plantation • Land and forest allocation • Rice bank
2	Red Cross project	1999 to present	• Distribution of free medicine
3	UNFPA[3] health improvement project	2002 to present	• Health care services • Family planning education
4	ADB-WFP[4] school meal project	2002–2005	• Provision of free school meals • Promotion of female students' enrollment

[3] United Nations Population Fund
[4] Asian Development Bank and World Food Programme of the United Nations

3.3 Livelihood systems

3.3.1 Economic activities

The villagers rely on NTFP collection for domestic consumption and generating income. NTFPs harvested for income generation include the following:

- Bitter bamboo shoots (*Indosasa sinica*), or *no mai khom* in Laos
- Cardamom (*Ammonium* spp.), or *mak naeng* in Laos
- Red mushroom, or *hed daeng*
- Rattan (*Calamus* spp.)
- *Mak kha* (*Alpinia malaccensis*)
- *Nya bai lay* (*Sanseviera Zeylanica*)
- *Peuakmeuak* (*Debregaesia hypoleuca*)

Individual collectors first sell their products to the village NTFP marketing group, and then the group sells to traders from other villages in the district and from China at slightly higher prices than those paid by individual collectors. The collective marketing through the group helps to enhance the bargaining power of the NTFP collectors and achieve fair prices. For instance, in the harvesting season of 2001 and 2002, the group bought bamboo shoots from individual collectors for 2,200 kip per kilogram and sold them to outside traders for 2,500 kip per kilogram.[5] During the season, the villagers gathered 57.2 tonnes of bamboo shoots and the group generated 18.2 million kip. The group also bought cardamom for 17,000 kip per kilogram and sold it for 17,500 kip per kilogram, resulting in profits of 600,000 kip in one season.

In addition to the income from NTFPs, livestock is another important income source, and with the money generated the villagers purchase necessities of life such as rice, clothes, and medicine.

3.3.2 Traditional farming system

Since the establishment of the village in 1973, the villagers have practiced slash-and-burn cultivation (called *hai* in the local language) to grow upland rice (sticky rice) on gently sloping land. Both men and women are engaged in *hai* throughout the year; they slash and burn bush during January and March, sow seeds in May, and continue weeding until the harvest season in November and December. On average, each household uses one hectare for slash-and-burn cultivation in seven- to ten-year rotations.[6] This produces 1.2 tonnes of rice per hectare, but this yield is not sufficient enough for the villagers to feed themselves throughout the year.

Only two families in the village have engaged in both upland and lowland rice farming. Due to the limited availability of flat areas, lowland rice is only grown in rain-fed paddy fields along the Nampheng River. Other families supplement their incomes by raising livestock, farming crops, and collecting NTFPs.

3.3.3 Modern farming system

A modern farming system has yet to be developed in the village; the present practice of growing lowland rice relies on rainfall, and no chemical fertilizer is used. One exception is the domestication of cardamom, which was made possible through training in the domestication technique provided by the IUCN's NTFP project. A cardamom plantation was set up next to the wild cardamom forests in the northern part of the village.

3.4 Village organizational structure

The head of the village is the administrative chief who leads the decision-making in village meetings (Figure 3). He also serves as the chief of the NTFP marketing group, and receives a monthly salary of 18,000 kip (about US$2) from the District and some income as financial incentives from the village NTFP marketing group. There are two deputy chief positions; one is responsible for economic issues, while the other deals with social issues. They each receive a monthly salary of 17,000 kip from the District. The elder's group assumes the responsibilities of preserving village customs and assisting the village leaders. The village finance officer collects taxes on various kinds of land such as gardens, paddy, fallow, and construction fields. The village police maintain security within and around the village.

[5] The kip is the local currency used in Laos (US$1 was equal to 9,000 kip in 2001).

[6] Note that the rotation periods have been shortened to three years since the land and forest allocation program was conducted in the village in 1997. For further details, please refer to Section 3.7.3 below, "Impacts of land and forest allocation (LFA) on resource management."

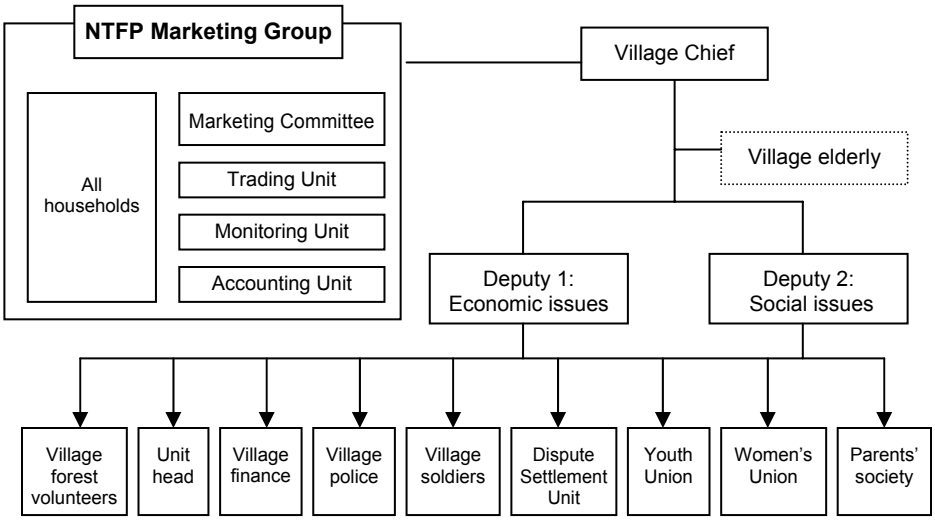

Figure 3. Organizational structure of the village of Nampheng (prepared by the authors)**.**

The dispute settlement unit serves as a problem solving organization within the village and between villages. Most of them are elders who are familiar with village rules and norms, and thus are trusted by the villagers. The Youth Union is composed of both married and single youth between 14 and 30 years of age. It raises its budget through membership fees of 500 kip per person, and organizes various social activities for the village youth. The Women's Union assists women in various aspects of their lives, and organizes social activities for women. The Parents' Society deals with school activities and overall education issues.

There is one forest volunteer in the village, whose responsibilities include the administration of forestry issues, monitoring protected forest areas from wildlife hunting and illegal logging, and providing advice on forest management. The village forest volunteer serves as a liaison between the village and the District Agriculture and Forestry Office (DAFO), which provides training.

The NTFP marketing group was created based on villagers' needs through a participatory approach under the IUCN's NTFP project. The objectives of the marketing group include improving the villagers' bargaining power with traders, establishing a sustainable management system for bitter bamboo shoots (*no mai khom*), increasing the incomes of the villagers, and promoting a village-based development fund.

The group consists of a marketing group committee, monitoring unit, accounting unit, and trading unit, and all the village households are members (IUCN 2000). One person from each household attends group meetings, where decisions and regulations are made collectively. Through this body, every household participates in marketing and management activities. Moreover, the participants can bring any issues concerning the village to the meeting, thus the group provides disadvantaged villagers with an opportunity to voice their needs and opinions.

A village development fund was established to channel the income from NTFPs into various activities for poverty reduction. Part of the profits from NTFP marketing is pooled in the fund and used for village development, including a village-run loan scheme to support agriculture and livestock development.

3.5 Forest use

The village of Nampheng is surrounded by forests rich in NTFPs, especially bitter bamboo, cardamom, rattan, and broom grass. The villagers are largely dependent on the natural forest for their livelihoods and as their main source of protein. They gather bamboo and rattan shoots and wildlife for their own consumption and cardamom for sale. Wood is used for the construction of houses and fences. Raw materials for handicrafts for daily use are also harvested in the natural forest. In addition to wild cardamom, a cardamom plantation was established to increase the efficiency of collection.

Village forests are also used for *hai*, or slash-and-burn cultivation, which villagers practice throughout the year. Before the land and forest allocation process, there was no perception of ownership of the forest because the village lands were abundant, and hence there were no restrictions on where to clear land for *hai*. But villagers believe that a spirit dwells in a certain part of their forest, which has since been placed under protection as conservation forest. Collecting NTFPs is allowed in this protected area, while practicing *hai* is prohibited.

3.6 Land and forest allocation (LFA)

Land and forest allocation was conducted in 1997 with support from the IUCN as part of the NTFP project. The IUCN field team and staff from Provincial Agriculture and

Forestry Office (PAFO) and DAFO spent 20 days conducting LFA activities according to the steps specified by the Ministry of Agriculture and Forestry (MAF).[7] The LFA consisted of two activities: demarcation of village forests, and allocation of land to each household. The demarcation activity clarified the village boundaries and classified the total village area of 2,559 hectares as conservation forest (158 hectares), protection forest (1,579 hectares), production forest (123 hectares), regeneration forest (291 hectares), agricultural land (398 hectares), and cemetery forest and others (10 hectares) (IUCN 1997). Each household received three parcels of land to be used for any sort of production activities (e.g. slash-and-burn [*hai*], paddy [*na*], crop cultivation [*suan*],[8] and NTFPs). The size of the parcels varied depending on the capacities of family and labor availability. Formal authority for using and managing the allocated land was transferred to each household from the State, although it is limited in the sense that passing it on by inheritance is recognized by law, but selling it is prohibited.[9]

The NTFP project-led LFA applied a participatory approach; a village land allocation committee was established, and village meetings were organized with representatives from each household to reflect their needs and concerns about the LFA process. Through social mapping and land-use planning, the villagers decided how their forests and land would be used, with the field team providing technical assistance and serving as facilitators. Moreover, the neighboring village chiefs were also involved in the discussions on boundaries, which helped resolve border conflicts.

3.7 Changes in livelihoods

Since the NTFP project conducted a socio-economic survey in 1997 through the methods of rapid rural appraisal (RRA) and participatory rural appraisal (PRA),[10] the village of Nampheng, with the support of the project, carried out various activities to reduce poverty and conserve natural resources, including the establishment of a village rice bank, a water supply system, and a marketing group and management regulations for bitter bamboo shoots (*no mai khom*) and wild cardamom (*mak naeng*), a village development fund, domestication trials for cardamom, as well as construction of a school.

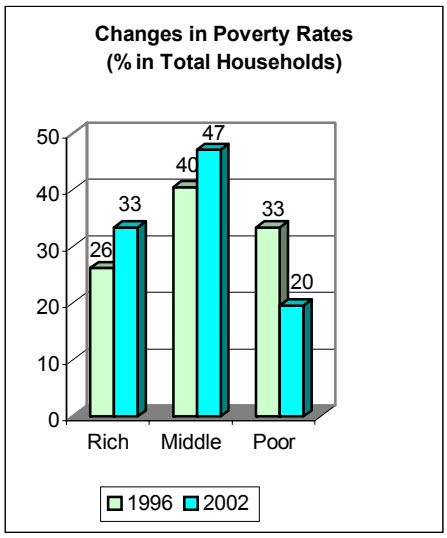

Figure 4.
Changes in poverty rates between 1996 and 2002, village of Nampheng (prepared by the authors)**.**

3.7.1 Changes in economic activities

The activities conducted under the IUCN initiative have brought about significant changes to the socio-economic conditions of the village over the past five years. With the introduction of organized NTFP harvesting and marketing, the main economic activity has shifted from *hai* to NTFP collection. Among 51 households, five have abandoned *hai* practices and the rest reduced their *hai* areas.

Their main income source at present is from the sales of NTFPs, and gross household incomes have increased on average. According to the wealth ranking exercise conducted in 1996 and 2002 (before and after the NTFP project intervention), the poverty rate—defined here as the share of poor households in the total households as perceived by the villagers—decreased from 33 percent to 20 percent due to an increase in incomes from selling NTFPs and other project-supported activities (see Figure 4).[11]

With the increased cash incomes, villagers can now afford a wider variety of products and services that they could not in 1996 (see Table 3). Now that their basic needs are met, i.e. improved food security, nutritional status, basic education, and access to medicine and medical services, both men and women enjoy spending more on non-essential items such as condiments, cosmetics (women), and tobacco (men). It should also be noted that villagers, especially women, have become interested in animal husbandry, as they can invest surplus cash into livestock as savings, which can then be redeemed in times of financial difficulties.

[7] MAF Instruction No. 822 on the Allocation of Land and Forest for Management and Use, August 1996.

[8] A type of cereal crop.

[9] In practice, allocated parcels of land are exchanged between villagers under an agreement as well as with permission from the village chief.

[10] RRA is a qualitative, participatory research methodology which uses a variety of tools and techniques to gather and analyze information in rural communities. In RRA, multidisciplinary teams of researchers from different backgrounds conduct studies of carefully defined issues, generally in short, intensive field studies (Freudenberger 1995). PRA, on the other hand, is a family of approaches, methods, and tools that enable people to formulate and analyze their situation in order to plan, act, monitor, and evaluate their actions. The underlying concept is that local people are capable of analyzing their own realities and that the outsiders should have the role of "mere" facilitators of the development process (cited from the "Participation" website provided by FAO <http://www.fao.org/Participation/ft_show.jsp?ID=3781>.

[11] The main criteria used for the wealth ranking exercise in 1996 and 2002 include housing materials, food security (e.g. rice sufficiency, livestock), and labor. These criteria were chosen by the villagers themselves based on their perception about what constitutes wealth in their lives.

Table 3. Changes in family cash expenditure ranking during 1996 and 2002, Village of Nampheng,

		Women, 1996		Men, 1996		Women, 2002		Men, 2002	
No.	Category	Share%	Ranking	Share%	Ranking	Share%	Ranking	Share%	Ranking
1	Clothes	40	1	35	1	12	2	10	3
2	Medicine	25	2	30	2	6	7	16	2
3	Foodstuffs	25	2	25	3	24	1	26	1
4	Farming tools	10	4	10	4	8	4	6	6
6	Condiments	x	x	x	x	10	3	8	4
7	Transportation	x	x	x	x	8	4	6	6
8	Livestock	x	x	x	x	8	4	6	6
9	Tobacco	x	x	x	x	x	x	8	4
10	Education (schooling)	x	x	x	x	6	7	4	9

Sources: Table IV in Changes in Family Cash Incomes Ranking in 1996 and 2002, Ban Nampheng, Namo District, (IUCN 1996), and Wealth Ranking Exercise, conducted by the author in September 2002.

An increase in incomes, however, does not necessarily mean an increase in profits per labor input. Villagers reported that labor input (working hours and amount of work) has increased since they started collective NTFP marketing. Labor calendars produced through the participatory rural appraisal method in 1996 and 2002 show the increase in working hours, especially in NTFPs harvesting seasons; before organized NTFP marketing was introduced in 1996, villagers collected NTFPs in their free time when there was not much work for *hai*, whereas they now spend a certain amount of time every day collecting and managing NTFPs throughout the year. Nevertheless, the villagers claim that they prefer to spend more time on collecting NTFPs, and purchase rice from markets, rather than *hai* farming. This is because they perceive that *hai* requires more backbreaking labor than NTFPs collection and harvesting, Thus, as long as cash incomes from NTFPs are enough to ensure food security, villagers opt to engage more in NTFP collection by decreasing or even abandoning *hai* production. The shift from *hai* cultivation to NTFP collection was prompted by not only economic benefits but also the villagers' preference of work conditions.

The downside of this shift in economic activities is the widening gap in living standards between the rich and the poor within the village. The comparison of the wealth rankings in 1996 and 2002 reveals that the poor households in 2002 are either newly established households or the ones with sick or old householders. This means that the poor households cannot benefit from NTFP collection mainly due to a lack of labor and remain poor and food insecure, while rich and middle-class households are better-off, using their additional incomes for new economic activities to further improve their livelihoods (e.g. investing in opening paddy fields, purchasing a small truck for transportation services and a TV for paid viewing by other villagers). Currently poor farmers have the option of working as hired labor for weeding *hai* land and opening paddy fields for wealthier families, but these opportunities are limited to less than ten days per year and do not generate enough income for the poor to escape from poverty.

3.7.2 Changes in forest management

There have been significant changes in the way that villagers manage their forests and forest resources. The village forests used to be open-access, and villagers could open up new *hai* land and collect NTFPs anywhere within the village territory. This loose management sometimes led to land disputes between the villagers of Nampheng and neighboring villages. With the support from the NTFP project, however, the villagers organized an NTFP marketing group and established management rules for collecting and selling bamboo shoots and cardamom. The marketing group serves as a participatory decision-making body, where a representative from each household attends and can voice their concerns and needs.

Once the villagers perceived the tangible benefits of organizing (e.g. effective marketing, better and more stable prices for NTFPs, increased incomes, etc.), they started actively participating in development activities for mutual benefits and were willing to engage in broader village issues. The leadership of the village chief contributed greatly to the successful consolidation of the group and implementation of the management rules.

Even after the completion of the NTFP project in 2000, voluntary rule-making still took place. Examples include the rules made about the lease of cardamom seedlings between the village marketing group and those interested in planting cardamom, and the sanctions against NTFP collection by outsiders without permission from the village chief. Rules for gathering red mushrooms (*het daeng*) are another example. Unlike bamboo shoots and cardamom, there were no management rules for red mushroom, although it has recently become one of the most important cash income sources (see Table 4). The lack of rules prompted harvesting in a prohibited area and immature- or over-harvesting—a typical collective action problem regarding the use of common-pool resources. To cope with the situation, the villagers started to establish

Table 4. Changes in sources of family cash incomes and ranking in 1996 and 2002, Village of Nampheng.

		Women, 1996		Men, 1996		Women, 2002		Men, 2002	
No.	Category	Share%	Ranking	Share%	Ranking	Share%	Ranking	Share%	Ranking
1	Bitter bamboo shoots	20	1	35	1	18	1	28	1
2	Cardamom	15	3	25	2	12	3	14	4
3	Rattan	X	X	20	3	4	6	X	X
4	Mushrooms	X	X	X	X	16	2	16	3
5	*Peuakmeuak (Debregeasia hypoleuca)*	X	X	15	4	X	X	X	X
6	*Nya bai lay (Sanseviera Zeylanica)*	10	5	X	X	8	4	10	5
7	Foum (fuelwood)	X	X	X	X	6	5	18	2
8	Rice	15	3	X	X	X	X	X	X
9	Wildlife	20	1	X	X	X	X	X	X
10	Livestock	5	7	X	X	12	3	X	X
11	Sesame seeds	10	5	X	X	X	X	10	5

Sources: Table IV in Changes in Family Cash Incomes Ranking in 1996 and 2002, Ban Nampheng, Namo District (IUCN 1996), and Wealth Ranking Exercise conducted by the author in September 2002.

regulations for harvesting red mushrooms, which included setting opening and closing dates for collecting red mushrooms and patrolling to ensure sustainable harvesting. This evolving system of forest management is one of the institutions that the villagers created by themselves for better coordination of collective forest management.

