INTEGRATED

BIODIVERSITY CONSERVATION

and

COMMUNITY DEVELOPMENT

in

NAM ET - PHOU LOEI NBCAS, LAO PDR

(Phase 1, June 2000 to June 2002)

COMMUNITY LIVELIHOODS ANALYSIS

report of Consultancy of

Mr Grégoire Schlemmer

12/00 to 3/01

2001

Edited by Ms Conny van den Berge

Project implemented by

Provincial Agricultural & Forestry offices – Houaphan and Luang Prabang Provinces
Viengthong and Viengkham Districts

with support from

Department of Forestry, Ministry of Agriculture and Forestry,
and
IUCN Lao PDR Office, Vientiane, Lao PDR

IUCN
The World Conservation Union

funded by Danida

TABLE OF CONTENTS

TABLE OF TABLES

TABLE OF FIGURES

Methodology

This report is the result of a mission conducted for Nam Et Phu Loey NBCA project implemented by IUCN. The mission lasted for three and half a months and took place between the 1 December 2000 until 15 of April 2001, in Viengthong District, Huaphan Province. Because of some administrative complications I did not start my work in Vienthong until 15 January 2001.

The objective of the research was to collect information on the social, cultural, historical, subsistence and economic life of the inhabitants of the NBCA, which will contribute to a better understanding of the area and its population. Based on the findings of the research, I will also propose some recommendations for project implementation when this concerns the people living in the park and nature conservation.

During my time in Vienthong district up until the end of March, I spent three weeks in the seven target villages. The last two weeks of the consultancy period were dedicated to the writing of this report. Before this mission, I worked for 16 months for the IRD/FAF (Nabong) project in the same district[1] during which, I spent 8 months in the district and 18 weeks in villages. As the research was similar, much of the information collected during that period was also used for this report, therefor, I will also briefly discuss the work and the methodology used when conducting that particular research.

Literature review

Literature about the National Park area is scarce and, when it does exist, it is very old and hard to find. Most books referred to in this report concern other but similar areas, with similar ethnic groups and livelihood techniques. The literature used is listed in the bibliography at the end of this report. The most useful document was the Agricultural Census of 1998/1999, which provide statistical data on the area[2].

Fieldwork data

The main body of this report consists of the data gathered during fieldwork as no other data were available. The data collected are both of quantitative and qualitative nature. Qualitative data were used to complement and explain the findings from quantitative research methods where necessary. The methods used during this research were as follows:

- Interviews with different representatives of the district authorities of Viengthong on the general situation in this area
- Quick survey in 52 villages[3] in all parts of Viengthong district
- In-depth village interviews in 34 villages (Muang Peu, Muang Kao, Muang Xon area).
- Detailed survey in 7 target villages of the NBCA.

---

[1] This project was funded by IRD, directed by Catherine Aubertin, research director at IRD and was about the construction of environmental politics in Laos, more precisely about the management of fallow land in shifting cultivation systems. In addition, it was a 5 month training program for students organized in collaboration with The Faculty of Agriculture and Forestry from Nabong (students trained were Saphangthong Vilalak, Sayavong Kongsy, Phomphakdi Vilaysak, Phasayvolavong Sengsamay in 1999 and Chantavi and Sifong in 2000). This program was part of the course to become a Superior technician in Agronomy. E. Jouve trained the students in 1999, with my assistance and that of Sanyarath Santi, and I trained those in 2000 myself. We should thank IRD, the Faculty of Nabong and all the project staff for their help, and for allowing the use of the information gathered during this period. I should also thank all IUCN staff and Lao authorities that supported me and facilitated the work.

[2] Unfortunately, more than half of the data of the Agricultural Census concern the whole Province, which makes it impossible to isolate data regarding the NBCA and the rest of the district and only few subjects were studied. The only general statistics concerning the NBCA area comes from when the Agricultural Census gathered data per village, which the local authorities provided to the project. However, data are very basic and only give the number of inhabitants and families, the main ethnic groups, the (approximate) number of livestock per type, the number of hectares of paddy and swidden fields (estimations) per village. Moreover, these statistics are not complete and are sometimes incorrect, therefore all tables based on this Census need to be updated later.

[3] Mainly conducted by Emmanuel Jouve and written up in: Jouve and Schlemmer, 1999.

- Detailed analysis of Muang Peu zone, composed of 7 villages to gather data at zone, village, family and individual level.
- One month participatory observation to observe village life and daily activities in Muang Peu area.
- 4 different thematic questionnaires among 50 families each. The data collected from these questionnaires were entered in a database[4].
- Conducted very detailed interviews on the productive and economic situation of 16 families in 9 village
- Detailed interviews among 21 families selected on the basis of their financial situation (one 'poorer', one 'normal', one 'richer') in each of the 7 targets villages.
- Analysis and preparation of various maps

The statistics and information presented in this report are a mix of the studies conducted for IRD and IUCN, or come from the Agricultural Census. Because data are not always uniform, we sometimes used only a part of the sample therefore the samples often vary and the total does not correspond to information given in the table below.

Table 1: Representativeness of the studied sample

	Population figures		**IRD research (entire district)**		**IUCN research**	
	Entire Viengthong district	*Viengthong part of the NBCA*	*Number*	*Percentage*	*Number*	*Percentage*
No of inhabitants	23256	12 172	±1700	7.3	145	1.2
No of families	3 420	1 835	± 250		21	1
No of villages	90	52	± 60	66.6	7	13.5

Constraints and limitations of the research

Some of the difficulties and constraints we faced while conducting the research are described below.

- Villages were inaccessible sometimes we had to walk one full day to reach the village, cross streams and rivers, climb mountains and walk through forests watching out for snakes and leaches.
- As a gesture of hospitality, villagers offered us alcohol from the early morning until late at night. This was one of the hardest parts of the fieldwork.
- People were not accustomed to foreigners and to researches.
- Collecting information about sensitive or illegal practices such as opium cultivation, hunting and shifting cultivation was difficult, and these were the main topics of the research.
- Understanding problems and conflicts in societies that are based on consensus was difficult.
- Because most of the work was done without translator, I may have misinterpreted some of the data.
- Statistical data, required to analyse the situation, are often based on too small a sample and may therefore not always be exact. They should be regarded as informative rather than reflecting the exact situation.
- The large variety of subjects that had to be studied in a relatively short period of time made it difficult to verify and check data and may have led to incomplete information perhaps to some mistakes.

[4] The Nabong's students collected the data for this database that Emmanuel Jouve set up. Unfortunately, it mainly concerns villages outside of the national park area.

Because previously nothing had been written about this area, many subjects needed to be studied, which was not possible because of the limited time frame. The main points that were not studied and/or analysed because of this reason were:

- A general and local history of villages (former settlements, their composition and their migration, history of the war[5] etc.).
- A more detailed analysis of farming systems and economy, with details on the gross production, production costs, added value etc.
- A more detailed and economic analysis of livestock raising (investment, added value, production tools).
- A description of additional products that are important, such as alcohol, silk and cloth, rattan etc.

Because there is no official transcription of the Lao language available, we wrote the Lao terms as we thought they would be pronounced, although we tried to respect the transcriptions used in other books.

[5] There is also and important impact of the war on demography, occupation of territory and agricultural strategy and a strong and interesting link between war and practice of shifting cultivation.

CHAPTER ONE: POPULATION PROFILE

1.1 Introduction

The population density of the NBCA Viengthong is very low with only 12,172 persons living on 2,800 km² (4.3 pers./km²). The people of the target area live in 52 villages that are quite small with on average 35.5 families per village. The average family consists of 6.6 persons. There is great variation between village size: the smallest village has only 9 families, whereas the largest village has 94 families (56 and 602 inhabitants respectively). The population of the area can be divided over 3 linguistic families and 8 ethnic groups, each with distinct characteristics. To understand the situation of people living in the NBCA it is necessary to explain some of the different characteristics.

Table 2: Population statistics

Surface Area:	2 800 km2	**Population**	12 172 persons	
	4.3 hab/km2		1835 families	6.6 persons/family
			52 villages	35.5 families/village

A common model to structure and organise groups has two main criteria: *kinship* and *territory*. Kinship is the first circle of interaction at village level. Outside of the village, territory becomes an important concept. For example, when two persons from different places meet each other, they first ask each other where they come from.

Table 3: Interaction circles

Territorial categories	***Lao word***	**Social categories**	***Lao word***
House	*Heuan*	Nuclear Family	*Khopkhoua*
Quarter	*Nouay*	Immediate Extended Family	*Tioum*
Village	*Baan*	Distant Extended Family	*Phinong*
Zone / Commune	*Khet / Tasseng*	Friend of same age	*Sio*
District	*Müang*	Clan	*Sing (chinese)*
Province	*Khweng*	Tribe / ethnic group	*Son phao*
		Ethnic category	*Lao lum/theung/sung*

The definitions above provide a framework to present this small but complex population. The main division will be according to ethnicity, divided into three main linguistic families. In doing so, the most important characteristics, differences and similarities can be presented clearly. Because many of these groups live close together and have frequent interaction with each other, also inter-ethnic relations, power structures and their position in relation to the dominance of Lowland Lao. At the end of the chapter, their different means of production and their economic situation will be described.

1.2 Presentation of ethnic groups

1.2.1 Considerations on ethnicity

When discussing ethnicity or ethnic groups[6], two pitfalls should be avoided. One is not recognising cultural characteristics and trying to explain all differences by external factors such as ecology, history etc. The other is concentrating too much on these characteristics and taking certain characteristics of an ethnic group as a cultural fact. The best way lies between these two. Culture has arbitrary boundaries independent to other factors, and must be treated as such. It can only explain certain issues, but not all. Culture and ethnicity are also changing and interacting, and so-called cultural facts (as politics and history) can be shared between different ethnic groups. On some points, ethnic groups are difficult to differentiate. It is already possible to say that there is a Laotian culture, and more specifically, a culture of population of the mountainous areas of Northern Laos.

1.2.2 Ethnic diversity

Laos is famous for its ethnic diversity. Census data identify between 40 and 70 ethnic groups on a population that just exceeds 5 million people. The same diversity can be found in the Viengthong part of NBCA. With only 12,000 persons, 4,400 families, and 50 villages, the area is home to 8 ethnic groups. Some are well known and widespread in northern Laos, while others comprise only of a few members and are almost unknown.

Table 4: Population in the Viengthong part of NBCA

Ethnic families	No families	No persons	% person	No villages
Tai Lao	223	1,499	12	8
Phu Tai	361	2,615	22	8
Khmu	558	3,204	27	14
Lao theung	*558*	*3,204*	*27*	*14*
Hmong and Yao	437	3,459	29	14
Mixed village	223	1,247	10	6
Total	1,802	12,024	100%	50

1.2.3 Ethnic classification

Linguistically, these ethnic groups can be subdivided into three sets: Tai-Kadai, Austro-Asiatic (or Mon-Khmer), and Hmong-Mien (or Meo-Yao). a linguistic branch of the Sino-Tibetan set. This linguistic classification partly overlaps with the former official Lao ethnic classification, Lao Lum ("lower Lao"), Lao Theung ("upper Lao"), and Lao Sung ("higher Lao").

Table 5: Classification of ethnic groups

Local classification	Corresponding Ethnolinguistic family	Group represented in national park
Lao Lum	Tai-Kadai	Tai Lao, Tai Dam, Tai Deng
Lao Theung	Môn-Khmer / austro-asiatic	Khmu, Lao Khaa
Lao Sung	Hmong- Mien / Meo-Yao	Hmong (white), Hmu, Iu Mien

This classification is Tai-centred, and began with a distinction between Lao and Austro-Asiatic people living in the mountains, in which Hmong-Mien and Tibeto-Burman populations were included after they arrived in the 19th century as a third group. One of its results was that it ordered this myriad of groups. According to Lee (1982), it was a Hmong

[6] An ethnic group is an entity superior to a clan. It has a proper name, uses a language or particular dialect, has a tendency to live and marry with each other, and possesses a common tradition and history.

leader of the former regime who decided to add the word *Lao* before the words Lum, Theung and Sung, insisting on the notion of a common citizenship of all ethnic groups. It also helped to erase the former pejorative term of *slave* (*kha* in Lao) for the Austro-Asiatic and *barbarian* (*meo* in Chinese) for the Hmong. These classifications have now been rejected by the government, but are still commonly used, even by government officials.

This classification has several problems. First, it is a classification, which is based on geography initiated by the Lao government. It tends to create contrasts among ethnic groups according to their locality, e.g. lowlands versus mountains and their specific production systems, e.g. paddy farming versus shifting cultivation. Usually, this is added by value judgements involving the 'Buddhist state of civilised society' versus the 'animist roaming in an anarchic society.' Another problem is the blurry use of the classification: for example, for many people from the studied area, the term *Lao Theung* includes only Khmu, while the *Lao Sung* are only Hmong (and Yao or Phong will be randomly called Phu Yao, Phong, or even Lao Phong…). So it loses meaning and creates supra-ethnic categories. In addition, because the word 'Lao' indicates a specific ethnic group as well as the entire national membership (this is not a neutral fact), a Tai Lao for example does not really know how to define himself. He is a Lao, but every Lao citizen is called like that. He is a member of the Lao Lum generic group, but what should he answer when asked what sort of Lao Lum he is? Nevertheless, and despite these problems, in this report sometimes this classification will be used, not to point out a linguistic or objective cultural reality, but for the social, cultural and political reality that this classification already possesses in Laos.

Tai-Kadai

The Tai-Kadai population forms the majority in this area. This family consists of four ethnic groups: the original Lao, or Tai Lao, the Tai Dam (Black Tai), the Tai Deng (Red Tai) and the Tai Khao (White Tai). The last three groups are sometimes together referred to as 'Phu Tai'.

- **Tai Lao.** The Tai Lao is the biggest and dominant of all ethnic groups in Laos. They live in 8 of the 52 villages in the Viengthong NBCA. The economic basis of their society is paddy rice growing, buffalo rearing and fishing. The two ideological pillars of their society are Buddhism and previously the monarchy, through which they ruled all of Laos. All Tai Lao are supposed to be the same ethnic group, from Pakse to Phongsaly, from the Mekong River into the mountains. However, in the NBCA there is little to differentiate them from the Phu Tai or even the other ethnic groups. Everybody engages in shifting cultivation, they no longer have a king, and in the absence of temples (there is only one temple in the whole area) the Buddhist religion is not particularly strong. Even their religious organisation seems to be close to the animism of other groups: the house and village spirit cult, often presented as the basis of 'animism', is practised in some Tai Lao villages. Rather than a distinction between Tai Lao and Phu Tai, there seems to be a stronger distinction between Tai from the plains and Tai from the mountains (including Lao).

- **Tai Dam, Tai Deng, Tai Khao (Phu Tai).** The main difference between Tai Lao and Phu Tai is historical: the Phu Tai came from northern Vietnam and were never Buddhist. One other difference is the clan organisation, theoretically absent from Tai Lao society but not the research area. The Tai Dam and Tai Deng are divided into clans[7], named after a

[7] A clan is a common institution among all ethnic groups, although the importance and definition may vary. Roughly speaking, a clan is a particular sub-group of persons descendant from a common (forgotten) ancestor, and can be divided in *lineages* (the common ancestor is known). They have a common name, related to a plant, animal or other things. Clans have little importance for all Tai-Kadai and Khmu but it is a very important sociological unit among the Hmong (and perhaps for Iu-Mien).

creature from nature or an artefact with which a taboo is associated. For example, the Lo clan does not eat the *nok tanglo* bird, and the Vi clan does not use a fan to keep the fire burning. The Tai Dam (and perhaps also the Tai Deng) have one dominant clan, the Lo Kham. Its members had the most political influence and possessed most of the land because of their celestial origin (they are affiliated to the Then Luang, the celestial gods). All headmen belonged to this clan. When the village formed a Müang (principality, now district), his authority extended to all villages in the area. This authority was reaffirmed periodically during *phi müang* (territorial spirit) ceremonies, in which everyone participated. Between the Tai Deng and the Tai Dam, most of the differences are of customary, ritual and cosmological nature. Their language is also different, and these two groups, despite strong similarities, are still quite endogamous.

The district also has a Tai Khao population, although they very often get mixed with the Tai Deng as is the case in Müang Kao. In fact, it is difficult to distinguish Tai Khao from Tai Deng. Some members of these two ethnic groups do not see any sort of difference and like to think of themselves as one group. Apparently, one of the important differences is that Tai Khao burn their dead while Tai Deng bury them (for comparison, Tai Dam burn rich persons who can sacrifice a buffalo and bury others who cannot afford this).

- **History of settlement.** These Tai populations seem to have lived in this area for a long time, though it is difficult to establish the period of their settlement. We know that villages such as Müang Peu, Müang Kao and Müang Xon have been here for at least two or three centuries. A booklet on the history of Houaphan says that the Lao came in the 13th or 14th century, but gives no evidence. The Tai Dam and Tai Deng settlements are certainly very old. The area is close to traditional settlements in Vietnam (Dien Bien Phu[8], Son La) and Tai Deng are numerous in other Houaphan districts. One or two centuries ago some other Phu Tai villages came from Vietnam and other districts of Houaphan Province (Xiengkho, Sam Neua). The Tai Lao population used to be larger, but many left for Vientiane Province during the sixties and after the war.

Austro-Asiatic

This linguistic group is only represented in this area by the Khmu, which is also the largest of the Austro-Asiatic groups in Laos, and lives in all regions of northern Laos. However, it seems that the so-called 'Lao Khaa', a small group of only a few families in the target area of the research, can also be included in this ethno-linguistic family.

Lao Khaa

The Lao Khaa (also called Khang or Ka) consist of 5 families living in Phongsing and about 10 families living in a quarter of Xon Neua village. They are certainly an Austro-Asiatic group, but they present themselves as Lao Lum, speak only Lao, and are Buddhist. We have not been able to get much information on this group. They can be differentiated from other Lao by their darker complexion, their Khmu accents, the existence of a clan structure, as well as a village and house spirit cult. All these characteristics point to a relation to the Khmu. However, the fact that distinguishes them the most is their supposed matrilineal system[9]. Before the war, they were apparently numerous in the area, all along the Nam Et river. Most of these villages now have migrated to Sam Neua and Xieng Kho. Now, with only a few houses (and many deaths reported in Xon Neua), this group is disappearing.

- **History of settlement.** The Khmu are the biggest ethnic group in the district. The Khmu in the Viengthon NBCA, are said to belong to the same sub-group of Khmu living in

[8] Tai oral history gives the present Dien Bien Phu as the origin of the Phu Tai population.

[9] Descent is traced through the line of the mother, as opposed to that of the father in patrilineal societies. Usually it is accompanied by matrilocality, which means that when a man marries, he goes to live in his wife's village and his children will belong to his wife's clan.

Xieng Khouang. There are certainly linguistic differences between the Khmu here and those from Luang Prabang. Little is known about their history, but general history of migration of the peninsula lead us to believe it is one of the oldest groups to have settled in the area. Villages in one area are generally related and come from a former settlement, from which small groups progressively migrated after clashes and population pressure. The war and resettlement politics made the migration situation more complex.

- **Cultural facts.** The K'hmu have undergone substantial changes under Tai dominance, and settled generally near a senior Tai village. Dussault notes that they had to pay tax, work in the paddy fields, and contribute free labour to the dominant Tai village[10]. We no longer find a communal house in the village, which used to be the social centre, but in some villages we still find a *sala mon*, the house for the protecting/healing spirit, where all villagers gather to participate in special rituals. Their religion is based on an ancestor cult (*phi heuan*, *phi baan*) and they worship of some spirits of nature (forest, mountain, water spirits). It is a largely egalitarian society with little or not hierarchies between families and clans. Up to the end of the war, all villages engaged only in shifting cultivation.

1.3.3 Hmong-Mien

In the NBCA, this linguistic category consists mainly of White Hmong, who represent around 90% of the Hmong-Mien. There is one Iu-Mien (Yao) village that recently arrived from Xieng Kho district. There are also some Black Hmong families, spread over and integrated into White Hmong villages[11].

- **History of settlement**. The Hmong presence in the area is supposed to date from the beginning of the 19th century (1810, 1820), arriving in Laos after strong repression in China via Vietnam through Houaphan and Luang Prabang provinces. However, the current villagers are not descendants of these first settlers. As the Hmong are a highly mobile people and because of the war their settlement situation is very complex. It is difficult to get to know the origins of Hmong settlement because oral history does not reach to beyond the 1950's[12]. Many of the villagers had to flee during the sixties, from royalist or communist armies, or moved voluntarily. Other villagers left during the seventies and eighties after a guerrilla war to what is now the Xaysomboun Special Zone. This guerrilla force was supposedly organised by a *tiao fa* (literally a heavenly headman) as a continuation of the anticommunist movement financed by America, Thailand and China. At the end of the eighties, a provincial military offensive against the guerrillas ended the guerrilla war, and Hmong inhabitants left the area (some of them were put in prison). Some of the Hmong now settled in the NBCA came during the nineties, from Sam Neua, Xieng Kho, and Houa Müang. They came to live in a focal zone, which or a priority zone for development. At the same time the Yao village arrived. Finally, some Hmong recently came from Vietnam, forming new villages or integrating into existing Hmong villages where they had relatives. This has created a problem in the district. The village of Phaphong arrived about 8 years ago from Vietnam and settled near the border. Lao or Vietnamese authorities do not recognise this migration, and they are regarded as squatters on Lao soil. These Hmong argue they are Lao citizens who had to leave Laos for

[10] Cf. Dussault, 1924, p.46.

[11] Black Hmong are not common in Laos. According to Lemoine (1972), Black Hmong are perhaps not a real Hmong group, but a group called 'Hmou', mainly found in China. Apparently, they try to assimilate with the White Hmong, they no longer wear their traditional costume, and almost have forgotten their language, despite its real difference from other Hmong languages. The Yao have come from an old Chinese sub-culture (Hubert-Lemoine, 1971). This group originated from a union of different groups and took common name. They had a special right of independence given by the Chinese emperors since the 5th century (Lemoine, 1998).

[12] Perhaps after the French defeat in Vietnam (a minority of Hmong were enlisted as soldiers for the French) or after the loss of the autonomous status of the northern Vietnam region and its control by the new Vietnam government.

Vietnam during the war. The case highlights the problem of population movement between Laos and Vietnam.

- **Cultural facts.** The Hmong-Mien society is organised through clans. The clan is more important for them than for others in the area. It is a functioning entity, and elders of each clan represent the real authority in the village. The clan is an institution that is more stable than the village, because the village population is mobile and fluctuates. Their religion is based on an ancestor cult, with a deference for the sky divinities, perhaps inherited from the Chinese. An important periodic ritual is the *kin tieng* or New Year celebrations, around December. This occasion strengthens family and clan relations with the ancestors and with other natural forces. Traditional healing is a strong institution. We heard that healing ceremonies were conducted almost every day in Hmong villages. There is no real principle of equality between society members, being rich adds to a person's or a family's status.

1.2.4 Inter ethnic relations

Ethnicity does not withhold relations between the different groups. However, there are some obvious differences. When taking in account differentiation between ethnic groups, we should refer both to the cultural and livelihood preference and socio-historical difference.

When analysing the differences between groups, we should always keep in mind it is not necessarily the result of a choice, that they belong to a certain group, but that it is related to historical factors. This is why it is necessary to analyse the relations between these groups and to the dominant Laotian society.

Mixed villages

There are few inter-ethnic villages in the area (9 on 50), and all were established after the war either to exploit abandoned paddy fields, or to regroup villages with fewer than 20 houses[13]. Even in a mixed village, each ethnic group usually occupies a separate quarter, and sometimes lives as a de facto different village (Napouak, Phungsing). Antagonisms are explained by a difference in traditions.

Table 6: Village with mixed ethnic composition, Viengthong NBCA, 1999

Ethnic groups	No of village	Name of village
Lao Lum /Lao Lum	3	Leng, Piengpho (?), Bo
Loa Lum / Lao Theung	3	Sakok, Nam Phoung, Ponsaad
Lao Lum / Lao Sung	1	Phungsing
Lao Theung / Lao Sung	2	Napouak, Vangkouang

Inter-ethnic marriage

There are still few inter-ethnic marriages. The most common are between Lao Lum (Tai Dam/Deng/Lao/Phuan). We heard of some marriages between Lao Lum and Khmu, and of two between Lao Sung and another group (Hmong/Khmu). Children of such marriages usually live according to the tradition and custom of the ethnic group where the family resides.

[13] Villages with less than 20 houses are not recognized as a village by Lao government standards and thus have no access to services such as water supply, health care and education.

Status and standing of each ethnic group

- **Tai-Kadai**. Here, like everywhere else in Laos, the Tai Lao are the dominant culture. They hold the political power and form the cultural norm and dominant model. The Lao Lum or Tai population are not a uniform ethnic group, but regard each other as relatives (*phi nong*). Differences in languages are small, and most are mutually intelligible. Differences in traditions and religion (Buddhism/animism) are not that significant. Most of the rituals carried out in Buddhist villages are no very different from animist rituals, which mainly concern ancestor cults. The Tai group knows how to make use of this situation. They preserve their cultural specificity and yet are integrated into the dominant Tai Lao society. In a remote area like this, it is difficult to know if it is the Phu Tai who are close to the Tai Lao, or the Tai Lao who in fact live as Phu Tai.

- **Khmu.** The Khmu and Tai populations have interacted for perhaps a thousand years. We noticed a lot of mutual influence and interaction, and it is difficult to ascertain which group has influenced the other. The Khmu were under Tai domination, employed as vassals or slaves. This long tradition of domination/servitude may explain the generally passive and fatalist attitude of the Khmu. The wish to claim or express cultural differences is absent, even though these can be significant. The Khmu are perceived to be the more backward people, having no understanding of the dominant rule and/or modern society, having many taboos and being close to nature, etc.

- **Hmong-Mien.** The cultural similarities that exist between the Tai and Khmu groups are lacking between the Hmong-Mien and either of the other two groups. They are quite different from all of them. Due to a long tradition of resistance to and interaction with the dominant Chinese culture, they were able to form a strong identity and maintain independence, also after arriving in Laos. The Tai and Khmu population perceive them as foreign and non-communicative people who refuse integration or submission. They are proud, independent, direct, stubborn and eager to fight. These characteristics, along with their involvement in the anticommunist war (supported by part of the Hmong community) and in the guerrilla movement still existing in some regions of Laos, have given them a negative reputation[14]. On the other hand, they have a certain prestige, based on fear perhaps, but also on respect because they are hard workers, adapt easily to economic change, and are economically successful because of cattle raising and opium production.

Summarising the above, the ethnic relationship can be described in a 2+1 formula: Tai Lao and the Austro-Asiatic group, who have a relationship of trade between and domination/subjugation, and the Hmong-Mien who maintain a certain independence from the other groups, as roughly summarised in Table 7.

[14] Most people forget that the Hmong community was divided both for and against the communists. There was a large part of the population who was neutral to either side. Because of their history, and because of Hmong guerrilla movement, it is also common to ascribe events to the Hmong, without making distinction, to mask the real causes.

Table 7: Ethnic relations

Groups	**Main attitude toward national authority**	**Relation to power**	
Tai-Kadai *Lao Lum*	Superiority	Hold the power	Dominant paradigm
Austo-Asiatic *Lao Theung*	Submission	Under the power or outside	Low self esteem Strong influence of the dominant culture Slow adaptation to economic changes Little initiative
Hmong-Mien *Lao Sung*	Independence	Outside the power or resist	Proud of themselves Little influence of other cultures Fast adaptation to economic changes Some initiative

1.2.5 Main characteristics of production for each ethnic group

Tai population

The main characteristic of Tai population is the cultivation of paddy rice, sometimes complemented by shifting cultivation. They usually raise livestock such as chickens, ducks, pigs, but most of all buffaloes. There is a long tradition of silk production and weaving. Opium production and trade is sometimes found. Of the hunting and gathering activities, fishing and gathering wetland products are the most important. Integration into the market economy has a longer history than is the case for the other groups. They controlled trade in the past and are still dominant in business. They also do administrative work. Rice whiskey production and consumption is important.

Table 8: Economic activities per ethnic group

Ethnic groups	Lao Lum	Lao Theung	Lao sung
Agricultural production			
Wet Rice	+++	+	+
Dry Rice	+	+++	+++
Cassava	+	+	+++
Maize	+	++	+++
Opium	++	++	+++
Industrial Crops	+++	++	+
Fruit Tree	+++	++	++
Animal Husbandry			
Buffalo	+++	+	++
Cow	+	+	+++
Pig	++	++	+++
Chicken	+++	+++	+++
Duck	+++	++	
Fishpond	+++	++	
Goat			++
Collecting Forest Products			
Hunting	+	++	+++
Fishing	+++	++	+
Gathering	+++	+++	+
Others Activities			
Silk	+++		+
Trade	+++	+	+
Rattan Products	+	++	++
Commerce (Shop)	+++	+	+
Administration	+++	+	+
Daily Labourer	+	+++	+

+++ = Very important
++ = Medium importance
+ = Little importance

Austro-Asiatic

The Khmu as most other Austro-Asiatic groups of northern Laos mainly practice shifting cultivation. The importance of livestock is limited to poultry and pigs, whereas buffaloes and cattle are rare. Forest products are very important in the economy because of the natural environment they live in. Rattan handicraft production is well developed, but cloth weaving is absent. Opium production is rare, but not its consumption. Temporary sharecropping is common, as well as serving in the army. Rice whiskey, and moreover *lao hai* (fermented rice wine in clay jars) production and consumption is important. Perhaps because of their long history of subordination to Tai people, their economy is not very productive.

Hmong and Iu Mien

Hmong and Iu Mien also mainly practice shifting cultivation, although they grow non-glutinous rice as opposed to the others. They are perhaps more livestock breeders than farmers. Poultry, but especially pigs and cattle raising are very significant. They also keep goats. Opium production, sale and consumption are very important activity. They are reluctant to eat forest products and there are many animals they do not like to eat, although they are very good hunters. There are numerous metal workers. There is a strong tendency to economic independence, and few people are engaged in sharecropper work.

Table 9: Monetary estimation of principal production (poultry, pigs, cattle, buffalo and rice) per family for each ethnic group, in $ in 1999[15]

Ethnic groups	Estimation
Lao Lum	725
Tai Lao	*680*
Phu Tai	*777*
Lao Theung	447
Lao Sung	741
Average	**507**

Of course, the data presented above are relative. Modes of production can change fast and are not static. Now, Khmu as well as Hmong grow paddy rice. Before the war, the area of Tassone was populated by Tai Lao villages doing only shifting cultivation. Hmong close to rivers do fish. There are rich and entrepreneurial Khmu and some Tai families smoke opium and do sharecropper work.

[15] Price given to counted goods: Buffalo: LAK 1,500,00; Cattle: LAK 750,000,; Pigs: LAK 150,000; Poultry: LAK 10,000; Rice: 600LAK/kg.

1.3 The village, authority and decision making processes

1.3.1 The village

Laos is a country consisting of villages, even cities are just an agglomeration of villages. The village and family are important concepts to explain characteristics about a population. The composition of a village is not fixed, but is subject to continuous disintegration and formation, and depending on the area, history, and ethnic group.

In the area, villages are quite small. Most of them are composed of a single ethnic group as people do not like to marry a person belonging to a different ethnicity or to live together with another ethnic group. But within villages there are multiple clans. Villages tend to be endogamic, but clans within the villages are usually exogamic. The families within a village do not necessarily have close kinship relations. The unifying link is just the fact that they accept to live together. A village is first of all a territorial unit[16]. This implies that people of the same village share the same territory (with a similar means of production because to live in a village gives people the right to use the land for agricultural production), a submission to a common organisation, and authority. All this entails a net of exchange and solidarity.

Table 10: Village composition in Viengthong part of NBCA

No person	No village	No family	No village
56-100	4	less 20	8
100-200	16	20-29	11
200-300	16	30-39	16
300-400	10	40-59	9
400-600+	4	60-100	6

Village composition changes continuously. The first reason is of course birth, death and marriage. In the area, all ethnic groups are patrilinear (except perhaps the mysterious Lao Khaa) and respect the *virilocal* rule of residence. It means that in case of marriage, the new couple will live in the village of the husbands father. As many people marry within the village, this does not lead to any questions of where a couple is going to live, only the house will become different for the bride. A second fact that leads a change in the composition is when a village becomes too big (as Xon Tai, which split into Xon Tai and Namo). Then the village will split into two villages. A third point concerns migration, all or a part of the population can decide to leave the village for a new area and/or a new means of existence.

Except during the war, migration is mainly motivated by the wish to find better land for production. For example, in Bong village, two thirds of the population left for Luang Nam Tha because of this. In the past, such migration was common, mainly for the Khmu, Hmong and Iu Mien[17]. It was mainly local migration, people moved in a limited area. Some of those villages practised a rotational migration meaning that they finally came back at their original position after a certain number of years. The low level of attachment to a certain territory and the relative mobility is typical for a population practising shifting cultivation. For paddy rice cultivators, migration never used to be important because of their perennial agriculture system.

Another motive to relocate a village is the wish to be closer to the road, as was the case of Houay Pachat and Houay Kat, whose inhabitants migrated to Houay Niam, near Müang Kao.

[16]The primacy of residence on based on kinship is presented by Lenclud as a recurrent factor in shifting cultivators societies.

[17] "The village community is a temporary agglomeration that scatter and resettle in affinity groups and function to the opportunity of everybody" writes Lemoine about Hmong and Mien villages (Lemoine: Les Hmong et les Yao, p.34).

A final cause of migration is the resettlement policy of the government. The government mainly explains the necessity of these relocations because of the fact that villages are difficult to reach and thus control, or because of environmental concerns. Forced relocation was the reason to move for the villages of Houay Sa, Deunbin, a Hmong village from Houay Meuay and the 4 villages of Tasseng Sathone.

Migration does not always concern the whole of the village. Only a part of the village population may choose to migrate, others can stay at the original site or choose to go somewhere else. Each family chooses for themselves whether they want to migrate, but it is rare for a family move alone. Without relatives to depend on it is very hard to start anew at a different location.

As the above shows, villages are not a fixed entity, not in its composition, or in time or place. Villages are an association of houses who share a common territory for the production and form a network of solidarity and mutual assistance (see also part on shifting cultivation and house construction).

1.3.2 Authority and leadership

Understanding the general principles of the system of authority and leadership is necessary to carry out enquiries at the village level. It helps to understand the different institutions at the village level and beyond. Furthermore, it makes it easier to comprehend the decision-making process at village level and how this relates to superior authorities.

Organisation of village authorities

Despite their remoteness every village has a political structure which links the village to the national government. Because of this structure, the village is not isolated from national policy and control.

- **Village headman.** Officially, the headman represents the government at village level. He is elected every three years and can be re-elected. The headman has two assistants, which he selects. If someone wants to become headman, he must submit a request to the district authorities, as only someone recognised by district authorities may be a candidate. They must be over 18 years of age, with some education, that is, to be able to read and write, should not be subject to criticism by the village Party members, should not smoke opium, and should not be a traditional healer[18]. His main role is to inform the villagers about and implement laws and policies upon information by the district authorities. He is first of all a state interlocutor, and the state gives him his legitimacy. But his real power will depend on his personal charisma, on his experience and decision-making abilities. He will have to take into consideration the views of the other members of the community, especially the Council of Elders. To be headman is not particularly profitable. He earns less than 10,000 kip a month and it is better to be rich when wanting to be a headman, because the work takes up a lot of time.

- **Council of Elders.** The Council of Elders represents in many villages the *real internal power of the community*. The elders are chosen based on experience, and their ability to solve conflicts by finding consensus. Villagers like to choose someone who knows the old and the new regime because of their ability to deal with different situations. “The

[18] To be village headman, one should be "loyal and honest towards the Party and the State, implementing the superior’s instructions with responsibility, displaying correct attitude, receiving the confidence and friendship of the population, skilled in mobilizing, educating and grouping the village’s internal solidarity, and in considering the people’s view. Literate in Lao language" (Decree 102/PM, article 5).

headman of the Council of Elders is like a general who looks after all villagers and solves conflicts," is what we heard in one village. But the headman does not take decisions alone. He first needs to discuss issues with all the influential members of the community. Through this organisation, the traditional power structures are perpetuated. In Hmong villages, clan leaders are the most influential people in the village, and have to be involved in every discussion to achieve any effect.

- **Youth Union.** The Youth Union is not a very important institution. It theoretically represents the interests of the youth in the village, but in reality it acts simply as a supplier of labour. For example, it is often the Youth Union that is responsible to mobilise a group of people to repair public structures, clean pathways, etc.

- **Women's Union.** The Women's Union was created after the revolution to represent women in politics. However, its power is very limited. When asking about their work, we were usually told that they serve water and tea at meetings, solve problems between women, or wait for district orders and recommendations, which never come.

- **Security.** The village security unit, consisting of one chief and two assistants. They act as guards and military. They deal with surveillance of the village territory and have to put a halt to illegal trade. They possess weapons.

- **Quarter authorities.** In a big village, houses are divided into units of 10 to 15 houses (*nouay*, L). Each unit has a chief and a responsible security person (not always present) who perform administrative work with the village headman.

- **Party.** The Party is a very important institution, in the village, as everywhere else in Laos. It is difficult to obtain information on this fundamental institution of Lao political life. They usually do not like to present themselves as Party members, therefore the total number of Party members in the area is unknown. However, in Müang Peu, there are 38 members on around 200 families.

With all these institutions, a village may easily have 15 to 20 (local) government representatives, on an average of 35 families per village. It is common that more than half of the households have a government representative although in many cases this is only in name. The large number of government representatives may be an attempt to give villagers a sense of responsibility and making them feel that they contribute to national politics.

Organisation of supra-village authorities: tasseng, district, province and state

- **Tasseng.** The *tasseng* is a political and administrative institution between the village and the district, and could be termed a sub-district or zone. Already in place before French colonisation, it was continued by the French, and then later by the new Lao government. More recently, the *tasseng* has not been officially in operation, although, it may still effectively exist in remote areas (Müang Peu, Müang Kao) where a large central village is a centre of informal governance. The *tasseng* is useful when the district calls a meeting of all village headmen. It can also assist in creating a supra-village authority, as it is still close to the villagers, and help reinforcing authority and implementing law and policies.

- **Provincial and district power.** Those placed in official local government positions (provincial governor, district governor) are appointed by the government and have to be a

member of the Party. The Province has a fair degree of autonomy in making decisions, particularly through implementation of decrees, which can lead to a modification of national law (or of its implementation). This is also true, but to a lesser extent, for district authorities. However, the real power of district and provincial authorities lies not in the fact of discussing laws, but to adapt them to the local situation.

Relation to authorities and law

Two decision-making structures can be distinguished: decisions only concerning the village, and those concerning the State, Province and district. They are organised around very different principles.

- **The decision-making process and power in the community**. This is based on a consensus after discussion in the community, although usually these are held only with influential men of the village. The discussion can take a lot of time, since they will have to reach consensus. To make discussion easier, each party will chose a representative to speak for them, defend their rights and beliefs, and argue for them. If someone does not agree and will not accept a particular decision, it is uncommon that he/she be punished or penalised. This way to implement a law, resolve a conflict, and impose fines, may seem strange to foreigners. The traditional vision of justice is not based on coercion, punishment, or vengeance. Resolving a conflict, as in taking a decision, is based on a collective or on a consensus between the parties concerned.

- **Relation to authorities**. All village as well as district headmen conduct their work in a way so that it seems they are only doing what they were told to do by higher authorities. They like to explain their work by relating it to a simple and non-discussed application of rules given by a superior. In doing this, they mask any personal initiative or responsibility. They will not show that they agree or disagree with certain decrees or policies, but they will implement them anyway. Because of this *we should be very carefully when making enquiries. The answer is often what the respondent thinks we would like to hear as he does not want to show disagreement.*

These points have some relevance for project implementation and conducting research in villages.

- Be careful with collected data: they may only be expression of what villagers think that the answer should be.
- Do not rely too much on PRA: the technique of group interviews can miss its objective if a leader is present
- Data concerning personal opinions, wishes, or illegal practices (opium, hunting, shifting cultivation in dense forest etc) should be questioned and not taken as facts.
- Village headmen and district staff would appreciate an informative process with clear and precise explanation of legal issues relating to the project.
- When trying to implement rules and regulations, try not to be repressive, but rather explain the argument; try to show the benefit of these rules for to the farmers.
- The Tasseng can be a supra-village decision-making body that can be very useful for implementation laws of management concerning a group of villages.

1.4 Family, age and gender

Family (*khop khua*) is the most basic social unit. House, money, land, goods and items, problems and future are shared by all members of a family. It is also the economic unit. Therefore, it is necessary to know its composition and its function. Analyses are not correct if they are based on individuals rather than the family. However, in this part, we will mainly give numeric and statistical data about the family. More sociologic and cultural facts will be presented in Chapter 3 and 4. General data concerning population are also presented in this paragraph.

1.4.1 Composition of the family

The most common type of household is composed of the nuclear family, parents plus children. Most of the time, after marriage, a new couple builds its own house and lives separately from their parents even if they are still associated to the family house. This is not the only type of household. Very often, one or two parents, usually from the husband, are living in the same house. This is because most ethnic groups are patrilineal and patrilocal, which in practice comes down to the sons having to look after his parents and in return will inherit the family house. In some other cases, more than one son will continue to live in the parental home, with their wives and with children if they have any. Sometimes the husband of the daughter comes to live a certain period with his parents in law (This is to pay the bride price by means of contributing a certain period of labour), or sometimes forever.

A larger kinship circle is the *tioum* (L). This is a group of close relatives defined by being related to the same house spirit (*phi heuan*, L). This unit is different for each family but also for each ethnic group. For example, it is a much bigger group in Hmong society because it concerns all members of a similar clan in a village.

The largest kinship circle is the *pi-nong* (L). Pi-nong is a generic term that does not have a precise limit. A *pi-nong* is a related person, by affiliation or by alliance. Children of a great-grand uncle or the wife of a cousin of a cousin can all be called *pi-nong*. Despite the imprecise aspect of this denomination, as it is impossible to say exactly who are a *pi-nong* and who are not, it is a very important element of social life. Having a *pi-nong* somewhere offers the possibility to migrate or just travel to a certain place. A person will always find a meal and a bed. The *Pi-nong* forms a large network of solidarity, for example for labour exchange, for borrowing money or finding a place to stay.

In the area concerned, the average number of person per family is 6.7. According to agricultural census data 56% of the family are composed between 5 to 8 persons, 19% consists of less than 5 members and 25% of more than 8 members (this means around 180 families are composed of more than 10 persons in the Viengthong part of the NBCA).

Table 11: Number of persons composing the family at in Viengthong district

No of person in the family	Percentage
1-2	1
3-4	18
5-6	34
7-8	22
9-10	15
+10	10
Total	100%

Source: Agricultural census, 1999.

The average number of persons per family varies according to ethnic group. It is the lowest for the Khmu. A newly married couple usually does not stay in the parental home although they continue to work together. However, it is also possible that this is due to a higher mortality rate. The number per family is the highest among the Hmong and Iu Mien population, with an average of almost 8 persons per family, but some even have up to 20 members. Hmong heads of families like to keep their sons in the same house, to safeguard income generating potential and a pool of labour for their families.

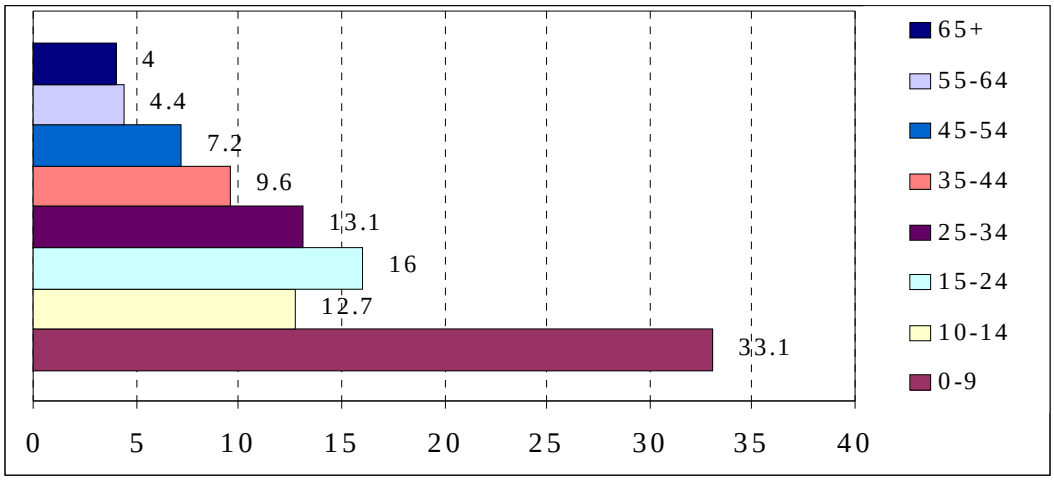
Table 12: Number of persons per family by ethnicity

Ethnic families	**No families**	**No persons**	**No persons/family**
Tai Lao	223	1,499	6.7
Phu Tai	361	2,615	7.2
Total Lao Lum	*584*	*4,114*	7.0
Khmu	558	3,204	5.7
Hmong (and Iu Mien)	437	3,459	7.9
mixed village	223	1,247	5.6
Total	1,802	1,2024	6.7

1.4.2 Age of the population

The average age of the population of the NBCA, as everywhere else in Laos, is relatively low. Precise data on the population per age group in the area are unknown, but the agricultural census provides information on the entire Viengthong district. Almost 47% of the population are under 14 years old and only 15.6% are over 45 years of age.

Figure 1: Population by age in Viengthong district in 1999



Source: Agricultural census, 1999.

1.4.3 Number of active persons per family

Because of the large number of young people, especially the high number of children in school going age, the number of economically active persons per family is relatively low. If the figure of 3.1 active persons per family as given in the table below is applied to the 1802 families in the area, this will give a total of 5586 active persons, representing 46.5% of the population in the NBCA.

Table 13: Number of active persons per family

N° of active per family	Percent of family
1	1
2	39
3	22
4	18
5	21
Average	**3.1/family**

Source: Agricultural census, 1999

1.4.4 Sexual division of labour: the family as unit of production

In the concerned area, the production unit is the family. The only apparent form of technical specialisation is based on sex and to lesser extent on age. Aside from these divisions, hardly any technical specialisation exists. Some activities are only performed by particular persons (such as blacksmiths, wicker workers, hunters of a particular type of animal etc.), but this is related to motivation or talent, and not to specialisation[19]. All these persons conducting such activities also do their usual work at the farm. The only kind of tasks done by particular persons are religious (healers) or modern ones (teacher, headmen). Basically, every family does the same kind of socio-cultural and productive work in order to subsist.

Sexual division of labour

The division of labour between the sexes is the main basis on which work is organised. It is applied to almost all activities conducted by a family. Some groups of activities tend to be more dominated by one of the sexes, but few are purely the domain of women or men. An attempt to present this division of labour is made in Table 14.

Table 14: Sexual division of labour

Domains	Men's tasks	Shared tasks	Women's tasks
Upland field and garden	Clearing big trees, burning	Fencing, weeding, harvesting, transporting, milling	Clearing brush, participation in labour exchange, carrying the cassava
Paddy field	Ploughing, repairing dykes, harrowing	Planting, harvesting, transporting, milling	
Livestock	Construction of fences and pens, slaughtering big animals, work concerning cattle, buffalo, fishpond		Looking food, preparing and giving the food
Silk			Feeding and looking after the worms and the silk preparation
Hunting	Big animals, with guns, traps, crossbows, when blood may flow, and / or hunting in dense forest	Small animals, when no blood flows, gathering in dense forest, going into the water	
Fishing	With cast net, gill net, spear-gun, basket trap,	With lift net, sip scoop net, without going fully into the water	
NTFP collection	Products that grow in dense forest, or one has to climb or cut trees to get them	Products with monetary value (except under conditions as described for men)	Bamboo shoots, mushrooms, vegetables, roots…preparing the products, collecting firewood
Domestic work	Repairing instruments and tools	Looking after children, preparing food (occasionally for men)	Fetching water, gathering firewood, cooking rice, preparing food, making rice whiskey, washing clothes, doing the dishes, cleaning the house, looking after children,
Handicraft	Wickerwork		Weaving (Tai), embroidery (Hmong and Yao), bedding
Other work	Trading, political work, house construction, blacksmith	Shaman, teacher, doctor (mainly men)	Making rice whiskey

[19] We can find some persons more skilful in making some sort of tools (blacksmith), wickerwork or some families growing or collecting products that others do not have, but no family will be involved in only one type of production activity.

When observing this division of work, some repetition appears. The logic of this division seems to be organised and structured around some general principles. Some of these principles are expressed by people themselves, some others are deduced from behaviour and/or appear to be a logical connection between the different activities done by the same sex. According to villagers men do heavy and dangerous work (use axes, fire, guns, cut and carry wood) while women do so-called “light” work, although for some of the work also strength and stamina are needed such as carrying cassava, firewood, weeding…. Women's work also mainly takes place in the domestic sphere and it is, at least partially, combined with childcare.

When asking who is working more, men or women, the answer varies depending on the criteria used. In qualitative terms, men perform more difficult and intensive activities. In quantitative terms, it is the women for whom “the work is never finished”, as we were told. When observing daily activities of both men and women, we noticed that male activities requires more strength, but they have time to relax (receive and visit friends, smoking and/or drinking together), while women never stop to work. They are doing domestic work or weaving, but never sit down for a chat. When proposing new activities, it is important not to overburden women, as their workload is already quite heavy.

Women's relation to power and economy
Generally, within the household, women have considerable control over the livelihood strategy and budget. The money is a common possession, and sometimes women look after it. Men sometimes do not even know the total number of poultry and pigs his family owns, two of the most important sources of income, and he has to ask his wife when he wants to sell some. On important expenditures a discussion is needed before a decision can be made.

Women's status varies according to ethnic group. Generally, Hmong society tends to be more male dominated. Women do more work, need to listen to their husband and parents in law (“the husband is the chief, we are the second” as a Hmong woman told us) and hardly speak with foreigners. In Tai Kadai society, women have a better status, where the work is probably the most equally divided. Among the Khmu women have a lot of freedom as women are allowed to drink alcohol, smoke tobacco etc. However, in all societies, women are absent in village (direct) decision-making.

1.4.5 Division of labour by age group
It is also useful to analyse labour aspect of livelihood strategies according to age class.

Children's work
Children gather some product near the village such as insects, *man one ling* or *dok khem*, and edible products for themselves or for the family. Girls will mainly participate in women's work (domestic work, collecting vegetal product, looking after younger siblings) while boys will hunt small birds, go fishing etc. Depending on the time, the work requested and the school program, they will also participate in farm work if necessary (clearing and weeding swidden fields, pulling young rice from seedbeds to transplant in the paddy fields).

Old person's work
Old people reduce their activities, or at least have stopped to do the heavy tasks when their children are of an age when they are able to replace them. However, they never really stop to work. They can be considered as fully active persons until they are 50 years old and half-active until 60. Even older persons are still useful for the family by conducting domestic work (the grand mother prepares the food and takes care of children, the grand father makes the

grass tiles for the roof or does some wickerwork) so the parents are free to go to work to the fields.

1.5 Wealth, poverty, social differentiation and its reasons

Wealth varies according to village and the family but can also vary depending on the period in life. Understanding the various reasons leading to enrichment or impoverishment is a difficult thing, but essential to comprehend the life of people and their economy.

1.5.1 Wealth and poverty among families

Often there are little and/or variable economic differences between families. However, there is of course a significant difference between richest and poorest of families. Important is to understand why this is the case. Wealth is mainly determined by the level of production, and by the quantity of products sold.

Table 15: Main factors leading to poverty for five types of wealth level.

	Surplus	**Capital**	**Ratio active/passive**	**Handicapped, drug addicts**	**Misfortune****	**Livelihood specialisation**
Marginal*	- - -	- -	- -	+ +	- -	+ +
Poor	- -	- -	- -	-	- -	+
Middle poor	-	-	-	-	-	-
Middle rich	+	+	+	- -		+
Rich	+ +	+ +	+ +	- -		+ +

*Marginal is distinguished from poor by a chronic under production linked to a particular situation other than "external" production factors.
**Misfortune column presents events of bad luck but also and mainly vulnerability to it.

Of course, children of a wealthy family have more chance to become wealthy themselves. However, there are few inheritable goods. These are mainly limited to buffaloes, some paddy fields and money. So, although inherited capital plays a role in the enrichment process, it is not a fundamental one[20]. Usually, food or financial reserves are small, so wealth is mainly dependent on production capacity.

One of the most important criteria of the wealth of a family is its labour potential. The larger the number of active members in relation to the number of passive members, the better the family's production will be. This ratio depends on the age of the members, which influences the production capacity of every family accordingly: the richest can become the poorest. In addition, disease can also have disastrous consequences for production.

A third factor that alters the distribution of wealth is related to forces of nature. Insects or animals eating rice, a flood or a drought destroying fields, an epidemic killing cattle may all result in families becoming poor.

A fourth factor is the level of integration into modern society through party, education, government officials, family outside the area and other factors. Sometimes this brings about a stronger will to accumulate money and goods. Some families just stop producing when they have what they need, and do not try to accumulate capital. Some others develop some specific activities, sometimes very profitable (silk, opium, fishpond, chilly, small shops), to increasing their capital.

[20] According to the law, and apparently to the Tai tradition, inheritance is divided over the sons with a preference for the oldest, who usually will stay at is parents' house and will take care of them when old. The daughters get a certain amount of goods when they get married, but will get her share of the inheritance if she does not get married.

A last factor contributing to enrichment/impoverishment is bad luck such as one active family member gets sick for a long time or is handicapped, the house burns down, death or marriage (events that may lead to de-capitalisation) etc. can, if happening frequently in one family, lead to impoverishment.

Table 16: Criteria for impoverishment and enrichment

Criteria leading to poverty	**Criteria leading to wealth**
No investment (inherited) capital	Investment (inherited) capital
Negative balance of the active / passive family member ratio	Number of active family members exceeds that of the passive
Handicap or disease	Good health
New house to construct (newly married, resettled)	Good house
Natural disasters (climatic, insects, animals, epidemic)	Good natural conditions
Absence of technique, motivation to produce Addiction to alcohol, opium	Good production skills, adaptation to the market, wish to succeed

1.5.2 Enrichment and impoverishment process

Some of these criteria are negatively influencing each other. Imagine a poor family, for example a young couple coming from poor families with 4 small children. They do not have capital to settle thus live in a basic house, and have no buffaloes or cattle. When paddy fields are private property in the village they come from, they would not own one. If the fields are communal, they do not yet have one for themselves. They have two or three pigs and some poultry, but they all die after an epidemic. They have a swidden field, but rice yields are not sufficient so they have to work for others. Because they have to do this, they have less time to invest in their own farm, so the situation will get worse the next year. If one of the two active persons gets ill, they will have no money to buy medicine. They have to borrow rice, but since it is difficult for them repay this debt, other families do not want to give them anymore. If the moral of the couple is not strong, the man may become an alcoholic, or if he is ill a lot and cannot buy medicine, he will perhaps smoke opium as a painkiller. And so the spiral of impoverishment continues.

Now imagine a rich family. It is a big family, with perhaps one or two grand parents not too old, with some children who are married and grandchildren. Labour is in large supply and can be devoted to different activities. They have a large paddy field and buffaloes since a long time. If this would be a Hmong family, they perhaps have a long history of opium cultivation and cow raising that was the basis of the family capital. Their swidden field produces enough rice for sale, in the form of paddy and alcohol. The division of labour allows for more specified activities to generate income such as chilly growing, silk production, opium trade. Raising small and big animals also brings in cash. The more money they earn, the more money they can invest (starting a business, raising big animals, small tractors can be rented), and the better they can cope with natural disasters or ill health because of their financial reserves. When also part of the village elite, they would know before and better than others about new state directives and economic development, so they can adapt more easily. Their wealth is secured for a long time.

Table 17: Summary of family capital in US$ in target village, 2000

	Level type	No person	K big animal	K house	K goods	K money	Total	Total/ Person
Long Ngua Pa	F1	4	0.00	0.00	0.00	13.00	**13.00**	*3.3*
	F2	11	875.00	0.00	0.00	100.00	**975.00**	*88.6*
	F3	8.5	875.00	625.00	1,806.00	500.00	**3,806.00**	*447.8*
Nam Neun	F1	5	0.00	0.00	0.00	112.00	**112.00**	*22.4*
	F2	4	0.00	25.00	19.00	287.00	**331.00**	*82.8*
	F3	4	375.00	187.50	912.50	1,250.00	**2,725.00**	*681.3*
Bouamphat	F1	4.5	0.00	0.00	0.00	0.00	**0.00**	*0.0*
	F2	5	562.50	75.00	69.00	-75.00	**631.50**	*126.3*
	F3	10	3,000.00	75.00	38.00	1,375.00	**4,488.00**	*448.8*
Deunbin/	F1	7.5	0.00	0.00	0.00	0.00	**0.00**	*0.0*
Houy Teun	F2	6	0.00	137.00	62.50	7.00	**206.50**	*34.4*
	F3	10.5	250.00	0.00	0.00	31.00	**281.00**	*26.8*
Phonexong	F1	2					**0.00**	*0.0*
	F2	6	1,875.00	37.50	85.00	19.00	**2,016.50**	*336.1*
	F3	6	325.00	3750	250.00	63.00	**1,013.00**	*168.8*
Xay	F1	10	930.00	0.00	37.00	13.00	**980.00**	*98.0*
	F2	8	750.00	813.00	1,337.00	150.00	**3,050.00**	*381.3*
	F3	5.5					**0.00**	*0.0*
Sakok	F1	3					**0.00**	*0.0*
	F2	7					**0.00**	*0.0*
	F3	5					**0.00**	*0.0*

Level type of family (F) means degree of supposed family's poverty. F1: poor, F2: normal, F3: rich. Concerning the number of persons, children between 0 to 5 are counted as half persons. K means capital or things capitalised. In category "big animal", only cows and buffaloes are included. K house means money invested in house construction. K goods is approximate price of expensive goods possessed (radio, motor, bicycle…). K money is the savings a family still had at the end of 2000.

1.5.3 Social differentiation between villages

There are, of course, also economic differences between villages as they exist between families, although no village is composed of only poor or rich people. We noticed more or less the same degree of differentiation between families in every village. The points summarised below are the main factors leading to enrichment of villages. They are important, but they do not solely explain the wealth of a village. Looking at the factors, one will recognise the characteristics of a Tai village.

- First of all, a rich village is defined by having access to good agricultural land, a large area that can be used for shifting cultivation and to raise livestock - fish, poultry, pigs, cattle.
- Furthermore being able to cultivate paddy rice is important to a certain extent. This point is often related to the first criterion: paddy fields take less space than shifting cultivation. Through a more efficient use of land, villagers have more forest and can supplement their rice production by shifting cultivation.
- Often, rich villages have access roads. Villagers do not have to walk one or more days to reach a market to sell their produce and to buy basic household items. In addition, there are more traders and the price of goods is better, for sale as well as for buying.
- Rich villages are often those that have been settled in one place for a long period of time because they occupied good agricultural land and have not been disturbed by resettlement, and thus do not have the burden of the high cost of a resettlement.

Impact and cost of resettlement
Migration and resettlement over a long distance are extremely costly. Usually, some men go first to the new place and start swidden fields so that they have rice to eat when the whole family will come. In this period, the women stay behind with their children. The family's production decreases because they have split up. Before the final migration, the men usually come back to the former village. All this coming and going takes a lot of time that could otherwise have been put in farming. When moving, not all goods can be taken. If a family has big animals, the transport cost will be high. If they do not want to take them, they will sell them and buy new ones. The family often looses out in such a transaction because they are under pressure to sell. When arriving, rice is in short supply, the area is not yet developed and people have to build new houses and buy or make basic equipment. Resettlement will cost several million of kip, and a family has to start from the beginning to accumulate new capital.

1.5.4 Roads, poverty, production and the cash economy

Some of these criteria mentioned above may be antagonistic, like the proximity of the road and the size of the agricultural land. In some cases, the proximity of the road is not necessarily an advantage. Some villages that have been resettled near the road and near other villages, face problems as land is of low quality or in short supply. They may have been resettled on steep slopes or on the land of an older village. It might mean they have access to the market, but sometimes they have nothing to sell. This is the case for a number of villages near Müang Hiam, and perhaps also in Müang Xon area (mainly Khmu). On the other hand, remote villages may have the benefit of a bigger agricultural territory than those near the road may have. They may have good harvests and raise a lot of livestock. They may be able to compensate for the absence of the road by trading in other ways. For opium and cattle, there are always traders who come to the village. The northern part of the NBCA is the market territory of Vietnamese traders. A comparison of the cash economy of (some) villages near to and far from the road have led to the conclusion that the cash economy is not necessarily more developed near the road. In conclusion, a road seems on the whole to be a good thing if the road comes to the village, but not in case the village is going to the road.

Distance to the road
The situation of Tamla area, although outside the national park, is a good example of the above mentioned issues. It is one of the more remote areas in the district (an 8-hour walk from the road and the district capital). Situated on a high, flat and rich plateau with paddy rice, grasslands and a big forest, the rice yields are excellent and livestock is plentiful. To compensate for their remoteness, they make whiskey from their rice surplus and organise an expedition to take it to the market. They have horses to carry goods. The women also sell their weavings. The village sells cattle to traders from Xieng Khouang and Müang Hiam, and there are usually more cattle buyers than there is cattle to sell.

CHAPTER TWO: PRODUCTION PROFILE

2.1 Introduction

In this report, we have chosen to present the data per activity. All activities together make up the economic life of the target population. It shows the large diversity of the activities in which farmers are engaged. They are not only farmers, nor are they only livestock breeders, or hunters, or gatherers, they are all in one. Moreover, these activities all overlap in time, in technique and in the final use of their products. This demonstrates a fundamental element of the peasant economy: the absence of specialisation whereby all families undertake diverse production systems. This is probably due to long absence of the market economy: peasant economy is oriented on self-sufficiency and motivated by minimising risks. Diversifying production means that each family is independent from each other. In addition, the dangers and risks, such as climatic change and trade dependence, which can lead to disasters if production is based on only one element, will have a minimum of effect on the farmers.