Besides these benefits, the villagers reported that illegal logging is no longer observed. While some of them used to log illegally and earned money from selling timber to a logging company, the increased incomes from NTFPs and better food security have enticed them away from the destructive practice.

3.7.3 Impacts of land and forest allocation (LFA) on resource management

In Nampheng, LFA was conducted as part of the NTFP project in 1997. Although the scope of the present study did not allow for substantive analysis of the impacts of LFA on resource management, it is observed that land use and forest management were affected to a certain degree.

The most noticeable impact on land use has been the shortened rotation periods of *hai*. They used to be seven to ten years before the LFA, but since each household received only three parcels of land in the process, they have been shortened to three years. This has increased the pressure on land, leading to declining soil fertility as well as an increased incidence of pests. Another noticeable change has been the reduction in *hai* areas from 45 hectares in 1997 to 30 hectares in 2002. One of the objectives of the LFA process in Nampheng was to promote sustainable forest management by limiting *hai*. Thus it is now restricted to allocated parcels, and the traditional practice of open-access forest use had to be abandoned. The expansion of *hai* areas is allowed only when new land is obtained from other households with surplus land or from the reserve land of the village.

It is a common perception among the villagers that the demarcation of village forests and the establishment of management rules have contributed to better use of the forest and reduced land disputes with neighboring villages, while land allocation to each household has not generated noticeable benefits. Although LFA aims to provide farmers with formal authority to use and manage allocated land as an incentive to invest in more productive activities, the villagers of Nampheng suggested that ownership did not bring them any tangible benefits. This is partly because the allocated land requires considerable labor and money to clear for more productive use, which villagers usually cannot afford, and partly because land sale is not allowed and land left uncultivated has to be simply transferred to the district authority through the village chief.

There is also a concern that the allocated land is too small to be divided up and distributed to the next generation upon inheritance. At the time of LFA, some forest areas were demarcated as reserve lands for future generations. While, in principle, whoever wants to obtain land for their descendants can do so by simply making a request to the village chief, in practice, reserved land is transferred to only those with the capacity and financial resources to open it up for productive activities. This implies that those who wish to obtain more land for their offspring but do not have enough finance or an economically active labor force cannot request new land to be set aside as an asset.

4. The village of Huaiohn

4.1 General description

4.1.1 Demographic data

The total population of Huaiohn is 664 (of which 330 are female), comprising 100 households (132 families).

High number of birth (20 per year) and low mortality rate (2.5 persons per year) has contributed to a rapid increase in population.

4.1.2 History of establishment

The village of Huaiohn, established in 1974, was populated by villagers who came from the following different areas of the district:

- Nam Xae sub-district (*Kamou-Lue*)
- Phoutan sub-district (*Kamou-Lue*)
- Houayho sub-district (*Kamou-Lue*)
- Nathong village of Namo District (*Lue*)
- Houay Ey village of Namo District (*Lue*)
- Kuang village of Namo District (*Lue*)

The establishment of this new village was prompted partly by the government's policy of resettling isolated upland communities to district centers and partly by communities' desire to obtain new land for upland rice production and crop farming. Since the improvement of the national road, No. 13 North, in 1995, there has been an increase in the number of immigrants to the village, which has made it one of the most densely populated villages in the district.

4.1.3 Accessibility

Huaiohn is located 55 kilometers from the provincial center and two kilometers from the district center along the national road, No. 13 North. It is easily accessible both in the rainy and dry seasons.

4.1.4 Infrastructure

Located very close to the district center, the village of Huaiohn enjoys basic infrastructure such as water taps, a primary school, power lines, [12] and a water pump provided by the government.

4.1.5 Land forms

The village area ranges from low, flat land along the national road to densely forested mountains in the north. It is surrounded on three sides by mountains and shares borders with the villages of Nathong and Nam Veuntai to the south, Nanoy to the east, and Phouthong and Laow to the west.[13] The Nam Xae River flows along the north side of the village and provides water for crops and lowland rice production. South of the village is a watershed forest which is protected for conservation purposes.

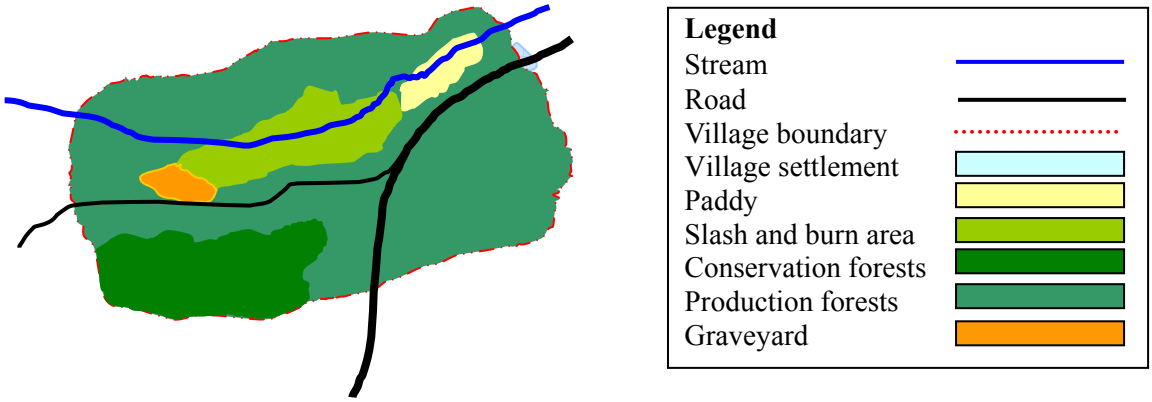

Figure 5. Map of the village of Huaiohn, Namo District, Oudomxay Province.
Source: Social mapping with villagers of Huaiohn (September 2002).

[12] Although power lines were extended to the village, the villagers still go without electricity because they can't afford the electricity bills.

[13] Community mapping by Huaiohn villagers reveals that they have a traditional perception of the village boundary with Nanoi village but not of the administrative boundary, as land and forest allocation has yet to be conducted in the village.

4.2 Development projects

With the easy access from the district center, Huaiohn Village has attracted various development projects supported by United Nations (UN) agencies, NGOs, and the government.

Table 5. Development projects implemented in the village of Huaiohn (1993–present).

No.	Project Name	Duration	Activities
1	Quaker Service Laos (QSL) community development project	1993–1996	•Rice mill construction •Water taps •*Neem* plantation for fuelwood •Threshing machine
2	ADB girls' education promotion project	2001–2006	•School construction •Financial support of $150/year for girls
3	WFP school meals project	2002–2005	•Provision of free school meals •Free rice to school girls (15 kg/month)

4.3 Livelihood systems

4.3.1 Economic activities

Villagers are mainly engaged in slash-and-burn (*hai*) cultivation as the main economic activity. Five out of 100 households also produce lowland rice and vegetables along the Nam Xae River. Due to the limited arable land available (i.e. 44 hectares of *hai* area, 14 hectares of *na* area, and 10 hectares of *suan* for 100 households), more than half of the households cannot produce enough rice for themselves, and thus remain food insecure for over six months of the year. In times of rice deficit, these households sell livestock, wild animals, and NTFPs to purchase rice from local markets.

In addition to subsistence farming, the good location of the village allows relatively wealthy villagers to run businesses such as small grocery shops, a gas station, and furniture factories.

4.3.2 Traditional farming system

Most households have practiced slash-and-burn cultivation since the settlement was created in 1974. Lowland rice and crop farming has also been practiced, but productivity has been low because villagers rely largely on rainfall and water from the Nam Xae River without any fertilizer input.

4.3.3 Modern farming system

DAFO provided a water pump for lowland rice and crop production along the Nam Xae River, but despite the introduction of modern tools, productivity has not improved due to the lack of skills to properly use and maintain them.

4.4 Village organizations

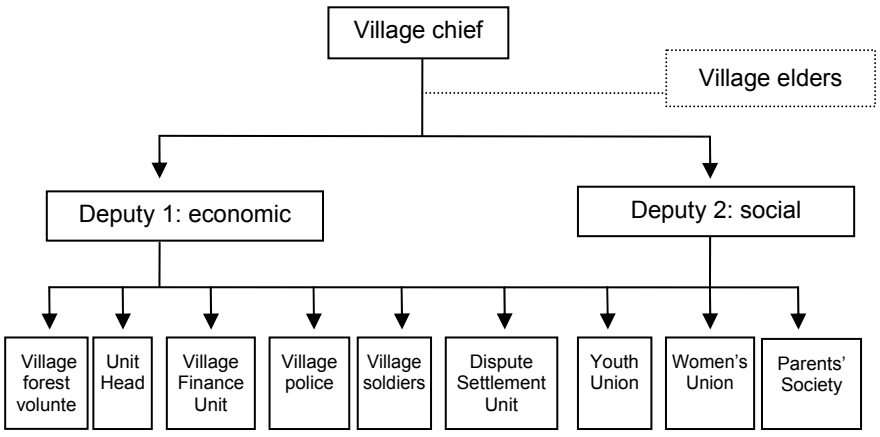

Figure 6. Organizational structure of the village of Huaiohn (prepared by DOUANGPHOSY Boonthavy)**.**

4.5 Forest use

Villagers are largely dependent on the surrounding forests and forest products for their livelihood. As the village's forests have not been demarcated under LFA yet, the villagers still use the forests according to their traditional rules. *Hai* areas used to be open-access, but as the population increased, there has not been much room for expansion. Thus an arrangement was made within the village that immigrants to the village would obtain land from households with surplus land. Another arrangement was made with three neighboring villages in 1998 to allow Huaiohn villagers to borrow the production forests in neighboring villages for *hai* cultivation free of charge, if given permission from the chief of the neighboring villages.[14]

A large portion of the village's forest is used for *hai*; the only area where it is prohibited is in the watershed area, which was designated in 1993 as a conservation forest by the village chief with a view to conserving water and the large trees in the area.

NTFPs are not abundant in Huaiohn, but even so, they are collected by both men and women, while wood is collected mainly by men for house construction materials, fences, handicrafts, and fuelwood.

4.6 Land and forest allocation (LFA)

LFA has not been conducted yet in the village of Huaiohn. It is now one of the few villages that have good access to major national roads but have not conducted LFA, and the villagers have not been informed by the district authority whether LFA will be ever carried out there in the future.

In order to avoid border disputes, the village chief participated in identifying village boundaries and agreed to a boundary agreement with all the adjacent villages, except Nanoy, during the LFA processes in these other villages. No major boundary disputes have since been reported between Huaiohn and the adjacent villages, except for one conflict with the village of Nanoy over shared *hai* areas in which the village boundary was drawn during the LFA process in Nanoy without any consultation with the village chief of Huaiohn. According to the villagers in Huaiohn, there used to be only a "loose boundary" (in the sense that it is the perceived boundary and not the administrative one) between the villages, and thus some landless farmers from Nanoy were practicing *hai* in Huaiohn's area. The boundary dispute has intensified since the LFA process in Nanoy because the landless farmers have continued *hai* cultivation outside their newly established boundary.

[14] Borrowers in Huaiohn do not incur any use fees, but they have an obligation to pay an annual land tax (8,400 kip per hectare) to the district tax office, as they would for their own land. On the other hand, the authors found during the preliminary survey that the village of Nasai, located close to Huaiohn in the district, has a similar land lease arrangement with the adjacent village of Nathong, but pays an annual use fee of 4,000 kip per hectare to Nathong in addition to the land tax.

4.7 Changes in livelihoods

Huaiohn is a relatively new village, established in 1974 when people from five villages migrated from remote areas of the district. The main reasons for the migration were because the area has easy road access and more arable land for slash-and-burn (*hai*) and lowland rice (*na*) cultivation and crop farming (*suan*). With the better road access, the village has attracted immigrants as well as various development projects over the past decade.

4.7.1 Changes in economic activities

Since their migration in 1974, the main economic activity of people in Huaiohn has been *hai*. Only in 1990 did the villagers start opening up new land for cultivating *na* and *suan* alongside a stream. The average annual yield of upland rice is two tonnes per hectare, although it can range from 0.5 to three tonnes per hectare, depending on annual rainfall and pest incidence. An increase in pests has been reported as intensive use of *hai* land has exhausted the soil.

The Community Development Project, supported by Quaker Service Lao (1993–1996), provided a grain threshing machine as well as rice mills, and the government provided a water pump for lowland rice production. However, these efforts failed to affect the production of rice, as there was no follow-up activity and no management or maintenance of the equipment.

Villagers used to collect NTFPs for household consumption only, but with the increase in trade with Chinese traders, they have recently started collecting and processing NTFPs to generate income. These include sesame seeds, *peuakmeuak* (*Debregaesia hypoleuca*) and *mak kha* (*Alpinia malaccensis*). Wild animals are also sold to local markets to earn additional income.

4.7.2 Changes in forest management

Since settling in 1974, villagers have largely depended on forested areas for *hai* and NTFPs such as bamboo shoots and wild animals. Due to the limited arable land available, *hai* has been practiced in three-year rotations. With the population increasing at the rate of over 2 percent per year, the pressure on land has increased significantly. As a result, soil fertility has declined and pest incidence has increased.

The villagers of Huaiohn have abided by communal rules on forest use ever since they migrated. Such rules include one that newly arrived migrant farmers could obtain *hai* land from villagers with surplus land free of charge. This rule has changed, also due to the population increase. Instead of borrowing land from other members of the village, three households in Huaiohn began, since 1998, to borrow land from three adjacent villages that had set it aside as reserve land. Another village rule concerns the use of the watershed forest. Realizing the population pressure on their forests, the village chief demarcated the watershed forest as a protected area in 1993 and imposed a restriction on the use of the

watershed area, and despite the increasing population pressure, the protected area has since remained intact.

Another development in forest use is the establishment of a tree plantation. Fuelwood collection was regarded as time-consuming, backbreaking labor for women and children, and thus QSL's Community Development Project (1993–1996) supported the creation of a tree plantation for fuelwood. Some trees in the plantation have grown up to three meters high, and are now ready to be used for purposes other than for fuelwood. But the villagers have made little effort in managing the trees since the termination of the project, and no specific plan has been made regarding their use.

5. Discussion

The participatory action research (PAR) activities in the villages of Nampheng and Huaiohn focused on livelihoods, land and forest use and management, and institutions in slash-and-burn areas. The PAR activities found that the villager's experiences with development interventions are mixed within each village and between the two villages. The NTFP project and other interventions in Nampheng have generated tangible benefits and improved livelihoods, and consequently have provided an incentive for sustainable forest management, while the community development initiatives in Huaiohn had limited impact on the villagers' forest use and livelihoods, and thus they still lack the means to shift to more productive and sustainable farming systems.

The next section analyzes more in detail the changes in livelihoods, forest use and management, and institutions that have been brought about by development interventions during the past five years.

5.1 Livelihoods

Both villages, Huaiohn and Nampheng, received support for improving various aspects of their livelihoods over the past decade, i.e. food security, health, education, and alternative economic activities to slash-and-burn cultivation (see Table 2 and Table 5). Both began in dire poverty but were affected differently by these interventions.

The villagers in Nampheng witnessed noticeable improvements in their livelihoods through various development activities supported by the NTFP project. The organized marketing of NTFPs contributed to strengthening their negotiating power and increasing the prices they get for bamboo shoots, which raised the incomes of individual villagers as well as the village as a whole (through the Village Development Fund). The increased incomes have enabled the villagers to diversify their investments and attain an improved quality of life and increased livelihood opportunities. Considerable improvements have been made, specifically, in terms of food security, basic infrastructure, education, and financial security. The study of cash expenditures before and after the inception of the NTFP project (in 1996 and 2002) indicates the diversification of the range of expenses and the consequent increase in opportunities for individuals (see Table 3). Moreover, the village as a whole benefited from the project through directing the profits from NTFP marketing to village development such as infrastructure (e.g. meeting room) and a loan scheme.

Although these improvements in livelihoods can be attributed to various factors, researchers found through the PAR activities that the villagers perceive the organized NTFP marketing as having played a major role in lifting them out of poverty, and other activities, supported by the IUCN (e.g. training in harvesting, accounting, and marketing), empowered them to participate in broader village administration. IUCN's NTFP project was participatory in approach and demand-driven in the sense that its objectives and the priorities of organized marketing were identified by villagers through the methods of rapid rural appraisal and participatory rural appraisal (IUCN 2000). Moreover, the project supported not only marketing activities but also various livelihood-enhancing activities (e.g. rice bank, schooling) that brought tangible benefits to the village, and thus served as an incentive for more active and voluntary involvement of villagers.

In the village of Huaiohn, on the other hand, little impact has been felt by the villagers in regard to interventions for community development. The Community Development Project supported by QSL aimed mainly at reducing the workload of women and children by setting up water taps and a tree plantation to replace their long walk to get water from the Nam Xae River or fuelwood from the village forests. Rice mills and a grain-threshing machine were also provided. After five years since the termination of the project, however, some of the water taps and the threshing machine are unusable, and the trees planted are not being used for fuelwood, thus having contributed little to achieving the original purpose of the project. The same applies to the water pump provided by the government for increasing the productivity of crops, including lowland rice.

These outcomes of the interventions could be attributed to the fact that they were neither demand-driven nor based on the needs of the village. Unlike Nampheng, the interventions in Huaiohn were not participatory in nature. Little incentive was provided for the community to engage in livelihood-enhancing activities by themselves, hence the lack of voluntary follow-up activities. Moreover, the interventions did not directly aim at income-generation activities based on their geographical advantages (proximity to the district market, easy access to the provincial center) and needs (more productive activities in lowland areas such as fish farming and lowland rice production).

Although various factors interacted and produced differences in outcomes between Huaiohn and Nampheng, the difference in the approaches is one of the deciding

factors that affected the livelihoods of people in the two villages. It is notable that the intervention in Nampheng, which was demand-driven and participatory, integrated a livelihood aspect into a forest resource management project and succeeded in providing incentives for the villagers to actively participate in both collective natural resource management and village development activities. This was made possible by empowering them through organizing and training.

5.2 Forest use and management

The province of Oudomxay was designated by the government as its focal point for rural development and the stabilization of slash-and-burn cultivation (*hai*), because the widespread impacts of *hai* have been felt throughout the province, and Namo District is not an exception. More than three-quarters of all the households in the district are engaged in *hai* in forests as their main economic activity, and the intensive use of forests has often contributed to degradation of forests and decreased soil fertility. The government, therefore, provided support for better use of land and more sustainable production through their land and forest allocation (LFA) program and extension activities.

The villagers in both Nampheng and Huaiohn have used forests and forest resources for *hai*, NTFP collection, house materials, handicrafts, and fuelwood. The noticeable changes observed recently in the two villages is that more and more farmers in Nampheng prefer to earn cash from NTFPs and buy rice, rather than practicing *hai* cultivation, while Huaiohn villagers have become increasingly interested in lowland rice cultivation (*na*) and riverside crop cultivation (*suan*). *Hai* in both villages, therefore, has been either stabilized or reduced in the past five years, but the reasons for the changes are different.

In Huaiohn, LFA has not been conducted, and thus there has been no intervention directly aimed at the stabilization of slash-and-burn cultivation or more sustainable use of forests. Instead, the limited availability of *hai* land and the reduced productivity of *hai* served as the driving forces behind the shift in forest use. Historically, Huaiohn villagers practiced *hai* in three-year rotations, because their small *hai* areas had to be divided among a large number of households engaged in *hai* cultivation. The short rotations of *hai*, coupled with high dependency on *hai* cultivation due to a lack of other income-generation opportunities, prompted intensive use of *hai* land, and consequently resulted in reduced soil fertility and declining productivity. To break this vicious cycle, the villagers want to engage in alternative economic activities, such as *na* and *suan,* and possibly NTFP marketing, but such changes in economic activities have not taken place yet because they lack the labor and finances to do so.

As of 2002, there was no plan to conduct LFA in the village. If it is to be conducted, special attention should be paid to the relationship between land use and food security so that villagers are allocated enough land to produce sufficient amounts of rice and also engage in other on-farm activities for additional income. Expansion of *hai* area may be possible, but this entails effective facilitation by the authority in addressing boundary issues between Huaiohn and neighboring villages.

In Nampheng, on the other hand, LFA and the economic benefits brought about by organized NTFP marketing have prompted the shift from *hai* to NTFPs collection and other forest uses, including a cardamom plantation and *na*. LFA was originally introduced with a view to achieving natural resource conservation and sustainable use of forests by transferring to village communities the formal authority for managing land and forests (MAF Instruction No. 822). It has also been instrumental in reducing unsustainable forms of *hai* cultivation and promoting more sedentary forms of agriculture. These policy purposes were well communicated to and understood by the villagers of Nampheng throughout the LFA activities. The villagers suggested, however, that the reduction in *hai* cultivation was prompted mainly by the economic benefits from organized NTFP marketing, and the difficulties in practicing *hai* cultivation on only three parcels of allocated land, rather than the sense of secure tiltle to the allocated land. Since the LFA in 1997, villagers have had to practice *hai* cultivation in three-year rotations on three plots of allocated land, while the rotations used to be seven to ten years when they were free to expand *hai* areas to maintain soil fertility. Then, the newly introduced collective NTFP marketing increased their awareness of the value of NTFPs and the cash income they were able to produce, enabling them to purchase rice from the market. Given the constraints (limited *hai* land, declining soil fertility) and opportunities (cash incomes, more productive ways of forest use), villagers have started to weigh the benefits between *hai* cultivation and other economic activities (e.g. NTFP plantation, *na*) and change their land and forest use based on their calculations and preferences.

Although one of the objectives of LFA, i.e. to stabilize and reduce *hai* areas, has been achieved, the villagers in Nampheng suggested that the negative impacts of LFA are felt strongly among them. While, on one hand, the common perception among villagers is that demarcation of village forests and the establishment of management rules through LFA has contributed to better forest use and reduced land disputes with neighboring villages, they suggested that the allocation of land did not provide them with any tangible benefits. Transferring ownership to village communities was expected to establish secure property rights and provide incentives for more productive use of land, but in reality the transfer of ownership has failed to encourage investment in productive activities because the ownership is restricted (i.e. the rights to possess, use, transfer, and inherit are recognized by law but the right to sell is not) and it is not a permanent right (i.e. the allocated land, if kept idle for three years, is supposed to be returned to the State to be re-allocated for use by others [MAF Instruction No.822]). Another reason that villagers did not see benefits in obtaining land is that the allocated land, often degraded

forest, requires significant amount of labor and money to clear for productive use that they usually cannot afford.

Even in Huaiohn, where LFA has not been conducted, it is perceived negatively; no consultation was held with the village's chief on village boundaries during the LFA process in the neighboring village of Nanoy, leaving boundary conflicts unsolved. As the village area has not been officially demarcated through LFA in Huaiohn, the villagers have no legal basis to defend their territory against intrusion by other villages.

5.3 Institutions

Growing evidence shows that institutions, defined here as formal and informal organizations, norms, rules, and other mechanisms for collective actions, are essential for development to be sustainable, both economically and environmentally. The PAR activities found that institutions played an important role in making changes in livelihoods and natural resource management in both Huaiohn and Nampheng.

Both villages have traditionally had some sort of rules and mechanisms for village administration and natural resource management in the form of a decision-making organization and rules for village administration, rules for forest use (e.g. village conservation forest where *hai* is prohibited), and specific rules on clearing land and ownership. In addition, the village of Nampheng, with support from the NTFP project, established an NTFP marketing group and rules and sanctions on harvesting, management, and marketing of NTFPs. A series of village meetings to familiarize villagers with the concepts and rules of the marketing group, along with the leadership of the village chief, have greatly facilitated the villagers' understanding and implementation of organizational rules. Empowered by their experience with organized NTFP marketing, villagers have voluntarily established their own rules for managing red mushroom collection, which has recently become one of the most important sources of cash income (see section 3.7.2). Voluntary rule-making has also occurred in Huaiohn. Concerns over the limited availability of land for *hai* prompted three households to engage in lease contracts with neighboring villages in 1998 (see section 4.7.2).

These evolving institutions for natural resource use and management at the village level reflect the villagers' increased awareness about the value of collective action and mutual support in natural resource management. Villagers suggested that they were motivated to participate in collective actions in natural resource management only when they saw tangible benefits from them. In Nampheng, for instance, more villagers started actively taking part in organized NTFP marketing and acquiring harvesting skills after they saw benefits in the form of higher and stable prices for bamboo shoots.

In addition to this tangibility, the reciprocity of benefits is also critical. A village rule on access to the rice bank in Nampheng is a case in point. In principle, any households suffering from a shortage of rice can borrow some from the rice bank as long as there is stock available. But some poor villagers, regarded by other villagers as being inveterate, lazy idlers, are not allowed to borrow rice because other villagers cannot expect reciprocal help from them. The same is true of the village's financial scheme. The villagers have traditionally helped each other in time of financial difficulties through an informal loan scheme (the Village Development Fund most recently), but there are restrictions on the use of such schemes when those wishing to borrow do not contribute to other kinds of economic activities (e.g. working for other households as hired labor), indicating that community institutions for collective action function on the basis of tangible and mutual benefits, and there are restrictions on use when reciprocal help is not expected.

6. Conclusions

This study attempted to examine the livelihood systems of slash-and-burn cultivation areas in northern Laos through participatory action research (PAR) and to analyze the changes in livelihoods, and forest use and management that were brought about by various development interventions. Emphasis was placed on examining selected aspects of slash-and-burn communities—their livelihoods, forest use and management, and institutions.

The PAR activities found that the impacts of development interventions are felt differently among different groups within a village (women/men, the wealthy, and the poor) and between villages. Development interventions in the village of Nampheng, especially the NTFP marketing project, have contributed to improving livelihoods by bringing increased incomes to individual villagers as well as the village as a whole through the Village Development Fund. The tangible benefits from NTFP marketing, in turn, motivated villagers to use and manage forest resources in a more sustainable way, based on rules of their own making. The participatory and demand-driven approach of the intervention as well as the focus on the livelihood aspect are considered critical for encouraging active and voluntary involvement of villagers in collective actions for forest management and village development. It should also be noted that the benefits of collective action should be tangible and mutual, and that access to such benefits of some village members can be restricted if reciprocal help cannot be expected.

On the other hand, the interventions in the village of Huaiohn have had limited impacts on livelihoods and forest use, and thus they still lack the means to shift to more productive and sustainable farming systems and forest use. Unlike Nampheng, the interventions in Huaiohn were not participatory in nature and provided little incentive for the community to engage in livelihood-enhancing activities by themselves. Moreover, interventions did not take into consideration the village's geographical advantages (proximity to the district market, easy access to the provincial center) and needs (more productive activities in the lowlands such as fish farming and lowland rice production), and thus failed to provide alternative income-

generating opportunities to reduce the dependency on *hai* cultivation.

Land and forest allocation (LFA) has had mixed impacts on forest use and management in the slash-and-burn villages. Villagers suggested that they had either reduced or abandoned slash-and-burn cultivation and had greater awareness about the values of forest resources after the LFA process, testifying to the achievement of some of the policy goals of LFA. But negative impacts were also felt by villagers in the form of limited land availability, shortened rotations of *hai* cultivation and consequent decrease in soil fertility, and restricted land ownership.

Lastly, through the participatory rural appraisal activities, it was found that institutions played a critical role in making changes in livelihoods and natural resource management in both Huaiohn and Nampheng. The evolving institutions for natural resource use and management reflect the villagers' increased awareness about the value of collective action in natural resource management and mutual assistance. Villagers suggested that the tangibility and the reciprocity of benefits from collective action are a key to promoting active and voluntary participation in collective action.

Due to the limited scope of this study, the research was focused on selected aspects of the communities in slash-and-burn cultivation areas in northern Laos. Nevertheless, the study may offer insight into the potential impacts of development interventions in other slash-and-burn areas with similar environmental and socio-economic conditions.

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Impacts of Forest-related Policies on Local People in the Phou Xang He Protected Area, Savannakhet Province, Laos

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Abstract: This report is one of the results of research conducted jointly by the Faculty of Forestry, the National University of Laos and the Forest Conservation Project, the Institute for Global Environmental Strategies (Japan) between September 2001 and March 2004. It aims to contribute towards developing effective village action guidelines (VAG), local policy guidelines (LPG), and sustainable forest management practices in national biodiversity conservation areas (NBCA) in Laos.

Field research was conducted on the land and forest use practices of the local people, and the impacts of implementing new forest policies were observed in three of the villages connected with the protected area. The progress of the government's land and forest allocation (LFA) program is very advanced in these areas, because it was implemented with local participation. Unfortunately, insufficient budget resources as well as low levels of capacity for implementation, including follow-up, have hindered proper implementation, and these are problems that need to be solved. On the other hand, some beneficial impacts can be observed, such as a decrease in the land area used for swidden agriculture and a high awareness of the NBCA among the local people. It was found that effective forest management can be accomplished by implementing policies with consideration of existing land and forest use of the local people.

Key words: Local people, National biodiversity conservation area, Land and forest allocation program, Savannakhet, Laos

1. Introduction

1.1 Research objective

The objective of the joint research between the Faculty of Forestry, the National University of Laos (FoF) and the Forest Conservation Project, the Institute for Global Environmental Strategies (IGES) is to develop strategies for desirable forest conservation and sustainable forest management (Inoue 2001). To achieve this target, FoF and IGES will develop village action guidelines (VAG) at the village level as well as local policy guidelines (LPG) at the local level through the participatory method.[1]

For the purpose of applicability of guidelines, two sites with different natural conditions were selected for research—one is richly forested and the other is a degraded forest area. In this report, the national biodiversity conservation area (NBCA) designated by the government of Laos, a richly forested site, will be introduced for the case study.

The objective of this research is to examine the actual land and forest use of the local people and the policy implementation of the local authority, and then analyze the impacts of the forest policy on the local people.

1.2 Research methodology

This work is composed of field research in the villages and interviews and data collection at local authorities and other concerned institutions and then data analysis.

The field research was carried out by using the participatory action research (PAR) method (Emadi et al. 1992). This research project is presently in the first stage of the PAR method, namely, the investigation phase. Actual research data come from a basic line survey in the village, which included using the wealth ranking method (Inoue 1998). In addition, interviews with key individuals and household surveys were conducted. At the local level, interviews with key informants and data collection in the villages were conducted.

Photo 1: Conducting interviews with village key informants at Kengyao Village, November 2002.
(Photo: K. Hyakumura)

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[1] The aim of developing the VAG and LPG is to enhance the participation of local people in forest management and support the central forestry government and local forestry administration, which is expected to satisfy the needs of local people, local governments, and local NGOs.

1.3 Reason for selecting target villages

The relationship of location between the village and the NBCA is considered an important criterion influencing the forest use of the local people. According to Christopher (1998), four types of villages can be identified in the area, as follows:

- Type 1 - Village located totally within the NBCA
  This is often termed an "enclave" village, and the nature of their location suggests that they will have a major impact upon and a major role within the NBCA and its management.
- Type 2 - Village whose boundaries overlap those of the NBCA
  A village type where the actual dwellings are usually located outside the NBCA, but whose village forest is located partly within the NBCA boundaries.
- Type 3 - Village adjacent to NBCA
  In this case, the village and NBCA share a common boundary, often because both boundaries are defined by a significant geographical feature such as a mountain ridge or river. Village authorities thought that village boundaries did not go into or overlap the NBCA, and thus they "claimed" the village boundaries up to the edge of the NBCA.
- Type 4 - Village distant from but "using" the NBCA
  The boundaries of this village type do not overlap or share a common border with the NBCA, and may be some distance from it; however, villagers might enter the NBCA either to pass through it or to collect natural resources.

In this study we seek to clarify the impacts of the NBCA-related policies on the activities of the local people. Therefore, village types 1 and 2, which have more impact on the NBCA, were selected as the focus for research. Another criterion is the differences in the steps and procedures of the land and forest allocation program (LFA) employed by the government in each village (see Chapter 3, *The present status of the land and forest allocation program in Savannakhet Province*).

To avoid any misunderstanding or bias of differences between ethnic groups, the same ethnic group was represented in each target village type selected—the *Bru* ethnic group (*Mang Kong,* or *Makong*), who speak the Mon-Khmer language and belong to the Upland Lao (*Lao Theung*).[2]

The three target villages were selected based on the following criteria:

- Nalay Village - A village whose boundaries overlap those of the NBCA (Type 2). The LFA program has been conducted, and land for agriculture was allocated to the local people.
- Namuang Village - A village whose boundaries overlap those of the NBCA (Type 2). The LFA program has been conducted, but land for agriculture was not allocated to the local people.
- Kengyao Village - A village located totally within NBCA (Type1). The LFA program has not been conducted yet (as of December 2003).

2. Phou Xang He National Biodiversity Conservation Area

2.1 General description

2.1.1 Background

In 1993, eighteen NBCAs were established by Prime Minister Decree No. 164; two more were added in 1995 (Dong Phou Viang) and 1996 (Xe Sap). The establishment of a protected area system was the start of a long-term process of developing a management system capable of protecting areas for the good of the entire nation. The Phou Xang He NBCA is one of the first eighteen NBCAs that were established on 29 October 1993 in order to promote biodiversity conservation and ensure the sustainability of natural scenery, ecotourism, education, and scientific research sites (Bermuller et al. 1995).

A new decree of the Ministry of Agriculture and Forestry No. 0524 (MAF/No.524) issued regulations on controlling NBCAs and wildlife on 7 June 2001.

2.1.2 Location

The Phou Xang He NBCA is located in the center of Savannakhet Province, a mountainous region between 16°42' to 16°04' north latitude and 105°19' to 106°06' east longitude (Figure 1). The total area measures 109,900 hectares, and about 80 percent of it is probably claimed by villages or included inside their boundaries. It extends over five districts: Atsaphone, 30 percent; Phalanxai, 22 percent; Phin, 10 percent; Xepon, 4 percent; and Vilaboury, 34 percent. There are ten villages inside the NBCA, while the territories of 49 villages overlap it and 21 villages are adjacent to it (Savannakhet PAFO 2002a; Savannakhet PAFO 2002b).

[2] In Laos, ethnic groups can be classified into three groups: *Lao Lum* (Lowland Lao), 56 percent; *Lao Theung* (Upland Lao), 34 percent; and *Lao Soung* (Highland Lao), 9 percent.

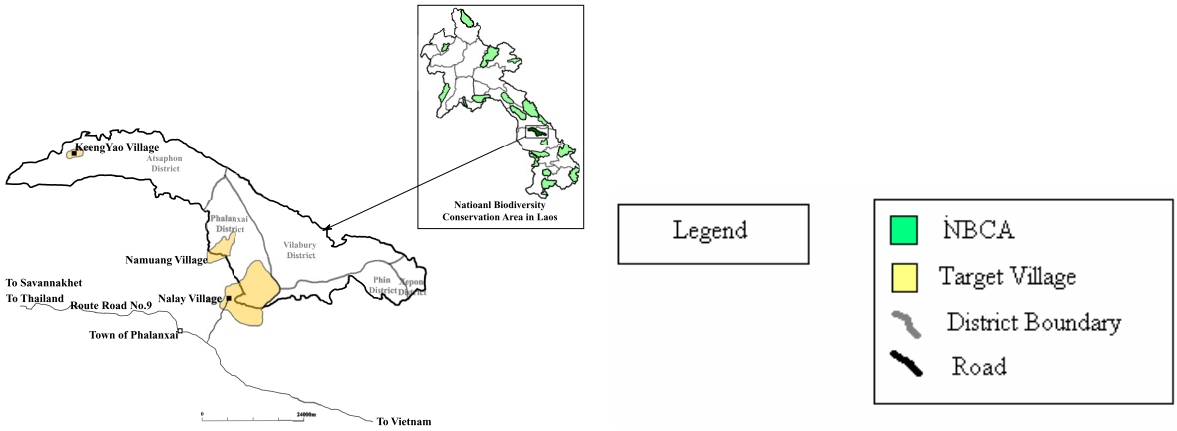

Figure 1. Location map of Phou Xang He NBCA.