2.2 Rice production: paddy and shifting cultivation

Rice is the staple food of all people concerned in this research. This is expressed through the general word for 'eating', which translates literally in "to eat rice" for all ethnic groups. Rice is most of all for human consumption, but also pigs, poultry and dogs will eat it. It is also used as a sacrifice to spirits. To be poor is to lack rice. Having to eat corn or cassava is considered to suffer from famine, although this is less the case in Hmong villages. Rice is the most important pillar of the local economy. The two mains ways to plant rice are through paddy or wet rice cultivation in 'lowland fields' or shifting cultivation in upland fields[21].

Table 18: Surface area of rice fields in Viengthong NBCA

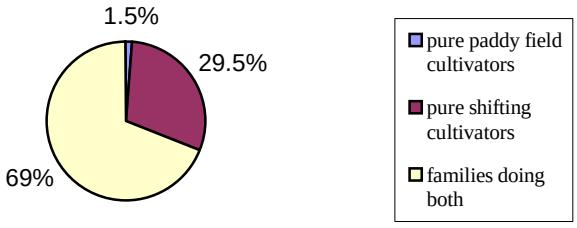
	No. of ha			**% of area**	**With fallow**	**No. ha**	**% of area**
Upland rice (Hi)	985		1268	77.7%	6895	7178	96%
Wet season paddy rice (Na pi)	252	283		22.3%	283		4%
Dry season paddy rice (Na seng)	31						

For counting fallow, the area of upland rice is multiplied by 7 (average estimated years of fallow). The total gives 70 km² of cultivated land, which represents 2.5% of the total NBCA territory.

Most of the people living in the National Park practice shifting cultivation. Families who only have paddy fields form a small minority while almost a third of the Viengthong district families' (there is no specific data on the NBCA) only practice shifting cultivation.

[21] Terminology of lowland and upland fields is not only a reference to altitude of the field as a “lowland field” can be situated higher than an “upland field”, nor is it a question of slope. It is more a reference to an ethnic and cultural division of the nation between the Lao Lum, who traditionally are paddy rice cultivators, and the “ethnic groups”, traditionally involved in shifting cultivation. This is why this terminology that “ethnicises” a type of culture or “substancialises” ethnical practice will not be used in this report.

Figure 2: Modes of rice production per family in Vienthong (1999)



As we wrote in Chapter, the division between different ethnic groups of paddy fields is not equal (see Table 19). Half of the total rice production of the Tai population comes from paddy fields, as opposed to only 10% for the other groups.

Table 19: Supposed importance of rice per type of rice production per ethnic group

Ethnic groups	**Rice kg/year per person**	**% prod hai**	**% prod na**	**% prod na seng**
Tai Lao	327	61	37	3
Other Tai	361	43	51	7
Lao Lum	*344*	*52*	*44*	*5*
Khmu	384	91	8	1
Hmong-Mien	273	86	11	3
Mixed village	353	86	15	
Average	330	71	26	3

Because average yields of paddy fields are higher than yields from swidden fields, the proportion of rice coming from paddy cultivation is not proportional to the area devoted to this mode of cultivation. However, even when taking this into account, paddy cultivation is still marginal in comparison to shifting cultivation. The ratio is 0.66:1.

Figure 3: Type of rice production

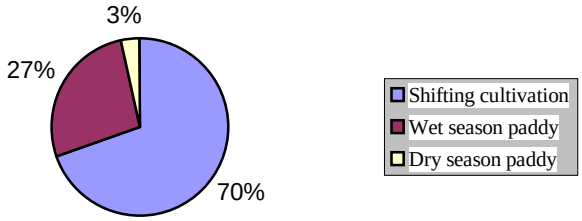


Table 20: Rice yields per hectare and mode of production

Type of agriculture	**No. ha**	**Yield per ha**	**Production**	**Percentage of total**
Shifting cultivation	985	2,3	2265,5	70
Wet season paddy	252	3,5	882	27
Dry season paddy	31	3,5	108,5	3
Total	**1268**		**3256**	**100**

A constraint to paddy cultivation is the limited availability of suitable land. Labour is not much of a constraint as two active persons can cultivate up to one hectare of paddy and two hectares if they have access to a tractor, while they would not be able to cultivate more than half a hectare when doing shifting cultivation.

Table 21: Comparison between the importance of shifting cultivation and production of rice per person in Viengthong NBCA

% of rice coming from shifting cultivation	Average kg of rice per person	Number of villages
100	283	17
85-97	344	11
55-84	366	8
24-54	379	14

2.2.1 Shifting cultivation

Definition and main characteristics

In Laos, shifting cultivation is done on 'forest' land. It consists of clearing a plot of land by cutting trees and shrub with axes and machetes, letting the debris dry and burning it. The debris will fertilise the soil. A corridor of bare soil is sometimes made around the field to prevent forest fires. When this is finished, farmers make small holes in the soil with a dibble stick and put some rice seeds in it (sometimes mixed with other crops, mainly cucumber). In specific places other crops are planted, such as chilly, corn, various sorts of tubers and vegetables (see also the section on gardening). These are for example places where wood has been re-burned, termite hills, particularly good or bad soil, near the field house etc. Afterwards follows a long period devoted to weeding. This work takes the longest and is perhaps the hardest of all. Depending on the age of the burned forest, weeding needs to be done between 2 to 4 times up to harvesting. When harvesting, the rice is usually put in stacks in the field, to be threshed there a few weeks later[22], put in bags and brought back to the house.

Organisation of the production

Usually, in shifting cultivation exchange of labour between families occurs. There are few activities in the field that are not subject to exchange of labour. Between 2 and 20 families may co-operate, depending on the family and village organisation. Most often, exchange groups are not fixed and each person decides with whom he will share his labour. The rule is simple: for one day a person spends in your field, you should work one day in his field. If ten persons went to work one day in your field, you will have to work for ten days in ten different fields.

Table 22: Approximate seasonal calendar for shifting cultivation

2	3	4	5	6	7	8	9	10	11	12	% of work
Look for plot of land											?
	Clearing the plot										12%
		Burn									3%
		Gathering and re-burning wood									5%
		Build field house									1%
			Fencing								?
			Planting crops								8%
				Weeding (1/2/3 times, and sometimes 4)							35%
								Harvest (1/2/3 times)			11%
								Gathering rice			7%
									Threshing rice and bringing it to the house		17%

Average percentage of working time for each activities are calculated based on calculations of students in 1999 (8 calculations)

[22] I don't really know what is the motivation is for doing this and why the rice is not directly threshed. People usually say it is because harvest is tiresome so they need to rest first.

Site selection

Villagers usually do not have precisely determined sites for swidden fields. They think more in terms of area, pragmatically determined according to the proposed use.
The two main factors they base their choice on are:

- an old and quite large vegetation cover although the trees should not be too big,
- relatively near to the village.

In addition to these two criteria, others are:

- presence of drinking water near the field,
- accessibility, with a minimum of mountains, cliffs, rivers or marshes to cross,
- land should be as flat as possible,
- good soil, without stones or rocks.

The selection criteria can also involve the presence of another activity elsewhere on the village territory. For example, a family with a private wet rice field far from the village, or with a fishpond, may choose to create the dry rice field nearby. In this way, a number of different activities may accumulate in the same place.

The distance people are prepared to travel depends on whether they are willing to sleep in the field. If they do not want to sleep at their farm, the distance will usually not be over an hour's walk from the village, which is the most common situation. If it takes two or three hours to reach, coming back at night is difficult, but still possible. When the field is further away, the family resides partly in the village and partly in their field. In this case, they can use this situation to raise animals (pigs and poultry) in better conditions, and grow vegetables. This is only possible if the family is large as they need someone to stay behind in the village and if shifting cultivation is their principal subsistence activity.

To decide where the actual fields are going to be villages first have a meeting to decide when they will start looking for a place. Villagers meet to express their preferences. After this meeting, the choice of a field is made in three different ways depending on the village traditions:

- Each family decides themselves on the location of their future fields wherever they want. They usually try to stay close to each other for better protection against wild animals. This is, for example, the case in Long Ngua Pa or Nam Neun.
- Families form groups (between 3 and 20 families) who assist each other, and select their future fields together. All the families in the one group work together to clear the plot and cut the grass. This is the case in Buamphat and Deunbin
- All families go together to find and mark future fields. Villagers form big groups (the size of such groups depends on the possibility of village territory for making big plots of swidden fields), and clear a common plot. Within this communal plot, each family gets their own area that they cleared, but the organisation of the work is communal.

The main rule which gives a family access to land is membership of the village or having permission from the village chief if they do not belong to the village. A previous user has primary rights to use old fallow land. However, if someone else expresses interest in that piece of land, and the original user does not want to use it this year, he cannot refuse this other family to take it.

Age of forest and rotation.

One of the most important characteristics of shifting cultivation is the fallow period. The longer the fallow period, the better the yield will be and the less weeding needs to be done.

Depending on the quality of the soil, the minimum fallow period is between 3 to 5 years. When the rotation period is shorter, work becomes too difficult, yields too low, and the situation will get worse over time. As mentioned earlier, shifting cultivation is preferable in an area that has a good vegetation cover and that the plot is in the proximity of the village. These two criteria are contradictory. After a while, these areas will be too far from the village and farmers have to start cultivating on their former fallow land: this is the beginning of a rotation circle. This is the case in the Development zone in Sakok: villagers did shifting cultivation on fallow land left by former inhabitants who left the area in 1985. Thus, the land was left to fallow for a period of 15 to 30 years when they settled here. Now, most of these fallow lands have been exploited, and peasants have to return to previously cleared plots. In case of more densely populated areas, land with a good vegetation cover is rare and a more strict rotation, at a family level, must be organised, as it is the case in Baan Xay.

Finally, there is a distinction between rotational and non-rotational cultivation. Although one should avoid thinking in exclusive terms, those who cultivate crops in a rotational cycle against those who do not. It also depends on the age of a village. Newly settled villages may not yet need to return to their fallow land because they have not yet exploited the whole of their territory.

Table 23: General data concerning shifting cultivation in target villages, 2000

Village	N° family	No of ha	No family doing SC	Years of fallow	Average yield	No ha/Fam	Total rice production
Long Ngua Pa	53	40	53	5-20	3	0.75	120
Namneun	41	24.5	41	7-30	3	0.60	73.5
Buamphat	44	36	44	7-25	3	0.82	108
Deunbin	38	23.5	32	7-15	3	0.73	70.5
Ponexong	58	25	56	5-20	3	0.45	75
Xay	52	19*	52	3-15	3	0.37	57
Sakok	42	22.5	40	5-30	2.8	0.56	63
Total	**328**	**190.5**	**318**		**2.97**	**0.61**	**567**

* Because the surface area mentioned when doing interviews was obviously wrong (8.5 ha), the number of ha are taken from the agricultural census.

Advantages and disadvantages of shifting cultivation

- **Shifting cultivation does not require much technology or capital.** A low technological and capital input is an important element considering the average income per person in the area (around 70$ per year). Shifting cultivation is a democratic type of cultivation favourable for poor people. With only a machete one could start practising shifting cultivation.

- **It is adaptable to many circumstances.** Shifting cultivation does not require any particular type of soil or relief. The only criterion is a minimum of forest cover, which was and still is the case of almost the whole of Laos. Because of this characteristic, it is possible to live off and in a mountainous area (80% of Laotian territory consists of mountains). This is very different from paddy cultivation for which a specific area is needed.

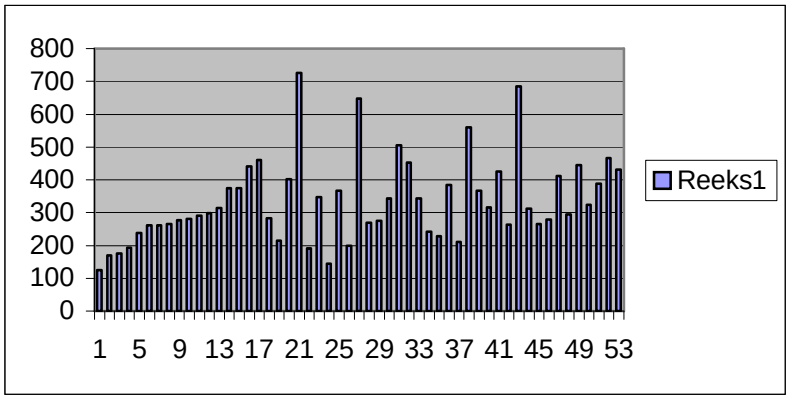
- **Others**. In addition to the advantages mentioned above, another one is that it provides the possibility to plant several crops in the same plot (which avoids having to make a separate

vegetable garden and increases bio-diversity). Furthermore, its nature provides the possibility to move relatively easily from the one place to the next.

All these advantages make up the success of shifting cultivation in this mountainous area. It also makes societies very independent. Low technology input, low capital investment, little dependence on land guarantees the survival of ethnic groups. It saved peoples lives during the war, as they were always able to grow crops, wherever they had to go to. These advantages make it possible to reject the usual criticism on shifting cultivation as being out of date and an obstacle for development. Both Condominas and Haudricourt[23] mention that shifting cultivation was a technical innovation that appeared after wet rice cultivation, as an answer to the difficulties in using such a technique in mountainous areas. The people practising shifting cultivation are self-reliant who cost the state very little money, a state that has no money anyway. Thus, the process of shifting cultivation stabilisation may transform villagers in becoming dependent on an external economy, over which they have little if any control.

- **It is a technique with a low productivity**. The low productivity of shifting cultivation is not an absolute fact. The area concerned still has a low population density and it is possible to conduct shifting cultivation under good conditions. The yield is around 2 to 2.5 tons per hectare, and higher in some places. In comparison, paddy fields offer an average of 3 to 3.5 tons per hectare. However, depending on the soil, the water and the technical inputs (presence of labour buffalo/motor), swidden fields sometimes provide a better yield per hectare. This is particularly the case if we take in account other products grown in swidden fields. When calculating the surface area the farmer cultivated, he did not only count the area devoted to rice, but also banana, corn, sesame, crops that grow in the same plot. Taking into account the financial value of the total production of such fields, it may even be more profitable than paddy cultivation that only provides rice.

Figure 4: Division of villages (1 to 53) according to the importance of shifting cultivation for rice production, compared to their average production of rice per person (0 to 800)



From village 1 to village 17 : 100%
From village 18 to village 28 : 85-97%
From village 29 to village 36 : 55-84%
From village 37 and over end : 24-54%

- **It takes more work than paddy fields**. This is not necessarily true in optimal conditions, as is the case most of the time. Paddy rice cultivation has activity peaks in shorter periods and offers the possibility to relax in between those busy times. In shifting cultivation weeding and the distance from the field to the village make it very time consuming.

[23] Condominas, 1972, Haudricourt, 1962

- **It is more vulnerable to weather conditions and destruction by animals**. It lacks the water level control that is possible in paddy fields. Also, it is necessary to guard the fields to protect the crops against birds and other animals. As the fields are not near the village, guarding is not always possible. This may make shifting cultivation more vulnerable to natural problems.

- **It needs a lot of space and leads to forest destruction.** This is the main problem concerning shifting cultivation. However, it is wrong to assume that shifting cultivation necessarily leads to destruction. Firstly, if it is done on old fallow land (what all farmers want), forest regeneration is guaranteed. Secondly, most of the area where shifting cultivation takes place should not be considered as forest land that is periodically cut, but as production land that is periodically covered by forest due to its long fallow period. Regarding shifting cultivation this way, it does not lead to forest destruction, but to its regeneration.

Clearing dense forest
Clearing in dense forests (more than 20 to 30 years old) happens for three main reasons. Firstly, in case an increase in population makes the actual territory too small. Secondly, when villages or families are resettled (or resettle themselves) in area where such forest exist. Thirdly, when the fallow period of the land reserved for shifting cultivation is still too short, and shifting cultivation on such lands is unproductive.

If recognising fallow land as agricultural land and not only as an abandoned plot, the area concerned is very large. In case of a 10-year fallow period, and using one hectare a year, a family needs access to 10 hectares in total. In that case, it is true that shifting cultivation needs a lot of space, and the yield per agricultural land would decrease from 2.5 tons per hectare to 0.25 ton per hectare. This agricultural technique is only sustainable with a low population density.

Shifting cultivation in itself does not lead to destruction of the forest, but in some instances it can be destructive when the wrong practices are used:
- Uncontrolled forest fire when burning cleared fields.
- Cultivating the same plot for two or three years after clearing it, without leaving it to fallow.
- Cultivating plots repetitively, which have had fallow periods that were too short (less than 3 to 5 years).

The first point leads to unproductive destruction of forest, while the other two encourage growth of unpalatable grasses.

All these points are linked to the same phenomenon: **shifting cultivation is not sustainable when fallow periods become shorter, and/or when population density increases.** When population increases (due to natural reproduction, migration and people settling close together in the same area), the forests and vegetation cleared is not enough to guarantee soil fertility and to stop grass from growing. All these points show the difficulties of shifting cultivation, in comparison to paddy cultivation. Farmers are well aware of this, and most of them would like to stop shifting cultivation in favour of paddy cultivation if they could.

Hai tay/hai kout: an alternative for shifting cultivation?

At the beginning of nineties, the Lao-American Project tried to implement a agricultural technique as a substitute to shifting cultivation. The basic principle is to plough the soil with a cultivator (hai tay) or by hand with a hoe (hai kout). It was piloted in Long Ngua Pa, Nam Neun (8 ha) and Buamphat (20 ha). Each family who participated got a private plot of land in a flat area. The plots were divided in 2 to 4 sections on which they had to rotate. The first years, the project used a tractor for ploughing, after this period the farmers had to find their own solutions. Some bought a cultivator (1 in Long Ngua Pa, 1 in Namneun, 2 in Buamphat), others ploughed their fields by hand. The main advantage for farmers is that they no longer have to move their fields and that the fields are near to the village. The disadvantages were the decrease in yields and an increase of weeds. It is difficult to tell the exact reason

Table 24: Evolution of hai kout yield and number of weeding times in Development zone

Years	Yield/ ha	N° weeding
1992	2500	2
1993	1500	3
1994	800	3/4
1995	600	4
1996	440	4

without making precise enquiries. Of course, it is related to the absence of long fallow periods. However, the fact that most farmers ploughed the fields by hand since the second year may also be an important point. Some of the families who possess cultivators still continue doing hai tay. One family in Long Ngua Pa has a yield of 2.7 ton/ha, and a family from NamNeun has 4 tone/ha, having to weed 3 times.

2.2.2 Paddy cultivation

Definition and main characteristics

Paddy cultivation is a perennial type of agriculture on fixed fields. The principle consists of preparing the soil in small plots closed by small dykes, in such a way that the irrigation water coming from the canals can reach all plots. Rice is grown in water, and sediments brought in via irrigation water make the soil fertile. In the NBCA, around 252 hectare (*na pi*, L) are devoted to this type of cultivation, of which 13 ha can also be cultivated in dry season (*na seng*; L).

Table 25: Approximate seasonal calendar for paddy cultivation

4	5	6	7	8	9	10	11	12
	Nursery preparation							
	Repair dam and channel							
	Flooding							
		Plough, harrow two times						
		Transplant rice						
				Clean dyke, cut grass				
						Harvest, gather, dry out fields		
							Threshing, fan, transport	

After a first weeding (not necessary if buffaloes graze in the fields first) and reparation of dykes, the irrigation channel is opened and water floods the fields. Afterwards the soil is ploughed (with a buffalo or a cultivator), then harrowed. During this time, rice seeds have been planted in a rice nursery, either dibbled in upland fields, or in a small plot in the paddy fields). When the harrowing is finished, the rice is taken from the seedbeds and transplanted in the flooded fields. The main work is finished. Up to the harvest, farmers only have to weed,

survey the water level and repair dykes. When rice is ripe, it is harvested and usually put in stacks in the field, threshed and brought to the house a few weeks later

Table 26: Data concerning paddy cultivation in target villages, 2000

	Buamphat	**Ponexong**	**Xay**	**Sakok**
Total No of family	44	58	52	42
Total No of ha	3	18	23	8.9
N° family doing paddy	4	28	50	16
Percent on total F	9%	48%	96%	38%
No of ha of public fields	0	12	14.4	16
N° family	0	28	50	0
No of ha of private fields	3	6	8.6	0
percent on total surface	100%	33%	37%	0%
No family	4	7	12	0
Percent on No F doing paddy cultivation	100%	25%	24%	0%
Yield/ha	2	2.4	3	2.5
Total production (ton)	6	43.2	69	22.25

The irrigation system

Irrigation is the key to the success of paddy cultivation, but it is also one of its major difficulties. We can distinguish 4 types of irrigation systems:

- **Rainfed irrigation**. This is the most basic one but it is not so common in the area. It is usually practised only when other systems are impossible for geographical, hydrological, financial or technical reasons. It consists of waiting for the rain to fill the fields. It is uncontrollable, the result is uncertain and yields are usually low.

- **River irrigation**. The system consists of building paddy fields along riverbeds, in such a way that it transforms the river into an irrigation channel. This is usually done only in a small valley. Before, this type of irrigation was not common, but now it is used more and more because of the lack of better suitable land. Also with this method of irrigation it is difficult to control the water quantity.

- **Traditional irrigation dams and channels**. This type is the most frequently used method to irrigate paddy fields. It consists of building a dam in the upper part of a big river by making a dam of wooden trunks. This is a difficult job and usually requires the help of all villagers for one day or more. Without using stone or cement, the dam breaks easily and needs to be repaired or constructed again every one or two years. From this dam, an irrigation channel is constructed leading the water up to the fields, sometimes over a long distance (more than a kilometre). Making such a channel is even harder than constructing the dam. As villagers do not have much equipment, breaking stones is very hard, and requires the help of all villagers. As the dam, the channel also breaks often and needs to be repaired frequently.

Constructing irrigation systems with limited equipment
Without appropriate equipment for breaking big rocks when digging an irrigation channel, people make a big fire on top of it and when it is very hot, water is poured is over the rock. Similarly, when transforming a piece of forest into new paddy fields, one of the most difficult things is to take out the stumps of big trees. To remove them, a whole is dug around the trunk in which a fire is made. Although these methods function, they are very time-consuming.

- **Modern irrigation dams and channels**. In the area, some villages now have access to modern irrigation systems. Often, this was financed by the Lao-American Project. The system consists of building a dam and sometimes a channel of concrete or stone. The advantage is that it is more durable and that it can contain larger quantities of water. Such

an irrigation system can only be constructed with external financial means. With regard to the costs of such infrastructure, thorough studies have to be conducted beforehand in order to take decision on possible target villages and locations of such systems.

Advantage and inconvenience of paddy cultivation

Advantages of paddy fields are:

- It is less time consuming than shifting cultivation,
- Yields are good, around 3 to 4 tons per hectare in this area,
- It is a sedentary form of agriculture so that it does not need a lot of space,
- It allows for a higher population density per km² (one hectare of wet season paddy can provide enough rice for 10 persons).

The promotion of paddy rice cultivation still seems to be a good solution to (partially) combining rice production with forest conservation. Nowadays, most of the people are convinced of the advantages of paddy cultivation, even though those who have never practised it and/or who still practice shifting cultivation in good conditions still have reservations about it. Despite all this, there are several problems with respect to paddy cultivation.

- **The availability of suitable land**. Almost everybody seems to be convinced of the advantage of paddy cultivation, but the problem is to find suitable land to convert in to paddy fields. There are several constraints to the creation of new paddy fields, including;
  - topography, flat land being better than sloping
  - water availability
  - soil quality
  - accessibility or location of the fields
  - altitude (the yield tends to decrease at higher altitudes)

  Since the implementation of the national policy of shifting cultivation stabilisation, the surface area of paddy fields increased a lot. In Müang Hiam area, 40% of paddy fields are created after 1987 (22% in Müang Peu area), an increase of 3% per year. Now, suitable land is starting to become scarce.

- **Dependence on water.** Irrigation works and canals are often fragile and difficult to maintain (see before).

- **Creating new paddy fields is laborious or needs a lot of technical input**. The construction of the fields and the irrigation system in a mountainous and forested area is very difficult. All vegetation needs to be burned, tree trunks removed and land needs to be levelled. After that, farmers have to construct irrigation dams and canals. Without modern technology, this operation takes a lot of time.

- **Capital needed to buy buffaloes or cultivators.** Another constraint that limits the cultivation of paddy rice is the necessity of ploughing aides. A buffalo costs between 1 and 2,5 million kip (about ten times the amount a person earns in one year) and a cultivator costs even more. Alternatively, the cost of hiring a buffalo or cultivator is about 5,000 kip per are, equivalent to about 1/3rd of the field's production. *Financial support is thus often requested from villagers who do not posses buffaloes*

- **Need of technical knowledge.** Lack of knowledge on how to cultivate paddy rice is a real constraint for those who have never practised it. It is the reason why some families are not that motivated to start growing paddy rice. It involves a lot of specific skills such as water management, making rice nurseries etc., all very different from shifting cultivation. *A lot of technical support will be necessary for people who never grew paddy rice before.*

The problems for developing paddy fields are numerous, but all solvable (technical training and assistance and credit). However, there is one issue that cannot be solved and that is the issue of suitable land. Already, there is a lack of suitable paddy land whereas the actual production of rice from paddy fields, both wet and dry season, is only enough for a small percentage of the total amount of rice necessary for consumption.

Developing na seng.

The government promotes *na seng*, paddy cultivation in the dry season, as a solution to increase in rice production without using more land as paddy fields can be cultivated twice a year[24]. *Na seng* usually needs a very costly irrigation system that can only be paid for with external assistance of either the government or a development project. In the NBCA, na seng was introduced in Müang Peu by the Vietnamese in 1976. It has been further developed under the Lao American project. They had their own motivations: na seng is done in winter time, a period of leisure except for the harvesting of opium. It is often planted in paddy fields as a second crop. By introducing *na seng*, rice and opium would compete for land. After a first experiment in 1997, *na seng* has been introduced in 1998 in Müang Xon and in 1999 in Müang Hiam. It is difficult to say what the surface area of dry rice cultivation is because it changes every year depending on the availability of water and the motivation of the farmers. According to the agricultural census, the area of na seng in 1999 in the Viengthong part of the NBCA is around 31 ha, a little over 10% of the total surface area of wet rice fields.

Table 27: Implementation of na seng in the district (projection for the end of the year, maximum surface)

Year	Müang Xon	Müang Hiam	Müang Peu	Total
1998	32 ha	0	0	**32 ha**
1999	37 ha	22 ha	0	**59 ha**
2000	150 ha	50 ha	0	**200 ha**
2001	*150 ha*	*50 ha*	*20 ha*	***220 ha***

The slow increase in the amount of hectares in Müang Hiam is explained by the fact that the irrigation system is not finished. There are 14 villages doing na seng, 8 in Müang Xon (That, Khong, Houayhom, Nanom, Xon Neua, Xon Tay, Houay Meuay, Xay) and 6 in Müang Hiam (Khong, Navieng, Nathouane, Thatiam, Müanghiam, Sapanthong).

Apparently, the result of na seng is quite promising. Yields are very good in the northern part of the area (even though it decreases the yield in the rainy season). However, there are problems concerning dry rice cultivation.

- **Yield.** Despite the yield of 7 tones per hectare in the experimentation stage, the average yield now is around 4 tone per hectare. It depends very much on the availability of water and the general weather conditions. If it is too dry, there is not enough water for the whole area. When it is too cold, the production will decrease, sometimes very substantial, as was the case in 2000.

[24] While in Vietnam, China or Philippine paddy fields can be cultivated 4 times a years.

- **Problems with irrigation canals.** Some canals, as those build in Müang Hiam area, get blocked. Labour is needed to repair and maintain them, but only the persons doing na seng would want to participate. Therefore, na seng should only be done with a large number of families, which in turn leads to a lack of land. In some places, they have to use their traditional irrigation canals.

- **Use of fertiliser.** There was a debate concerning the necessity of using fertiliser. Some families used fertiliser and some did not but all had the same yield. But supposing that using fertiliser would make difference in the future, district authorities may urge farmers to start using it. The problem is the high price of fertiliser. A yield of 4 tones per hectares would need 2 million kip worth of fertiliser, which is around 36% of the total value of the harvest. Moreover, farmers usually do not know how to use it and in what quantity. Theoretically, they also have to use insecticide, but after different cases of disease, they stopped doing it. Insecticide contaminates water, insects, frogs, fish and snails that most of the farmers drink and eat in large quantities.

Table 28: Price of chemical fertiliser per hectare of na seng, (1999)

Fertiliser type	Bag/ha	Kg/ha	Price per kg	Price/ha
16-20	6	300	1,600 k	480,000 k
46-00	4	200	1,200 k	240,000 k
Total	**10**	**500**		**720,000 k**

Source: district agricultural authorities, personal enquiries, IRD.

- **Adaptation to the system**. Some problems are linked to the adaptation of this type of cultivation. First, the district should mobilise extension workers to train and demonstrate the techniques. As it was unusual for farmer to work during the winter, they began too soon because they did not want to be late with starting the wet season cycle. Some families did not want to cultivate their plot of na seng. Since district authorities had ordered that all parcels needed to be cultivated, the land was sometimes given to someone else, leading to two different families cultivating the same plot.

- **Grazing areas.** Finally, implementation of na seng necessitates the development of separate grazing areas because buffaloes can no longer graze in the paddy fields. This is problematic as illustrated in the part on livestock.

Table 29: Example of a seasonal calendar of na seng: in Ban Xay in 1998

Rice nursery	Month	Total hours	Hours per ha
Plough	January	3	30
Harrow (2 times)	January	4	40
Making flat	January	1	10
Planting rice in nursery	January	0.3	3
Field			
Ploughing	January	18	180
Harrow (2 time)	January	24	240
Planting	February	18	180
Clean the dyke	April	6	60
Harvesting	June	36	360
Gather rice together	June	18	180
Biting	June	36	360
Transport	June	18	180
Total	**6 month**	**182.3**	**1,823**

On this surface area, the family plants 15 kg (150kg/ha) and has a yield of 400 kg (4 tone/ha, 27kg for 1 kg planted). With a total of 23 working days per active family member, in monetary value one earns around 10 000 k (1.3$) per working day.

2.3 Garden culture and other plantations

In addition to rice, numerous varieties of others crops are planted, in the rice fields, or in separate plots called “garden” (*suan*, L). These include vegetables, tubers and fruits, all for human consumption, fodder for livestock and cash crops. We will focus on the different types of products, and a little on the cultivation techniques, which are in many cases similar to shifting cultivation.

We can distinguish four types of gardens:

1 Shifting garden made on slopes
2 Gardens on flat land near the river
3 Fenced / Home gardens
4 Tree plantations, although these are technically not really gardens.

Almost all families have at least one type of garden. Mostly, a garden of corn and/or cassava where others crops also can be planted such as pumpkin, banana etc., and often also one or two others gardens. The most common are opium plantations in combination with *phak kat* and some others products and/or silk mulberry gardens. In addition, there are the home gardens where they grow vegetables and plant fruit trees. In total, including the paddy fields and dry rice fields, a family has around 4 to 5 different plots that they cultivate.

2.3.1 Shifting gardens made on slopes.

Such gardens are exactly similar in technique as is required for dry rice. It is part of the shifting cultivation system. The two main products planted in these gardens are corn and cassava both as fodder for livestock and for human consumption. A family usually grows 10 to 20 are of one of the two crops. The main reason to have such a garden separately from the dry rice field is people want to grow these crops closer to the village. Until a few years ago, only paddy rice cultivators had such gardens, because those who grow dry rice planted other crops in the same area as rice. The increase of “garden” is related to the promotion of cassava by the government (see also part on *livestock*). In the table below an overview is given of the main crops that most families grow, in addition to rice.

Table 30: Main products planted in swidden fields

English	Lao	English	Lao
Corn	Sali	Loofah	Mak Bouap
Sesame	Mak Duay	Yam	Man Phao
Tobacco	Ya Soub	Sweet Potatoes	Man Dang
Peanuts	Mak Toua Din	Green Garlic	Phak Tiem
Cucumber	Mak Teng	Wax Gourd	Mak Nam
Pumpkin	Mak Eu	Eggplants	Mak Keua
Ginger	Khing	Coriander	Phak Hom Pom
Banana	Mak Kouay	Beens	Thua
Sugar Cane	Oy	Cabbage/Salad	Phak Kat
Chilly	Mak Phet	?	Mak Pheuak/Mak Satou
Onion	Phak Boua	?	Mak Tone/Mak Phak
Soybeans	Mak Toua Luang	?	Mak One

2.3.2 Gardens on flat land, preferably near the river

These gardens are usually made on better soil, and can sometimes be cultivated continually over several years. In these gardens farmers plant opium, *phak kat* and mulberries. Not all villages have such gardens, for example there are numerous in Xay, but none in Deunbin. It depends on the suitability of the area whether these gardens exist.

2.3.3 Home gardens

These gardens (*suan khua*, L, literally cook gardens,) resemble the former type, but they have a different use. They are made on riverbeds during the dry season. The floods in the rainy season left sediments that make the soil fertile in these locations. When the water retreats the farmer takes out the stones on a plot between 2 to 10 m², fences it, and plants salad, *phak kat*, garlic and onion. The same type of crops can be grown in the village, close to the house. In this case, the soil is fertilised with pig manure.

2.3.4 Fruit trees

Fruit tree plantation is widespread in the area. Almost all families have some fruit trees. They usually do not have very many. Until recently, there was no market for fruit and the trees were only planted for home consumption. Most of the time, the trees are planted in the village, around the house, because they need to be well protected against animals. The only trees planted outside of the village are bananas, so easy to grow and so plentiful that loosing a part of the yield is no problem. The other tree is the mulberry, which does not attract animals.

Table 31: Main fruit trees planted in the village area and/or gardens, target villages, 2000

Lao	**English**	**Lao**	**English**	**Lao**	**English**
Mouang	Mango	Lamnyay	Longan	Houng	Papaya
Kham	?	Khai	Peach	Tiong	Santol?
Pouk	?	Man	Cherry	Nao	Lemon
Kiang	Orange	Sida	Guava	Mone	Mulberry

2.3.5 Examples of other crops

- **Sesame and Job's tears.** Sesame and Job's tears are traditional crops in the area, but were usually grown in small quantities for domestic consumption. They have become commercial crops only in 1998. Now, their cultivation is fairly widespread in villages along the road. The productivity of the crops is quite similar when comparing income per hectare. In some villages, these crops have become the primary source of income. But the success was short lived. The second year, production increased, but buyers did not come (or when they came they never paid). Now, nobody wants to plant these corps again without any prospect of selling. This experience was a good lesson to what can happen in case farmers would become dependent on the global market (e.g. market fluctuations).

Table 32: Yield per ha and profitability of commercial crops (estimation) in comparison with shifting cultivation, 1999

	Job's tears	**Sesame**	**Shifting cultivation**
Yield	600 kg	3,000 kg	2,000 kg
Price per kg	3,000 k	600 k	600 k
Price/ha.	US$ 225	US$ 225	US$ 150
Time spent	150 days	150 days	
Profitability per day	US$ 1.5 (12,000 k)	US$ 1.5 (12,000 k)	US$ 0.75 (6,000 k)

- **Opium.** Opium cultivation has a long history in the area. The French government first introduced it after the British developed market for opium in China. Opium needs specific soil, on a high altitude, a cold climate without too much sunlight. The Hmong traditionally grow the crop, but in the NBCA, Tai villages also cultivate opium since a long time. Cultivation is widespread in Viengthong district, especially in the northern part. The district is mentioned in a UN report as having the highest production in Laos in the 1980's. Since the implementation of the Lao-American Project in 1989, production has decreased a lot, although it still exists. Since the project finished, the production of opium seems to be on the increase again.

Table 33: Estimation of opium production in target villages, 2000

Villages	**No of family**	**No F planting opium**		**Average Surface area/ F (are)**	**No of bia[25]/F**	**Total (kg)**	**Total income per village (US$)**	**Average income per F, (US$)**
		Number	*percent*					
Long Ngua Pa	53	53	100	20	25	51	8,290.00	156.40
Namneun	41	41	100	20	18	28,4	4,617.00	112.60
Buamphat	44	43	98	15	13	21,5	3,497.00	81.30
Deunbin	38	20	53	10	5	3,9	626.00	31.30
Ponexong	57	5	9	5	2	0,4	63.00	12.50
Xay	52	27	52	10	2	2,1	338.00	12.50
Sakok	42	0	0	0	0	0	0.00	0.00
Total	**327**	**189**	**58**	**11.4**	**10.8**	**78.8**	**12,810.00**	**67.80**

The income in Table 33 is calculated on the basis of the market value of their total produce. In reality, farmers do not sell everything. A certain part of the production is smoked at home. Opium addicts need between 2 to 8 khan of opium per year (0.8 to 3kg). An average, based 6 persons interviewed, is 5 khan (1.9 kg) per year. One pipe is about 1 bak, one pipe per day adds up to about 3.6 khan per year (1.4 kg), and 2 pipes a day, 7.3 khan per year (2.8 kg). In other words, 13% of the total production is needed for home consumption in the villages studied. Another part of production is kept for different purposes. It serves as a means of exchange when people need goods or pay for labour (one day of work costs 1.5 bak of opium). In case of disease it is used as an anaesthetic (a person will take between 3 to 20 bia depending on the severity and duration of the disease). This is another 20% of the total production.

It is difficult to estimate average opium production per hectare. Opium is a very profitable type of cultivation, but not an easy one. It is difficult to plant and yields are always unpredictable, as there are times there is nothing to harvest. In addition, the fields are at a long distance from the village and it overlaps with the work on the swidden fields. Furthermore, the opium fields need to be burned in October, when it can still rain. Then there is the harvesting opium, which is a difficult technique.

[25] Local measuring units for opium:

	Local measure		gram
10 000	li	=	0.04
1 000	phong	=	0.39
100	Selung/bak	=	3.85
10	bia	=	38.5
1	khan	=	385

1000 gr = 2.6 khan = 26 bia = 260 bak

Table 34: Part of opium consumed, saved and sold in target villages, 2000

Villages	Total production	No opium smokers	Quantity smoked	Quantity not sold	Total sale US $	% sale	Average income/F, US $
Long Ngua Pa	1325	28	140	53	7,075.00	85	133.50
Namneun	738	10	50	41	4,043.80	88	98.60
Buamphat	559	15	75	43	2,756.30	79	64.10
Deunbin	100	16	80	20	0.00	0	0.00
Ponexong	10	0	0	5	31.25	50	6.30
Xay	54	3	15	27	75.00	22	2.80
Sakok	0	0?	0	0	0.00	0	0.00
Total	**2786**	**72**	**360**	**189**	**1,3981.25**	**80**	**74.00**

Under optimal conditions in this area, 10 are may give a yield of 0.5-1 kg, but often only 100 to 300 grams. But whatever the yield is, with a price of US$ 162.50 per kg in 2000, US$ 325 in 1999 and around US$ 250 this years[26], opium is still very lucrative. Supposing a farmer has a yield of 3 kg per hectare, he would earn US$ 488. In comparison, paddy rice has a value of US $ 219 per hectare, and Job's tears or sesame around US$ 225.

Table 35: Price of opium per measuring unit, 2000

Measure	Kip	Dollar	Gr/kg	Kip	Dollar
1 bak	5,000	0.63	10 gr	13,000	1.63
1 bia	50,000	6.30	100 gr	130,000	16.30
1 khan	500,000	62.50	1 kg	1,300,000	162.50

2.4 Livestock

Raising animals is one of the most important productive activities. Villagers are as much stockbreeders as they are cultivators. Sometimes, mainly among the Hmong, livestock raising is the most important activity. While animals such as poultry and pigs the most common, the most prestigious and expensive animals are cattle and buffaloes – which are not as common and less equitably shared.

Table 36: Domestic animals and their purpose

Animal		Purpose for raising
Cattle	Cows	To sell or sacrifice (at weddings, funerals, village/Müang spirit ceremonies)
	Buffalo	To sell, draught, or to sacrifice (wedding…)
	Pigs	To sell, exchange, sacrifice, or home consumption
Poultry	Chickens	
	Duck	
Other animals	Dogs	To sell, sacrifice, use in hunting, guard and clean the house
	Goats	To sacrifice (or to sell)
	Fish	For home consumption (or to sell)
	Horses	Draught animals for agriculture or transport of goods
	Turkeys	For home consumption or to sell
	Pigeons	For home consumption and some local sale

2.4.1 Composition and division of livestock

There are about 3,652 big animals in the Viengthong part of NBCA, or 1.3 heads per km². Of these, 67% are buffaloes and 23% are cows. There are about twice as many pigs as cattle, and 2.6 times as many poultry as people.

[26] The price varies because of the quality and the price on the Burmese market.

Table 37: Livestock statistics in Viengthong District

	Total number		Average number per family member	
Buffalo	2,437	3652	2/f	0.3/pers.
Cows	1,215			
Pigs		7,350	4/f	0.6/pers.
Poultry		31,626	17.3/f	2.6/pers.

Data: agricultural census

Table 37 shows the average number per domestic animal per family and person. It provides an indication as to its importance, but it does not tell use anything about the actual distribution of livestock per family. Although all families have pigs and poultry, there are inequalities in the ownership of large livestock. There are no data available concerning the NBCA area, but it was possible to make a good estimation based on the figures of Viengthong district (more than half of its population is living in the national park).

Table 38: Estimated domestic animals per families in Viengthong district (percentages, 1999).

% of families having:	0 head	1 head	2 heads	3 to 4 heads	5 to 9 heads	10 heads or more
buffalo	39%	18%	16%	14.5%	8%	3.5%
cows	84%	1.5%	5.5%	4.5%	3.5%	1.5%
pigs	9%	14.5%	21%	22%	26.5%	6.5%

Data: agricultural census and personal estimation

Concerning the target villages, 43 percent of the families do not own any big animals while on average each family would possess 4,6 heads.

Table 39: Possession of cattle per village and family

Villages	No family	No buffalo	No cow	No total big animal	Average/F	No F without	% F without	Average/F possessing
Long Ngua Pa	53	47	258	305	5.8	9	17	6.9
Nam Neun	41	27	37	64	1.6	19	46	2.9
Buamphat	44	63	142	205	4.7	8	18	5.7
Deunbin	38	24	28	52	1.4	32	84	8.7
Ponexong	58	88	44	132	2.3	33	57	5.3
Xay	52	67	4	71	1.4	14	27	1.9
Sakok	42	35	0?	35	0.8	27	64	2.3
Total	**328**	**351**	**513**	**864**	**2.6**	**142**	**43**	**4.6**

2.4.2 Livestock, ethnic group, ecology

There are some particular relations between ethnic groups and some kinds of animals and/or techniques of animal raising. These links stem from both cultural demands and cultural preference for a particular type of environment for the village. Mainly the people living near a river, mostly the Tai population, and to a lesser extent the Khmu, who fish, develop fishponds or raise ducks. The Hmong have a preference for pigs, which they use in many rituals, while the Phu Tai and the Khmu use more poultry for the same reasons. Horses are more common in shifting cultivation villages and remote areas. They are mainly used to carry the rice from the field to the house, which explains why the Hmong living on mountaintops and sometimes practising shifting cultivation in another valley have many horses. In addition, horses are used for trade. The absence of goats in Tai and Khmu villages can be explained by the fact they do not like the taste of the meat, but also because they have gardens around the village. In Hmong villages this is usually not the case, so goat raising is compatible with their way of growing food crops. Moreover, they need goats for specific rituals.

Table 40: Average number of domestic animals per family of each ethnic group

Ethnic group	Cow/f	Buffalo/f	Total Cattle/f	Pigs/f	Poultry/f
Tai Lao	*0.4*	*1.9*	*2.3*	*3.9*	*17.3*
Phu Tai	*0,3*	*2.2*	*2.5*	*4.1*	*26.5*
Lao Lum	0.4	2	2.4	4	21.9
Lao Theung	0.1	0.9	1	3.3	13.2
Lao Sung	1.9	1.2	3.1	6.7	19.4
Mixed	0.3	0.9	1.2	2.6	17.4
Average	**0.7**	**1.3**	**2**	**4.1**	**18.8**

The distribution of cattle is also related to ethnicity because of choice as well as because of economic differences. Buffaloes are symbolically important for Tai and Austro-Asiatic people; it is the principal sacrificial animal. Additionally, they are useful for wet rice cultivation, as mainly the Tai do. Alternatively, the Hmong raise cows, animals that suit high altitudes because they are better resistant against the cold. Cows need a large grazing area, whereas buffaloes do not need that much space and like water.

Cattle raising in Hmong a village, Müang Kao area
In this area, Hmong villages adapt their territory to make it suitable for cattle raising. They fence pathways around their village to create pastures for the cattle. It sometimes means they have to travel longer to reach their upland fields. They also periodically burn the grasslands so that cattle can graze on the young grass.

The difference in buffalo ownership between the Tai and Khmu cannot only be explained by a cultural preference for the animal. It is partly caused by the difference in economic status. For reasons explained in Chapter 1, the Khmu are more marginalised and usually have less capital to be able to purchase these animals.

Since cattle, along with a good rice harvests, represent a primary wealth factor, information about cattle ownership (at the village and family levels) is very important. Again we find inequalities in livestock distribution according to ethnic group, village and location. Khmu are again the poorest, especially in recently resettled villages, since they need to sell the livestock that cannot be transported to market.

2.4.3 Main features of production and related problems

Gender division of labour
Women generally feed pigs and poultry twice a day. Men are involved only in constructing pigpens, chicken runs, making fences, and making troughs. Men mainly look after cattle, and the fishponds. *In case of development activities relating to poultry and pigs both men and women should be involved.*

Feeding
The main fodder for poultry and pigs but also fish is rice bran (one kilo of rice provides around 40% of the daily ration). If the bran is not enough, it is supplemented with cassava and corn. Sometimes plants from the forest are added when the other sources of food are insufficient or if it is more convenient. Cattle usually fend for themselves, except when they are herded into harvested rice fields to eat straw, or when buffaloes are tended near the paddy fields during the ploughing season. An additional input is the provision of salt, both for nutrition and to help the owner manage/herd the animals.

Table 41: Division of pigs, poultry and fishpond in target data, 2000

Villages	*No of family*	**No pig**	**No pig/F**	**No poultry**	**No poultry/F**	**Fishpond**
Long Ngua Pa	53	160	3	350	6,6	12
Namneun	41	150	3,7	110	2,7	0
Buamphat	44	142	3,2	259	5,9	8
Deunbin	38	154	4,1	?		0
Ponexong	57	290	5,1	?		6
Xay	52	156	3,0	360	6,9	0
Sakok	42	20	0,5	120	2,8	3
Total	**327**	**1072**	**3,3**	**?**	**?**	**29**

Time spent on animal raising.

For all animals, not much time is spent on looking after them. Feeding may take around an hour a day for poultry and pigs. For cattle, the main job is to herd them when they are in their pasture (the time spent will depend on the distance to the pastures), fence the pasture area when needed, and look after the buffaloes when they are kept in the village during ploughing time. The latter can take a full day, but is usually carried out by boys. *Time is not a constraint in animal production.*

Reproduction

The reproductive cycle can be an important limitation on the rearing of pigs and cattle. For pigs, it may be that when they are kept pens, natural reproduction may be impeded (see below). For cattle, the problem is the chaining of the animals in some villages. The more cattle you have the more your herd will increase. For cattle, *one solution may be to borrow a male buffalo/cow for reproduction*

Vaccination

Vaccines are not available, except in the "development zone", where LAP supplied some. Traditional medicine is also very rare. However, epidemics are very common, happening every few years in most villages. *Medicine and vaccines for livestock are the most important need for farmers what livestock is concerned*. Sometimes all the poultry of one village die within a day if an epidemic breaks out. The biggest problem of vaccines is to ensure that they are kept in cold storage. Another problem may be the cost of the vaccine. Since farmers operate in a very low cash economy, the costs may outweigh the benefits, as may be the case when buying vaccines for poultry.

Others

- **Purchase capital**. Another important point is the lack of capital or of low-interest credit to buy big animals, like cattle. The poorer villagers need an outside source for this.

- **Predators**. (see chapter on "hunting")

- **End-use for livestock**. (see also chapters on "economy" and "hunting")
  Animal sacrifice takes place on specific occasions. It is rare that an animal is killed without a specific reason. Animals are killed to cure diseases and for religious ceremonies, in compensation for exchange labour, for sale, in exchange of goods with a trader, and when receiving guests. Besides these occasions, villagers rarely consume large livestock but instead consume wildlife. Sacrifice is not a necessity, but more a social arrangement, which provides a reason to kill an animal. To eliminate these reasons will

not suppress the need to eat meat. Buddhist villagers, who do not make sacrifices, do not kill fewer animals than animist villagers do.

In conclusion, we can summarise the main limitations to livestock production as:
- lack of capital,
- lack of medicine against epidemics,
- lack of time to produce fodder,
- low reproduction rate.

2.4.4 Space for livestock production

Pigs

One major change involving animal raising is related to the enclosure of grazing areas, sometimes ordered by local authorities. As far as pigs are concerned, the aim has been to create a cleaner village and reduce the potential for disease by putting the pigs in pens or fenced areas, but also to protect the fields. Fencing pigs avoids having to fence gardens or paddy fields. However, this also may have negative impacts on pig farming. Farmers need to grow more corn and cassava to feed the pigs because they no longer roam around in search of food. In addition, reproduction becomes more difficult. No information is available to judge the medical impact on the village, though it seems to be positive. Fencing and penning to protect fields may be positive in densely populated areas, where fields are near the villages. But it may be negative in remote areas with a low population density, where the income from cultivation may be too small to replace the income lost by having fewer pigs. Possible solutions to the problems are:
- Do not try to implement identical solutions in every village, as each has its own specific circumstances.
- Propose but do not impose a solution.
- Try to analyse the profitability of different types of pig farming systems and suggest alternatives to the farmer. For example, most have built individual pens, but others have collective pens near the village, which may be better for reproduction. Some others carry out pig farming near their gardens, far from the village, where there is more food and less disease.

Cattle

For buffaloes and cows, the main changes concern enclosed grazing areas. The main aim is to stop cattle grazing near the village where they may eat the crops. Stopping cattle from grazing near the village was introduced with *na seng.* Before the cattle could graze in the paddy fields after harvest, but not when the paddy fields are used for a second rice harvest. To protect the rice, cattle had to graze away from the village or in a fenced area. Enclosed grazing areas may have some advantages. Some villagers asked district authorities to implement this system in their own village. Disadvantages appear when pastures are so far from the village that it makes it difficult to reach and to guard, and where many wild predators are. Enclosed grazing areas can sometimes lead to a serious decrease in cattle. For example, in Müang Hiam there is a big decrease in the number of cattle since the implementation of *na seng*. Some farmers kept a minimal number of buffaloes for ploughing. Poor farmers who do not own a buffalo now find it difficult to rent one.

Traditional cattle pasture organisation
The traditional way to keep cattle varies from village to village. Grazing areas may be near or far from the village, with fenced pathways, fully enclosed, or without fences, near hilltops (cows) or in lowlands (buffaloes), in grasslands or in forests. The cattle may be tended by a person who receives a salary or in a rotating system by owners themselves. Where possible, the grazing areas may include paddy fields. Before planting rice, cattle graze the fields to improve soil fertility and decrease weeds and shrubs which aids land preparation, and again after harvesting they can eat rice straw.

The solutions are similar to those proposed for small animals:
- do not impose a single solution, but consider case by case and discuss with the farmer to get to know his/her point of view;
- create pastures near the village if possible;
- create or improve rotating grazing systems (for example use crop fallow land as grazing areas for cattle and increase soil fertility),
- consider the possibility of employing poor villagers as cattle guards in return for a salary or some of the offspring.

Fishponds
The fishpond is a recent phenomenon outside of the flat and populated areas of Müang Hiam and Müang Xon. Farmers only consider fish farming if there are not enough fish in the rivers. The absence of fishponds is also caused by the fact that it is not always possible to find suitable young fish. The only traditional "fishpond" is the paddy field itself. When irrigated, numerous small fish enter the field. They are caught when the field is drained, which can add up to several kg per hectare. Principal constraints to fish farming are:
- suitable location: a flat piece of land for the pond and irrigation possibilities,
- time and tools to build the fishpond;
- money to invest in young fish,
- the necessity to feed the fish regularly.

If well constructed, a fishpond can be profitable, guaranteeing a permanent source of protein, and extra income. It does not take that much work and can be made in a small area. Developing fishponds can protect the aquatic resources in the environment without diminishing fish consumption. The problem will be obtaining young fish, lack of technical knowledge, and finding a good location for the fishponds in mountainous villages. The cold may also be a constraint in this region.

2.4.5 Recommendations for research for livestock specialist:
In my opinion, a livestock specialist should concentrate on the following issues:
- Find out what sort of epidemics are present in the area, why they occur, how they spread, what the possibilities are to stop them, what is the cost of doing this and how can this best be financed: by the project and/or farmer?
- Comparing advantages and disadvantages of different type of fodder (mainly corn or cassava) with respect to production and preparing time, yield, ecological impact etc.)
- Comparing advantages and disadvantages of different types of grazing systems: enclosed areas versus free roaming for pigs, how best to look after cows and buffaloes etc.

2.5 Gathering forest products

Forest products are an important part of the livelihood of the NBCA inhabitants. They mainly serve to supplement their diet, but are also sold. In addition, forest products are used as livestock fodder and provide construction materials, firewood, lighting, and materials for making handicrafts and medicine.

Table 42: Use of forest products

Category of use	Products
Consumption as food or medicine	Bamboo shoots
	Vegetables
	Mushrooms
	Fruit, roots, tubers, seeds…
Fodder for pigs	Roots, stems, leaves…
Construction and others	For house: Bamboo, wood, vines
	For handicraft: bamboo, rattan, leaves for pigmentation…
Sale	Cardamom, paper mulberry, broom grass, orchid, honey etc.

2.5.1 Products for consumption

The main products that people eat are bamboo shoots (the most important in terms of quantity), vegetables (leaves, shoots, grass, creepers), mushrooms, fruit, seeds and tubers.

Table 43: Average of forest product eaten per year in kg. (based on 30 families)

N° of family	Total kg	Bamboo shoots	Vegetables	Mushrooms	Fruit	% Bamboo shoots	% Vegetables	% Other
30	165 kg/F	92	62	7,5	3	56	37,5	6,5

Bamboo shoots

Although everybody eats bamboo shoots, their nutritional value is low. The most important are hok, khom and tya, but there are also other species. We found a total of 9 species that were eaten: *tya, loun, khom, van, lai, hia, lang, sang, hok.* In terms of weight, bamboo shoots represent more than half of the forest products eaten. In some villages, farmers plant some varieties of bamboo close to the village to have construction material and bamboo shoots in their immediate environment.

The importance of Bamboo

Bamboo is one of the most important and commonly used forest products in Asia. It has many advantages: its wood is hollow, very strong, easy to cut in small pieces, light and long. This makes it very suitable for handicrafts and construction. In addition, it provides food in the form of bamboo shoots. Furthermore, it is the home of some edible insects, and the To On (bamboo rat), a rodent that is also eaten. In the NBCA, bamboo is not widely cultivated, because its is still abundant in the forest. People, who plant it, usually want a specific variety closer to their house.

Vegetables

People eat a variety of wild vegetables. We identified a total of 34 species but there are no doubt many other. The most frequently eaten vegetables are *nok, ven, kout, hak, nao* and *kèp*. Most of theses species are found in or near paddy fields and wetlands and assumed to be important nutritionally.

Mushroom

Also mushrooms are an important food source. We found 14 species, of which the most important are *bii, katan, pouak, sanoun* and *man*. These are mainly found in upland fields.

Fruit
Although there are many types of edible forest fruits (9 species mentioned in interviews), people do not eat them in large quantities. A possible reason is that the forest fruits grow in dense and distant forests. They only go there occasionally to hunt wildlife.

Other products
Seeds, tubers and other products are also numerous. It is impossible to make an inventory of all edible forest products, as there are so many. Only the main products were studied. This may have led to an underestimation of products, which are less commonly gathered including fruits.

2.5.2 Non-edible forest products

Products used to make handicrafts
The most important products used in handicraft production are bamboo (mainly in wickerwork), rattan (for tables and stools), a leaves, bark, roots as natural dyes (for example *thon hom* leaves), broom grass *(dok khem,* for making brooms) and *ton lao* (as stuffing material for mattresses and cushions).

Medicinal products
There are also a large number of products that are used for medicinal purposes. It is impossible to give a list of such products because they are so many (see Schlemmer 1999).

Pig feed
Another important use of forest products is pig feed. When fodder produced in the fields is insufficient, or in case there are forest products, which can be used as pig feed, in abundance near village or near the field, families will take it home to feed their pigs. This is common practice. Two thirds of the 50 families interviewed gathered food for their pigs. The most important products are *bon* and *mun phao* (both tubers) but also *po sa*, *alamang* grass, *mak man*, *pak kout*, *pak hom*, *nya pheung* grass.

Firewood
Firewood is the only source of fuel in the NBCA. An estimation of the quantity used is difficult, it may be as much as 5m³ per family per year, which comes down to around 9,000 m³ per year for the whole of the Viengthong part of the NBCA. Most of the time only dead wood is used, but sometimes people cut trees or branches of trees when dead wood is not available near the village. Women the main persons responsible for collecting firewood.

Construction
See Chapter Four: Community and social development profile, paragraph 4.3 House construction for information.

2.5.3 Division of labour
Mainly women gather forest products, although men are also sometimes involved. They will go when strength is needed to collect the forest products or if such products grow in faraway places. Women and girls are the main gatherers of products such as bamboo shoots, vegetables in paddy fields and along the streams, mushrooms from upland fields or fallow

land. Men mainly collect fruits and medicinal products because of their location in dense forests, high up in trees. Other products that they collect are *tiang deng*, *dok pheung*, *mak tao*, *may ket sana*, *mak khen*. Products collected by both men and women are products that the family needs in large quantities, mostly for sale and are only available in a certain season. Cardamom is the most important of such products. The benefit of products gathered is individual, except for wax. Only this product is considered as a communal resource. The benefits have to be shared. For all other products, the collector may keep the benefit of what he collected. However, it is common to go gathering with friends and/or relatives. Often, when collecting bamboo shoots and vegetables, women take it as an opportunity to socialise and chat with each other.

2.5.4 Gathering technique

Gathering techniques are fairly simple, with the main tool being the hands, although, it does require expertise and knowledge about plants and ecology. The hardest thing in gathering is to climb trees. There is no special tool for gathering activities. They use knives for cutting, hoes for digging and baskets for transporting the products. Capital input for this activity is thus very low. The main limiting factors are labour and time.

2.5.5 Seasonal calendar of gathering activities

Vegetables (*top*, *khao*, *ven*, *kout*, *diane*...) can be found year round, and numerous others during a long period but mainly between March and September. Wood, bark, vines, roots and some tubers (*man phao*, *van fan*, *bone*...) can also be collected throughout the year. Fruits have two seasons: from June to August (*fay*, *ken*, *thao*) and from November to January (*ileung*, *mak phao*, *tianteuil*). Bamboo shoots are plentiful from February to September, but the height of the season is around June. Mushrooms are found from May to November, but the best period is June to August. Some products, such as orchids, *may ket sana*, rattan etc. can be collected all year long, but the difficulty with these products is that it takes a lot of time to find them. Therefore, villagers choose to gather them in winter when they have more free time. Other products (*mun phao*, *mun orn ling*…) are collected when there is a market demand for such products. A few products a collected during short specific season, the main ones being cardamom (August/September), honey (May) and wax (June/July).

Table 44: Seasonal calendar of collecting NTFP's

Product	**Period of availability**	**Period of collection**	**Product**	**Period of availability and collection**
Commercial products			*Mushrooms*	
Po sa	Year round	May - June, September - October	Het bii	May - August
Dok khem	Year round	November - February	Het tanoun	April - November
Mak neng	August - October		Het kadang	April - September
Tiang deng	January - February (?)		Het khon	May - August
May ket sana	All		Het pouark	May - August
Mak ken	October - January		Het man	May - November
Mak kha	August - October		Het taap	June - September
Vai	Year round	December - February	***Bamboo shoots***	
Ton lao	November - December		No sot	June - August
Mak kho	November - December		No hok	June - October
Man one ling	Year round	November - February	No lay	June - October
Honey	May		No sang	June - October
Dok pheung	Year round		No hia	June
Ki pheung	June - July		No khom	January - June
			No van	April - June
			No tya	February - June
			No men	May - September

2.5.6 Ecology of "forest" products

In this report forests products defined as all products that are not cultivated by humans. They not necessarily come from the forest. A large part is actually found in wetlands, grasslands, fallow land, cliffs, dense forests, and rivers but also swidden and paddy fields. Although many products are found in forests, it is only a small part in comparison to the amount coming from other places. In addition, some of the products coming from the forest such as rattan, cardamom, orchids are not of primary importance. Other locations provide wild products that are more important in every day life. Surprisingly, these are areas created by humans. Paddy fields, upland fields and fallow lands are full of edible, but not cultivated products. The paddy fields are the main location of 'forest products' for wet rice cultivators, whereas swidden fields are equally important to shifting cultivators. Finally, riverbanks offer a diverse variety of vegetables and animals, sometimes similar to those found in paddy fields, as they are both 'wetlands'.