2.1.3 Boundaries

For the most part, the boundary of Phou Xang He NCBA is easily discernible as where the land starts to rise at the base of the Phou Xang He and Phou Hino-Katong Mountains. The only exception to this is a lowland corridor zone between these two groups of mountains that is bounded to the north by the Dong Xe Bai forest in Vilaboury District and to the south by the Houay Alom and Houay Xeloun Streams in Phin District. The NBCA boundary follows the Phou Xang He Mountains escarpment for most of its northern length; it is bounded by the Xe Namkok River to the east, in Xepon District, and to the south by the Houay Thinyalong Stream, in Phalanxai District, and the Palanhin Phoutakouan Rock Pan in Atsaphone District.

2.1.4 Accessibility

The Phou Xang He NBCA is accessible from the south for its entire length via numerous tracks and paths leading from National Route No. 9. Its northern border can be reached from the road through Mahaxai District of Khammouane Province, Vilaboury District, and by Provincial Route No. 10 from Xepon to Vilaboury, but the NBCA itself is largely inaccessible from this direction due to steep escarpments. Access to the corridor zone is possible from Vilaboury to the north and Phin District to the south, but vehicle traffic is limited to the dry season. Access to the Phou Hino-Katong Mountains is possible in some areas, but only during the dry season and only for quite short distances into the NBCA. Access to the NBCA will likely increase markedly post-2000 with the completion of a number of planned or on-going road projects. Access from Vilaboury and the north will be eased with the new road from Mahaxai District, as will access from the east, when the on-going improvements to the Xepon-Vilaboury road are completed.

2.1.5 Topography

Topographically, the Phou Xang He NBCA comprises two mountain ranges oriented northwest-southwest: the Phou Xang He Mountains and the Phou Hino-Katong Mountains. To the north and northeast, the Phou Xang He Range is dominated by steep sandstone escarpments, while slopes to the south and the west rise more gently to the plateau. Sandstone outcrops occur throughout the NBCA, and can be quite extensive, particularly on the southern aspects of the Phou Xang He Range.

The NBCA contains no standing water bodies, and many of its creeks and small rivers are highly seasonal. Indeed, the plateau and higher slopes are extremely arid in the dry season, and many large mammals are forced to migrate to lower elevations for water at that time. The NBCA is drained to the south by the Xe Xangxoy River, Xe Thamouak River, and Xe Champhon River, and to the north by the Xe Bay and the Xe Noy Rivers.

The Phou Xang He NBCA is somewhat unique in the presence of the lowland area between the Phou Xang He Range and the two hills. Although still largely forested, the corridor zone has been settled and contains eight enclave villages (Type I).[3] The elevation of the NBCA ranges from 150 to 794 meters above sea level.

2.1.6 Main farming systems

The farming system used by the local people generally depends mostly on nature, a tradition long practiced by their ancestors. Rice cultivation begins by the end of May, mostly using a local variety of rice, and it is harvested between October and November. According to the availability of water, shorter-age rice is cultivated in the higher elevations, while middle-age rice is cultivated in the lower elevations. Swidden agriculture begins in February to March, and harvesting occurs between October and the beginning of November.

2.2 Past and on-going forestry-related projects conducted in the Phou Xang He NBCA

Given the objectives of creating NBCAs of the government of Laos, land-use planning and conservation

[3] Please refer to Section 1.3 above.

activities have been implemented. These include a land and forest allocation program (LFA) that was conducted from 1996 to 2001 in some villages whose territories are connected to each other and inside the NBCA, under joint funding support from the Lao Swedish Forestry Program (LSFP).[4] Since 2001, the government has been the sole funder of the LFA activities in the remaining villages.

The government of Laos has given priority to strategies to protect biodiversity and conserve natural resources by establishing development projects to support the Phou Xang He NBCA. These projects and activities are listed as follows:

- From 1996 to 2000, the LSFP carried out the protected area management program.
- The Action Nord Sud Organization carried out its food security project from 1998 to 2002 in four mountainous districts (Phin, Xepon, Vilaboury, and Nong).
- The IUCN conducted its wildlife conservation project from 1995 to 1997.[5]
- The Netherlands Development Organization has carried out its ecotourism support project from 2002 until the present.

The government of Laos continues to contribute some of its national budget to these activities.

For the purpose of rural development in remote areas, focal sites were established in the Phon Ngam zone in Atsaphone District in 1995/96, Lako zone in Xepon in 1996/97, Namlo-Angkham in Vilaboury District in 1997/98, Houay Hoy-Thounkham zone in Phin District in 1998/99, Kengchip-Nalay in Phalanxai District in 1999/2000, and Latho zone in Xepon District in 1999/2000. The focal project site in Kenchip-Nalay includes the villages of Nalay and Namuang (selected for this research).

3. The present status of the land and forest allocation program in Savannakhet Province.

In August 1996, Prime Minister Decree No. 3 (No. 3/PM) and the Instruction on Land and Forest Allocation (No.822/AF) were promulgated. According to these, the government allocates cultivated land and degraded forest to local individuals and recognizes their possession and inheritance rights, giving them the right of land use under agreement between village authorities and local authorities. On the other hand, the government assigns responsibility of forest management inside the territory of the village to the local people.

In the LFA process at the provincial level, the highest decision-making organization is the Land Management and Land and Forest Allocation Committee under the Provincial Office. The committee is responsible for all activities; however, this program is managed and implemented by the Extension Section of the Provincial Agricultural and Forestry Office (PAFO). Implementation of the program is carried out at the village level by the District Agricultural and Forestry Offices (DAFO). Each DAFO must make a plan for implementation every fiscal year, based on the budget, in the collaboration with related district organizations, i.e., the district office, tax office, and education office.

In the case of Savannakhet Province, the LFA program has already been conducted in 171 villages since 1996 (see Table 1). In the past, foreign donors (i.e., LSFP and FOMACOP)[6] supported technical transfers and supplied funds for implementation activities for integrating the skills of DAFO staff as well as for acquiring land-use rights for local people. In many cases, these functioned as a kind of pilot project to extend the LFA program's activities. Since 2001 the government of Laos has conducted the program on its own initiative, and is carrying it out in 120 to 130 villages every year (Hyakumura 2002). The program must be conducted promptly in order to decrease the forest area affected by swidden agriculture, with the goal of eliminating the practice of "slash-and-burn cultivation" in Laos by 2005 (*Vientiane Times* 2001).

[4] The Lao Swedish Forestry Program is a support organization on forestry supported by the Swedish government.

[5] IUCN (The World Conservation Union).

[6] FOMACOP is an organization (World Bank and Finland) that supports forestry issues through its forest management conservation program.

Table 1. Progresses and targets of the land and forest allocation program in Savannakhet Province.

	Name of district	1996-2000	2001	2002	2003	2004	2005	Number of villages
1	Khanthabouly	12	20	24	13	13	12	94
2	Champhone	11	4	3	53	52	47	170
3	Songkhon	18	13	2	37	37	35	142
4	Sonbuly	5	5	5	31	31	30	107
5	Thapangthong	22	5	5	15	15	15	77
6	Outounphoun	5	7	8	29	29	28	106
7	Atsaphone	5	3	2	17	17	17	61
8	Atsaphangthong	8	5	5	27	27	25	97
9	Phalanxai	7	11	5	19	19	17	78
10	Sayphouthong	11	6	2	15	15	14	63
11	Saybouly	3	9	10	23	23	21	89
12	Phin	27	9	44	12	12	12	116
13	Xepon	8	12	35	35	35	35	160
14	Nong	11	13	35	7	7	5	78
15	Vilaboury	19	7	33	15	15	15	103
	Total	171	129	218	348	347	328	1,541

Source: Data of the Land and Forest Allocation Unit, PAFO Savannakhet, As of 21 February 2002.

4. Nalay Village

4.1 General description

4.1.1 Demography

In the village of Nalay (*Ban Nalay*) there are 832 inhabitants (185 families living in 145 households), of which 447 are female and 212 are children (14 are old or disabled men). The main labor force numbers 263 individuals (135 female), plus 98 substitute laborers. The inhabitants, who believe in spirits, belong to the *Bru*, or *Mang Kong,* minority of the Mon-Khmer of the *Lao Theung* ethnic group. Generally, they have a low level of education—none have graduated from secondary school, while only 87 inhabitants can read the written Lao language. In the school, which was constructed with the participatory funding of the villagers and the district, there are only three teachers.

4.1.2 Village history

Nalay is an old village located partly inside the Phou Xang He NBCA; its boundary includes the NBCA and the Dong Kapho Production Forest in Phalanxai District of Savannakhet Province. According to the old men in the village, Nalay was established in 1763 under the leadership of Thao Phia Phommaxay, who named it *Ban Khonglai.* It was formed by only four families, who migrated from Nounoi Oinou Village in the eastern part of Khammouane Province, and were joined along the west side of the Mekong River by Siam soldiers, mostly from Hinkeo Village, Sakon Nakone Province in Thailand, after their defeat by the Daiviet Kingdom of Vietnam. In the twentieth century (1910) the French conquered the village, and changed its name from Khonglai to Nalay.

4.1.3 Access

The village of Nalay is situated in the eastern lower part of the Phou Xang He Mountains, along the Xe Xangxoy River, 20 kilometers from the north part of Phalanxai District (see Figure 2). This is a remote area, where it is difficult to reach outside villages, because the only access is an unpaved road, and many streams obstruct the route, especially in the rainy season.

4.1.4 Infrastructure

Nalay is one of the many villages in Laos still suffering from a lack of facilities and infrastructure. Even as the main focal site (Kengchip-Nalay) of the province's rural development project,[7] the living conditions of the population are difficult, and they still depend largely on nature to survive. Besides this, communication with the outside world is very limited—there are no telephone lines, post office, newspapers, or journals. The only fuel available for lighting is oleoresin (from the Dipterocarp tree) or oil (petrol), and water is taken, untreated, from wells, springs, or nearby rivers or streams.

[7] For more, see Chapter 4.2.

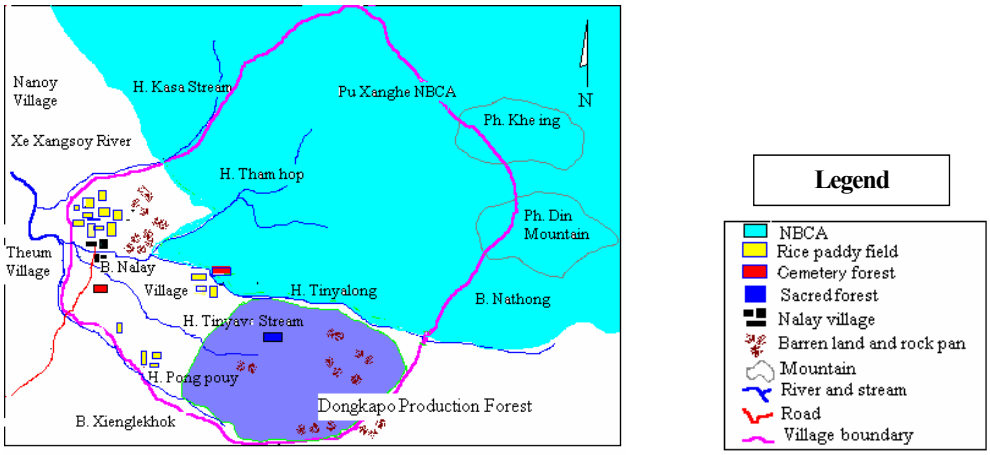

Figure 2. Map of Nalay Village.
(Prepared by T. Khotpathoum)

4.1.5 Landforms

According to the LFA conducted by the LSFP in 1998, the village of Nalay borders with the following villages: (SIDA 1998)

- the villages of NaBo Nuea and NaBo Tay and the Phou Xang He NBCA to the north
- Xienglekhok Village to the south
- the Phou Xang He NBCA, Nathong Village, and the Dong Kapho production forest to the east
- the villages of NaBo Tay and Theum to the west

The general sizes of the various areas are shown below in Table 2.

Table 2. Land areas comprising Nalay Village.

	Land category	Area (hectares)
1	NBCA	5,672.0
2	Joint management forest	1,574.0
3	Protection forest for river bank	148.0
4	Forest area and conservation land	20.0
5	Rehabilitation forest	568.0
6	Sacred forest	12.8
7	Cemetery area	3.5
8	Utilization and reserve forest	1,623.4
9	Rice field	75.0
10	Reserve area for agriculture production	93.6
11	Houses and roads	23.6
12	Rock pan	29.0
13	River body	16.8
	Total	9,859.7

Source: SIDA (1998).

4.2 Development projects

Of the three target study areas in Savannakhet Province, the village of Nalay has benefited from more development projects (outlined below), both from the government of Laos and international organizations, than the villages of Namuang and Kengyao.

- In 1998, the LSFP supported the LFA program in Nalay and provided funding for cultivating land and building small weirs.
- In 1999/2000, the government of Laos established Kengchip-Nalay as a district zone and developed an rural development project to strengthen the village institutions in agriculture, communications, education, and to create permanent jobs through raising poultry (but just at the preliminary stages).
- In 2000, a project of World Vision Laos, with funding support from England, provided support for cultivating rice during the dry season by providing loans for purchasing water pumps and fertilizer, but it has not been continued because most people couldn't pay back their loans.
- In 2002, the government began construction of a nine-kilometer secondary road from National Route No. 9 to the village, and it is about 70 percent finished.

4.3 Livelihood systems

4.3.1 Income sources

The main income-generating activities of the people are rice field production and raising livestock such as pigs and chickens. Besides these, the local people go into the forest to collect non-timber forest products (NTFP) like cardamom, seesiat bark (*Pentace burmanica*), dammar resin (from *Dipterocarpus tuberculatus*), and rattan. All the NTFPs that they collect can be sold in the villages; otherwise they go to the market in Phalanxai District. Some families derive income from producing small handicrafts or being hired to cultivate rice fields,

make weirs, or cut wood in Nalay or the neighboring village.

4.3.2 Farming systems

People cultivate rice in the uplands and in their gardens, but they still depend mostly on nature, especially the rainy season, for producing rice. (They tried cultivating rice during the 2000/2001 dry season, but it wasn't overly successful and they recently stopped.) Rain-fed rice cultivation begins at the end of May to June, and harvesting occurs from October to November (fast-growing rice takes three months and slow-growing rice takes four to five months). Most rice seeds used are an improved breed variety, but local rice seed is also still planted. Normally, people cultivate fast-growing rice in the higher elevations and slow-growing rice in the lower elevations because of the availability of water. Swidden agriculture begins with slashing from February to March, burning from March to April, area preparation and planting in May, and harvesting from October to November. In the upland areas, the people cultivate not only rice but also secondary crops like cassava, maize, cucumber, and chili, as is practiced by the cultivators throughout the country. People also cultivate gardens around their houses (vegetables such as eggplant, chili, cucumber, etc.), and during the dry season, from January to May, they mostly cultivate alongside the Xe Xangxoy River.

The villagers of Nalay, which belong to the *Bru*, or *Mang Kong,* minority ethic group, cultivate rice using traditional methods, much like other villagers elsewhere in the country. Before beginning the seasonal production of upland rice in June they conduct rituals to pray to their ancestors for protection of their crops, and then in December they offer thanks for the year's harvest. Paddy field cultivation does not require much ritual, but its success depends on the villager's traditional beliefs and practices passed on through the generations.

4.4 Village organization

In terms of organizational structure, the head of the village (*naiban)* generally directs the affairs of the village, along with consultation of the senior union section *(neohoom)* and the assistance of two deputies overseeing seven units (see Figure 3).

The village head and two deputies are elected by the villagers, and then approved by the district government. The persons in the senior union section are selected according to their age, experience, circumstances, and the respect they are given by their own villagers. The committee members are assigned their responsibilities according to their tasks, as shown in Figure 3.

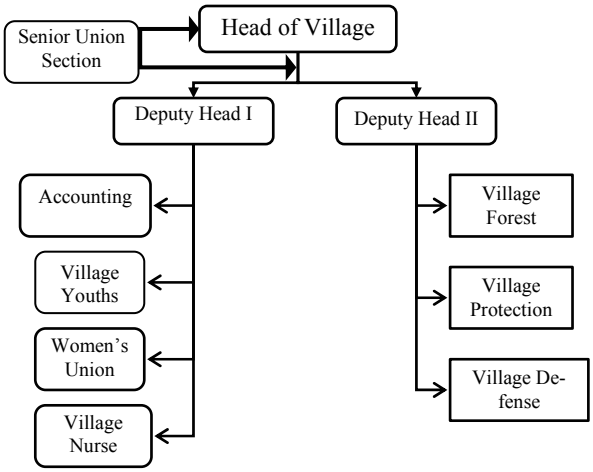

Figure 3. Organizational structure of Nalay Village.

4.5 Forest use

Nalay Village is inside the Kengchip-Nalay focal site, one of the government's rural development project. The living conditions of people here are improving step-by-step, but most are still connected to nature through their use of natural resources for their daily needs such as fuel, light, food, warmth, and materials to build their homes. The forest provides them with most of their livelihood needs, i.e., rattan shoots, rattan string, and small wildlife, and some materials are of value for sale or barter to the neighboring village, such as cardamom and the bark of the *seesiat* tree (*Pentace burmanica).*

4.6 Protected area activities

The Phou Xang He NBCA was established in 1993 by Prime Minister Decree No. 164 from the central government. It was around 1996 when the LSFP started up by introducing the funding for the protected area in Savannakhet Province. The local people in Nalay Village became aware of the existence of the NBCA when DAFO planned out the land use management of the village through the LFA process in early 1998 (DAFO was provided funding for the protected area in affected districts around 1998). Under the LFA program, one of the efforts made was local notification of the NBCA.

4.7 Land and forest allocation program (LFA)

The LFA program was carried out in the village from 29 January to 14 February 1998, with support from the LSFP. As a consequence, the territory of the village was set as comprising 10,035 hectares, and of that, 5,672 hectares (about 57 percent) overlaps the territory of the NBCA (DAFO Phalanxai 1998). The NBCA zoning in Nalay was carried out under the LFA by DAFO; however, the LSFP had also set up Nalay as a model village of the program. It created a draft land-use plan, including a land-use map initially based on interviews and data collection from the local people, paying attention to the

rights of traditional land use. During a three-week-long process, the draft and the program and its implementation were discussed.