Table 45: Typical forest product collection sites (REQUIRES VERIFICATION)

	Paddy field	**River bank**	**Upland field**	**Young fallow (1 to 3 years)**	**Fallow of 4 to 6 years**	**Old fallow (7 to 10/15**	**Fallow of more than 10-15 years/old forest**	**Grassland**
Vegetables	Khep	phak kout	phak kout ngong	paak nam	phak kha	phak haak	phak Maa	keua tam tan
	Ven	khom saling	phak tenglaï	paak kout		bai	phak Hak	
	nok (visiam)	bone	phak kadang	paak nao		kho	phak Nam	
	hompen	phak ven	phak homkin	paak hom pentai		sangsing	phak Kout	
	hin	phak ho	nya kouay	paak nya mou		pik	pak ahak	
	nan	phak ngoua		paak nod?		tong	pak samone	
	nya kouay	phak nok				na	phak nao	
	bii yen	kua seng han				phak ha	phak veun	
	nya kapi					phak somlom	phak kampom	
	pen						phak van	
							phak haa	
Bamboo shoots		no hok		no hok	no hok		no hok	
				no sot	no sot		no men	
				no tya	no khom		no khom	
							no van	
				no khom	no tya		no sang	
Musrhooms		het kon	het tanoun	het bii	het sanoun		het pouak	
			het vii	het pouak	het man		het man	
			het taap	het man	het paak		het luat	
			het man	het khon	het bii		hettan	
			het kadang	het kadang	het sanone		het taap	
				het tanoun	het man		het phao	
					het pouak		het koo	
					het tan			
Fruits		mak not		mak not	mak not	mak not	mak not	
				mak ko	mak ko	mak ko	mak ko	
						fruits mak fai	mak fai	
				mak ken	mak ken	mak ken	mak ken	
		mak kouay					mak kouay	
							mak sangsing	

							mak tin	
							mak mangiou	
							mak ngoua	
							mak phen	
							mak tao	
							mak hoo	
							mak katai	
Others		man one ling	man one ling	man one ling	man one ling	man one ling	man one ling	man one ling
		ton lao		ton lao	ton lao	ton lao	liane po	ton lao
				possa	possa	possa	Cardamome	kha deng
				dokkem	dok khem	dok khem	rotin	mak khai kai
				houa man kep		dok pheung	dok pheung	
				po hou	po hou	po hou	po hou	
				bai sontpome				
				man kep				

2.5.7 Solutions to a depletion of natural resources

An important reason for a decrease in availability of wild products is the increase of population that leads to more people gathering the same products. However, the influence of agriculture is more ambiguous. New paddy and swidden fields may lead to a decrease of some products but an increase of others. The most commonly eaten vegetables are found near rivers and in paddy fields, whereas mushrooms mainly grow in fallow land, as does bamboo.

Although agriculture may not lead to a decrease in the quantity of products, it does mean a decrease in old forests. As a result, some products used for commercial purposes such as cardamom, rattan, *mak tao* that grow in old forests decrease or disappear all together. Cardamom is still present in some areas because it grows in wet parts of the forest, near the river, a place where it is difficult practice shifting cultivation. It may be possible to protect a stretch of forest along rivers, by explaining people that it is an important habitat of products with a cash value. A decrease in commercially attractive products is often compensated by an increase of others, such as *po sa*, *man one ling*, *dok khem*, which grow in fallow lands. Another option is to promote and study the cultivation of cardamom and rattan in forest gardens.

Finally, unsustainable gathering techniques may lead to destruction such as not replanting collected product, cutting trees to pick the fruits etc. It is possible train people in better and more sustainable collection techniques.

2.5.8 Commercial value of forest products

Products for home-consumption

It is not common to sell such forest product because most of them are available in such large quantities that there is no real market for them. The people who want to eat them will collect them themselves. What does happen is that those products are presented as gifts to friends and relatives to maintain good relationships. Some mushrooms, or bamboo shoots are sold to people who pass by and to district staff who do not have the time to gather them.

Table 46: Commercial value of forest products in target villages, in kg and kip, 2000

NTFP	Quantity of NTFP collected in each target village								Price per kg when sold in village						
	L	**N**	**B**	**D**	**P**	**X**	**S**	**Total kg**	**L**	**N**	**B**	**D**	**P**	**X**	**S**
mak neng							50	**50**							17,000
po sa	200	70			300	120	500	**1,190**	1,000	1,000			1,000	700	1,500
dok khem	800				500		200	**1,500**	500				1,000		1,500
man one ling	400		400		1800	650		**3,250**	2,500		2,500		1,500	700	
ki pheung	60	90			82		16	**248**	30,000	40,000			40,000		30,000
dok pheung	6,000	2,400	5,200	1,2000	500	300	100	**26,500**	600	500	1,000	1,000	1,000	1,000	500
may ket sana							2,000	**2,000**							6,000
nang meuark							1,000	**1,000**							2,000
mak kha	500	100		50				**650**	1,500	1,500		1,500			
mak ken	50							**50**	500						
mak ko	500							**500**	500						
no may tia				1,2000				**12,000**				500			
tiang deng						40		**40**						1,500	

Commercial products

The sale of such products is very important for almost all families. Villagers do not really use these them, their only use is to generate income. Only recently these products became commercially interesting for the national and international market.

Table 47: Percentage of each product in the total income from commercial forest products in target villages, 2000, per village

NTFP's	Long Ngua Pa	Nam Neun	Buamphat	Deunbin	Ponexong	Xay	Sakok	Total US $
mak neng	0	0	0	0	0	0	5,1	**106**
po sa	1,8	1	0	0	3,8	7,6	4,5	**176**
dok khem	3,6	0	0	0	6,3	0	1,8	**150**
man one ling	9,1	0	15	0	34,3	**41,4**	0	**644**
ki pheung	16,3	**50,9**	0	0	**41,6**	0	2,9	**1,145**
dok pheung	**32,7**	17	**78,2**	**64,8**	6,3	27,3	0,3	**2,856**
may ket sana	0	0	0	0	0	0	**71,7**	**1,500**
nang meuark	0	0	0	0	0	0	12	**250**
mak kha	6,8	2,1	0	0,4	0	0	0	**122**
mak khen	0,2	0	0	0	0	0	0	**3**
mak ko	2,3	0	0	0	0	0	0	**31**
no may tia	0	0	0	32	0	0	0	**750**
tiang deng	0	0	0	0	0	5,5	0	**8**
sat pa	27,2	29	6,8	2,4	7,6	18,2	1,8	**881**
TOTAL %	100%	100%	100%	100%	100%	100%	100%	
Total US $	**1,378**	**884**	**831**	**2,316**	**985**	**137**	**2,091**	**8,622**

These products serve as an opportunity to generate cash income while it does not require any capital investment. However, to be able to collect these products several conditions have to be met. These are:

- the presence of such products in the area (some are only found in a specific area such as *tyan deng*, *mak tao*),
- the good infrastructure,
- the time, the will and the necessity to collect the products. Urban areas, and village who cultivate opium do not need the extra income, Hmong people do not like to

gather forest products, and poor families do not always have the time for collecting such products.
- the existence of a market, with stable and good prices.

Most NTFP's are mainly exported to China, Vietnam and Thailand, except for *po sa* which is bought by the Petlama company in Luang-Prabang. This company semi-manufactures it before selling it on to Thailand. Two traders in Viengthong buy products and sell them on outside the district. They employ middlemen who go to the villages to buy the products. Some of these middlemen are also working for themselves. They partly fix the price that becomes lower when they have to travel further. Because all intermediaries take a commission, the price that the people who collect the products get is quite low, sometimes so low that they do not want collect it anymore. Middlemen offer no contract and work on an informal basis. This can lead to the problem of products being ordered, but middlemen never coming back to buy them. In Nanom, in zone 7, villagers decided to stop collecting products after they were left with stocks that nobody came to buy. For some products such as *mak kha khai*, *peuak meuak, pak kantyong* there is no market at all.

Solutions to the problems described above could be to establish an NTFP co-operative as there was before. In addition, a good transport system could be set up to get the products from the villages into the district.

Table 48: Average quantity gathered of the main commercial NTFP's and profitability per hours of work, 1998/1999

Product	Quantity	No village	No family	Tot hours	Price per kg	Total price	Kips/hours
cardamom	4.5	3	13	26	9,500	42,384	2,600
dok khem	10	3	5	29	800	7,500	750
dok pheung	22.5	1	2	14	300	6,750	550
mak ken	90	1	1	48	2,500	225,000	4,700
mak tao	31	2	7	37	1,500	46,714	1,500
man one ling	30	3	8	40	1,800	55,125	1,100
po sa	32	3	7	100	1,200	41,429	700
vai	30	2	2	15	650	5000	300

2.6 Hunting and gathering of wildlife

2.6.1 Importance of hunting in the area

Hunting is important for food and income generation and almost all families are involved in this activity. Hunting, fishing and collecting insects and other aquatic animals generally account for more than half of the protein consumed. According to interviews among 45 families, it is estimated that such activities provide around 65% of the meat intake (varying between 44% in villages near the district centre and 80% in more remote areas).

Almost half of the protein intake from these hunting and gathering activities comes from fishing or 2/3rds when other aquatic animals are taken into account. Large animals hunted (or at least those reported to the project) are mainly barking deer, wild pig and pheasant, and we have extrapolated that about 2 000 barking deer and pigs captured the Viengthong portion of the NBCA area (see
Table 49).

Table 49: Average annual wild meat consumption per family (51 families from district area)

Animal	Kg/f	Percent	
Deer and wild pigs	28.3	19.5	33.5
Other mammals and reptiles	20	14	
Birds	5.7	4	4
Fish	66.2	46	62.5
Insects, molluscs, crustaceans	16.6	11.5	
Frogs	7.1	5	
Total	**144.1**		**100%**

Other animals hunted include mainly squirrels and rats, but also include porcupines, civets, snakes, monkeys and others. The investigations have revealed very few animals on which a taboo rests or a not considered edible. Hunters appear not to be selective, catching or shooting almost every kind of animal they come across.

Most wildlife is hunted for the purpose of consumption, but there are also two other motivations. One is to generate income and the other is to produce traditional medicine. For the latter purpose, mainly the bones and intestines are used. The animals that are used as ingredients in traditional medicine include bears, monkeys, pythons, cobras, porcupines, and wild goats. Most of these animals are protected species. Wildlife market is analysed below. It is interesting to note the virtual absence of the use of animal parts in handicrafts: bones are never used, although skin is occasionally is used for making small bags (see photo), straps, and shirts.

2.6.2 Ethnic and geographic variations in hunting practices

In the district hunting preferences vary according to ethnic group, population density and location of the village. In general, Tai people mainly hunt and gather water and wetland animals. These animals represent up to 90% of a family's wildlife consumption. In contrast, in Hmong villages where there are hardly any big rivers such animals are seldom hunted. The Hmong have taboos on hunting certain animals - they do not eat snakes, some kinds of rats, insects, and some kinds of monkeys.

The reason for variations in the type of wildlife consumed is the location of a village, rather than ethnic preferences. Thus, villagers usually hunt or gather the resources they find present on the village territory. A big river will lead to fish being important in the diet, a cliff to honey and wax collection being an important income source, etc.

Table 50: Estimation by village authorities of consumption of wild animals, in kg and percent, 2000

Animals	Long Ngua Pa		Nam neun		Buamphat		Deunbin		Ponexong		Xay		Sakok		Average	
	Kg	%	Kg	%	Kg	%	Kg	%	Kg	%	Kg	%	Kg	%	Kg	%
Fish	0.5	2	2	4	10	21	2.5	8	5	21	20	28	10	37	7.1	18
Other aquatic animals	0	0	0	0	1.5	3	0.5	2	1	4	40	56	1.5	6	6.4	16
Birds	8	25	4	9	5	11	7.5	25	5	21	1	1	3	11	4.8	12
Barking deer, wild pig	20	62	35	74	25	53	15	50	7	29	7	10	10	37	17.0	12
Others	4	12	6	13	6	13	4.5	15	6	25	4	6	2.5	9	4.7	42
Total	**32.5**	**101**	**47**	**100**	**47.5**	**101**	**30**	**100**	**24**	**100**	**72**	**101**	**27**	**100**	**40**	**100**

The availability or use of wildlife in the diet is not only due to geographic variations, but also to population density of the area. Villages with a low population density may have more hunting possibilities than those located in densely populated areas.

Table 51: Number of animals hunted per village and per family in one year, 2000

Villages	No family	Barking deer	Kg/F	Wild pig	Kg/F	Monkey	No/F	Wild chicken	No/F	Silver pheasant	No/F
Long Ngua Pa	53	15	8.5	15	17.0	6	0.1	100	1.9	100	1.9
Nam Neun	41	13	9.5	20	29.3	10	0.2	50	1.2	40	1
Buamphat	44	12	8	15	20.5	16	0.4	50	1.1	50	1.1
Deunbin	38	10	8	5	7.9	30	0.8	13	0.3	13	0.3
Ponexong	52	3	1.7	5	5.8	0	0	20	0.4	10	0.2
Xay	52	4	2.3	4	4.6	0	0	15	0.3	4	0.1
Sakok	42	6	4.3	20	28.6	12	0.3	40	1	30	0.7
Total	**322**	**63**	**5.9**	**84**	**15.7**	**74**	**0.2**	**288**	**0.9**	**247**	**0.8**

Note: in addition 250 squirrels in Buamphat, 120 nok kho in Deunbin, 20 nok kho and 20 hon in Ponexong, 6 hon and 2 meen in Xay.

2.6.3 Division of labour and hunting equipment

Hunting is principally a male activity. Women collect insects, frogs, aquatic animals, small fish, turtles and rats. They never use an instrument that causes animals to bleed, but only baskets and small shovels. Men begin to hunt when they are young, trying to kill birds with a small crossbow or a catapult and catching snails and small fish. They usually start to hunt or fish when they reach the age of 15 years. Between 15 and 18 (the legal age to use a gun), they can carry a spear gun and go farther to hunt. Hunters should neither be too young or too old.

Table 52: Fishing tools

Main fishing tools	Lao word
Lift net	*kadung*
Dip scoop net	*saving*
Cast net	*hee*
Gill net	*mong*
Basket trap	*say*
Wedge cone trap	*souang*
Fence filter trap	*li*

The most common weapon hunters use is a gun (a traditional one, home-made, or one supplied for official security[27]). The crossbow is still used for birds. In addition, various traps are used for catching birds, rats, civets, and wild chickens (snare, with club, with valve, with bait, with slipknot, with detonator). For fishing, they use a lift net, scoop net, cast net, gill net, basket trap, wedge cone trap, fence filter trap, or fish with a club or spear-gun. It is also possible to catch animals by hand (turtle, frog), hoe (bamboo rat) or knife (bamboo worm). Also, nests may be smoked (ground hornet). Hunting with guns can be carried out alone or in a group, with or without a dog, day or night, by tracking, ambush, at salt-licks, or with decoy calls or bait. Villagers make most of the instruments themselves, although often parts need to be purchased.

With perhaps 75% of the families owning guns (some poor families do not have the money to purchase a gun), there are 0.5 guns per km² in the Viengthong NBCA.

Some good hunters, who know the forest well, could be useful for the project as guide and informants on the ecology and wildlife in the area.

[27] There are two types of home-made guns: a Hmong one, with a short butt, and a Lao one. It is officially forbidden to use security guns for hunting. Village security agents have to explain every utilization of bullets but there is always the possibility to buy them from traders.

2.6.4 Dangerous animals or otherwise causing problems

Dangerous to humans

The bear is one of the few animals that can be dangerous to humans. When one meets a single bear, it generally leaves. However, a female with young may become very aggressive and attack humans. In 1998, one man died from a bear attack in Namsaad village. One Khmu man told us a female bear will not attack women. The only other animals reported to be dangerous to humans are snakes.

Table 53: Dangerous or problem causing animals in the area

Animals reported as dangerous		
Crops	*Livestock*	*Humans*
Wild pigs	Tigers	Bears
Bears	Wild dogs (*ma nay*)	Snakes
Porcupines	Other unidentified felines	
Rats	Civets	
Monkeys	Birds of prey, other birds	
Bears		
Birds (mainly *nok pit*)		

Dangerous to livestock

There are a number of different animals that eat chickens and ducks, but they are not as problematic as those that kill cattle, which are usually the villager's only capital reserve. In the area, a lot of cattle have disappeared, assumed killed by animals. The total number of cattle lost in the Development zone in 1999 is 24, 3.6% of the total number of animal, or a loss of US $5,000. It was reported that when a tiger kills cattle, the villagers can officially request to hunt it, and are then given three days to try to kill it. This has happened twice of which one time was successful.

Table 54: Total loss of livestock by predators, 1999

Villages	**No big animals**	**Lost by predators**	**Percent of total**
Long Ngua Pa	305	15	4.9
Nam Neun	64	2	3.1
Buamphat	205	5	2.4
Deunbin	52	1	1.9
Ponexong	132	1	0.8
Xay	71	0	0
Sakok	35	0	0
Total	**864**	**24**	**2.8**

Dangerous to crops

There are many animals, which regularly cause damage to crops. This is one of the main problems of shifting cultivation, as fields are usually not near the village. It is an important factor to be considered when selecting a site for a new wet rice field. It is unwise to create fields in faraway and scattered places because of the need to guard them. Protecting fields against animals is part of the reason to hunt. Many animals live near humans, as they eat cultivated crops.

2.6.5 Bans on hunting and their consequences

According to the district agricultural service, there has been a ban on hunting many kinds of animals since 1989[28]. This ban is well known in the villages. However, no one knows all the animals that fall under the ban. Villagers say that of the big animals, only deer and wild pig can be hunted, because they forage in the fields and ruin crops. Most village headmen also know that there is a ban on hunting smaller animals and that it is forbidden to sell the meat of wild animals. However, some parts of the ban are confusing for most people. They do not clearly understand the ban during Buddhist Lent (June to October) as many villagers are not familiar with this religion. They do not know the period and which animals it concerns[29] and why they cannot be hunted at that time.

Understanding wildlife preservation

Village headmen that were interviewed do not understand the reason why it is forbidden to hunt certain animals. They repeat what they have learned, but do not seem to be convinced. They often reply that it is forbidden because some animals are decreasing in numbers. But if someone asks them to explain why these animals should not further diminish, the answers are less clear. They mentioned that the government does not want them to disappear, they are very valuable and the government wants to keep them, it makes the forest nice and pretty, their children will not be able to see them if they keep hunting; the animals can reproduce so that they can hunt them again or that they do not understand the reason for the ban at all (perhaps the most honest answer).

Protected animals now seem to be increasing in numbers. People appear less unhappy with the ban, or, perhaps they fatalistically accept it. The best explanation one can offer villagers is to protect wildlife because animals are disappearing and if they are less plentiful hunters will also have less to hunt. Another explanation to offer is that also before the ban these animals would not have been a main source of food, as they were in short supply already.

Table 55: Estimated previous annual catch of species that are now banned

Village	**Family/inhabitant**	**Sambar deer**	**Barking deer**	**Bear**	**Tiger**
Nakhiam	18 f / 124	5-6	20	1	?
Bong	14 f / 90	1 / 3 years	1 /2 years	Few	0
Sobtiou	14 f / 96	2-3	4-5	1/ 2-3 years	0
Sobiang	25 f / 166	1 /2-3 years	2-3	1 / 2 years	0
Houaypheung	36 f / 209	7-8	5-6	?	?
Total	**107 f / 685**	**12**	**31**	**2**	**0**

As Lao hunters are not selective, it is not problematic if there are a few species they can no longer hunt, all others are still available.

Animals perceived as forbidden to hunt

It is interesting to observe animals mentioned as forbidden to hunt, because it shows us, through their frequency of occurrence, the relative importance of the animals to the villagers. For the large mammals, only 6 names were cited. Villagers named the bear (30 families on 30), male sambar deer (28/30), tiger (20/30), wild goat (19/30), wild cow (13/30), and elephant (3/30). The bear was often hunted and many families still want their intestines for medicinal purposes. The tiger was symbolically important but was not commonly hunted and perhaps was mentioned frequently because of its impact on the domestic animals. The wild goat was mainly hunted for medicinal and/or commercial purposes. The wild cow was very valuable, because it was not common, and considered dangerous. The male easily kills hunters who do not chant a magical formula before or just after killing it.

[28] According to Chazee, wildlife preservation in Laos is based on three decrees of the Council of Minister. A decree dating from 1986 is relating to commercial activities (Decree N° 185/CCM), one is relating to the tax system dating from 1989 (Decree N°47/CCM) and one relating to the management of wildlife preservation dating from the same year (Decree N°118/PCM). (1994, p. 4).

[29] Again according to Chazee, 'in July 1993, a note relating to the ban on the hunting and fishing during the Buddhist lent from August to October was sent to every Ministry, Province and District' (1994, p. 4). Certain village chiefs told us about this ban but also that they did not know when the mating season of deer was so it was difficult to adhere to the ban. Nowadays, since 1999, there is a total ban in the whole of Laos ordered by the Ministry.

Bans on hunting create difficulties for farmers for whom wild animals are a source of food and sometimes a source of income. In mountainous areas, like Luang Prabang, taking guns from villagers was not very successful because they hid them in the forest, and made new ones within a few days. An alternative for villagers is to hunt with a crossbow, which is not forbidden[30]. However, it is only effective in combination with strong poison on the tip of the arrows, which can also kill hunters. Hunting bans for certain periods such as Buddhist Lent could be very effective. Using religion could be more persuasive, though most of the people in the national park are not Buddhists. Control on the sale of ammunition and explosives are needed. This mainly comes from the army, road constructors and some traders. In addition, posters with a precise list of the endangered species would be useful.

2.6.6 Banning the sale of game

We should distinguish trade in wildlife into trade in meat of non-endangered species and trade in animals or animal products of endangered species (such as the pangolin).

Trade in meat

Banning the sale of game may be necessary for animal protection, but is not well observed for a number of reasons. Hunting is first of all for domestic consumption. Of 50 families interviewed, 11 said to have sold some animal products. Sale of the meat of wild animals is particularly important in the development zone (see table below). Some of these were fish, insects, deer and wild pigs[31]. Meat of bigger game is sold because it is hard to preserve it. It is difficult to control the sale of animals inside the village. Usually there is a reciprocal system to share the meat between families. As long as there is a demand, farmers will supply because they in turn are in search of cash. There is still a significant demand for wildlife from government staff and outsiders for whom it is a luxury. Finally, the wives or relatives of government staff sell game in the market. It is perhaps possible to tolerate the sale of game within the village. However, the sale on market must be controlled, it will not work to ask farmers to stop selling as long as government officials are doing the same thing.

Table 56: Importance of wildlife trade in target village on total income from forest products, in US $ and %, 2000

Village	Total NTFP	Wild meat	Percent
Long Ngua Pa	1,378.75	375.00	27
Nam Neun	883.75	256.25	29
Buamphat	831.25	56.25	7
Deunbin	2,316.25	56.25	2
Ponexong	985.00	75.00	8
Xay	125.00	25.00	20
Sakok	2,091.25	37.50	2

Trade in live animals and animal products

Trade in live animals (such as pangolin and *pa fa*) and animal products (see table below) may be worse than the sale of meat. The price of such products and animals is high, so it is very profitable for villagers.

[30] The government impounds guns for various reasons including the control of hunting and the need to decrease hunting accidents.
[31] For customary law on sharing big prey, see chapter on sale.

Table 57: Main live animals and products traded in Viengthong district

Products	**Prices**
Pangolin	500,000 k per animal
Bile of bear, wild goat (*nguang pha*), tiger…	1.5 million k /bia (150 gr)
Pa fa	50,000 k/kg
Stag horn (specific rare type)	1.5 million k per pair
Insect *meng ngam nyé, a sort of black* beetle	1 million k per animal (?)
Bee wax	30,000 k/kg
Bee honey	3,000 k/liter
Turtle shell	1,000 k/kg

It is very difficult to measure the extent of this form of wildlife trade but the number of arrests made by district authorities provides some indication. Last year, they caught 8 groups transporting pangolins (more than 300 kg); 2 groups transporting stag horns and 2 others who were in possession of bear's bile. Former accomplices turned in most of the arrested persons after a disagreement over a transaction. Then there are those who smuggle the goods over the Vietnamese border to the North and those who never get caught, so the total traffic may be quite substantial. According to district staff, until recently nobody went to jail for trafficking of wildlife even though an official document gives various penalties according to the type of prey: between 3 and 6 months jail for a small protected animal, 3 years for a tiger and 5 years for an elephant or a wild cow. Another penalty is a fine of 960,000 kip. Most of the time, the goods are already sold, and as the penalty is less than the earnings from the trade, it is still profitable even when you get caught.

Bear hunting
"Previously, we regularly used to hunt bear. Not so much for its meat -which is not so tasty- but for its bile. When somebody caught one, he had to share the meat with all villagers, but the bile was for him. One *bia*[32] of gall bladder bile is worth around 1 million kip. We did not use the skin, it was also eaten" (*Namsaad* village).

To control the sale of protected animals is very difficult. A large part of this traffic goes to Vietnam via the numerous paths in the north of the district, which are very difficult to monitor. Co-operation with Vietnamese authorities, national park staff and Customs officers is therefore necessary. One solution is to offer a reward for information to village authorities, with part of the reward for the individual providing the information and a part for the village development budget.

Bee, wax and honey
Bee products are important for the local population, including larvae, honey but mainly wax. Honey and the larvae are eaten, but the wax, previously used for candles, is now sold. One man told us one hive weighs around 3 kg and contains between a half and 3 bottles of honey, 200 to 500 grams of wax and many larvae. To produce wax, they boil or steam the hive, put it into a basket with small holes, mix some washing powder with water, and pour the liquid wax into it. The wax mixture will become solid after one hour. All ethnic groups collect beehives, but the Khmu and Hmong seem to do it more often. Each year, Khmu men from villages along the road to Luang Prabang are meeting together to go on an expedition to collect the hives. The group can vary between five to fifteen persons and is mainly composed of young adults, who stay in the forest for around a week. The expeditions are in July, during the rainy season, when the queen bee usually already left the hive. Sometimes when they go earlier, in May, they will only

[32] A *bia* is a measuring unit. 2.5 *bia* is 100 gr.

collect the honey. The expedition goes in the direction of Phu Loey, along a different stream each years to increase their chance of finding hives. Last year, they got 40 litres of honey, which they sold for 14 000 kip per litre.

2.6.7 Banning and regulation of fishing

According to district staff, there are no places where fishing is forbidden, although there is a ban on some fishing methods such as using explosives or chemicals. However, according to the Pongpin village headman, the government decided in 1985 to ban fishing in some places. This was also the year fishing with explosives was banned.

Fishing rate in the Nam Peu

Fishing is an important activity in Ban Peu, which has more than 80 families and almost 600 inhabitants. We counted around 80 gill nets, 120 cast nets and numerous basket traps and other fishing instruments ranging from mosquitoes nets to sledgehammers. Every day of the year people go fishing in the Nam Peu, and during winter, it is the principal activity. Presently, more than 100 persons fish in this village. According to different people and by personal calculations, the Müang Peu inhabitants catch around 30 kg of fish a day (not counting frogs, aquatic animals, snails, etc), adding up to over a ton of fish a year and around 130 kg of fish per family. All this fish comes from a stretch of 7 km of the river, including a site where fishing is supposedly banned. The rate of fishing in this area is 4.3 kg of fish/km/day.

Some villages themselves have declared certain places in a river as conservation areas for fish. Villages with such sites are Poungpin (3 places), Nathongpho (2 places) Samsoum (1 place), That and Leng (1 place for both villages), Vat (2 places), all on the Nam Et river. There is also one in Bong[33] where villagers argue that it was a government decision. The Nanom headman explained that previously they had two conservation sites, but since nobody respected the ban, they allowed everybody to fish there. Some villages have also decided to ban some fishing techniques, such as using gill nets or fishing with help of a barrage at Nakian.

Banning fishing, an example of local initiative

'In Müang Peu village, we usually fish with a gill net, but the fish are getting smaller and smaller. In the neighbouring village of Nakian, they decide to ban fishing with gill nets three years ago. Actually, the fish from our part of the Nam Peu river have gone near to Nakian, where there are now lots of big fish'.

2.6.8 Solution to a decrease in wildlife

When guns are confiscated and the hunting of wildlife banned, this would have serious consequences for the diet of villagers. Their protein intake, which is already low, will reduce even further. It is a very difficult issue. Studying the situation in areas with a high population density may provide an indication to the future situation in the park.

- The number of animals will decrease when population increases. The presence of people, repeated fires, and disappearing of dense forest led them to leave the area in search for less populated places. However, some kinds of animals prefer the presence of humans so these will increase in numbers. In case wildlife becomes scarce, people eat less meat from wild animals and will compensate this by eating more fish and more livestock, but apparently not proportionately to the decrease of wild animals. In addition, meat may be

[33] Villagers said it is only forbidden to fish in such places with gill nets or explosives. As explosives are banned everywhere, it was asked why this specific method was added. The villagers answered that the use of explosives were very hard to control, so they decided to be practical and just banned it in one specific area.

bought at the market, as the traditional way of sharing wildlife will disappear and surplus of meat will have to be sold.

- When river fish are becoming scarce, farmers develop fishponds. Productivity seems to be good without having to invest much time or money. Although it may not be an alternative to fishing or hunting, it may offer some sort of solution.

Furthermore it is recommended to do a detailed study on meat consumption in Ban Naven, where guns have already been confiscated, and in villages where this is not the case and, where wildlife and fish are still important sources of protein. This would provide good information to the consequences hunting bans. Protein consumption from meat, eggs, fish, both domestic and wild, livestock development and marketing should be issues to take into account.

2.7 General organisation of the work

To conclude this chapter, the activities that were presented one by one will now be taken together to show the relationship between them. First, we will briefly discuss the seasonal calendar of farmers, the main activities performed each month and the total time spent on those activities per month for different families. Furthermore, a summary table is presented to compare the importance of each activity. Finally, the average of the productivity for each of the activities is given.

2.7.1 Yearly organisation of the work

January and February are not very busy. After New Year celebration (or harvest celebrations for Buddhists), agricultural work is finished. Main activities in these months are making grass roofs, house construction, repairing tools, travelling, wedding, hunting etc. In March and April, agricultural work begins again for shifting cultivators, with clearing and burning of the land, but these months are still not very busy. From May to August, the agricultural season is at its height with planting rice and weeding in the upland fields, and soil preparation and planting rice in the paddy fields. Around August and September, there is a short period of rest for those who do not cultivate opium. From September to November/December, the work is intense again, and devoted to a last round of weeding, harvesting, threshing and transportation of rice to the villages.