At this point, the professional-guided participatory approach[8] employed by LSFP was very useful for both drafts of the plan, which were based on data analysis, including natural and socio-economic aspects and the possibility of being adapted to people's opinions.

The traditional village boundary between Nalay and the neighboring village was already fixed in the flat area, and this system prevented conflicts between them over intensively used resources such as agricultural land and NTFPs. In the LFA process in Nalay, this traditional boundary was regarded as the official one. On the other hand, the boundary of the mountainous area between Nalay and the neighboring village could not be close to or overlap with the NBCA area, because there was little incentive for local people to use natural resources in the area. Upon the suggestion of the LSFP, the boundary between those villages has been set close together in order to expand their territory. The intention of the above measure was to try to prevent the trespass of local people into the core zone, which has been managed by the government, for expanding the territory of the village, as well as to legally retain the local people's rights to land and forest use.

All of the NBCA within the territory of the village, however, is regarded as a core zone, although the program can allow local people to use the forest in the area concerned. The LSFP came to the conclusion that the area where the NBCA overlapped with the territory of the village was essential to biodiversity conservation, including providing a source of water for elephants. This infers that the LSFP wavered between biodiversity conservation and forest use by local people.

Photo2: Land Use Map at Nalay Village, January 2000.
(Photo: K. Hyakumura)

4.8 Changes in livelihood: the influence of the NBCA and LFA

4.8.1 The decrease in swidden agriculture

According to our survey, using the wealth-ranking method, the LFA program caused the number of households that conducted swidden agriculture to decrease rapidly, dropping from 91 percent to 53 percent (Table 3).

As for the number of households conducting swidden agriculture at each economic level, in the rich level it decreased from 91 percent to 36 percent. On the other hand, in the poor level, the decline was smaller, from 83 percent to 72 percent. The decrease of swidden land area under the LFA program has been most effective at the rich level.[9]

Interviews with the local people revealed the main reason why the area of swidden land was decreasing was because of the diversion and renouncement of swidden land. After the LFA program, cultivating land for rice as the staple food is supposed to be acquired from swidden land converted to paddy field or from new farmland.

Table 3. Changes in agriculture area as a result of the land and forest allocation program.

Economic level	Number of households practicing swidden agriculture				Number of households that acquired agricultural land	
	Before LFA program	(%)	After LFA program	(%)	After LFA program	(%)
Rich (n=11)	10	90.9	4	36.4	2	18.2
Middle (n=42)	40	95.2	12	28.6	18	42.9
Poor (n=65)	57	82.5	47	72.3	31	47.7
Total (n=118)	107	90.7	63	53.4	51	43.2

Source: Interviews in Nalay Village by the authors in January 2000.
Note: The LFA was carried out from January to February 1998.

[8] A blueprint approach where residents are considered to be wage laborers, volunteers, fund providers, etc. See Inoue, Makoto. 2000. Participatory forest management. In *Rainforest ecosystems of East Kalimantan: El Nĩno, drought, fire, and human impacts,* ed. Edi Guharidja, Mansur Fatawi, Maman Sutisna, Tokunori Mori and Seiichi Ohta, 299–307. Springer Verlag.

[9] Most of the swidden agriculture we describe in this report means that cultivation of the land is rotated in the same place for three to four years, and therefore the government and local people regard it as *suan,* or "garden."

4.8.2 The acquisition of agricultural land

As for the acquisition of additional agricultural land, in examining the differences at each economic level, 18 percent of households at the rich level acquired land as a result of the LFA program, as did 43 percent of the middle level, and 48 percent of the poor level (Table 3). The reason why so few households in the rich level acquired agricultural land is that they already had enough land for rice cultivation, so they did not need any more. At the same time, many households of the middle and poor levels acquired agricultural lands because of their lack of land for rice cultivation.

But more than half of the middle and poor households were still not able to obtain any additional land because of a lack of suitable land available. Most of it that was offered for cultivation is dry dipterocarp forest, with many trees still remaining. Reclaiming this type of land for paddy fields is very difficult and requires considerable labor; it takes four laborers and one buffalo to cultivate just 0.2 hectares per year. In addition, taxes on this kind of occupied land are higher than that for normal agricultural land not needing reclamation. As a result, the households with not enough labor capacity were not able to acquire any land for cultivation.

Among the poor households who could not acquire land, many collected NTFPs for supplementary food. In times of insufficient rice harvest from the swidden lands, the local people were forced to collect more NTFPs than usual, and this put the rich forest products in the NBCA at risk.

5. Namuang Village

5.1 General description

5.1.1 Demography

The people of Namuang Village (*Ban Namuang*) also belong to the *Bru*, or *Mang Kong,* minority of the *Lao Theung* ethnic group. The village has a population of 273 (66 families in 57 households), which includes 113 females. In the main labor force of 133, there are 49 females. As in the village of Nalay, the people here have a generally low level of education; most have attended grades one to three, but none have graduated from primary school. The people here believe in spirits, too. For example, they conduct a ritual, called "*Lapeup,"* once a year after harvest season, usually between January and March.

5.1.2 Village history

Namuang is a rather old village—more than 100 years old, according to the old villagers that originally moved from Lek Village. At that time, there were only two households, made up of Mr. Khut's and Mr. Kheu's families. Twenty years later, nine more families moved from Dankoy Village because of the more suitable conditions for growing rice and upland rice cultivation. Namuang Village was included in Atsaphangthong District until it was rezoned to Phalanxai District in1997.

5.1.3 Accessibility

Namuang is located far from the center of the district and is difficult to reach; the only access is via a dirt road, and there are no bridges to cross the barriers of the Xe Kasok and Xe Xangsoy Rivers (Figure 4). Therefore, cars and trucks can only travel the 40-kilometer distance in the dry season. Almost all the villagers travel to the district on foot, bicycle, or by rice-field cultivator.

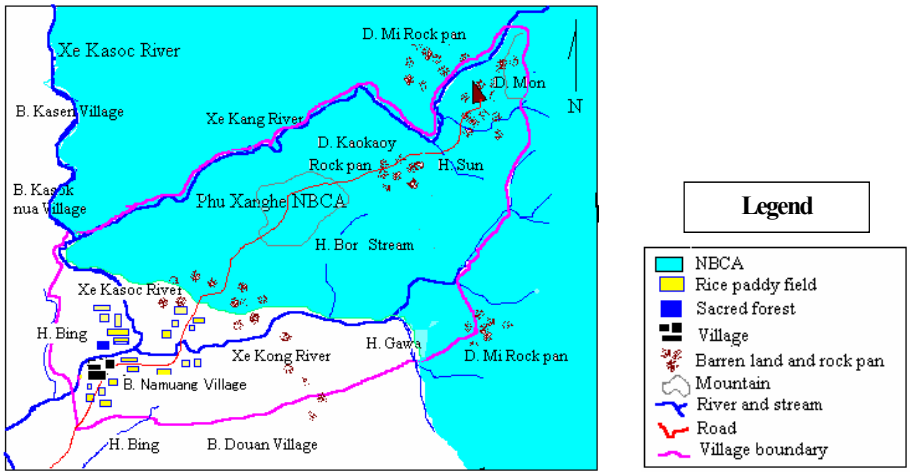

Figure 4. Map of Namuang Village.
(Prepared by T. Khotpathoum)

5.1.4 Infrastructure

Namuang is another village facing difficulties because of a lack of facilities and infrastructure. Even though it's the main focal site for rural development in the province (Kengchip-Nalay), the living conditions of the population are still difficult and mostly dependent on natural resources. Outside communication is difficult, because there is no telephone line or post office. Fuel material is oleoresin (resin of *Dipterocarpus alatus*) or petrol lamp (no electricity and gas), and water is gotten from wells, a spring, or the rivers.

5.1.5 Land forms

According to a topographical map and an actual survey, the area of this village is mountainous, consisting of forests and rock pan. The flat area, which is cultivated, is located along the Xe Kasok and Xe Kong Rivers. A description of the surrounding area is as follows:

- Phou Xang He NBCA and Dan Mi Rock Pan to the east
- Kasok Nua Village to the west
- Xe Kang River and Kasen Village and Phou Xang He NBCA to the north
- Douan Village to the south

The village's total area is 156.76 hectares and the land is classified as NBCA (SIDA 2000), protection forest, rehabilitation forest, production forest, cemetery area, sacred forest, and village reserve forest, but the exact sizes of these areas have not yet been measured because of a lack of staff and professionals.

5.2 Development project

The village of Namuang has not had the benefit of as many development projects as Nalay. In 1998, however, the United Nations Children's Fund (UNICEF) dug a well and installed a hand-powered water pump. In 1999, the agricultural and forestry extension district staff came with a support project from the government of Laos for raising poultry and upgrading agricultural production activities, but it was not successful because of problems with disease and a lack of interest on the part of farmers to cultivate rice in the dry season. In 2002, the health care district staff dug another well and installed another hand-powered water pump. This was included in a sanitation water project operated by the district health care section, as part of the provincial program's contribution for villages in remote and mountainous areas.

5.3 Livelihood systems

5.3.1 Income sources

The main economic activities of the people are rice paddy cultivation and raising livestock such as pigs and chickens, etc. They also go into the forest to collect NTFPs such as damar resin (*Dipterocarpus tuberculatus*) resin, rattan string, and oleoresin (resin of *Dipterocarpus alatus*), which are sold to dealers who periodically visit the village. Some villagers are hired for paddy field work or sawing wood by neighboring villagers.

5.3.2 Farming systems

Rice paddy and upland rice cultivation depend primarily on the cycles of nature, a tradition practiced for many generations. Rice paddy cultivation begins from the end of May, and harvesting occurs between October and December, depending on the type of rice seed planted. Most of the seed the farmers plant is obtained locally; improved varieties are not used much. Upland cultivation, or swidden agriculture, begins by slashing in February to March, burning from March to May, site preparation and planting in June, and harvesting from October to November. Besides planting rice for their staple food, people cultivate secondary crops such as maize, cucumber, chili, and tubers.

The main activity of the villagers is rice cultivation, employing the same practices used by their ancestors over many generations in the same vegetable garden. Some families inherited land from their parents and ancestors, while some continue to open up new areas for cultivation. As with other traditions, they conduct a celebration ritual before production season, known as "*Phi-ta-hek"* (the spirits of paddy fields). Selecting the day of celebration is decided by the head of the family. When cultivating their vegetable gardens, the villagers must inform the spirits (that they believe live there) of their actions. Before slashing and burning, or cultivating the rice paddies, they must conduct a secret ceremony, offering food and drink such as a chicken and local wine. From June to December, the forest is off-limits, and no one is allowed in to cut wood for building materials.

5.4 Village organizations

In the village's general organizational structure, the head of the village (*naiban)* makes and carries out decisions after consultation with the senior union section (*neohoom*) and the assistance of two deputies, as shown

in Figure 5.

The village head is elected by the villagers and then approved by the district government. Then the village head and senior persons select the two deputies and organization committee members, and they also assign the head of each unit. There is no time limit on how long they can hold office; it depends on the respect they get from the rest of the villagers.

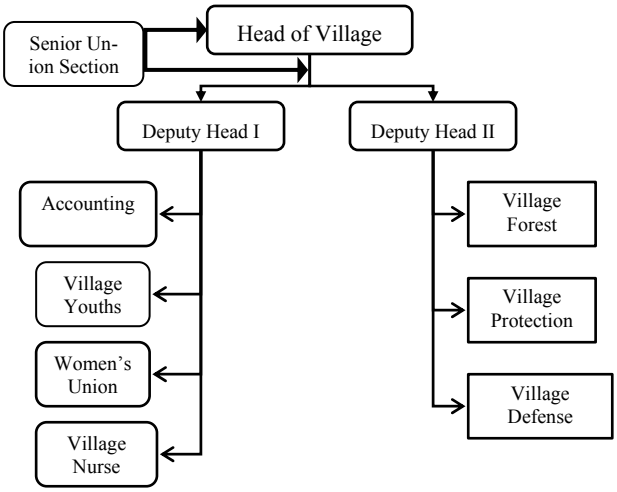

Figure 5. Organizational structure of Namuang Village.

5.5 Forest use

Namuang lies within the research area of Phalanxai District, which includes the area of the Phou Xang He NBCA. It is located in a remote area, which makes access difficult and hinders activities such as selling, buying, and exchanging goods. The villagers depend on nature for their livelihood; essential materials such as wood for house construction and fuel are all derived from the forest. The areas they cultivate are in and around the forest, and its impact on their lives cannot be underestimated.

5.6 Protected area activities

Since 1998, protected area management activities at Namuang Village have been conducted by DAFO. The budget for managing the protected area was appropriated by DAFO from the LSFP. Protected area activities could only be started after the LSFP provided financial support, the same as with Nalay Village, indicating that one of the main obstacles to conducting protected area activities is a lack of adequate funding. An indication of this is that it wasn't until five years after the establishment of the NBCA that the local people of Namuang Village actually were made aware of it.

Unfortunately, a signboard displaying the land-use map was not set up in the village. The traditional village boundary between Nalay and the neighboring villages was already fixed in the flat area, but not all of the local people were aware of the upper boundary of the Phou Xang He Mountains area. Only the village leaders and members of the village's elder group could say where the boundary is located. There are two reasons for this lack of awareness: (1) demarcation of the boundary between villages was only shown on a map with verbal explanation; and (2) the local people think that knowing the boundary is not necessary because they don't depend on forest products in the upper reaches very much.

5.7 Land and forest allocation program (LFA)

The LFA program in Namuang was carried out by DAFO from 5 to 20 April 2000, and was linked to the activities of the LSFP. Although the program in the village of Nalay had financial support from the LSFP and the participation of foreign experts, the program in Namuang Village was funded solely by the LSFP. The intention was that the experience and lessons learned in the LFA activities in Namuang Village would be diffused by DAFO staff to other villages selected by the LSFP.

Although it took around two weeks to implement the LFA program in Namuang, the local people were not allocated agricultural land in the process. In consideration of the case study in Nalay Village, this amount of time could have been enough to allocate land to the local people. The process of allocating land to the local people might be skipped in Namuang altogether, but there is still a constant lack of rice in the village, and allocating land could alleviate this. The cause of the delay can be traced back to DAFO's lack of manpower, finances, and capacity building abilities.

According to the map of the NBCA, we know that part of the rice paddy field was located inside the NBCA. During the LFA process, DAFO's field staff re-delineated the border so this area was located beside the NBCA, a move that could be appraised as protecting the rights of local people to agricultural land. This alteration of the NBCA boundary indicates the flexibility of field-level policy application.

5.8 Changes in livelihood: the influences of the NBCA and the LFA program

After the LFA process, the local people reduced the size of land area used for swidden agriculture, but they could not procure any replacement land for agriculture; subsequently, they sought out alternative land or, if necessary, converted existing swidden areas into rice paddy fields.

The DAFO considers the agricultural land near the NBCA as being located outside its boundaries. Therefore, the local people haven't faced serious impacts to their agricultural land use, and they aren't regulated in their use of NTFPs or subject to any other specific constraints.

The local people did not use the land-use map produced by the LFA process, and therefore, most of them, even their key leaders, do not adequately understand the categories of land use and their regulation as set up during the LFA program. In reality, the local people still

abide by the rules of their traditional land use practices and rituals.

As far as reflecting the new forest policy in the village, it has had little impact on land use, except for reducing the practice and area of swidden agriculture.

6. Kengyao Village

6.1 General description

6.1.1 Demography

The villagers of Kengyao (*Ban Kengyao*) also belong to the *Bru*, or *Mang Kong,* minority of the *Lao Theung* ethnic group. There are 270 inhabitants in 49 families living in the village. They use traditional medicines from the wild, and they believe in the supernatural, as do the villagers in Nalay and Namuang. Generally, their education level is low; none of them completes secondary school. The majority of children attend school only until grade 3 (the top grade available in the village school) and then abandon their studies to help their parents with family work.

6.1.2 Village history

Kengyao Village has long history. It got its name after a change in government in 1975, and was originally derived from Thamkhuane Village, estimated to be more than 200 years old (according to the old villagers). At first, the village was situated three kilometers to the northwest of the present location, and then Houay Don Village was established seven kilometers to the east. Facing problems and difficult living conditions, the villagers moved again in 1933, along with the *Phu Tai* ethnic group, to Song Hong Village in Atsaphone District, about 18 kilometers away. Ten years later, they returned to their old village because of conflicts between the two ethnic groups over paying taxes (this was during the French-controlled era) and differing traditional beliefs, as well as being homesick for their original home. Seven families moved during the first migration, and five families moved during the second—each to an opposite site of the stream. Two years later (1944), they moved to the present location and named it Kengyao Village, after the name of the waterfall along the Houay Don Stream.

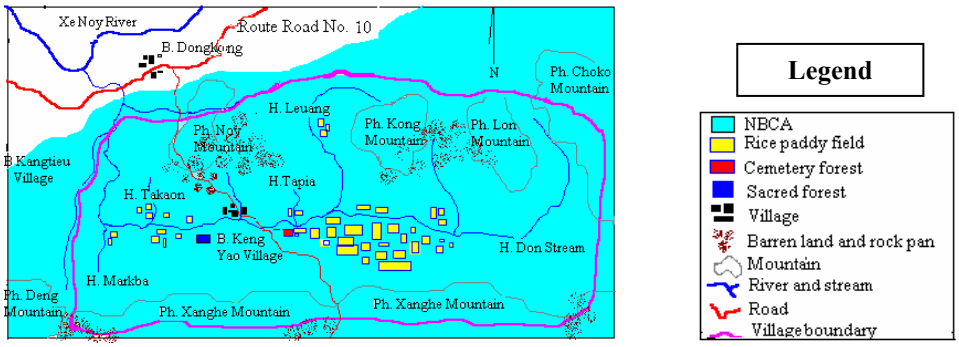

Figure 6. Map of Kengyao Village.
(Prepared by T. Khotpathoum)

6.1.3 Access

Kengyao is in a very remote area, and is the only village in Atsaphone District to be situated inside the Phou Xang He NBCA (Figure 1). Communication with the outside world is most difficult, especially to the district. There are two roads out of the village. The first goes north for five kilometers and then along provincial Route No.10 about 75 kilometers to Savannakhet. The second road is south of the village to Atsaphone District about 20 kilometers away. Both roads are unpaved and only accessible by car and truck during the dry season; otherwise, the only access is by bicycle.