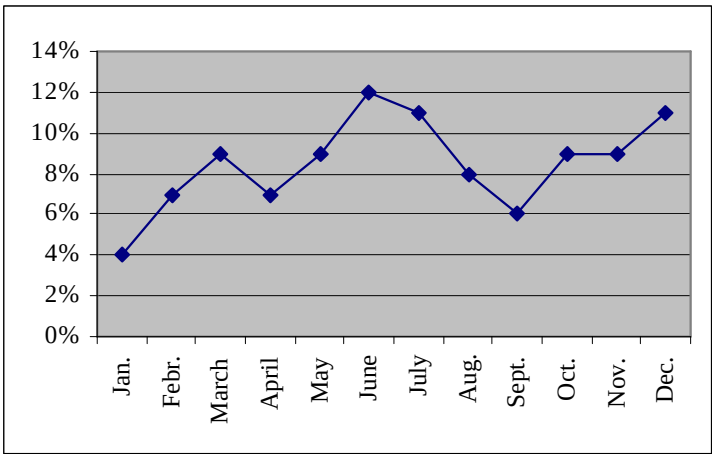
Table 58: Total working time per month in 12 families, in percentages, 1999

Villages	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**Total**
Müang Peu 1	6	8	8	8	10	**11**	10	7	7	7	8	**11**	100
Müang peu 2	5	5	8	7	**12**	11	10	10	5	**12**	9	6	100
Sobtiou 1	4	3	9	2	11	13	11	15	5	5	**17**	6	100
Sobtiou 2	4	10	4	11	12	**14**	4	10	8	4	12	7	100
Bong 1	5	7	9	7	5	11	14	5	3	2	13	**18**	100
Bong 2	7	8	9	6	10	11	9	7	7	5	6	**15**	100
Houaphou 1	4	14	10	8	6	**15**	10	6	6	5	10	6	100
Houaphou 2	2	2	10	5	11	**18**	14	5	11	9	2	10	100
Houayssa 1	3	3	12	8	9	13	6	10	6	7	9	**14**	100
Houayssa 2	3	13	13	6	8	8	12	5	5	2	8	**17**	100
Ponghai 1	4	4	7	4	4	3	9	3	3	44	12	3	100
Ponghai 2	5	5	8	6	5	15	**17**	10	4	4	7	14	100

Number 1 indicates families studied by Chantavi, the number 2 those studied by Siphong. Bold and underlined numbers are the months requiring the most work, the number that are just underlined number are the second busiest months.

When averaging the data from this table for all 12 families, we obtain an artificial calendar, but which is useful to get an indication as to the general division of work over one year as shown in the graph below.

Figure 5: Working time, per month, in percentage



2.7.2 Comparison of the time of work per type of activities

Another important element of comparison is the time spent on each activity. However, it is difficult to produce such data, because every family has different activities to do. Therefore, re grouped all activities in three big categories, as shown in Table 59.

Table 59: Percentage of time spent per activity, based on data from 12 families, 1999

Village	Livestock	Agriculture	Forest products	Total
Müang Peu 1	6	40.5	**53.5**	100
Müang peu 2	13.5	43	**43.5**	100
Sobtiou 1	16.5	**64.5**	19	100
Sobtiou 2	14	**49**	37	100
Bong 1	12.5	42.5	**45**	100
Bong 2	21	34	**45**	100
Houaphou 1	10.5	43.5	**46**	100
Houaphou 2	10.5	**49.5**	40	100
Houayssa 1	20	**62**	18	100
Houayssa 2	20.5	**64**	15.5	100
Ponghai 1	5	**71**	24	100
Ponghai 2	**46**	42.5	11.5	100

Number 1 means families studied by Chantavi, the number 2 those studied by Siphong. Bold numbers indicate the most intensive activities. IRD data

Most of the time is spent on agricultural activities, which is the case among 6 families. Surprising is the time spent on the collection of forest products, for 5 families this is the most labour intensive of all activities. Livestock activities are the least time consuming, only one family spent most of their time on raising livestock. However, it should be taken into account that a part of the time spent on the field is to produce fodder, which the table does not show. The division of time spent on each activity does not necessarily reflect its importance to the family. This requires a comparison of the productivity of each of these activities. Comparing

the total benefit a producer would get by selling his produce minus the production cost to the time spent on producing this product provides some indication.

Table 60: Estimated productivity per activity

Activities	Productivity (kip)	Productivity (US $)
Paddy cultivation	6,500	0.80
Shifting cultivation	6,000	0.75
Garden	11,000	1.40
Hunting	10,000	1.25
Gathering	5,500	0.70
Livestock	40,000	5.00

These data are of course very inexact. Calculation of the productivity is a very difficult exercise, especially for livestock. The data in the table should be regarded only as an indication. However, it is interesting to see that the difference in productivity between paddy cultivation and shifting cultivation is not very significant and that gardens and hunting are quite productive. The low productivity of gathering is probably due to the fact that people underestimate the price of these products. According to this table, livestock raising is the most productive of all activities.

CHAPTER THREE: SUBSITENCE AND TRADE PROFILE

3.1 Introduction: the logic of economy and income

The communities in the Viengthong part of the NBCA are not really integrated in the market economy. The things they produce are mainly for domestic use and hence their economy is oriented towards self-sufficiency. Farmers produce almost everything they consume and they also consume almost everything they produce. Some families only sell products when they have a special need; they rarely produce in order to accumulate goods or money. They adapt their production to their own needs, which are limited. This is the reason that families hardly ever produce more than what they need, even when conditions for cultivation are good. Fully using land and labour up to their maximum potential does not usually happen.

Each family produces a wide variety of products, and all families produce almost the same quantity of these products. Being involved in many activities and producing many different products reduces risks and this lack of specialisation creates each family to be economically independent.

Summarising, self-sufficiency, a low productivity adapted to the needs, and a varied production in all households to ensure economic independence are the main characteristics of the production system and the economy in the target area. These characteristics have been the same for many centuries, when access to markets was very limited and a surplus of production useless in the absence of a dominant class and/or technical specialisation. This situation may soon change because markets are better accessible due to better infrastructure and because of governmental pressure. Until that time comes, each household is still independent from others and is self-sufficient because they produce what they need.

3.2 Diet

Food is obviously a central element in the livelihood of people. Most of the productive activities and part of the expenditures are centred on obtaining food. The staple food in the target area is rice, but meat and vegetables, produced, gathered or hunted in the forest are also important for a healthy diet.

3.2.1 Rice consumption per person

According to the FAO norm, a normal adult will eat around 300 kg of rice per year. In the area, this amount is perceived as too little. Here, the district authorities estimated the annual consumption on 350 kg, whereas farmers themselves thought it was around 450 kg. The difference between sticky rice (khao neow) and white rice (khao chao) may explain this variation. The FAO norm is based on white rice while almost everybody in Laos eats sticky rice. Apparently, people need larger quantities of sticky rice in comparison to white rice. For example, Hmong are white rice eaters, and they told us that 250 kg of white rice is enough for

one person per year. I personally prefer to respect the Lao norm of 350 kg per years per person.

Table 61: Rice consumption per age group compared to labour contribution

Age	Rice consumption	Labour contribution (% on one full active)
0-5	150 kg	0%
6-10	250 kg	30%
11-15	300 kg	50%
15-45	350 kg	100%
45-50	350 kg	50%
50-60	300 kg	30%
+60	250 kg	10%

3.2.2 Lack of rice and alternatives

Rice shortages are frequent. Statistics from targets villages show that more than a third of the families do not produce enough rice for themselves while only 22% of the families produce more than they need. The table below shows the situation in 2000. It reflects the fluctuation of rice yields. For example, 2000 was a very bad year Ban Xay that usually has good yields. In Long Ngua Pa, the large number of families with rice shortages can be explained by the recent arrival of migrants. In Buamphat, they perhaps only counted families with serious rice shortages[34].

Table 62: Rice sufficiency in 2000 in seven target villages

Village	No Family	No F lacking	% F lack	No F enough	% F enough	No F more	% F more	No month lacking	Recurrent families	Recurrence %
Long Ngua Pa	53	27	51	16	30	10	19	3	4	15
Nam Neun	41	10	24	21	51	10	24	2	5	50
Buamphat	44	5	11	28	64	11	25	5	5	100
Deunbin	38	15	39	18	47	5	13	4	8	53
Ponexong	52	11	21	27	52	14	27	3	3	27
Xay	52	25	48	12	23	15	29	3	6	24
Sakok	42	10	24	25	60	7	17	4	0	0
Total	**322**	**103**	**32**	**147**	**46**	**72**	**22**	**3.5**	**31**	**30**

Although, the data in Table 62 present some indication as to the relative wealth of a village or of the families suffering shortages as this is mainly based on the quality of the soil and capital input for production, it has to be remembered that rice yields are always fluctuating. According to the table, only a third of the families are chronically lacking rice, which is less than 10% of the total number of families. Chronic shortage of rice may be due to opium addiction, a disproportionate number of passive persons in relation to active persons in a family, disease, misfortune in the family or laziness. Otherwise, all families have an equal chance on good yields and bad yields and this varies year by year. Those who have more rice than they need this year may not have enough rice next year. Families who only occasionally face shortages solve this problem by buying (by selling animal or something else) or borrowing rice while others may choose to work for other families in exchange of rice. Furthermore, there is the option of eating cassava or corn, but they would only occasionally eat these products because villagers perceive it as animal food, and not good enough for humans. Only Hmong-Mien appreciate eating corn.

[34] This would explain why the number of families that lack rice is so low, and why these are all recurrent families and why the number of months they lack rice is so high.

The issue of nutrition.
There are very few studies of nutrition in the rural areas of Laos. Most of these studies give the impression that there are few problems in the villages. People are not undernourished (when people say they have nothing to eat it only means they have not enough rice to eat) and there are few problems with malnutrition. The diet mainly consists of starches and vegetables, with protein from wild meat and fish, and not much fat. Goitre is caused by lack of iodine in the salt, but this problem seems to be on the decline as a result of the national salt iodisation regulation (SCSP, 11). Should there be interest in the subject, more enquiries need to be made.

3.2.3 Field and forest products.

Other products farmers grow besides rice, corn and cassava for livestock and some cash crops, are vegetables (*phak kat*, pumpkin, gourd, leaves, salad) and herbs and spices (ginger, garlic, onion) for home consumption. People frequently use them to make soup that is eaten together with rice. Other products, such as tubers or fruit, are mostly eaten as snacks or to eat when they are hungry. However, most of the products that accompany rice are not planted, but gathered in the forest. Forest products are not only eaten by those who face food shortages, but by everybody because of their taste and variety.

Table 63: Comparison between cultivated and wild vegetable products (in kg and in price) for 8 families, 1999

Village	No of persons	Kg wild products	Estimated price (kip)	Kg cultivated products	Estimated price (kip)	% kg wild products on total consumption of vegetable products	% price of wild product on total of vegetable products
Xay	4.5	146	96,000	189	181,500	43.5	34.5
Xay	4.5	290	165,000	257	299,500	53	35.5
Xay	2.5	350	99,000	326	104,500	52	48.5
Xay	2.5	90	46,000	398	588,000	18.5	7
Namsaad	6	446	362,000	144	407,500	75.5	47
Namsaad	5	315	192,000	190	114,500	61	63
Buamphat	4	44	28,000	230	117,000	16	19
Buamphat	5	105	258,500	644	371,000	14	41
Average	**4,25**	**223**	**157,000**	**297**	**273,000**	**41,5 %**	**37 %**

3.2.4 The consumption of meat

Hunting, fishing and collecting insects and other aquatic animals (often 70% of all wildlife gathered and hunted) generally make up for more than half of the total amount of protein consumed. Families estimate (45 families in 9 zones [*khet*, L]) that such activities provide around 65% of the meat intake, varying between 44% in district zones and 80% in more remote areas. Large animals hunted (or at least those reported to the project) are mainly barking deer, wild pig and pheasant, and we have extrapolated that about 2 000 barking deer and pigs captured the Viengthong portion of the NBCA area.

***Table 64: Comparison between domestic and wild meat consumption (including aquatic product) in 8 families from 3 villages*[35]**

Village	No of mouths to feed	Kg of wild meat	Kg of domestic meat	% of wild meat on total meat consumption
Xay	4.5	81	411	16,5
Xay	4.5	38	185	17,0
Xay	2.5	93.5	80	53,9
Xay	2.5	110	16	87,3
Namsaad	6	177	25,5	87,4
Namsaad	5	172	46	78,9
Buamphat	4	354	152	70,0
Buamphat	5	141	138	50,5
Average	**4.25**	**141**	**132**	**52.5**

3.2.5 Expenditure on food

Food takes up a relatively large amount of money when compared to the total annual budget. For the poorest families expenditures on food even make up 25% of their budget, while for rich families this is only 6%. This is due to the fact that salt and kitchen utensils (60% of food budget of poor families) cannot be made at home. Richer families spend more money on kitchen utensils and on "luxury" products, such as alcohol, tea, sugar and meat. In addition, poor people also have to buy rice when they face shortages whereas rich families do not lack rice at all or not as often as poor families do.

Table 65: Detail of expenditure for food by type of families, 2000 (on 21 families)

	Poor families	Normal families	Rich families
Average expenditure for food, in kip	108,214	275,857	448,857
Percent on total expenditure	25.2 %	11.6 %	5.8 %
Food expenditure per type of product, in percentages			
Manufactured products*	36.9 %	21.3 %	17.8 %
Meat	16.0 %	46.2 %	18.8 %
Alcohol	0.0 %	6.6 %	7.1 %
Kitchen utensils	22.7 %	25.1 %	50.0 %
Others	24.4 %	0.8 %	6.4 %

* mainly salt, but also some monosodium glutamate and sugar

Cooking
Mainly the female members of the family (wife, grand mother, older daughter and/or daughter in law) are involved in food preparation. Cooking takes around 1 to 4 hours per day, depending on the number of persons in a family, the complexity of the meal and the number of persons preparing it.

3.3 Expenditures and motives for sale

Just as the income of the local population gives us a good idea of the mode of production, so will the expenditures give a good indication to the extent of market integration, and the needs of the population. In this section, we will discuss common, unusual and extraordinary expenditures, and the difference in the way rich and poor families spend their money. More detailed information on the expenditures per type of product can be found in 3.2.5 Expenditure on food, 4.1 Education and schooling and 4.3 House construction.

[35] Those families are not particularly representative. They are richer than others are. It is better to look at the percentage than average number of kg eaten.

3.3.1 Common expenditures

Money is mainly used to purchase products the family cannot produce themselves. The main items bought include:

- clothes; although they can make them only few people now want to, because of the difficulty and time it takes,
- kitchen utensils and food such as salt, monosodium glutamate or a piece of fresh deer or wild pig,
- equipment and tools used for production, such as bullets, metal tools, plastic containers for rice etc.,
- medicines
- items for children's schooling,
- products necessary for celebrations and ceremonies such as alcohol, chicken, pigs.

Other products that people buy but not as regularly are:

- luxury goods such as watches, radios, bicycles etc.,
- cultivators,
- animals to eat or to rear such as chickens, pigs, buffaloes or cows,
- wood to build a house (building a new, big house seems to be among the most important investments).

Besides spending money on the above mentioned items and services, people need money to pay for hospital visits, travelling, resettlement, weddings and funerals.

Table 66: Average expenditure per family, made on 21 families from 7 village, 1999

Type of family		**Poor***		**Middle***		**Rich***	
Product		***Incl. Others***	***Excl. Others***	***Incl. Others***	***Excl. Others***	***Incl. Others***	***Excl. Others***
Production items		2.7	2.7	6.8	8.3	2.8	9.6
Food		25.2	25.5	11.6	14.2	5.8	19.9
Clothes and blankets		46.4	46.9	19.4	23.8	7.9	27.1
Various goods		7.4	7.5	3.1	3.8	1.5	5.2
Services		17.2	17.4	40.7	49.9	11.1	38.1
Others		1.1		18.3		70.9	
Total	**percent**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
	kip	**429,214**	**424,571**	**2,383,000**	**1,946,571**	**7,707,143**	**2,245,000**
	dollars	**54**	**53**	**298**	**243**	**963**	**281**

*As there is a difference between expenditures of a family with and without the category "others", a second column is included.

3.3.2 Variations in expenditures according to ethnicity and economic situation

When comparing the expenditures on types of products purchased by poor, middle and rich families, there are some differences. Poor people mainly spend their money on basic goods. As Table 66 shows, products such as clothes and blankets make up for almost half of the family's expenditures. Although they can make these goods themselves, they prefer to buy them because making costs a lot of time and it will also cost some money. As we already saw in section 3.2 Diet, quite some money is reserved to buy food because they often need to buy rice in case they face shortages and to buy salt. The same is true for the category "various goods", which is mainly composed of oil for lighting, something that everybody needs. Not much money is spent on production materials and equipment, because poor families make these materials themselves. In comparison, richer families spend most of their money on services such as education, medicine and transportation. The big difference between "middle" and "rich" families is the expenditure on the category of "other" goods, mainly consisting of electric motors, cultivator, bicycles etc. As this category of expenditure is so significant for

rich families, consisting of 71% of their budget, we made two columns in the table above: in the first one, we included it, and in the second one we did not.

Ethnic variations are not obvious. The few general remarks to be made are that that Tai people are more integrated into the market economy, consequently they have more money to spend and have higher expenditures. Khmu and Hmong people have less money, but the difference between the two groups is that Hmong are better craftsmen, and therefor they make many of items they need themselves (they are good blacksmiths and dressmakers).

3.4 Income, cash economy and relationship to the market

This section relates to the level of economic development of the people living in the national park. Development activities can only be implemented when there is a good understanding and analysis of the current economic situation. Therefore an attempt is made to present the causes of poverty and wealth, the subsistence economy in comparison to trade and the cash economy, and the sources and use of cash income.

3.4.1 Exchange economy

The cash economy (goods for money, money for goods) is only one part of the economic system. The exchange economy is still very important in the villages under study. Many goods and services are purchased in return for other goods and services, as summarised in Table 67.

Table 67: Summary of the cash and exchange economy as existing in theNBCA

Type of exchange	Goods for payment	Goods and services purchased	Partners
Goods for services	Rice, meat, opium	Consult of shaman , sawing wood, building houses, agricultural work, education, hospital visits	Villagers/Vietnamese
Goods for goods	Rice, livestock, opium	Consumer goods (kitchen tools, salt, fuel	Vietnamese (Laotian traders)
Goods for money	Rice, garden products, cash crops, livestock, opium, NTFP's	Cash money	Laotian traders/ Vietnamese (villagers)
Money for goods	Money	Medicine, cloth, various consumer goods	Laotian traders/Vietnamese

Most bartering occurs with Vietnamese traders who do not want Laotian money, but are interested in small and transportable livestock (chickens, piglets, dogs), opium, pumpkin seeds, and NTFP's (pangolin, rattan, cardamom, *man one ling* roots etc). In exchange, they offer manufactured items such as clothes, kitchen utensils, watches, salt etc. There is a fixed exchange rate for all these products. More recently, bartering has started with road constructors.

Table 68: Example of exchange rates with Vietnamese traders in Muang Peu area

Product (kg)	Salt (kg)		Oil (litre)	
	Dry season	*Wet season*	*Dry season*	*Wet season*
Chicken	4	3	2	1.2
Dog	3	2	1.5	1.1
Pig	3	2	1.5	1.1

The difference between dry and wet season rates is explained by the difficulties to travel when it is raining. The price difference per kg between pigs and dogs as opposed to chickens is also explained the by transport problems for the bigger animals. The exchange rates have been fixed for over 10 years.

Another important aspect of the exchange economy is using food as payment for services. When people perform exchange labour in the fields, they are offered a meal with chickens and

rice whiskey. In addition, (spiritual) healers can be paid in goods. The healer, the 'bad' spirit who makes a person sick, and the tutelary spirit who helps the healer are all paid in rice whiskey, meat and some money. As explained in 2.4.3 Main features of production and related problems, sacrifices, feasts, and honouring guests are the main reasons for killing livestock.

Sacrifice and religious activities as economic activities
Sacrifice should not be understood as being of a different logic than economic activities. For people who perform sacrifices, it is no more than a business deal. The objective of the rituals including sacrifices is to purchase a good or service in exchange of another and make it a profitable and beneficial exchange. The only difference is that one of the business partners is invisible, as is the good that people want to obtain (souls, prosperity, good luck etc.).

3.4.2 Cash economy

All villages, even the most remote, earn cash income from selling a part of their produce. However, the sales are nowhere near the value of the total production. Averaging data from 20 families revealed that a family sells around 1/6th of its total estimated production per year[36] (about US$25 per capita annually). Most of the time, people sell their produce when their yields were abundant and they ensured their level of self-sufficiency.

Table 69: Comparison of sales to gross estimated product (based 20 families)

	Kip	US $
Estimated Gross Product	7,800,000	975
GP per person	1,250,000	157
Sales per family	1,300,000	163
Percentage of cash income on GP	**17%**	

Data: personal enquiry, IRD

3.4.3. Types of retail goods

There are a limited variety of products to be sold. Differences between villages consist of the quantity of the products sold, rather than they sell different types of products. In Table 70 a comparison is made between the types of products sold in the target villages.

Table 70: Importance per source of cash income in target villages, in percent, 2000

Products Sold		**Long Ngua Pa**	**Nam Neun**	**Buamphat**	**Deunbin**	**Ponexong**	**Xay**	**Sakok**
Agriculture		54.3	69.4	47.7	19.6	40.1	31.5	26.2
Livestock		34.2	10.9	38.8	10.8	32.7	24.2	21
Forest product		9.7	13.6	12.2	66.8	13.1	2.8	51.3
Others		1.8	6.1	1.3	2.8	14.1	41.4	1.5
Total	**%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
	Kip	**114,241**	**51,932**	**54,335**	**27,747**	**59,985**	**35,965**	**3,262**
	US $	**14,280**	**6,492**	**6,792**	**3,468**	**7,498**	**4,496**	**4,078**
	No F	**53**	**41**	**44**	**38**	**58**	**52**	**42**
	Total /F in US$	***269.4***	***158.3***	***154.4***	***91.3***	***129.2***	***86.5***	***97.1***

Agricultural products are predominant in the items sold, but of the four villages where this is the most important category, three are producing opium. Comparing agricultural products excluding opium with livestock, the latter would be more important. Forest products are dominant in two villages (Deunbin and Sakok), which are among the three villages that sell

[36] We should be careful judging the figures because the interviewed families were not poor. In addition, people usually underestimate the price of goods they never sell.

the least. The only village where the category 'others' is the most significant is Xay, where they sell a lot of silk.

Sphere of trade

When discussing trade, it is important to know where and to whom products are sold. Here, it should be noted that there is an important difference between:

1. Trade and products sold in the village, such as wild meat, alcohol, domestic meat, rice, some of the opium etc. This exchange of products is only internal money circulation and does not a really contribute to an increase of income in villages. Some of the goods bought are identical to those sold (for example, one family may sell poultry when they have a lot, and few months later they may have to buy some because they do not have any chickens left).
2. Trade and products sold outside the village, such as cash crops, buffaloes, dogs, NTFP's etc. This type of trade accounts for the biggest part of the cash income in villages, and although the terms of trade are not that favourable, it enables villagers to buy goods not produced in the area.

History and evolution of sold product

- **Livestock.** The principal source of income for almost all villages and families is livestock, mainly cattle, pigs and poultry. They can be stocked and sold at the best time and are relatively easy to transport. Though expensive, it is nevertheless always in demand for special occasions. Cattle should be distinguished from pigs and poultry, because the outlets are usually not the same. The market for pigs and poultry is geographically limited. These animals are often sold within the village or in the same area (except when there is a good road, with travellers and when there are workmen in the area[37]). Instead, cattle are usually bought by a trader who sells the cattle on outside the district or Province. This trade in cattle creates an external income. Although it is impossible to date the trade in livestock, traders of cattle began to come more frequently in the1980's.

- **Opium**: From the 19th century until its ban, opium was the pillar of the cash economy of northern Laos. The area under study was one of the most important places of opium production in the country. Farmers do not really understand why the trade in opium is prohibited[38]. Opium is extremely profitable for farmers because it is grown during the cold season, when the main agricultural activities are finished. Furthermore, it does not weigh much, it is divisible, conservable and valuable, easy to trade and has the best labour/income ratio. That means that no matter how remote a village is there will always be traders who come to buy it. It is still the main product sold in the Hmong villages of Houay Meuay and Muang Kao. Most of the crop is sold, except for a small part for Hmong healers and some for personal use.

Table 71: The French piastre and it Laotian equivalent

Local name	Piastre value	Equivalent in kip
1 hao	5 centime	5 000 k
2 hao	10 centime	10 000 k
5 hao	50 centime	25 000 k
1 man	1 piastre	50 000 k
1 khan	Metal bare	500 000 k
1 khan = 10 man = 100 hao		

[37] The first impact of the road was an outlet for pigs and poultry sold to numerous workers.

[38] First the French introduced opium cultivation in Northern Laos at end of the 19th century, then opium was used to partially finance the war for both sides and thereafter, the new government was the principal buyer up to the ban (at least in this area). The confusion of the farmers about the production of opium is thus not difficult to imagine.

- **NTFP's.** The sale of forest products has a long history in the area[39], although the types of products sold varied from period to period. In the eighties, the trade in NTFP's was quite significant, but it collapsed when a co-operative that was buying the products disappeared. The trade took on again in the middle of the nineties when traders went to villages to buy NTFP's. During this period, after the ban on opium trade and before the cash crops were introduced, NTFP's were the second most important source of income after livestock (and still is for certain villages). The main products sold are cardamom, *man one ling* (tubers), *po sa*, *dok khem* (type of flowers), *mak leng*, *mak tao* (type of fruit), and *may khet sana* (type of wood).

- **Rice and alcohol.** Although rice is the most important crop in the region, it is first of all grown for subsistence. The amount sold is only a small part of the total yield. Farmers sell rice when they have enough for their domestic needs and reserves, which means that not always the same families sell rice every year. Rice is usually sold within the village to families that suffer from rice shortages. Therefore, somebody who sells rice this year may have to buy it the next. Because the rice is sold within a limited area, it does not generate much income for the region, as the money only circulates. Rice whiskey should be included in the total sale of rice as it is the best way to sell it. It adds value to the rice and lasts longer, while demand is high.

Table 72: Periods of sale of main trade products

Up to 1989/95	Opium (officially)
Up to 1980's	Wild animals (officially)
Up to 1999	Orchids (officially)
Old business	NTFP
Since 1980's	cattle
Since 1990	silk
Since 1998	Sesame, Job's tears

- **Silk.** Silk production has been important for a long time in Lao Lum villages, but only for domestic use. The trade only started when the Lao-American Project introduced it in the early nineties as an alternative to opium. Lao Lum are still the main producers of silk, but also a some Hmong took up silk production in the development zone. Silk has several advantages: it is durable, and much of the work (feeding the worms) can be done at night or in spare time and the price is good (around 90,000 kip per kg for good quality silk). However, it is a difficult type of production and it takes a long time before a family has produced a reasonable amount. In addition, it remains to be seen whether the market, partly set up by LAP, is not an artificial one.

- **Other agricultural crops.** The most important cash crops are by far sesame and job's tears. In some villages, it was the main source of income in 1998. But this market is recent and fluctuating (see also 2.3.5 Examples of other crops). Other crops have a small market. Vietnamese traders buy ginger and pumpkinseeds for 7,000 k/kg and bananas are sold to a company from Xieng Khouang since 2 years. Other agricultural products that are marketed are chillies, tobacco, garlic, etc. However small, the income from these products plays an important role in the family budget although estimations are hard to make.

[39] Prior to French colonisation, remote villages had to pay tribute to the king or local ruler in forest products such as benzoin, animal parts etc.

- **Other products.** Other sources of income such as the sale of handicrafts, doing business or wage work are recent and/or of minor importance. They are particularly developed in the district town and villages close to it.

3.4.4 Trade networks and problems

Though every family needs some cash income to buy manufactured goods, to pay tax, to pay for transportation and hospital visits, it is difficult to find something to sell. Conditions to be able to sell produce are having a surplus, the existence of a demand and a stable market with reasonable prices. Unfortunately, the absence of good or lack of roads, and the remoteness of this Province make trade difficult, which in turn leads to a low demand and low prices. Furthermore, the quantity of products supplied as well as the quantity demanded varies often, making markets unstable. The only goods that are traded on favourable terms are illegal, such as wildlife and opium.

Development of co-operatives or sale groups
To counter low prices and unstable markets, co-operatives or sale groups could be developed. Such co-operatives could be set up at quarter, village or zone level. This would be an instrument to regulate supply and demand and thus would improve prices and solidarity between the farmers. Transportation of goods could also be arranged in a more efficient way. Furthermore, it may have a good impact on the collection on NTFP's, which are at the moment sometimes harvested in unsustainable way to be able to sell as much and as quick as possible.

The main conditions necessary for developing trade are the existence of a legal market with relatively fixed prices and demands, the possibility of transportation, the availability of profitable products and/or the time to invest in the production or collection of such products.

CHAPTER FOUR: COMMUNITY AND SOCIAL DEVELOPMENT PROFILE

4.1 Education and schooling

4.1.1 Traditional education

Up to a recently, formal education was not very common in remote areas such as the one under study. This was both due to lack of infrastructure and because of lack of relevance. A son of a farmer would never have a chance to become something other than farmer, and to become a farmer one does not need formal education. The traditional way of educating children is very different from the system used in government schools. Traditional education is very tolerant, with few reprimands, and mainly based on concrete observations. This is why at first glance there seems to be no or little education taking place in village. However, once married, boys and girls know and are able to do what an adult is supposed to know and do.

4.1.2 Attitude towards formal education

Most adults are convinced of the use and the value of reading, writing and knowledge in general. Another important point is that they usually let their children decide up to which level they want study, without looking at the cost (at least for primary school). Still, there are many problems concerning formal education. Children as well as parents do not always see the necessity of studying for a long time as most of the pupils will become farmers just like their parents. For example, a teacher told us that the Khmu tend to do well at school but usually stop early (at PO5) to help their families. In Muang Xon school, very few pupils continue studying after the last class (MO4).

Teachers and soldiers: two alternatives to becoming a farmer
It is possible for students who are good and persevering to get themselves good positions inside or outside the district, but this is very hard to achieve. It is more common to climb the social ladder by becoming a teacher or a soldier. Joining the army is common for Khmu who are often not very well educated. The salary for teachers and soldiers is the same but soldiers get free rice, materials, clothes and the possibility to travel. Physically it is difficult and there is always the risk to die.

4.1.3 School participation

Without conducting a survey, it is difficult to assess the exact attendance of children in school. Most village headmen said that every child of school going age attends school, but the teacher contradicts this[40]. The only data we have are from Ponexong village where 6 on 41 children do not go to school (13%), and from Deunbin where 5 on 57 children do not attend school (9%).

[40] One teacher told me a positive rule to increase student participation. The teacher has the right to fine parents whose children regularly miss classes. Since he can use this money for himself, he will usually implement this rule. This seems to work effectively but this practice is not officially institutionalised, and is implemented only in some villages.

Table 73: Statistics on schooling based on interviewed families in targets villages

	No of person	Average years of schooling (all persons)	No person without education	Average years of schooling of people who went to school	Maximum level of education
Men, >25	26	3	9	4.5	MO3 (2)
Woman, >25	22	1.6	12	3	PO5 (1)
Men, <25	14	5.3	0	5.3	MO5 (1)
Women, < 25	29	1.3	17	3.3	MO5 (1)
Men not finished school yet	24	/	/	/	MO5 (1)
Women not finished school yet	10	/	/		MO4 (1)

4.1.4 Lack of schools

Perhaps the most important reason for not having much education is the lack of schools. Access to primary schools is still quite good in the area, as elsewhere in Laos. Almost all villages have a primary school. Officially, to get a school, a village should have at least 15 children of school going age. Usually, these schools have only one or two grades, which officially is for children between 6 to 8 years.

A primary school with all grades exists only in the biggest and fixed villages. There are only two secondary schools, one in Muang Hiam and one in Muang Xon[41]. To continue their studies students have to go to Sam Neua.

Table 74: Villages with secondary school and its maximum level, 2001

Village	Level of the school
Muang Kao	MO 3
Xon Tay	MO 3
Xon Neua	MO 4
Muang Hiam	MO 6

Parents do not like young children to walk to school alone, which is sometimes necessary if the village does not have a school. After one or two years, pupils from small villages have to travel to a bigger one to continue their education. If the school is more than 1 or 2 hours walking distance, this becomes a problem. For secondary education this is even worse as there are not many secondary schools in the area. In the secondary school of Muang Xon for example, 24 pupils (8.5%) cannot go back home at night (3 from Muang Peu area, 4 from Muang Kao, 6 from Xay valley). Therefore the distance to school, and not having relatives in town to stay with, both discriminate against pupils from rural areas.

Table 75: Data concerning Buamfat school in 1999

Grade	No pupils	Percentage of girl	Normal age	Average age	Difference	Age min/max*
PO1	32	34.5	6	8	2	6 (8) / 12 (1)
PO2	40	45.5	7	11	4	9 (6) / 14 (2)
PO3	32	25	8	12	4	?
PO4	38	22	9	13.5	4.5	11 (1) / 15 (7)
PO5	14	12.5	10	14.4	4.5	11 (1) / 16 (3)
Total/Average	**156**	**23.25**	**6.67**	**9.82**		

* the first number is the age of the youngest person in the class; the number in slash is the number of person from the same age

[41] The Muang Xon secondary school was built in 1995 with funding from a Japanese project. The MO4 class only started 2 years ago, while MO3 classes existed in the area since 1974 (before these were located in Xon Tay). There are four grades (from MO1 to MO4) and 281 pupils divided over six classes.

4.1.5 Others problems

Lack of money

Another constraint to the education of children is the lack of money to buy even the most inexpensive school materials. For secondary school the yearly fee is 8,000 k per year and the estimated cost of copies and pencils is around 20,000 to 25,000 kip. In addition, when children have to sleep with relatives, this would cost around 150,000 kip. In all, to enrol in secondary school, the total cost would amount to 350,000 kip. Besides these expenses clothing should be included. Although t theoretically it is obligatory to wear a uniform, pupils who do not are not sanctioned. But children care about what they wear and do not like to be different from others, wearing old second hand clothes in school. If the books used in school are well cared for, the parents will get the money back that they paid for them. Manuals are sell by the state to childrens. If they protect it well (which is often the case), they are repay if the parents bring it back. However, in grade PO3 to PO5, there are often not enough books (the shortage is around 30% in Buamphat). According to some teachers, pupils coming from poor families tend to be more serious about their education as they are more concerned about their future. Despite of this, they face more difficulties to complete school: they have to work in the field and do not have enough money, and therefore their dropout rate is higher.

Table 76: Average cost for one pupil in one year

Expenditure	**Estimated cost (in kip)**	
	Primary school	*Secondary school*
School fee	5,000	8,000
Materials	60,000	100,000
Clothes	150,000	150,000
Food in school	0	100,000
Total	**215,000 k / 27$**	**358,000k / 45$**

Working conditions in school

Classes have many students, in Muang Xon for example, the average is 49 pupils per class, with a maximum of 63. This is a big limitation for students for being able to learn something as classes are built for supporting 22 pupils (not enough places to sit and desks to write on, too noisy etc.)

Lack of labour

One problem for parents is their need for and lack of labour at times of planting and harvesting. During these busy periods, students are allowed time off. Officially, in primary school students have to attend 5.5 hours per day, and in secondary school this is 6 hours for 5 days per week during 8 and half months (holidays are from 15 to 30 January and June-August). This allows for quite some time to work in the fields.

4.1.6 Ethnic and sex discrimination in education

Ethnicity

Criteria required for the construction of a school usually favour Tai villages as they match the criteria sooner. This is a first constraint to education for ethnic groups. When the school is in another Tai village and people from other ethnic groups do not have a *siao* (friend of the same age)there, their children may not have a place to sleep. In Muang Xon school, Lao Lum are over represented with 83% of the students coming from this ethnic group (comparatively, only 34% of the NBCA population is Lao Lum). In comparison, Lao sung (10.6% of pupils and 29% of the NBCA population) and moreover Khmu (6.4% of pupils of 27% of the NBCA population) are underrepresented. Those groups already are in a disadvantaged position

because of the language as the official language in school is Lao. For Khmu villages, this is not a big problem because everybody speaks Lao well, but in Hmong villages, young children do not speak one word of Lao.

Samneua ethnic school
In Samneua, there is a school for ethnic groups. This national institution, based in all provincial capitals, was established to allow students from ethnic minorities to go to school. The only criteria are that students have to be poor and belonging to one of the ethnic minorities. Each village and district chooses their candidates. The school starts at grade PO3 up to MO6. School supplies the uniforms and the students receive a grant of 90,000 k per year. The main problem that the district and provincial officials select their own relatives, therefore in the Samneua ethnic school, fifty percentof the student are Lao Lum.

Girls attendance in school

Generally, girls tend to do better at school than boys at least until a certain level, when boy like to hang around, something that girls do less. Especially for girls having to go to another villages to attend school is problematic as parents are even more protective of them, than of boys and do not like them to sleep somewhere else instead of home. In Muang Xon school 1/3rd of all students are girls, and their numbers decrease when the level goes up. Moreover, the drop-out rate among girls is higher than that of boys. Parents consider domestic skills and becoming a good housewife to be more important. When they get married, which usually happens when they are between 14 and 18 years old, they stop going to school. This discrimination against girls is stronger in the Hmong-Iu Mien communities than in Tai villages. The data from this research show that on 13 women interviewed in Hmong-Iu Mien population, only 2 went to the school, while for the others groups (Lao Lum and Khmu together) of 9 women interviewed, 8 went to the school. From the boys and girls interviewed that were still attending school, the outcome was similar: in Hmong-Iu Mien villages on 14 boys only 4 girls went to school whereas for the other groups 10 boys and 6 girls went.

Table 77: Data concerning pupils of Muang Xon school, 2000

	No pupils	**% girls**	**% Hmong**	**% Khmu**	**No rooms**	**N°pupils/ class**	**Normal age**
MO1	123	39	10.5	8.9	2	62,5	11 – 14
MO2	78	33.3	10.2	3.8	2	39	13 – 16
MO3	58	29.3	6.9	5.2	1	58	15 – 17
MO4	22	31.8	22.7	4.5	1	22	16 – 18
Total	**281**	**98 (35%)**	**30 (10.6%)**	**18 (6.4%)**	**6**	**47**	

Conclusion

From the above it can be concluded that in education a discrimination based on ethnicity and gender exists. Differences become even bigger as the children grow older. The higher the level, the more students are of Lao Lum background. The findings can be summarised as follows:

Advantaged pupils	**Disadvantaged pupils**
Boy	Girl (mainly Iu Mien)
Rich	Poor
Central village	Remote village
Tai population	Iu Mien and moreover Khmu

4.1.7 Data and problems concerning teaching and teachers

There is usually one teacher for one or two classes. Teachers receive a salary paid by the district, but if there are not enough teachers in a village, it may be (as in Muang Peu) that

villagers themselves employ one. Although after the revolution, the number of schools has increased a lot in the country, the quality of the school has not (Stuart Fox, Evans). Lack of qualified persons after the war led to the employment of low qualified and inexperienced teachers, whom themselves sometimes only attended school for five years. Now, the required level is MO6 for teaching in secondary schools and MO3 for other schools and remote villages. When finishing school, teachers study for another 3 years in a teacher training college in Xieng Khouang.

Teachers in villages are usually from rural areas and quite poor. The low salary is not much of a motivation to become a teacher. They receive between 57,000 and 120,000 k per month depending on their level of education, which is not enough to live on. Some teachers have to do shifting cultivation (paddy fields are not allocated to officials) to survive, which is usually the work of his wife and children. The Government theoretically provides teaching materials but, in Muang Xon secondary school for example, they have not received anything for 2 years. The same happens with salaries, which are usually between 1 and 6 months late.

Ethnicity and location of the job sometimes causes problems. Theoretically, teachers can be transferred anywhere but they are often sent to their own village or, if there is no school there, near their own village. However, teachers have to be transferred every one to three years, a system with advantages and disadvantages. An advantage is that teachers have to teach children of a different ethnic background, which can benefit both teachers and pupils. But to be transferred every few years is difficult in terms of agriculture. They can do only shifting cultivation as it takes to much time and effort to prepare paddy fields. The older teachers get the more possibilities they have to choose the place they want to be transferred to.

Hmong villages often experience problems with teachers. In the area, most teachers are Tai[42] and they usually do not appreciate having to teach in Hmong-Iu Mien villages. These villages are often far from home and integrating in those villages is more difficult (women often do not speak Lao and do not speak with outsiders, and food and traditions are very different). Some teachers, as in Houay Pachat, are unwilling to continue teaching in a village of a different ethnic background. A solution may be to have teachers of similar ethnic background teach in those villages.

4.1.8 Non-formal education

In addition to the formal system of education, there is also non-formal education, a programme of schooling for those between 15 and 30 years, conducted by village teachers. For example, in Muang Peu, there are around 15 persons participating. We have no information about this programme (who funds it, how old it is, and if it is available in all villages), but it seems to benefit many people and could be encouraged.

4.1.9 Foreign aid for education

LAP has constructed schools in the area, 11 primary schools and 2 secondary schools in Viengthong district. Such actions are of course beneficial and respond to the needs of the inhabitants. But school buildings are not the first priority for education in the area. It does little or nothing to improve the learning process. Teacher training (with an increase of salary, for example trading lessons for commodities or for environmental preservation) and supplying textbooks would probably be more useful.

[42] In Muang Xon school, there are 10 teachers (3 women), 9 Lao Lum and one Hmong. All came from the villages of Xon Tay and Xon Neua (except one from Xieng Khouang but who took a husband there). According to them, the school should get 2 more teachers to ensure proper teaching.

4.1.10 Needs expressed by Muang Xon secondary school and proposed action

For solving the issue of distance, ideally, there should be at least 3 classes per village but this is not very realistic. Another option is to organise school transport but this is also expensive.

Concerning schooling expenses, possible intervention could be:

- supplying uniform for the poorest,
- supplying new teaching materials for teacher and pupils,
- supplying official text books when these are lacking.

Concerning the issue of the low quality of teaching, related to teachers not being motivated due to their low salary, the project could assist by:

- improving teacher training (in Xieng Khouang teacher training college to improve the general level of teaching, or on specific subjects relating to conservation)
- supplementing salaries and/or materials in exchange of which teachers could teach about conservation (added to the distribution of books, stickers, T-shirts, posters regarding nature and NBCA)
- support private teachers in selected villages (or help to implementing a village development fund to finance such a project)

Needs expressed	**Comments**
Materials for teachers, tables, sports and music equipment, free uniform for poorest pupils	This is theoretically the task of the Government, but it in practice it does not work very well.
Water supply for the school	This is of course an important need. The water is far and it comes from the Nam Et rivers, which is not very safe. The water point can be constructed between the school and the hospital, which are about 200 metres apart and can be used for both.
New school building up to MO6	I personally do not think it is necessarily a good idea. Improve the existing four levels is hard enough and should have priority.
Planting trees around school	Easy and of course positive for an NBCA

4.2 Health: a development priority in the area

Disease is a frequent event in the life of villagers. Several persons told us that they used their savings to pay for medical treatment in case someone falls ill in the family. 11.5% of a family's budget is used to buy (modern) medicines. Around 10% of the total population of the target villages went to hospital in 2000. That the health situation is bad in the area is indicated by the fact infant mortality is about 33 %.

4.2.1 Principal diseases

We have not been able to get much information on this subject, but according to a list from the Provincial Health Office, the principal diseases are malaria, diarrhoea, and respiratory infections. These diseases are more prevalent during the wet season from March to October. Some diseases could be easily prevented by basic knowledge. Resettled Hmong villagers do not think about using mosquito nets, mosquito nets of poor families are sometimes more

symbolic than useful and cholera could be easily prevented by adhering to basic hygiene practices.

4.2.2 Fertility rate and use of contraception

The ideal number of children among the families interviewed is two sons and two daughters. More than four children are too much to because it gets difficult to provide enough food, clothing etc., and less then four would make it difficult to look after the parents in the future. The family should have at least one son because a son will look after the parents when they get old. In case a couple is not able to have any children adoption is a possibility. Families with a lot of children are sometimes happy to give some of their children to those who want them[43].

Although the ideal number of children may be 4, the real number is often much higher. Because contraception was non-existent before or not used every one or two years women would have a baby up until the menopause. The average number of children in Laos is 5.6 children per woman. However, mortality rate is high: 22 women from 16 to 60 years old that were interviewed gave birth to 152 children of which 54 or 35.5% died before they reached the age of 18.

Contraception in the village

Traditional medicine that can be used for contraception exists although we were not able to identify it. It seems to be a bark that is boiled and the extract women drink when they do not want to have anymore children. Some argue that the result is quite efficient, but others disagree. Since a few years, a hospital in Vietnam offers a free contraceptive, and several women from the northern part of the district went to get it. Another technique available in Laos are injections, but a man from Nam Neun said that 2 members of his family died after receiving it. Finally, the Lao American Project apparently subsidised contraceptive pills. Women could buy the pills for 5000 k per year instead of 5000k per month, 0.63$, which few persons can afford to pay.

4.2.3 Water

It seems that since the revolution, people have learned to boil water before drinking, which most families do. Nevertheless, villagers do not always drink boiled water, for example when they are out in the field. Clean water is not available in every village. Villages located high up in the mountains (so mainly Lao Sung) usually have a clean water source, and when the spring is near the village, they have no need for a water supply system. However, there are many village with clean water, which have a problem with the supply, i.e. the spring is far or too small. This is the case in Deunbin, where a bamboo gravity flow system leads water from a spring more than 1 km away into the village. Nam Neun villagers have to walk half a kilometre to reach clean water. Long Ngua Pa has a reservoir, but it is too small. In ban Xay they have a reservoir but there is little water in the dry season so they would like a tap to be able to save the water. Some villages near a river have access to connecting springs where they fetch their drinking water. This is the case in Ponexong, but the spring water apparently makes people sick. Other villages get their water directly from a river, as in Sakok and Naven. Only villages that are over 10 minutes' walk away from a spring or that take their water from a larger and polluted river need a water supply system. It is not only individual families who have problems with water supply, it also concerns schools and even the hospital of Müang Xon.

[43] Another occasion to giving away children may happen when a child is often sick. In such situations it is believed that in the house where the child lives, there is a spirit that causes the illness. To solve the problem he/she is given to someone else, so the spirit cannot find him/her again.

4.2.4 Strategy adopted in case of disease

In case of disease, different approaches are applied for treatment. Four main methods can be distinguished: self-treatment with traditional medicine, self-treatment with modern medicine, going to hospital or calling in the help of a shaman. None of these treatments are viewed to be in contradiction or in conflict with each other. Actually, they are considered as complementary, and all can be applied to cure the same disease. It is difficult to describe a typical treatment because it may vary depending on the village, the family, the person, and their financial situation, availability of transport, level of education and former experiences with illnesses. Roughly, in case of a minor illness, self-treatment is used. Whether traditional medicines are used depends on the knowledge of traditional medicine within the family, and the existence of a product considered useful to treat the disease. In addition, there are the issues of availability of modern medicine in or near the village, and the financial situation of the family, which also influences the fact whether a sick person is treated with traditional medicine or modern medicines.

Self-treatment

- **Traditional medicine**. Most families interviewed use traditional medicines derived from plants and animals. There is usually no traditional healer, although there are some in Lao and Tai villages. Every family knows perhaps 3 or 4 medicinal plants and shares this knowledge when someone is sick. This method of treating diseases is common and perhaps more beneficial and less dangerous than using modern medicines that are often used the wrong way. Traditional medicines are useful because there are very few health centres and modern medicines are sometimes too expensive whereas everybody has equal access to traditional medicines. Most of this kind of medicine is boiled in water or added to rice whiskey.

- **Modern medicine**. The use of modern medicine is widespread in villages. Some families have some paracetamol at home in case someone gets ill. Buying and selling medicine in the village can be a lucrative business. Modern medicine is good to treat illnesses but only if people know what they are doing. However, often sell-by dates are not considered, the wrong medicines are taken, or the course is not finished. During the fieldwork we met persons taking medicine for the wrong purpose. It could be very useful to train some villagers in basic modern medicine. We did note the presence of a vaccination campaign of the government that is covering all villages[44].

In conclusion, the main health needs are first the prevention of the most common diseases and basic hygiene techniques. Added to this, basic information on the use of modern medicine would be useful. When possible, establishing local village medical assistants (phet ban) could help to make sure villagers have a better understanding about health issues by training villagers. These trainings should be organised in co-operation with a (or by) a mobile team.

Using a specialist

In case of complications and if self-treatment has no effect, people usually go to hospital, or request the help of a shaman. There is no preference for the one above the other, so it is not possible to say that they first go to hospital and then call a shaman or the other way around.

[44] The SCSP report says: 'EPI covers six mains diseases: tuberculosis, measles, diphtheria, pertussis, tetanus, and polio, for 15-45 year-old females'. The problems this program has are that when campaigns reach the village, farmers are sometimes absent, and some people do not like to see their children vaccinated. (SCSP, 11).

People explain their strategy very rationally. Generally, in case the illness has a natural cause, they will go to hospital, and if a spirit caused the disease, they will call a shaman.

- **Hospital and clinic**. There is one hospital in Xon Neua built by LAP recently. In the area of Müang Xon, the Vietnamese built the old hospital in 1974. A new hospital was built in 1995, with funding from the government (2/3rds) and Lao American Project (1/3rd). The total staff consists of eight persons: two college graduates and six lower college graduates. Six are from the area itself, one from Xiengkho and one from Viengsay, but all have their family there. The hospital does not keep any records, but director estimated 5 to 20 visits per day, and between 5 to 8 persons staying for the night. In total this would amount to between 2000 and 7000 visits per year, and between 2000 and 3000 persons sleeping in the hospital[45]. People usually stay between one and 5 nights, with a maximum of 20. When persons cannot be cured, doctors ask them to go back home. With 15 beds, the hospital has a capacity of 5500 nights per years. This is not sufficient considering the peaks during the rainy season and relatives accompanying the sick person. Twenty beds would be sufficient.

Table 78: Approximate statistics concerning hospital visits in target villages, 2000 and 1999*

Village	**Village population**		**No Person who went to hospital**		
	No family	*No person*	*2000*	*1999*	*Percent***
Long Ngua Pa	53	429	10	15	3%
Nam Neun	41	268	40	50	17%
Buamphat	44	285	8	8	3%
Deunbin	38	338	6	20	4%
Ponexong	57	326	100	100	31%
Xay	52	355	20	12	5%
Sakok	42	212	15	20	8%
Total	**327**	**2213**	**199**	**225**	**10%**

*Hospitals does not have any statistics
**Percentages calculated over two years

Buamphat dispensary
The vice village headman of Buamphat acts as a doctor in the development zone. He has some basic knowledge about medicine, which he learned when he was in Viengsay, during the eighties. He was chosen by the Lao American Projec to manage a small dispensary in the area. He participated in two other training courses of one week in Müang Hiam hospital. His skills are not sufficient, but he says to treat only those diseases and ailments that he knows something about. As the dispensary does have any equipment, he acts as a commercial pharmacist. He buys around 450 000 k worth of medicine tree times per year, in total of 1.35 million or 170$ in Müang Hiam. He sells it in the village with a profit of around 10%, earning 150 000k per year. Apparently, the medicine he buys is not sufficient to cover the demand, but he does not have the money for a bigger investment. People from Nam Neun, Deunbin and Ponexong come all the way to Buamphat to buy medicine. He would like to get material to equip the dispensary (mainly drips) and get further training to be able to do small operations. It is recommended to give him a salary when he spends more time in the management of the dispensary.

An equal number of men and women visit the hospital, while children outnumber adults. Ethnic groups are all represented (apparently many Kh'mu come for treatment of malaria), depending on the money have and the distance from the village to the hospital.

The problems that the hospital faces are mainly:

[45] The most common diseases treated are by far malaria and diarrhea. Deliveries are also relatively frequent (around 15/20 per month). Women usually stay one or two days after giving birth.

- lack of material: the director particularly asked for tho palat lang vat and tho pasout,
- lack of money to buy medicines, mainly antibiotics (ya that sua), vitamins (ya bambloung), and medicines against malaria,
- lack of access to water: the hospital would like to have running water,
- lack of transport: the hospital would like to have a vehicle to go out to villages.

The hospital is hardly used when people are sick, they mainly rely on buying modern medicine, take traditional medicine, and/or use a traditional healer.

Table 79: Number of healers in target village

Village	No family	Modern	Traditional
Long Ngua Pa	53	0	1
Nam Neun	41	0	2
Buamphat	44	1	0
Deunbin	38	0	0
Ponexong	57	0	2
Xay	52	1	0
Sakok	42	0	0
Total	**327**	**2**	**5**

- **Shaman**. Shamans, or “traditional healers”, do not form an obstacle to the use of modern medicine. They act in a symbolical and sociological way and give meaning to the disease by explaining the human misfortune with cosmological logic. This is important to cure the person and often neglected by modern medicine. Combining these two healing methods together seems to be better than creating opposition.

  The principle is simple. When a person is sick, the shaman will call his tutelary spirit. This is the spirit (or sometimes spirits) that gives him his powers and assists him to travel in the spirit world and deal with other spirits. In Lao they are called *phi mone*. Then, he does divination to know what is wrong with the person and which spirit is causing the disease. Usually, he finds one spirit that stole the sick person soul. This can be a house spirit, a dead person spirit, a mountain spirit or a forest spirit. Most of the time, there is no moral connotation to this. The spirit was angered by something so he caught a soul to eat it. The shaman's work is to deal with this spirit, usually by offering it some meat. In exchange, the spirit should give back the soul he caught and should stop bothering the sick person. Afterwards, the shaman helps the soul to reintegrate with the body. He performs some ceremonies to help the soul to stay in the body, and to scare bad spirits away.

4.3 House construction

House construction is an important event in peoples' lives. It is a sign of independence of a newly married couple and of their participation in village life (“families” are often counted in “houses”, and not in couples). The house is a structured place where the family lives, under supervision of the head of the family and ancestors (*phi huan*, L). It is the main place of relaxation and pleasure, it is where people eat, sleep and feast. For all these reasons, it is important to have a nice and well-organised house. A good house is also important in a sociological sense. It is an important object of prestige, as it is one of the first things that other people will see and judge a family by. For rich people, a house is a source of investment, while for poor people having a basic house is their priority.

4.3.1 Type of house

Architecturally, there are two main types of houses: houses build on stilts and houses build on ground. Houses on pillars is the norm for all Tai-Kadai groups as well as the Kh'mu whereas the Hmong and Iu-Mien build their houses on the ground.

When comparing houses, important criteria are the size (and its height for houses on stilts), the material used for construction (type of wood, bamboo), and the roofing material (grass, bamboo, wooded tiles, corrugated iron or asbestos). All houses can be classified in three mains types, presented in Table 80.

Table 80: Type and quality of the houses

	Good house (Type 1)	**Normal house (Type 2)**	**Basic house (Type 3)**
Description	***Lao lum and theung:*** all wooded house, often with corrugated iron or asbestos roof ***Lao sung:*** wooden walls and roof with good soil floor	***Lao lum and theung:*** house with wood walls, bamboo floor and grass/bamboo roof ***Lao sung:*** wooden wall with grass roof	Bamboo house with grass/bamboo roof
No of big tree used (∅ 40cm-1m)	1 to 5	1-2 to 4	0 to 1
No of small trees used	0	15 to 50 (average of 25)	20 to 50 (average of 50)
m^3(estimated)	8 to 15 (average of 10)	2 to 10 (average of 5)	1 to 6 (average of 2.5)
Total cost	1.5 to 5 million (average of 3.5 million)	0 (45% of house) to 5 million (average of 2.5 million of those who spend money)	0
Estimated value	6 million	2 million	0.2 million
Durability	10 to 40 years (average of 25 years)	8 to 30 years (average of 15 years)	3 to 10 years (average of 6 years)

These three types of houses are not equally represented in all villages. The number of good quality houses depend on the health situation of the families, the number of years a village has been in one place and its proximity to the forest (for cutting wood) and access to roads (for transporting wood, corrugated iron or asbestos tiles).

Table 81: Number and percentage of houses per type in the target villages

Villages	**Number of houses per type**			**Total**	**Percentage per type per village**		
	Type 1	Type 2	Type 3		Type 1	Type 2	Type 3
Long Ngua Pa	11	31	11	**53**	21	58	21
Nam Neun	4	25	12	**41**	10	61	29
Buamphat	0	30	14	**44**	0	68	32
Deunbin	1	21	16	**38**	3	55	42
Ponexong	8	4	45	**57**	14	7	79
Xay	7	40	5	**52**	13	77	10
Sakok	4	0	38	**42**	10	0	90
Total	**35**	**151**	**141**	**327**	**11**	**46**	**43**

The data in Table 81 are estimations of the interviewed villagers. However, as the villagers participated in the construction of the houses, there is a certain level of exactness. They would

of course know the number of trees used, the total m³, price of wood per m³ when somebody else cuts it.

4.3.2 Use of wood

The wood is cut in a part of the forest reserved for house construction (see part on forest zoning). Theoretically, there is a limit to the quantity of wood that villagers can cut and they would also need to ask permission first. In practice, it does not work like this. Villagers just cut the wood they need to build a house. In Xay village, they share a piece of forest with other villagers, but it is not known if there is a legal base to this system. Government officials from Müang Hiam seem to consider the forests in the development as a public domain, where they cut wood with permission (or laissez-faire) of the district authorities. Some villagers profit from this situation by selling wood coming from their territory.

It is of course difficult to know if wood for construction is sufficient in the allocated areas. Most of the villagers seem to think there is not enough wood. When the formula, explained below would be applied to the situation in each village, it would provide an indication to the extent of wood necessary.

Table 82: Calculation of sustainable surface of forest reserved for house construction

Number of trees or m³ used for construction:	a
Number of new houses build per year:	b
Durability of house:	c
Number of trees used per year (x):	(a/c) * b
Number of trees available for house construction:	d
Age of trees:	e
Required area in hectare (y):	x * d
Sustainable forest area reserved for house construction:	y *e

4.3.3 Cutting and preparing wood

The cutting and preparing wood is done by villagers themselves or by Vietnamese who are hired, depending on the wealth of the family. There are no statistics available, but it is estimated that half of the houses from type 1 and around a third of the houses from type 2 are made with wood sawn by Vietnamese. Cutting trees is less difficult and less time consuming then sawing trees into planks. A group of villagers would do this work together. Usually, sawing is done directly in the forest, and wood is brought in the village in the form of planks and pillars. For one house, cutting and sawing takes about one month. When villagers do all this work themselves it has to be done in their spare time and may take up to three or four years. The wood is stored under the house until there is enough wood or until the family has enough money for construction.

4.3.4 Building structure

Mostly villagers build houses themselves. Vietnamese or professional Laotians are requested only in case of a complex house that is very high and/or has concrete pillars etc. When professionals are hired, they need to be paid between 10 000 and 15 000k per person per day. When villagers construct the house themselves, all villagers participate in the construction. Nobody is paid, but they will be compensated by a feast and will also be able to ask for help when they will build a house. The feast usually consists of meat (pork, dog or chicken, depending on the wealth and domestic animals of the family), rice and rice whiskey. The total

cost of such a feast is around 100 000 to 200 000 k. Houses are usually built within one or two days. Except in Hmong villages, where women participate in the levelling of the soil, house construction is a men's only affair.

Table 83: Cost for a type 1 house if everything is bought

Expenditures	**Price per unit (estimation)**	**Estimated price**
Cutting wood	Between 250 000 to 450 000k /m³	2.8 to 5 million
Construction: - Vietnamese - Laotian (professional)	 All inclusive price: 1.5 million 15 000 k per day per person	1.5 million or 1.8 or 2 million
Roof: - Corrugated iron - Asbestos tile	 12 000 k each	2.5 million or 3 millions
Total	**6.8 million to 10 million (850 to 1250 $)**	

4.3.5 Type of roof

Five types of roofs can be distinguished in the area: three traditional ones, and two modern ones. The most commonly used material to make roofs is grass (*nya kha*, L). It grows on unfertile soil. When grass is abundant and easily accessible, nobody has ownership over it. Everybody collects as much as they need. Some villages, like Müang Peu, regularly burn the area reserved for grassland when it becomes too old. Grass is mainly collected in February. It is cut, assembled in bunches and carried to the village. The load can be as heavy as 30 to 40 kg, so when the village is far from such grasslands, farmers grow grass in a private field, which basically comes down to fencing a piece of land and burn the grass when it gets to old. It is estimated that such privately owned grasslands are around 7 to 8 *are* per family.

Table 84: Cost and durability of roof materials

Roofing material	**Price per unit**	**Durability in years**
Grass (Imperata cylindrica)	300	2 to 7 (average of 3)
Bamboo	500	Around 5
Wood	1,500	Around 7
Corrugated iron	12,000	> 10 years
Asbestos tile		> 10 years

Bamboo roofs are the not very common, because they are more difficult to make and to maintain (bamboo has to be cracked, unfolded and then flattened). Bamboo is often used in areas without grasslands, as in Ban Naven, where all houses have bamboo tiles. Wooden roofs are even rarer, because the tiles are even more difficult to make. Wooden tiles are made one by one, splitting logs into flat slates. Depending on the type of wood used, these tiles may last 5 to 15 years. Only a few houses in the area have wooden roofs.

Modern roofing materials are corrugated iron sheets and asbestos tiles. The advantage of both these types is their durability. However, iron roofs are very hot during summer time, but light and relatively cheap. Asbestos tiles keep houses cooler but are heavier and more expensive and prone to breaking. Only the wealthier families can buy them.

4.3.6 Price of land for housing

Land for housing usually does not have to be bought, although occupants ‘officially’ rent the property from the Government, on a square meter basis. In the districts or in a Müang, land to build a house has a price, for example in Müang Hiam, an area of 6m by 15m costs 2 million kip. Traditionally, Tai people have to pay a sort of tax to the land spirit (phi din) for good luck and protection against misfortune. The 'tax' consists of burying some silver coins under the central pillar of the house.

4.4 Festivities

Festivities are important occasions to give and receive goods and products. The most important festivities in terms of expenditures and social relations are weddings and funerals. Other important festivities are of a religious nature, such as celebrations for the house and village spirits. A third category of festive occasions are the visits of friends, family and relatives, always good for sharing food and alcohol.

4.4.1 Weddings

Weddings are important events in Lao society. They mainly take place during the dry season from December to March, when there is little agricultural work to be done. A marriage marks the legitimate union between a man and a woman, it gives the status of and independent family, the right to a legitimate sexual relationship and the duties of collaboration between husband and wife. It is also the union of two families, that of the wife and that of the husband. The exchange between those two families is not identical. One family gives a woman and the other family takes her. Once married, the woman will live in a house belonging to her husband's clan, and their children will also belong to this clan. Moreover, the family of the husband will gain a worker, while the family of the wife looses one.