6.1.4 Infrastructure

Kengyao is similar to the other remote villages in the country in its almost total dependence on nature, difficult living conditions, and lack of communication facilities, information, and newspapers, except for entertainment from radios owned by some families. Wood is used for fuel and *Dipterocarpus* resin is used for light, and although some families use petrol lamps, electricity and gas are not yet used.

6.1.5 Land forms

Official demarcation of the village boundary has not yet been completed; the villagers still follow the traditional boundary. The LFA program has not been conducted in this village yet, but its territory is supposed to be included in the conservation program activities of the Phou Xang He NBCA. According to maps and an actual survey, the area is mostly mountainous—for the most part it is surrounded by bare land and rock—with Phou Choko Mountain to the east, Phou Xang He Mountain to the south, Kangtieu Village and Phou Deng Mountain to the west, and Phounoy Mountain to the north. The only flat area available for rice paddy cultivation is along the

Houay Don stream and its tributaries, such as Houay Leung and Houay Thamkhuane.

6.2 Development projects

There have been no significant development activities in this village, except for UNICEF's Clean Water Access Project, which drilled a well and installed a hand-powered pump in 1998—but the pump doesn't work anymore. Staff from another UNICEF project came to support the villager's livestock by supplying cattle feed in a kind of revolving fund for those who lacked funding up front.

6.3 Livelihood systems

6.3.1 Income sources

The majority of family incomes come from rice paddy cultivation, while a smaller amount comes from raising livestock such as pigs and chickens. Villagers generate extra income from selling or exchanging NTFPs and fish for rice with neighboring villages.

6.3.2 Farming systems

The farming system employed by the villagers generally depends on nature, a practice passed on from their ancestors. People in Kengyao mainly practice traditional rice paddy and swidden agriculture, with rights to cultivated areas having been transferred and shared by their children and grandchildren. According to their belief in supernatural spirits, they must conduct a family ritual before starting the production season to inform the spirits of their intentions and pray for their protection from wild animals that might harm the crops and for a good harvest.

Rice cultivation begins by the end of May, and harvesting occurs from October to November, depending on the growing time of the type of rice used, which is mostly of a local variety. According to the availability of water, faster-growing rice is planted in the higher areas and slower-growing rice in the lower areas. Villagers also grow cassava, maize, cucumber, chili, etc. Normally, slash cultivation begins from February to March, and burning occurs from March to April. Preparation and planting is done in May, and harvesting is done from October to the beginning of November. In reality, it depends on the type of rice such as faster-growing rice or slower-growing rice.

6.4 Village organizations

The head of the village (*naiban)* directs the general affairs of the village, with consultation of the senior union section and the assistance of the two deputies. The head and the deputies are elected by the villagers and then are approved of by the district government. Senior union leaders (*neohoom*) are selected according to their age, experience, their circumstances, and the respect given them by their own villagers.

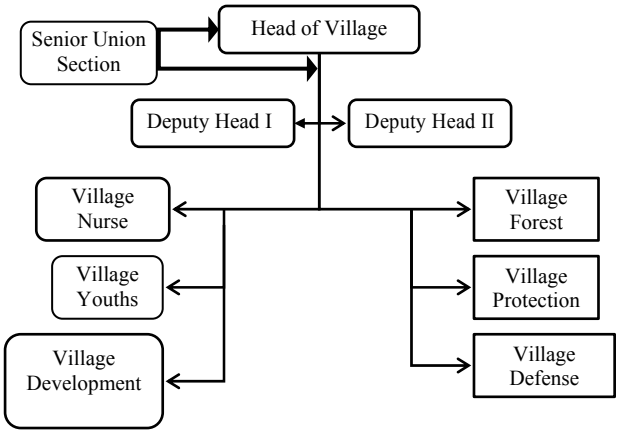

Figure 7. Organizational structure of Kengyao Village.

The village's organizational structure (Figure 7) has been formed under the direction and according to the policy of the provincial government. The duties and functions of these committees are to advise and follow direction from the district. Committee members are assigned by the head, the deputies, and the villagers. Generally, the duration of their assignments is not limited and depends on their effectiveness.

6.5 Forest resources utilization

In Kengyao it is difficult to communicate with the outside world, and the livelihoods of the villagers are largely dependent on nature. Forest resources provide them with materials for their daily needs, such as vegetables, NTFPs, *Dipterocarpus* resin, fuel wood, and house construction materials.

Photo3: Torch made by resin of Nyaang tree *(Dipterocarpus alatus)* at Kengyao Village. November 2002
(Photo: K. Hyakumura)

6.6 Protected area activities

In 1998, DAFO launched its protected area activities in earnest in the area that includes Kengyao Village. The initial budget for protected area management was

allocated by the LSFP to each DAFO, who then put their staff in charge of protected area activities. In other words, the local people became aware of their village's links to the NBCA in 1998 only once DAFO staff conducted awareness-raising activities, which included advertising the NBCA activities in the village, the extension activities carried out by the forestry volunteer, and installing a signboard in the village to display a map and information on the NBCA.

According to the Ministry of Agriculture and Forest's Decree No. 524, the activities listed on the board[10] are strictly prohibited in the NBCA's core zone, but they are permitted in the buffer zone. DAFO staff tolerates local people conducting agricultural activities, including rice paddy cultivation and other crops, while the collection of NTFPs is not at all prohibited because the village's territory is regarded by DAFO as being inside the NBCA's buffer zone.[11]

6.7 Land and forest allocation program (LFA)

The territorial boundaries and classification of land categories in Kengyao Village have not yet been clarified, because the land and allocation program has not been carried out here.[12] But the boundary with the neighboring villages to the north and west is already fixed through traditional use and agreement.

The recognition of local people's rights in Kengyao to use NTFPs depends on the type of forest product. Collecting NTFPs that are eaten on a daily basis, such as mushrooms and bamboo shoots, is permitted on the boundaries of the neighboring village, but collecting those which can be sold in the local market, such as Nyaang oil (resin of *Dipterocarpus alatus*), Keesy (resin of *Dipterocarpus tuberculatus*), and *Mak Neng* (cardamom) is not allowed. In terms of recognizing land-use rights, any agricultural land (i.e., paddy field, swidden field) on the other side of the boundary of the neighboring village cannot be used. These traditional regulations are followed by the villagers of both Kengyao and the other village.

According to the government of Savannakhet Province, the territory of Kengyao Village is located totally within the NBCA.[13] There are only eight villages in the Phou Xang He NBCA, and only one in Atsaphone District. As for DAFO, it is still determining how to deal with the management of the land and forest of Kengyao Village within the NBCA.

6.8 Changes in livelihood influenced by protected area policy

Now the villagers are aware of the NBCA, and the entire territory of Kengyao Village is considered to be located within the NBCA; but, in reality, DAFO allows the local people to use the agricultural land there for their livelihood, and most of the resources management system does not impose any restrictions on the local people.

The main change that occurred is the end of logging by timber companies since 1998. Since then, none of the big trees, such as *Dipterocarpus sp*. have been cut down. Therefore, any villager who has a big tree in their paddy field or swidden field has not cut any down—even though doing so would generate a high income.

7. Steps toward participatory forest management

7.1 Discussion

In the domain of protected area management policy, the LFA program holds great significance. It is very highly evaluated as a participatory forest management system for use in Southeast Asian countries (Inoue 2000), so it would be expected that implementation takes local people into consideration.

Unfortunately, there are insufficient budget resources available for implementing the LFA program. An example of the effect of this lack of funds is that, in every village affected, the local people should know about the establishment of the NBCA after five years of its establishment, but in some cases they didn't. Since the establishment of the NBCA, foreign organizations often provided the funds for implementation, and DAFO was able to assign staff to manage it. Subsequently, local people in each village were made aware of the existence of the NBCA by DAFO staff. Again, the greatest problem to overcome is that the government organizations in the field have not been able to get enough funding to implement the necessary programs.

Another obstacle to overcome in terms of budget is funding the follow-up activities after the LFA process has been completed. Presently, DAFO has little funding available for these ongoing activities, and therefore staff have little opportunity to conduct regular follow-up activities, and can only visit the village when they happen to have another obligation there. It is a real disap-

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[10] In the village land, the board of NBCA and its regulation was placed by the DAFO. According to that, it mentioned as follows;
- Tree cutting is prohibited.
- Swidden agriculture and burning is prohibited.
- To keep occupied land and paddy field is prohibited.
- To collect Non Timber Forest Products is prohibited.
- To hunting is prohibited.

[11] According to MAF Decree No. 524, villages established before the creation of the NBCA are allowed to conduct agricultural activities in the area.

[12] Forested land in the village can be divided into the five natural categories by the local people, as described below:
- *Arui* - fallow land with small trees (tallest is around one to two meters)
- *Pa Ten Sao* - fallow land with tall trees (tallest is more than ten meters)
- *Turong* - rich forest with a few big trees (swidden agriculture has never occurred)
- *Turung* - rich forest with many big trees (swidden agriculture has never occurred)
- *Ghok* - savanna forest occupied by dry dipterocarp forest

In the religious category, local people have two types of forest:
- Pinkamui - grave forest
- Gian - spiritual forest

(Source: Interviews with local people in Kengyao Village)

[13] The territory of the western part of Kengyao Village is the proposed extension land of the NBCA. The government of Savannakhet Province regards this area as the real NBCA.

pointment that these activities could not be accomplished right away, because local people's awareness of the NBCA was still high immediately after the LFA program. Particularly in the NBCA, where the use rights of forest and forest products have been changed under the LFA program, follow-up is very important.

In the NBCA, it was necessary to consider both biodiversity conservation and the forest use practices of the local village people in the area where the rights of traditional forest use overlapped with the NBCA. In the LFA program, we can see the beneficial effects of support from foreign donors. For example, the draft plan made by the LSFP, created by experts after conducting a survey in the village, used a top-down process. Then the plan was discussed directly with the local people during a workshop, using the professional-guided participatory approach, and the plan to implement the program was finalized with respect for traditional land uses (Hyakumura 2001).

On the other hand, this approach requires considerable data to be gathered from the villages in advance, so that it takes much more time and expense than the normal program. Therefore, increased budget allocation and capacity building within DAFO and their staff should be considered. It is very difficult for the district to implement this program with insufficient funding and staff development; it might be necessary to revise it to make implementation easier to accomplish, with a less expensive system and simpler survey method. Creating a manual and providing training for local authority staff would be indispensable measures to build capacity.

7.2 Conclusion

Upon the establishment of NBCA and implementation of the LFA, the new regulations and restrictions have had an impact on the livelihoods of the local people. As a result of the policy implementation, there were three achievements, as follows: (1) At first, the introduction of the policy triggered a greater consciousness of land use among the local people. Then, the villages were able to determine the boundaries between villages after discussions among local people. (2) Local people now know that there are some restrictions on forest use in the NBCA. Then, further instruction and education on the policy helped spread awareness of the NBCA's existence to more local people. Now, most people in the three target villages know of the existence of the NBCA in their territory. (3) The most important change of significance for the government is the reduction in the area of land where swidden agriculture is practiced.

Regarding land and forest management, it appears that the LFA program in villages is still at the trial-and-error stage. If land and forest use by the local people continues to be conducted using their conventional methods, it is not considered that extreme forest deterioration will occur, since the present land and forest use practices that they employ includes significant elements of sustainable forest use.

On the other hand, the new land use practices employed by the local people after the policy implementation (e.g., opening up new land, instead of giving up the right of swidden agriculture land use) might be considered as sustainable use. There are enough flat lands to cultivate alternative agricultural crops in the target area close to the edge of the hillsides. The pressure on land in Laos is still not overly high because of low population density. In the south of Laos, where forest management is in good condition, there is still much flat land available compared with the north.

As a result of the above research and discussion, it appears that land and forest management at the local level can still be conducted by the local people themselves. When the enforcement of forest policy is provided enough implementation power, including funding, the government can improve forest management in Laos with the cooperation of local people.

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Towards Participatory Forest Management in Laos
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Participatory Forest Management: a Research Study in Savannakhet Province, Laos

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Abstract: In accordance with the vision set out by Agenda 21 at the 1992 United Nations Earth Summit, the government of the Lao People's Democratic Republic (Lao P.D.R.) has been pursuing plans and policies aimed at environmentally sound and sustainable socio-economic development in Laos. Strategically, while poverty alleviation is its highest priority, for the foreseeable future at least, development will continue to be driven by natural resource use. It is therefore of the utmost importance that this is done sustainably and equitably, in order to satisfy the government's dual aims of improving citizens' livelihoods while maintaining ecological integrity. The economy is still largely dependent on just a few industries, relying heavily on the country's natural resource base, with agriculture and forestry accounting for 52.1 percent of gross domestic product (GDP) in the late 1990s. Mainstays of the national economy continue to be crop production, livestock, fisheries, forestry, and hydroelectricity. The basic focus of this study is to examine the government's policies in terms of forest management and conservation as well as poverty alleviation. There are five elements of this process which must be considered: (1) reforming the structure of the Provincial Agriculture and Forestry Office (PAFO) and the Provincial Forestry Office (PFO) based on decentralization, (2) rural development projects, (3) land and forest allocation program, (4) national biodiversity conservation areas, and (5) the stabilization of shifting cultivation practices. Data were collected for this study from PAFO reports as well as from its staff that have worked closely in the target fields. Based on the data collected, key points of the research study describe in detail some of the concerns about the current status of natural resource conservation and management and the problems to be solved. Finally, the paper outlines what could be an appropriate process of forest management and conservation, based on the participation of local people in Savannakhet Province.

Key Words: Structural organization of PAFO and PFO in Savannakhet Province, Rural development project, Land and forest allocation program, National biodiversity conservation areas, Stabilization of shifting cultivation practices.

1. General description of agriculture and forests in Savannakhet Province

Savannakhet is a province in Laos, located in the southern part of the country and lying between 16° to 17° north latitude and 105° to 106° east longitude. Its total area is 21,774 square kilometers, and in 2000 it had an estimated population of 757,950, with an average population density of 35 persons per square kilometer (Department of Planning 2000). Approximately 75 percent of the total population belongs to the *Lao Loum* ethnic group, with most of the remainder belonging to the *Lao Theung*. The topography varies from the low-lying floodplains of the Mekong River to the foothills and mountains of the Annamite chain. Annual rainfall averages approximately 1,440 millimeters per year, with rainfall in the eastern uplands substantially higher than in the lowlands, but periodic droughts and flooding are common.

Agricultural production is the primary activity in the province, and rice is the most important crop. According to the government's policy, the agriculture and forestry sectors are the most important to national economic development because they are responsible for carrying out five government aims, as follows (PAFO 2002):

1. Economic reform towards a market-oriented economy
2. Water resources maintenance
3. Research activities
4. Shifting cultivation stabilization
5. Human resources development

Currently, Savannakhet Province has an estimated 116,809 hectares of rain-fed rice fields and 19,801 hectares of irrigated rice fields, which produce enough rice for both domestic consumption and for sale on the market. The situation is similar with other agricultural activities. For example, the number of domestic livestock being raised is increasing steadily, and presently there are seven buffalo and cattle farms, 79 pig farms, 19 poultry farms, 15,924 man-made fish ponds, and 259 natural fish ponds (PAFO 2002).

Savannakhet is also a province rich in forest resources; in 2000 it still had approximately 70 percent forest cover and included three national biodiversity conservation areas (NBCA): Phou Xang He (109,900 hectares), Dong Phou Vieng (197,000 hectares), and Xe Bang Noun (150,000 hectares). In terms of the economic aspect, there are two state production forests in the province: Dong Ka Pho (9,600 hectares) and Dong Si Thounh (212,000 hectares) (MAF 2001).

In Savannakhet, there has been a loss of "richer" forest

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types and overall forest area and a consequential gain of poorly stocked areas in terms of quality and quantity of tree and bamboo species. The following changes in land use and vegetation type were observed between 1982 and 2000 (see Table 1 below).

1. High-quality forests declined by 11 percent, from 1.214 to 1.075 million hectares.
2. Poorly stocked forests increased by 3 percent, from 0.696 to 0.716 million hectares.
3. Overall increase in forest area of 6 percent, or 119,000 hectares.
4. Agricultural areas increased by 59 percent, or 113,000 hectares.
5. Urban areas increased by 29 percent, or 4,000 hectares.

Table 1. Area distribution in Savannakhet Province by land use and vegetation type, 1982, 1990, and 2000 (in thousands of hectares).

Land use / vegetation	1982	1990	2000
Dry dipterocarp	591	631	641
Lower dry evergreen	13	4	3
Lower mixed deciduous	168	134	66
Upper dry evergreen	20	36	28
Upper mixed deciduous	409	388	330
Gallery forest*	13	10	4
Mixed coniferous/broadleaves	0	0	0
Coniferous	0	0	0
Plantations	0	0	3
Total high forest**	**1,214**	**1,203**	**1,075**
Bamboo	82	57	9
Unstocked/poorly stocked	375	535	598
Shifting cultivation	31	33	58
Total potential forest	**488**	**625**	**665**
Savannah/open woodland	189	19	38
Heath and scrub forest	19	13	13
Total other wooded areas	**208**	**32**	**51**
Sub-total all forest areas	**1,910**	**1,860**	**1,791**
Rice paddy	170	225	285
Agricultural plantation	1	0	0
Other agricultural land	1	0	2
Grassland	15	18	20
Agricultural land	187	243	307
Urban and infrastructure	14	16	18
Barren land/rock	4	3	3
Swamp	3	3	3
Water	22	15	18
Total other land	43	37	42
Total all land	**2,140**	**2,140**	**2,140**

Source: JICA/SIDA and NAFRI (2000).
*Note: * Gallery forest is forest located above/around a river.*
*** High forest is high-density forest.*

2. Reforming the structure of the Provincial Agriculture and Forestry Office (PAFO) and the Provincial Forestry Office (PFO) based on decentralization

2.1 Structure of the PAFO

In terms of organizational structure, PAFO is responsible to the provincial governor horizontally, and vertically to the ministry of agriculture and forestry, and there are six provincial assistance offices under it: the executive office, livestock office, irrigation office, cultivation and extension office, meteorology office, and the forestry office. In order to carry out agricultural and forestry production, PAFO also has local offices in each district called the District Agriculture and Forestry Office (DAFO).

Generally, PAFO is a strategy unit for agricultural and forestry production, and its role is to seek out possibilities to decentralize planning and budgeting to DAFO. Nowadays, each DAFO is responsible for implementing agriculture and forestry practices in villages in its district.

As the structure of PAFO and DAFO is the same, the differences between them depend on their actions as well as responsibilities.

2.2 Structure of the PFO

Horizontally, the PFO is responsible to PAFO, and vertically, it is under the Department of Forestry (DoF). The PFO has its own technical assistance units, one each for plantation, protection and conservation, inventory, executive functions, international check-posts, land-use planning and shifting cultivation stabilization, and forestry management. The PFO also has district forestry units (DFUs); in Savannakhet Province there are 15.

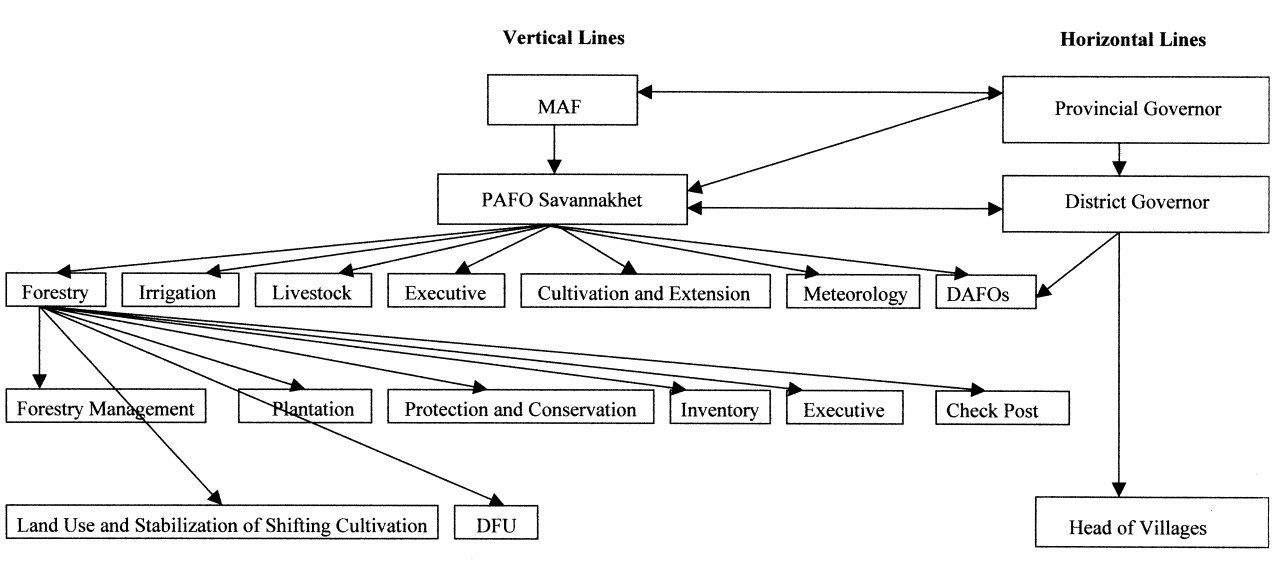

Figure 1. The structure of the Provincial Agriculture and Forestry Office and Provincial Forestry Office based on decentralization.
(Prepared by author)

3. Ongoing forest-related projects and activities in Savannakhet Province

3.1 Rural development project

The government of Laos has a history of emphasizing action for increasing the well-being of the country's rural people, and it established special zones for this purpose in 1995. In the province of Savannakhet there are four provincial special zones and six district special zones. These were created to increase the well-being of rural people, reduce the gap in poverty between the district and more remote areas, distribute information and useful materials to rural people as well as those living in districts or towns, and to build rural infrastructure such as schools, hospitals, roads, offices, etc.

Currently, PAFO is responsible for rural development projects, in cooperation with other government agencies (public health, education, industry and handicrafts, road construction, etc.) as well as external supporting organizations (CIDSE, OXFAM, Action North Sud, etc.).[1]

Annually, PAFO proposes plans and budget estimates to the provincial governors and external supporting organizations in order to undertake agriculture and forestry activities in the special zones. Some agricultural and forestry activities, such as land and forest allocation and stabilizing shifting cultivation practices, are implemented in the rural development projects, particularly in the special zones. This means that land and forest allocation as well as stabilizing shifting cultivation practices are two of PAFO's activities that must be conducted both inside and outside of the special zones.

Basically, the provincial and district special zones share the same rural development concept. Provincial special zones are established as the first part of the rural development program, where provincial and district staff from related government agencies conduct activities directly with village organizations and rural people. Then the activities in the district special zones are followed-up on by district government staff after learning from the lessons and experiences in the provincial special zones.

3.1.1 Provincial special zones

- **Atsaphone District:** Phonh Am provincial special zone
  Located in the northern part of the district, and consisting of 13 villages with a population of 6,622 people.
- **Xepon District:** Lago provincial special zone
  Located in the eastern part of the district, and consisting of 14 villages with a population of 6,611 people.
- **Vilabouly District:** Angkam-Namchalo provincial special zone
  Located in the northern part of the district, and consisting of 16 villages with a population of 3,287 people.

[1] CIDSE (Cooperation International pour le Developpement et la Solidarite).

- **Thapangthong District:** Xeku-Phoumaly provincial special zone
  Located in the northern part of the district, and consisting of 18 villages with a population of 4,851 people.

3.1.2 District special zones

- **Xepon District:** Ladho district special zone
  Located in the eastern part of the district, and comprised of 23 villages with a population of 3,939 people.
- **Xonbouly District:** Tanvay-Lamthouay district special zone
  Located in the eastern part of the district, and comprised of 32 villages with a population of 13,208 people.
- **Nong District:** Paloa-Asing district special zone
  Located in the eastern part of the district, and comprised of 15 villages with a population of 3,264 people.
- **Phin District:** Hoay hoy-Thoun kham district special zone
  Located in the southern part of the district, and comprised of 31 villages with a population of 8,518 people.
- **Phalanxay District:** Keng Cheep-Nalay district special zone
  Located in the western part of the district, and comprised of 15 villages with a population of 4,080 people.
- **Saybouly District:** Xieng Kai district special zone
  Located in the northern part of the district, and comprised of nine villages with population of 3,049 people.

3.1.3 Project implementation in the special zones

Similarly, both provincial and district special zones have undertaken socio-economic development activities in order to increase the well-being of rural people, including

1. enlarging rice paddy fields to replace shifting cultivation practices,
2. encouraging rural people to plant trees for wood production and fruit, and
3. programs to encourage rural people to raise poultry, cows, pigs, and buffaloes for domestic consumption and for sale to the market.

One of the results of these programs is that public health as well as children's education in rural areas have improved since the special zones were established.

3.1.4 Problems to be solved

Although the government agencies as well as related supporting organization have tried to solve problems in the rural areas, especially poverty alleviation, some cannot be solved immediately, such as the following:

- Some of the annual plans for agricultural activities, such as expansion of rice paddy fields, small-scale irrigation systems, and tools for agricultural production, have not been fully carried out yet due to insufficient budget resources—a problem in both provincial and district special zones.
- Cooperation between provincial and district agencies and related supporting organizations is sometimes not well coordinated in both provincial and district special zones; for example, the success of an annual plan for rural development activities depends on which donor supports them.
- The availability of official staff to conduct activities in special zones is limited, particularly in the district special zones.
- People living in the special zones are often at a disadvantage because of language problems and low education levels, making it difficult for official staff to explain the concepts of rural development activities and convince them to participate. The task of government agencies working on rural development in the special zones is to modify the concept of rural development, depending on different natural conditions as well as differing ethnic groups. This means that rural development programs in the special zones may take a long time to be realized.

3.2 Land and forest allocation program

The land and forest allocation program was started in the province of Savannakhet in 1996 in order to conserve forestry resources and use them sustainably, allocate land to the landless poor people for agricultural production, and increase the well-being of rural people through appropriate extension activities (paddy rice fields, livestock bank, fruit and industrial trees plantation, revolving fund, etc.).

Basically, there are ten steps in the land and forest allocation process in a village, as follows:

1. Preparation and planning for land and forest allocation activities
2. Define the limits of the village's boundaries
3. Data collection and analysis
4. Land and forest planning
5. Decision-making on land and forest allocation by the villagers
6. Field measurement of lands and forests
7. Institution of the village's regulations on land and forest resources management and conservation
8. Conduct extension activities according to people's basic needs
9. Create a memorandum on the land and forest allocations
10. Evaluation

3.2.1 Background of the land and forest allocation process in Savannakhet Province

The land and forest allocation program in the province of Savannakhet was started in 1996 in cooperation with external supporting organizations such as SIDA and FOMACOP.[2] Basically, with their support, the ten steps

[2] SIDA (Swedish International Development Agency), FOMACOP (Forest Management and Conservation Program).

of land and forest allocation, outlined above, are conducted by district forestry staff that have gone through a training course by the DoF and PAFO.

➢ **Land and forest allocation supported by SIDA**

From 1996 to 2000 SIDA contributed to fund the land and forest allocation program, which was conducted in six districts (Atsaphone, Phalanxay, Phin, Xonbouly, Vilabouly, and Xephon) with a total of 36 villages. Currently, the program is being operated by the district forestry unit (DFU) with funding administered by PAFO, but, unfortunately, extension activities have not been implemented because of insufficient budgets compared to when SIDA was providing financial support. Some programs, however, are still in place in the villages where SIDA had supported land and forest allocation activities, including the rice bank, livestock bank, women's weaving association, the revolving fund, etc. The regulation of each of these activities is different, depending on the villagers' agreement (FMPU 1993).

➢ **Land and forest allocation supported by FOMACOP**

FOMACOP also supported a fund for land and forest allocation from 1996 to 2000, which was conducted in two districts (Songkhone and Thapangthong) with a total of 39 villages. Although FOMACOP ended its support, activities are still operating in the target villages similar to those in the SIDA-funded villages.

In accordance with the government's forestry policy, the management of state production forests must be modified in order to become sustainable, and to assist with this goal, FOMACOP will start up again at the end of 2003. It is now in the process of preparing, discussing, planning, and training staff.

Table 2. Land use and land allocation from 1996 to 2002.

District	Total villages	Total households	1996–2001		2001–2002		1996–2002	
			Villages	Area allocated (hectares)	Villages	Area allocated (hectares)	Villages	Area allocated (hectares)
Khanthabouly	94	16,689	32	14,992.45	16	28,172.00	48	43,164.45
Champhone	170	16,375	15	2,635.04	4	2,862.55	19	5,497.59
Songkhone	142	16,005	31	23,426.23	2	2,768.60	33	26,194.83
Xonbouly	107	8,134	10	11,856.07	5	4,679.00	15	16,544.07
Thapangthong	77	5,281	27	57,991.86	5	17,320.20	32	75,312.06
Outhumphone	106	12,497	12	2,680.49	7	113.19	19	2,793.68
Atsaphangthong	61	8,448	8	6,786.85	2	456.72	10	7,243.57
Atsaphone	97	6,412	13	6,709.74	5	5,441.99	18	12,151.73
Phalanxay	78	4,892	18	33,761.77	6	8,858.64	24	42,620.41
Xayphouthong	63	7,781	17	5,607.15	2	1,573.83	19	7,180.98
Xaybouly	89	10,234	12	13,109.93	10	12,395.10	22	25,505.03
Phin	116	8,279	36	59,456.50	16	42,037.55	52	101,494.05
Xepon	160	7,640	20	35,127.80	12	19,434.85	32	54,562.65
Nong	78	3,045	24	20,781.24	13	6,589.00	37	27,370.24
Vilabouly	103	4,778	25	24,045.86	10	6,915.79	35	30,961.65
Total	1,541	136,490	300	319,268.88	115	159,628.73	415	478,596.99

Source: Land Allocation and Stabilization of Shifting Cultivation Unit, PFO (2002b).

3.2.2 Land and forest allocation from 1996 to 2002

Land and forest allocation is the most important issue in terms of forest management and conservation in the Savannakhet Province. Generally, the PFO has cooperated with the provincial land and forest allocation committee as well as external supporting organizations in setting up an annual plan to undertake the land and forest allocation program. To date, it has been completed in 415 villages, or 26.9 percent of all the villages in the province (Table 2).

3.2.3 Problems to be solved

The main problems facing the land and forest allocation program include the following:

- Incomplete projects – The land and forest allocation program was still continued in the target villages even after SIDA and FOMACOP participation ended, but could not move onto the extension step because of an insufficient budget.
- Outside encroachers – Although the land and forest allocation program has already been conducted in some villages, outsiders (from other village) still encroach on their land and forestry resources.
- Incomplete implementation – Due to an insufficient budget to undertake the program in all the villages in the province, it was carried out first in the mountainous districts as the top priority rather than in the lowland districts.

3.3 National Biodiversity Conservation Areas (NBCAs)

There are three national biodiversity conservation areas (NBCAs) in Savannakhet Province: the Phou Xang He NBCA (109,900 hectares), Dong Phou Vieng NBCA (197,000 hectares), and the Xe Bang Nounh NBCA (150,000 hectares) (PFO 2002a).

3.3.1 Phou Xang He NBCA

This protected area was established in 1993, and it includes parts of five districts: Atsaphone, 30 percent; Phalanxay, 22 percent; Phin, 10 percent; Xepon, 4 percent; and Vilabouly, 34 percent. There are 117 villages located inside the NBCA and ten villages outside. The main forest types are upper-elevation dry evergreen forest, 41 percent; dry dipterocarp forest, 7 percent; upper-elevation mixed deciduous forest, 44 percent; agricultural areas, 6 percent; and other land and forest types, 2 percent. The Phou Xang He NBCA is rich in habitat and wildlife, including mammals, birds, reptiles, amphibians, and fish. There are two ethnic groups of Lao people living in the NBCA, the *Lao Theung* and the *Lao Lum*, who conduct rain-fed rice field production, livestock raising, fishing and hunting, and non-timber forest products collection.

SIDA provided funding for the Phou Xang He NBCA from 1990 to 2001 for surveying forest and wildlife resources, aerial photo-mapping, socio-economic data collection, setting up a revolving fund for villagers, running the land and forest allocation program, and training official staff and villagers in forest management, conservation, surveying, and conducting eco-tourism activities. Currently, the DAFOs are responsible for the protected area and are cooperating with external supporting organizations, including UXO and Action North Sud.[3] The UXO's mandate is to search for and destroy unexploded ordnance, left behind from the Indochina War, in the people's living areas as well as their agricultural production areas; whereas Action North Sud provides some extension activities to the villagers, including opening up rice paddy fields, providing health services, supplying tools for agricultural production, etc.

3.3.2 Dong Phou Vieng NBCA

This protected area, with an area of 53,000 hectares, was established in 1995, and then three years later it was enlarged to a total area of close to 144,000 hectares because of threats to habitat and wildlife species. The Dong Phou Vieng NBCA covers parts of three districts, Phin, Xepon, and Nong, and straddles the borders of Xepon District in the north, Tum Lan District, Salavanh Province in the south, Nong District in the east, and Phin District in the west. There are 57 villages located inside the protected area, which is rich in biodiversity resources including different forest types as well as wildlife species. The protected area includes five main rivers and their watersheds: Xe Bang Hieng, Xe Ta Noun, Xe La Nong, Xe Pon, and Xe Chon. Streams that flow from the protected area to surrounding lands are important as sources of water for this chronically dry region.

FOMACOP undertook action on forest management and conservation in the protected area from 1997 to 2000 with the following main activities: socio-economic data collection and analysis, surveying wildlife resources, conducting the land and forest allocation program, and training official staff and villagers in forest management and conservation. Currently, DAFO, and especially the PFO, are continuing with these activities, and the protected area has been further planned and surveyed for eco-tourism activities with the aim of increasing local people's abilities to generate income as well as to protect the environment.

3.3.3 Xe Bang NBCA

The protected area straddles the border between the Savannakhet and Salavan Provinces. It is 580 kilometers south of Vientiane and 20 kilometers northwest of Salavan Province. Two-thirds of the area lies below 500 meters in elevation. The natural vegetation is largely intact, and includes a mosaic of evergreen forests (covering approximately half the protected area) and deciduous forests; the 30,000 hectares of dry deciduous forests have been identified as an important representative site for the conservation of this forest type in Laos. At least 13 species of internationally threatened wildlife are present, including the Siamese crocodile, douc langur monkey, concolor gibbon, green peafowl, and several species of wildcat. The residents of the 65 villages located within three kilometers of the protected area's boundaries make extensive use of Xe Bang Nouan's forest resources for subsistence and, to a lesser extent, for sale to markets. Fish, wildlife, dipterocarp resins, and edible and medicinal plants are extensively collected (NRCU 1992). From 1993 to 2000, SIDA supported a fund for the Xe Bang Nouan NBCA management program, which included administration, community outreach, training, resource management and protection, and research and monitoring programs.

3.3.4 Problems to be solved

Although NBCAs have strongly been supported by government agencies as well as related supporting organizations (SIDA and FOMACOP), there are still problems to be solved, as follows:

- As there are many villages located both inside and outside the protected areas, training of village forestry volunteers on forest management and conservation is still limited. Even in the Dong Phou Vieng NBCA, where training was supported by FOMACOP, the number of forestry volunteers is still limited compared to their responsibilities, similar to the situations in the Phou Xang He and Xe Bang Nounh NBCA where training was supported by SIDA. On the other hand, the forestry

[3] UXO (international organization managing unexploded bombs), Action North Sud (international development organization).

volunteers already trained in forestry management and conservation are found to be bringing their experience to other villages.

- Socio-economic data collection in each NBCA is not sufficient enough for the purposes of effective forest management and conservation planning. In the Phou Xang He NBCA, district staff collected socio-economic data only where villages were accessible by road. The situation in the Dong Phou Vieng NBCA is much better, where data were collected from almost all the villages in the Phin, Xepon, and Nong Districts because FOMACOP had organized teams specifically for that purpose.
- Although each NBCA has regulations set up for land and forest management and conservation, some villagers violate these by encroaching on protected area land and forestry resources, burning grasses for their domestic animal feed, illegally logging trees, conducting shifting cultivation, etc. In the mountainous parts of the Dong Phou Vieng and Pho Xang He NBCA, rural people still practice shifting cultivation and burning grasses for animal feed. And in the Xe Bang Nounh NBCA, outsiders sometimes encroach on the forestry resources and burn grasses for animal feed.
- Unexploded bombs left over from the Indochina War still remain in the Dong Phou Vieng and Phou Xang He NBCA, preventing people from living there and opening areas for agricultural production. Nowadays, the UXO manages this activity.
- Currently, land and forest allocation is carried out in the Phou Xang He NBCA by district forestry staff from Xepon, Phin, Vilabouly, Phalansay and Atsaphone Districts, as in the Dong Phou Vieng and Xe Bang Nounh NBCA. Although land and forest allocation is implemented in each NBCA, the number of villages that have gone through the process is limited. In villages where land and forest allocation has not yet been implemented, there are many problems relating to village boundaries, land and forest use, land and forest planning, overuse of forest and biodiversity resources, forest fires, etc., especially in the mountainous parts of the Phou Xang He and Dong Phou Vieng NBCA.
- The living standards of villagers in the mountainous parts of the Phou Xang He and Dong Phou Vieng NBCA are low compared to villagers living in the lowland areas of the NBCA in terms of health security, education, and basic infrastructure (roads, schools, etc.). As well, in the mountainous parts of the NBCA, wild animals and disease continue to damage agricultural production.

3.4 Stabilization of shifting cultivation activities

Stabilizing shifting cultivation practices is one of the five main government strategies (mentioned at the beginning of this paper). Currently, shifting cultivation activities are still practiced by rural people, especially those living in the mountainous areas of the Phin, Xepon, Vilabouly, and Nong Districts, but the area of land devoted to shifting cultivation practice has been steadily dropping annually, going from 5,392 hectares in 1996 to approximately 2,499 hectares in 2001. There are two types of shifting cultivation being practiced in Savannakhet Province, as described below. Both types of shifting cultivation are still being practiced.

3.4.1 Type 1

In the first year, villagers clear land for rice cultivation mixed with other crops such as fruit trees, trees for industrial production (for wood and other commodities), sweet corn, water melon, beans, etc. In the second, third, and fourth years, they return to cultivate the rice as well as the other production crops until their fruit and industrial trees grow larger and block too much sun (too much shade is detrimental to cultivated rice), and finally, they move on to other places to cultivate.

3.4.2 Type 2

This type of shifting cultivation is very dangerous to both land and forest resources because of the practice of slash-and-burning. Due to the fact that villagers have little control over their rice cultivation because of invading grasses and low soil suitability, they must move location every year. In 2001 this type of shifting cultivation was found particularly in the four mountainous districts of Phin, Xepon, Vilabuly and Nong, while the area of land where it was practiced varied (34 hectares, 1,370 hectares, 715 hectares, and 400 hectares, respectively).

Activities following the stabilization of shifting cultivation are carried out by government agencies (PAFO and DAFO) together with external supporting organizations (SIDA, FOMACOP, CIDSE, OXFAM, and Action North Sud). They have been conducted with a focus on the basic needs of the rural people in order to substitute their shifting cultivation practices with other types of agricultural production, including coffee tree plantations, forest plantations (including both fruit and/or industrial trees), livestock raising, and permanent paddy rice fields.

Table 3. Shifting cultivation practices in four districts

District	Shifting cultivation practices			Cultivated areas (hectares) 1996–2002						
	Total number of villages	Number of villages employing shifting cultivation	House-holds	1996	1997	1998	1999	2000	2001	2002
Phin	116	39	30	192	150	668	38	34	34	0
Xepon	161	100	4,035	3,213	3,213	3,000	2,900	2,500	1,350	1,080
Vilabouly	102	40	877	558	500	300	452	901	715	450
Nong	78	52	1,526	1,279	1,126	1,200	780	1,450	400	270
	457	236	6,468	5,392	4,984	5,168	4,170	4,885	2,499	1,800

Source: Land Allocation and Shifting Cultivation Unit, Provincial Forestry Office (2002).

3.4.3 Problems to be solved

Shifting cultivation is the main occupation of the mountain people. Although the government (of Laos) has tried to replace this practice with other, more appropriate occupations to produce higher value products, some problems can't be solved immediately.

- Over the last ten years, the government has spent considerable amounts of money to substitute shifting cultivation practices, but this investment is still limited compared to people's actual needs.
- Some of the activities meant to help stabilize shifting cultivation have not yet been implemented, again, because of limited funds available, but the list of activities the government is pursuing includes opening paddy rice fields, agricultural and industrial crop production, traditional handicrafts (weaving, making fishnets, etc.), raising livestock (buffalo, cattle, and poultry), fish farms, etc. Currently, the government is trying to stimulate these activities for rural people not only in provincial and district special zones and NBCAs but also for all people living in mountainous districts where shifting cultivation is practiced.
- Unexploded ordnance left over from the Indochina War still remains where people are living and opening up agricultural areas, and it is still being found in some parts of the districts of Phalanxay, Atsaphone, Phin, Xepon, Vilabouly, and Nong. Although the UXO is managing this activity, the process is going slowly because it is very dangerous and the area affected is quite large.

4. Concrete local guidelines extracted from the field study

The government's policy on forest management and conservation stipulates that, basically, forestry resources must be used without any kind of depletion. A new concept being used to support this policy is to involve local people in the process of forestry management and conservation. This means that the process requires cooperation between both local people and related supporting organizations. In the case of this research study, good examples of changes to the forest management and conservation model based on the participation of local people implemented in Savannakhet Province can be found in (1) the rural development project, (2) the land and forest allocation program, (3) management of the national biodiversity conservation areas, and (4) stabilization of shifting cultivation activities. The proposed concrete local guidelines involve related stakeholders (local residents, government organizations, non-governmental organizations [NGOs], and related supporting organizations [RSOs]), which are divided into both internal and external stakeholders. The internal stakeholders include the village head, the village committee, and the villagers themselves, whereas the external stakeholders involve government agencies, NGOs, and other related supporting organizations (see Figure 2, below, for a description of the framework of participatory forest management).

The stages of implementing the proposed local guidelines are outlined as follows:

1. The first stage of the process is identification of the target area, taking into consideration the background of the community.
2. The second stage of the process is data collection, processing, and analysis, using appropriate technical tools for problem identification based on the rural development projects, land and forest allocation program, management of national biodiversity conservation areas, and stabilization of shifting cultivation.
3. The third stage is going back to discuss the research findings with villagers, and if the issues are agreed upon, then the process goes onto the next stage.
4. The fourth stage concerns planning for forest management and conservation as well as the village's own development programs. In this stage, however, the main points to be considered are already mentioned above in terms of problems to be solved on rural development projects, land and forest allocation, national biodiversity conservation areas,

and stabilization of shifting cultivation.

5. The fifth stage relates to submitting the proposed plan or local guidelines to the MAF, DoF, PAFO, and related supporting organization(s) for approval. If all agree on the issues, then the villagers will implement the plan.
6. The last stage is monitoring, feedback, management, modification, and meetings. This involves villager's comments and mechanisms for the greater part.

If the proposed local guidelines are followed step-by-step, it is likely that the ultimate goal of sustainable forest management and conservation, based on local people's participation, will be realized.

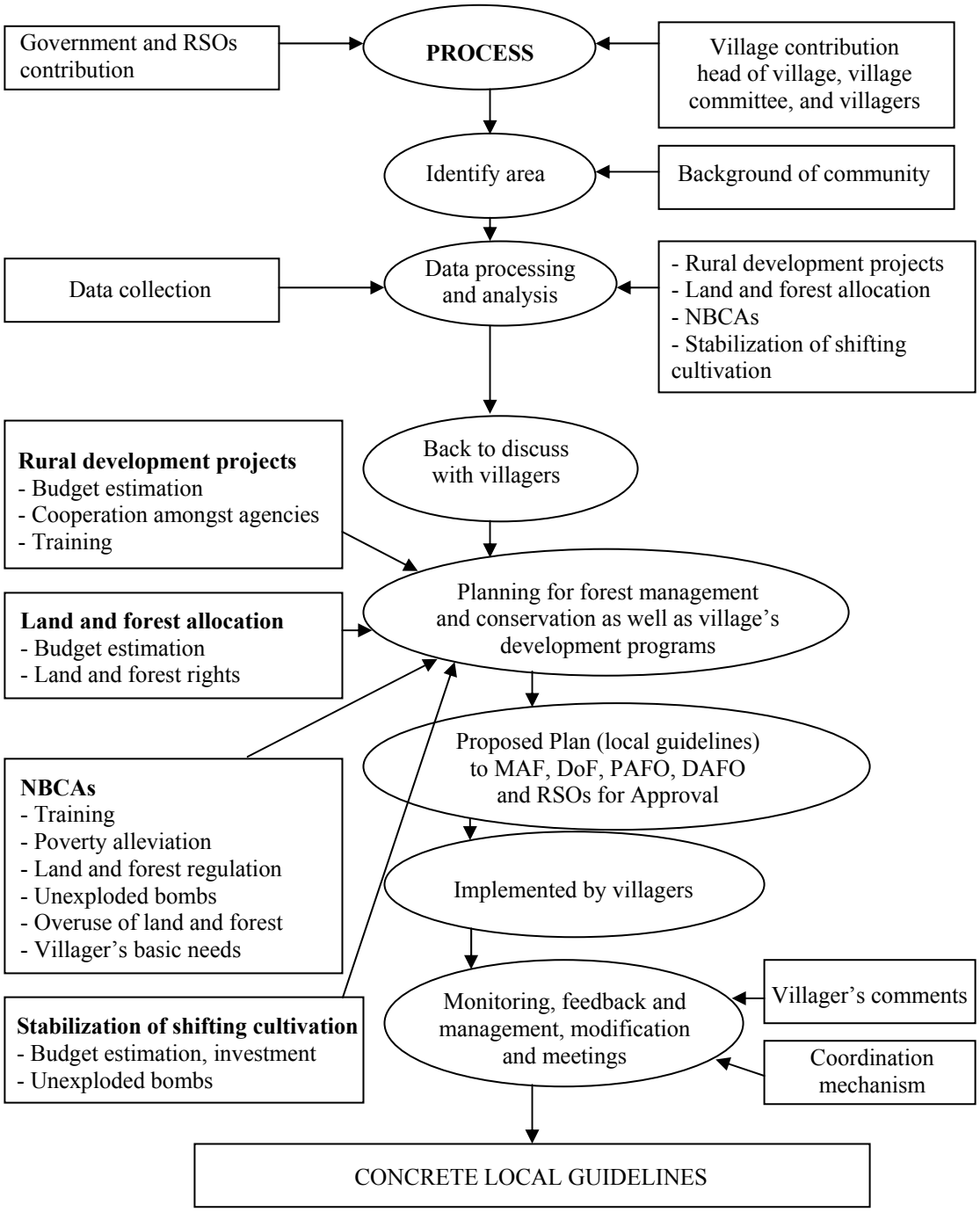

Figure 2. Framework of participatory forest management in Savannakhet Province.
Source: Chanthavong (1998).

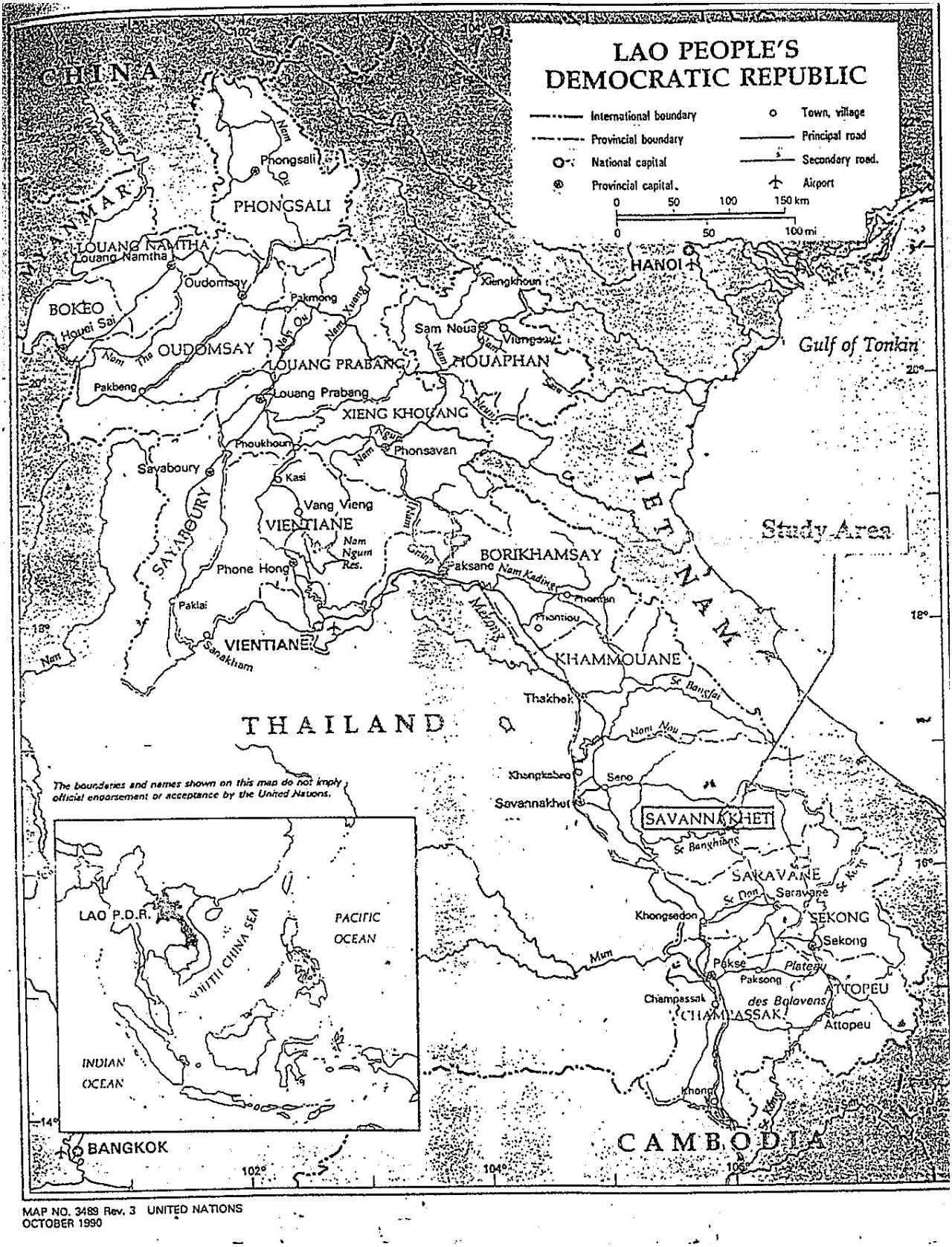

Figure 3: Map of Laos

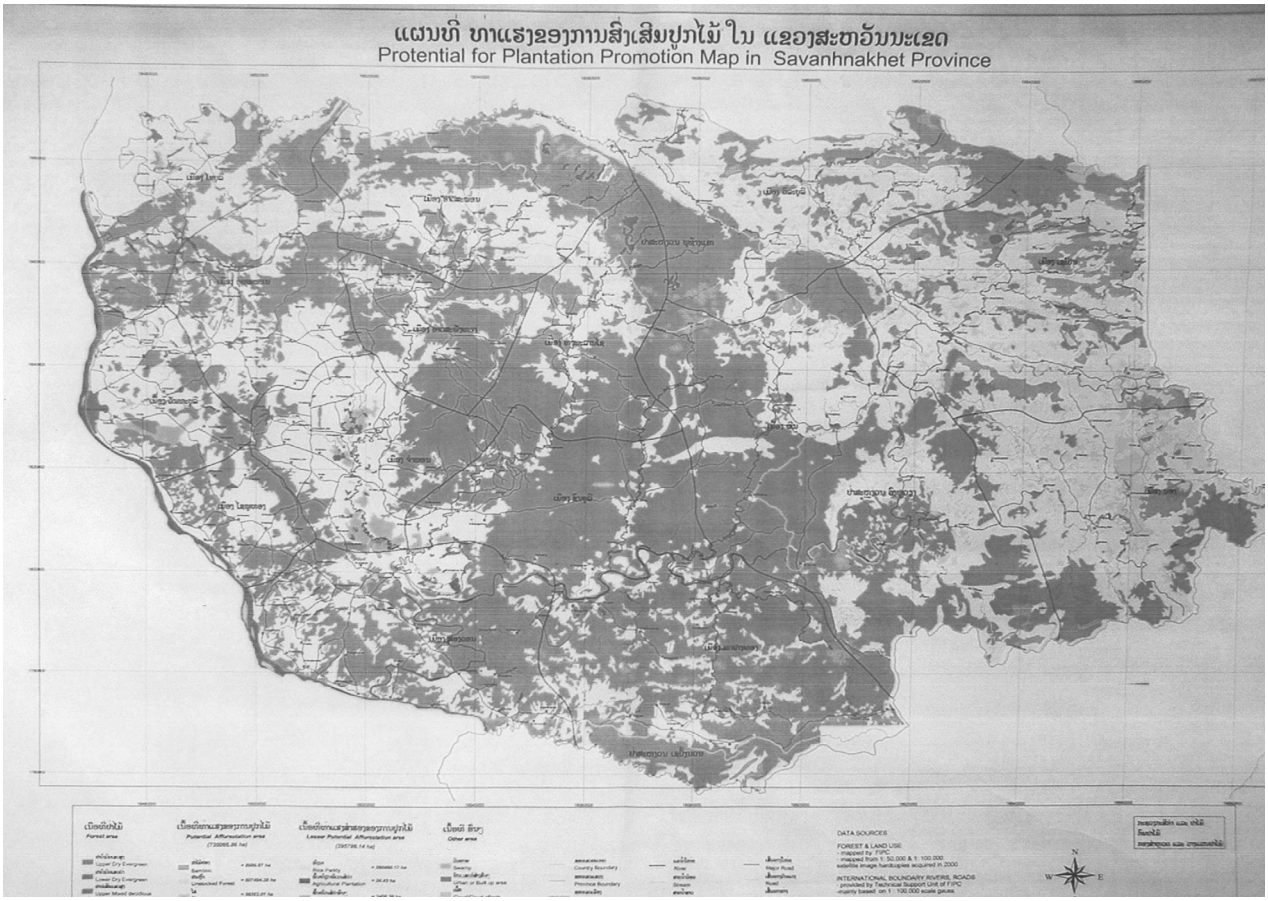

Figure 4:Map of Savannakhet Province

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