Labour and marriage: passu-kat

The "*passu-kat*" institution is a solution for parents who do not have a son to look after them when they are old. It is, however, a bit cruel to daughters as parents consider one of their daughters as the missing son who will take care of them. One of the daughters will marry in the same way as a son would. This means that her family will pay the dowry and not the husband's family, as is usually the case. The new couple will live in the wife's parents' house and children will belong to the wife's clan. Of course, most men are reluctant to engage in a marriage under such conditions, which makes it difficult for a girl to find a husband. Often only poor men accept this situation if the family of the girl is rich, or men who have difficulties finding a wife for some reason.

All those reasons justify the price of the dowry. The dowry is a kind of compensation for the loss of a daughter. Tai and Khmu populations call it "price of the milk", symbolically it is the price of the wife's education and the food she received. The dowry can be given in two ways: one is a monetary gift (traditionally in silver coins, but now often in kip), and the other is labour (the "*su*" institution). Paying part of the dowry in the form of labour is possible in Phu Tai and Khmu societies, but not in Hmong, Yao and Tai Lao societies. Since they only give money, the dowry is usually more important in Hmong and Yao (between 400,000 k and 600,000 k).

Table 85: Weddings and divorces in target villages, 1999

Village	Average price of the dowry in kip	No of cases of divorce	No of unmarried women*
Long Ngua Pa	500,000	0	1 (1**)
Namneun	600,000	0	0
Buamphat	500,000	0	2 (1)
Deunbin	350,000	0	1 (1)
Ponexong	400,000	2	0
Xay	180,000	1	2 (1)
Sakok	?	3	6 (2)

* Girls are not included, only relatively old women who at their age should be married, but are not.
** Numbers in brackets correspond to the number of unmarried women who live in a separate house and are heads of households. It corresponds is similar to the number of widows, except the one in Xay ,who is divorced.

The expenses for food and alcohol for the wedding are usually between 300,000 and 1 million kip (40$ to 125$), and including the dowry the total expenditures are over 1 million kip in some villages.

4.4.2 Funerals and birth

Other symbolically and financially important events are funerals. Unfortunately, not many enquiries were made on this subject. The exact cost of funerals for all different ethnic groups is unclear. At funerals buffaloes or cattle are sacrificed. Even Lao people will slaughter buffaloes or cows, but it is unknown if there is a religious motivation for doing this. Buffalo sacrifice is rare among the Khmu population. A Khmu elder explained that if an elder did not receive a buffalo sacrifice for his funeral, none of his sons would be entitled to receive a one when they would die.

Table 86: Funeral practices per ethnic group

Ethnic groups	Treatment of the body
Tai Lao, Tai Khao	Burned
Tai Phuan, Tai Dam	Rich are burned (for the Tai Dam, those who can offer a buffalo sacrifice), poor are buried
Tai Deng, Khmu, Hmong, Yao	Buried

Except for these costly sacrifices (Hmong families may kill more than one cow for the funeral of rich persons), expenditures also include sacrificing pigs and poultry, alcohol, payments for religious performances, food for relatives and neighbours, ritual paraphernalia, clothes for the dead man etc. Except when cows or buffaloes are sacrificed, weddings seem to be more expensive events than funerals.

Birth and related practices (end of postpartum women rest –*Yu kham*, giving new-born babies a name, first food given to the baby – *Chom khao*…) are also occasions to celebrate (for details on these practices in Houaphan, see Phanjaruniti, 1994).

4.4.3 Other religious festivities

Religious activities can be considered to be of an economic nature. A relation with a spirit is a ‘care taking relationship’. It is a kind of 'contract': men take care of (lieng) a spirit, and in return a spirit protects (axa) men. The main religious festivities concern house spirits, village spirits, müang spirits and mountain spirits. Furthermore there are New Year celebrations, Buddhist festivals, healing ceremonies and holidays. All will be briefly discussed below. It is important to know of the existence of such events, and when they occur, because these

festivals are imperative, and lead to specific conduct such as not working during *sin* or *kalam*, and a ban to leave or come into the village during certain rituals. The project has to take this into consideration and should not organise any activities on such days[46].

The house spirit

The house spirit (*phi heuan*) ritual is conducted for the souls of family ancestors and reinforces the relations between the family and their ancestors. It is not a single and personalised spirit, but an entity created by an agglomeration of the souls or spirits of ancestors[47]. This entity has a small altar in each house, except in Khmu houses, where ancestors are supposed to reside on the central pillar. In the area, all ethnic groups[48] perform the house spirit cult. This cult is very important as families are under the obligation to pay respect to their own ancestors. Worshipping happens periodically during the New Year (*kin tieng*) festival for the Hmong-Mien, or during the anniversary of the death of the father of the head of the household for others. Khmu seem to do it more often because each time a wedding or a funeral occurs they perform ceremonies to explain the changes in the family to the ancestors. It can also be done after disease in the family, if the healer's diagnosis points to ancestors as being responsible for the disease. During the ritual of paying respect to the house spirit, the family has to offer some food (pigs, poultry and several other kinds of products) and drink rice whiskey in honour of the ancestors, to ask them for protection and good fortune for the house, the family and their possessions.

The village spirit

All ethnic groups (even some Tai Lao) worship a village spirit (*phi ban*), but not in all villages, maybe only a third still does it. Many of the recently established villages and/or those with an ethnically mixed population do not perform ceremonies for village spirits. Each ethnic group has a different kind of village spirit. The village spirit may be a fusion of all the house spirits of a village as is the case in Khmu villages. For the Tai Dam and Tai Deng village spirits are the ancestors of the dominant clan and of the founders of the village. It is again different for the Hmong where village spirits are local mountain and soil spirits while for the Tai Lao the spirits are celestial divinities. Celebrations are usually performed in June, when rice is planted. Usually, sacrifices only consist of pigs, poultry and alcohol. This cult strengthens the unity of the community and its right to land but is also performed to ensure a good harvest.

The ‘müang’ *spirit*

The *Müang* spirit (*phi müang*) is the only ritual performed beyond the village level. Originally, it was done in each principality that had a local ruler, in order to ensure the protection and prosperity of the entire area. Celebrations were also to reaffirm and reinforce the relations between the inhabitants of the area and their lord, and the peripheral villages with the *müang*. Now, it is only performed in some areas, sometimes periodically (Tamla), or for specific purposes, such as an epidemic outbreak or the construction of a road[49] (Muang Peu). During this cult, similar to the village spirit cult, a period of confinement is imposed on all inhabitants. Nobody is allowed to leave the village or to enter it. Such confinement may also occur to an individual family in case of extraordinary events, such as diseases. This

[46] In case of violation of the code of conduct during such festivals, the fine can be expensive because ancestors have been offended. Apologies and paying respect is necessary in such cases so it will take sacrifices of poultry, pigs and sometime even a buffalo, alcohol etc. to be paid by the offender.

[47] The type of ancestors whose souls are part of the cult varies according ethnicity. For example, the strongly patrilinear Hmong society worships only male ancestors for three generations but Tai and Khmu also pay respect to the souls of their mothers.

[48] Although theoretically, Tai Lao do not perform such rituals several of those households do it anyway.

[49] It was said that district spirit did not like the noise and the vibrations of the engines, and he asked, through diviners, for the sacrifice of two buffaloes.

confinement is announced by the placement of a *taleo* in front of the house or at the entrance of the village.

The *taleo*
A *taleo* is a sort of star woven with bamboo on a wooden stick planted in the soil. Its primary meaning is to mark a ban of some sort. It may concern natural resources, for example when a person discovers a beehive or tree to cut, but does not have the material or time to take or cut it. Then he places a taleo in front of the resource he considers to be his, so it is clear to other people that this particular resource cannot be taken anymore. Similarly, a *taleo* in front of a house or a village means that it is forbidden to enter. In addition to being a sign of a ban, it is believed that the *taleo* has a power over people and things. *Taleos* are also called 'eagle's eyes' because they are believed to see everything. In case people do not respect a taleo, they can become sick. A *taleo* even has power on spirits. When placed in a rice field, this prevents spirits (but also humans) from steeling the rice.

Mountain spirits
This category is unclear and its meaning varies according to ethnic group. People often explain that the small sacrifices made in the swidden fields are to avoid animals destroying the harvest and to ask the mountain spirit for good yields. The mountain spirit is presented as the owner of the soil (*chiao din*) and sometimes also as the owner of wild animals.

Healing
Healing rituals are important, both in terms of expenditures and as a source of distraction. Main objective of these rituals is to find the origin of a problem by divinatory techniques (including direct dialogues with spirits by possession). Villagers regard shaman activities as good fun to watch and healing cession often finish with a party where meat and alcohol is served.

New Year
New Year celebrations are not as important for every ethnic group to the same extent. For the Khmu, Hmong and Yao it indicates the end of the work in the fields and occurs when the harvesting is finished. Furthermore, it is a time of abundance, marked by the full granaries. For Hmong and Mien people, it is a very important occasion because all religious practices are concentrated around this time, and it lasts one week. Although Tai people also celebrate the end of the rice harvest, this period does not correspond with their New Year. For the Buddhist population (Tai Lao and Tai Phuan) New Year (*Pi May*) takes place in April/May, and for Phu Tai, it seems to be around August, when before Phi Müang was celebrated (Maspero), and they now perform the New Rice (*Khao May*) celebrations (Buddhists also celebrate this).

Table 87: New Year Celebrations among ethnic groups

Ethnic groups	New year's name	Date	Period
Tai Lao	***Pi may***	April/May,	Around spring time
Phu Tai	*Khao may/ Phi Müang*	Around August	When rice grains start to develop
Khmu	*Greu*	Around November/December	When cherry trees blossom
Hmong-Yao	*Kin Tiang*	Around December	After rice harvest

Buddhist and State festivals
Buddhist festivals are not widely celebrated in the area. Only Tai Lao, Tai Phuan and a few Khmu (and Lao Kang) celebrate these festivals (around 1/8th of the total population of the area). As we wrote in Chapter One, there is only one temple (*wat*) in the National Park area and religious practices of Buddhists seem to be close to the animist practices (*satsana phi*) of the other groups. In the absence of a temple, Buddhist activities are not particularly adhered to. *Pi may* (Buddhist New Year), *Visakaha Bu saa* and *Bun Bang Fai* (in May), *Khao Phansa*

(July) and *Hawk Phansaa* (November), *Bun Pha Vet* (December) and *Makkha Bu saa* (February) are national festivals and are celebrated but are not considered to be too important, or are not celebrated at all. Such festivals are performed in temples, but only villagers who live nearby come to participate. Buddhist festivals that are performed in villages in the area are *Khao Saa* (around December) and *Haw Khao Padap Din* (around September), which exactly correspond to the 'animist' New Year (the former) and to the ancestors cults (for the latter). Similarly, State Holidays (Labour Day, National Holidays, Women's, Youth, and Army Days) are not really celebrated outside of the district town.

Holidays

Real days off occur twice within the lunar month, once for the full moon and once for the new moon and are called *van sin*. During these days, working in the rice field is not allowed although working in the gardens is. During these days people take the opportunity to visit friends or relatives and repair tools or go hunting. At *kalam*, the anniversary of the death of parents, it is taboo for the families involved to work.

CHAPTER FIVE: LANDSCAPE MANAGEMENT PROFILE

5.1 Ethnic conceptions of territory and landscape

The location of villages and which ethnic groups live where is the result of history, livelihood strategies, government policy, geopolitical strategy, environmental factors and the construction of roads. All these factors overlap and it is not possible to determine which factor was the most important for a village to settle itself where it has. In this section many of these factors will be addressed.

5.1.1 Landscape and agriculture

Type and location of a village are closely related to the type of agriculture villagers practice. Referring to ethnicity as the explaining factor for the economic situation, way of life and other characteristics is dangerous. As was explained earlier in this report, it is possible to find a Tai village practising only shifting cultivation, and Khmu and Hmong villages only doing paddy cultivation and a Tai village which is located at a higher altitude than Hmong ones. Although there is a correlation between ethnicity and mode of production, it must be kept in mind that that it is not the only explaining factor.

Culture or history: relation between ethnic groups and their livelihood strategy
When looking at the agricultural situation of different ethnic groups, the technique used (paddy cultivation versus shifting cultivation) corresponds with a stereotypical way of life for each of the ethnic groups. However, their way of life is in fact difficult to explain. Did the Khmu mainly practise shifting cultivation because the Tai population occupied all suitable paddy land or did Tai use this land because the former group did not use it? Apparently, Hmong people in China went to live in the highlands because of security reasons, and adapted their agricultural system to this environment (extensive livestock grazing, shifting cultivation and continuous movement of villages was perhaps motivated by the fact that they were fleeing from one place to the other). Once, they themselves chose to live in such environment and now they continue this lifestyle because it has certain conveniences such as clean water and no malaria. Recently, some have begun to desert this way of life under government pressure and/or the opportunity to live in lowland areas.

Paddy cultivation imposes limitations and constraints on villagers with respect to choosing a settlement. Land has to be relatively flat and rivers or streams are necessary to be able to construct irrigation systems. Such places are limited in the area. Shifting cultivation has fewer constraints. Shifting cultivators can almost occupy and exploit all kinds of territory, with the exception of really steep slopes and land covered with stones. It is, therefore, very suitable for mountainous areas. Furthermore, shifting cultivation is able to support more people in mountainous areas than paddy cultivation in similar terrain. Settlements of shifting cultivators face only two constraints. The village has to be located near relatively old forest, which guarantees good quality soil and good yields. Villages, therefore, cannot be too close together. In contradiction to this prerequisite, the other constraint is that the village should preferably be near communication and trade axes, or at least not too far from other villages to have the possibility to a minimum of trade and exchange. As those locations are rare, it often means to have to live areas that are relatively densely populated.

Tai

Tai settlements are widespread in the area, depending on the possibilities offered by the natural environment to cultivate paddy rice. Paddy fields can be made in valleys and plains, which are quite rare in the area. Because flat land is due to the presence of a river, these villages also can make use of other opportunities this water source offers such as fishing, making gardens on rich alluvium soils, and using the river to transport products.

Khmu

Most Khmu villages practice shifting cultivation. This type of agriculture is adaptable to a large variety of locations. The first inhabitants of the region probably occupied the plains and valleys first where it is easier to practice shifting cultivation. The soil is of better quality and the land is flat[50]. They usually also settle near rivers but these are often smaller than the ones near Tai villages. They are also good fishermen but have particularly good knowledge of forest products as they are dependent on the forest for subsistence.

Hmong-Mien

Legend has it that the Chinese Emperor divided his territory in the highlands for the Hmong-Mien, and lowlands for the Chinese[51]. Hmong-Mien usually occupy the top of mountains and use the valleys only to go to other villages in the highlands. Despite the fact that living on top of mountains makes it impossible to have a large community of neighbouring villages, their settlement is structured and each Hmong-Mien villager knows all their relatives in other distant villages. Furthermore, the choice of living in the highlands is related to opium production (a crop does well in cold climates) and cow raising.

Table 88: Summary of ethnic characteristics of livelihood strategies

Ethnic group	Predominant mode of production	Characteristics of village location
Lao Loum	Wet rice cultivation, gardens, animal raising (poultry, pigs, buffalo) fishing	Flat land (lowland or plateau), close to big river
Lao Theung	Shifting cultivation, fishing, animal raising (poultry, pigs) hunting, collecting	Slope of mountain, close to river, near forest
Lao Sung	Animal raising (poultry, pigs, cow) shifting cultivation, hunting	Top of mountain, near forest and grasslands

For both Khmu and Hmong-Mien, the choice location is also politically motivated. The Khmu are close to power centres because of their former domination by the Tai, whereas some of the Hmong are far from such centres. This decision is sometimes taken by villagers themselves but can also be made by the local authorities.

Summarising, the Tai population, because of their agricultural system and/or their military superiority, selected land suitable for wet rice cultivation. They settled, sometimes using force, in some of the best lands where first the Austro-Asiatic people lived. In response, the Khmu villages moved to other uninhabited locations, higher up on mountains which was possible because they practised shifting agriculture. With a lot of space at their disposal, villages were able to settle far enough apart to avoid land conflicts. Hmong newcomers did not create specific land conflicts due to the fact that they chose to live on top of mountains, an area not used by other groups.

[50] Nothing leads to suppose they practised paddy rice cultivation before. In areas with a low population density, shifting cultivation is very suitable, and perhaps easier and more productive than paddy rice cultivation.

[51] As the legend goes, the Chinese Emperor promised half of its territory and his daughter to those who helped to kill a demon who was destroying his kingdom. The P'an hou dog, the ancestor of Iu Mien, defeated the demon so the Chinese Emperor gave his daughter, but was reluctant to share his territory so he deceived them and he divided his land the lowlands and highlands. He gave all highland to the P'an hou descendants, the Iu Mien. See Dussault, 1920.

5.1.2 Agriculture and population density

When looking at Table 89 showing average size of village and the importance of shifting cultivation in rice production, we see that the smaller villages mainly derive their rice from shifting cultivation. Bigger villages practising shifting cultivation are Long Ngua Pa and Khang, with around 380 inhabitants, but the average pure shifting cultivating village is 214 persons. However, the largest villages are not paddy cultivators, but practise a mix of both techniques. Because the suitable locations for paddy field are limited, they often do not allow for a high population density.

Table 89: Comparison between importance of shifting cultivation, size of villages and rice production per person

% of rice produced from shifting cultivation	No. village	Average no. of families/village	Average no. of persons/village	Average kg of rice/person
100	**17**	30	214	283
85-97	**11**	37	225	344
55-84	**8**	412	2674	362
24-54	**14**	42	300	379
Total	50	1835	12172	330

In conclusion, paddy cultivation in combination with some shifting cultivation, allows for a higher population density per cultivated area, but needs only a limited amount of space, while shifting cultivation is only possible in village with a limited number of inhabitants but needs quite a lot of land.

5.1.3 Ethnicity and the conception of territory

A first remarkable aspect of how people occupy land in this area is the total absence of ethnic territory. It is hard to find areas only inhabited by one single ethnic group. Although villages are usually composed of only one ethnic group, the territory of the village often borders on the territory of a village with another ethnicity[52]. A second point is the absence of any clan or lineage territory. Among all ethnic groups, the clan institution does not play a role in the division of the village territory (as it is the case for Karen and Lua of Thailand or Phu Noy of Pongsaly[53]). Vienne (1991, p. 54) called such groups in northern Thailand that are similarly organised, "non territorial societies"[54].

Table 90: Ethnicity and settling pattern

Groups	Territory	Migration types
Tai-Kadai groups	Fixed territory, fixed site	Occasional scattering
Khmu	Fixed territory, moving sites	More or less periodical and cyclic migration with occasional scattering
Hmong-Mien	Moving territory, moving sites	Periodical and continual migration, sometimes cyclic, sometime pioneering

Khmu

Khmu villages, at least in this area, do not have a notion of a village being in one place, but do have a more or less fixed area which they regard as theirs. There is apparently no founding clan who considers an area as their own. They have a tradition of changing parts of the house without fully having to rebuild it. Moreover, houses should be built within one day. This

[52] It is why Condominas writes that a good ethnic map can be only made with dots (« Asie du Sud-Est », in Izard et Bonte, 199 ? ?).
[53] Kunstadter 1972 for Lua, Moizo 1996 for Karen, Bouté 2001 for Phu Noy.
[54] Vienne continues by saying: 'where the idea of occupation, of ownership of territory, is nothing else but the train of thought of other ethnic groups'. It is very interesting to attribute spiritual ownership of the soil to other groups that cannot be verified by us (one is still far away from the wish to buy land, which is very often presented as one of the characteristics of peasant society).

could be viewed as a sign of temporal settlement, which holds them back from investing in one particular location. However, their villages are more or less sedentary, they only move their village in case of extraordinary circumstances (such as an outbreak of an epidemic) within in a fixed area. Although they do not have a real attachment to a village site, they are attached to a larger territory and its soil.

Hmong and Iu-Mien

For Hmong and Mien, attachment to territory is even less strong. A nomadic existence is apparently intrinsic to their culture. During funerals, religious leaders verbally send the spirit of a dead person to all the places he/she lived before to 'pay' local spirits for the soil and water that he or she used during life. Although before, they migrated also more or less rotational within a larger but fixed territory, they now tend move over longer distances.

Tai

Tai villages are the most sedentary of all groups. The population in these villages is more stable. Village settlements do not move very often and may be in a certain place for a very long period of time. Such villages have a well-defined territory. This territorial attachment is expressed by the existence of a founding clan (at least in Tai Dam society[55]) and the existence of a territorial cult (*Phi Müang*, L). This last point leads to a reflection on the Tai domination in the area. Their domination is not based on seniority as Khmu people were here first, but on a politics. "In all Tai principalities, the King is the owner of all land by right of conquest. He periodically distributes it and creates dependency links as a measure of his authority, concretised by payment of tribute" (Condo, BARL 110). Tai domination in the area is not founded on a particular relation to the territory but on political and military power. Their authority does not concern a particular ethnic group, but all people present in a certain area.

5.1.4 Traditional land and forest management and the influence on territory

Village territory can be viewed as a number of concentric circles that contain areas more or less brought into culture or used by humans. These areas are defined by their proximity to the village and by their ecology that is related to how humans use the area. Two points should be noted. The first is that an area is valued according to its production capacity. The second is that the way a village manages and uses its land depends on geography, type of agriculture it practices and also to the age of a village. The older a village is, the better villagers know their territory. Continuous resettlement of a village leads to a lower investment in the territory. In contrast, the prospect of staying in the same place for a long period of time may lead to a better management and preservation of the environment.

Territory, spirits and rituals

The notion of territory villagers have is expressed in the "*territorialisation*" of spirits. First there is the house, the centre of social and family life, structured by, and under the control of spirits of ancestors. Then comes the village itself, which is nothing more than a clearing in the forest, without trees, where people live. The village is often symbolically closed during the commemoration of the village spirit. Furthermore, the home and riverbank gardens, rivers and wet rice fields are all places brought into culture. Such places are also under the protection of the village spirit, the *phi ban*[56]. At last, there are the swidden fields that are simply "borrowed" from the forest and only temporarily domesticated. These fields are, like fallow land and dense forest and are under control of mountain spirits, and not the ancestor spirits. Some villages still have ceremonies for these forest/mountain spirits when they start converting a piece of forest into a swidden field.

[55] Although it is less important than the senior clan, Lo kham.
[56] Divine spirit, and ancestor of the dominant or founding clan, or a union of ancestors of all village families.

The village

Villages are usually composed of bamboo and wooden houses situated in a cleared area. The only trees found in the village are privately owned fruits trees planted by villagers[57]. In villages, poultry, pigs and dogs are raised, in addition to the planting of fruits trees, but the main village based activities are transformative in nature such as handicrafts, weaving, making and repairing tools and other materials.

The river

Rivers, streams, and other water sources and their surrounding area are crucial to villagers. Almost all villages are situated close to a river, or a spring. Often a village is called after the name of the water source they are near to. Rivers are the place of several daily activities, such as bathing, cleaning food and clothes and doing dishes. It is also a place where animals can be raised, such as ducks but also for buffaloes the water is important. Rivers provide food and income in the form of fish, several aquatic animals and wild vegetables and riverbanks offer the possibility to cultivate vegetables in gardens during the dry season. Furthermore, the water is often used to generate electricity with help of micro-hydropower turbines.

Paddy fields

Old paddy fields are all situated near the village or rather the village settled itself near the paddy fields. Since population started to increase and since the active promotion of paddy cultivation, farmers use all suitable land. This is resulting in the fact that many paddy fields are now at a longer distance from the village then used to be the case, and also near smaller rivers. Paddy fields were once forests, but now fully brought into to culture by humans, without anything that reminds us of the areas' original state. They produce first of all rice, but it is also a location for fishing, hunting (mainly insects, rats, birds), and gathering of vegetables and it even serves as a grazing area for buffaloes and cows.

Village surroundings, first circle[58]

The immediate area surrounding the village is used for productive activities that need constant supervision and frequent trips. It is here that farmers have their cassava fields for pig food, plant mulberry trees for silk production, fruit gardens or fish ponds. This area is of high value to farmers, and perennial crops are common.

Village surroundings, second circle

Home gardens and growing vegetables in swidden fields are activities that farmers like to do as close to the village as possible. This space has been used more and more since the introduction of new perennial cropping techniques. However, in pure shifting cultivator villages the use of this circle is sometimes absent because they plant vegetable and perennial crops in the same plot as rice. When people have both gardens and swidden fields the areas would overlap, but usually the gardens are closer to the village. Upland fields can be found in an area ranging from very near villages to being located in remote forests.

The forest

Swidden fields, fallow lands and forests can be considered as continuity. A plot may be used for cultivation, but when it is left to fallow for a number of years, its former agricultural function is hardly visible any more. Nearby fallow lands and forests are still considered as

[57] The contrast with villages of paddy cultivators and those of shifting cultivators is big. Villages that grow paddy have many trees but the surrounding paddy fields have none, whereas villages of shifting cultivators are like small islands in the middle of a green ocean full of trees.
[58] It is of course not a visible geographical circle, but a perimeter determined by a certain distance to work. Borders of these area are determined by a maximum distance people are willing to go for the activities that take place in the areas, and the possibility the landscape offers to the perform these activities.

'productive' land, as it is where villagers usually collect forest products. This terrain, although used by humans, is still considered as being dangerous and not controlled by humans, full of (bad) spirits or roaming souls of deceased villagers. In addition, where population density is low and the number of villages limited, dense forest can still be found. This is usually considered to be no man's land. Here, people only go occasionally, and always with a special reason, such as to hunt, collect medicinal products, collect rattan etc., because it is conceived as being a dangerous place, where humans have no business and where wild animals and forest spirits can cause people to die.

5.2 The territory and its boundaries

The issue of land and natural resources ownership cannot be discussed without relating it to the recent establishment of village boundaries, an early step in the land and forest allocation process. This has partly changed how villages were organised in the past and led to a new relationship between villages. Defining the village territory is part of the general process of forest zoning and land allocation being carried out by donors and the Lao government. The aim of this process is to definitely fix, and register, the village land and resources (with the long term aim of fixing and registering the boundaries of the entire national territory, shared between national, village and family levels). By issuing rights and duties to villages and families to a certain area, it is hoped that this will lead to taking more responsibility towards it and will encourage them to use the land in a sustainable way. This process should lead to a more rational, ecological, sustainable and controllable use of territory and its resources. The first step is to define a village boundary, within which farmers have certain rights but not outside of these boundaries. When consulted, village headmen all expressed approval of the aims of the law especially because it also is a means to control encroachment on their land by other villages for the purpose of shifting cultivation, hunting or collecting forest products. Thus, villagers seem to appreciate the possibility the definition and allocation of territory provides, as it will enable them to protect their own resources. However, as we will see, this is not without contradictions and conflicts[59].

In northern Laos, the territory of a village or of a müang[60] has never really been defined by geographical borders, but rather by the presence of a centre, a place of political power. Thus, boundaries are not usually defined in detail but rather the territory is defined by a central focus of administration, populous and trade surrounded by smaller villages who depend on the services of the centre. In the past boundaries in forested hilly areas were not considered particularly important.

5.2.1 Conflicts between villages and ethnic groups

Where the original Tai population settled was primarily determined by their preference for wet rice cultivation so we assume that the Austro-Asiatic population (like the Khmu), the first inhabitants, were driven from the small pockets of flat, lowland areas. There probably was little conflict because land was still in abundance and Khmu villagers practice rotational shifting cultivation, which is easily adaptable to another environment. Up until French colonisation, Khmu villages often settled around Tai villages that exercised political domination and used the Khmu as a source of cheap labour. In addition, Hmong migration

[59] Despite soil degradation caused by cattle and pigs in fields of a neighboring families and villages as one of the most common sources of conflict, we will not discuss this issue because it is not related to the subject of this chapter. Such conflicts are usually solved through discussion and compensation for the victim.

[60] Müang has many meanings. The word refers to a spatial entity defined by its center, but also kingdom, its capital and, inside it, all different chiefdoms and their principality. Now, the word means first of all district.

was not very problematic, because they chose to settle in high places, which were not used by the other groups.

In summary, the relative absence of conflict over land before the implementation of village boundaries is linked to the abundance of uninhabited areas and to the fact that different ethnic groups used different ecological spaces. Each new village settled itself far enough from other villages to avoid land conflicts. Most historical conflicts were not related to land, but were of political and/or commercial nature[61].

5.2.2 Establishing village boundaries in the area

The situation as described above has recently altered. With a natural population increase of about 2.5% annually, and after resettlement of villages in valleys and near roads, the spatial distribution of population has changed significantly. Thus, while large areas have become uninhabited, other areas have reached the limit of the number of people that it can support with the current style of agriculture. Therefore, the government has decided to define village boundaries to resolve the increasing difficulties of land management. This process requires that district staff consult with village authorities and elders to decide on the delineation of village boundaries, although this process is often undertaken without maps.

Apparently, it was not very difficult to establish village boundaries. When villages were far enough apart, there was no conflict about boundaries. Because village boundaries were never precisely defined, and because they only consider land important for its productivity, villages had no interest in gaining control over a bigger territory. The only conflict we heard about was over forest products. The cause of the conflict may have been the presence of rare and valuable natural resources, such as beehives, in that particular area, halfway between two villages. Such natural resources are very desirable because of their income generating potential. The authorities dealt with such conflicts, by dividing the contested area precisely between the two villages, or declaring it to be a conservation area, making it illegal to use the land.

If villages were close to each other, but had been settled in that area for a long time, their boundaries had been established gradually over that period. Until now, land had not been a rare resource, and the fact that villages were situated near to each other often indicated that the territory could easily support both. Finally, there was often already a tacit division between villages of productive land, and the only thing for the authorities to do was to adopt this status quo.

The situation concerning newly resettled villages is more complicated. They are often resettled near roads and/or in plains, areas that are usually already densely populated. In case they themselves decided to resettle, this may cause few problems because they usually evaluate the situation beforehand. Moreover, they could be affiliated with people in older villages, which creates solidarity. However, when district authorities order that villages relocate, the situation is more problematic, especially if the newcomers belong to a different ethnic group. These villages are usually allocated a small area peripheral to fertile production areas, and in some cases villages are allocated almost no productive land, or are resettled within the boundaries of another village. They may also be resettled on government land, but that often means they are away from roads and from other villages. Unless the territory of the

[61] Conflicts on which we get information during French colonisation primarily concern political domination (like Khmu free work for Tai seigniors) and conflicts about control of communication routes (that permitted the trade control, in particular opium trade product by Hmong).

"host" village is big enough to support a larger population, or unless they are related to the present inhabitants, newcomers have no priority access to fertile land and will have to be satisfied with young fallow land and land with bad soils.

Newly resettled villages
An example of a newly resettled village is Houayssa, a Hmong village, which was previously located inside the national park, at the foot of *phu loey* mountain. It was ordered to resettle near the district capital, where population density is already very high, and to start practising wet rice cultivation. Up until now, they have not been allocated wet rice fields and have no access to good fallow land. This land is reserved for villagers who have been in the area longer. Their village is between land occupied by other villages and a conservation forest for the protection of the hydropower dam. Thus they have to walk for three or four hours to find good land to grow crops (which would still not be theirs but situated in a protected forest or on another village's territory), or they must clear one- or two-year old fallow land which is not yet fertile. So far, they have been able to survive by selling their cattle. This comes on top of the cattle they had to sell to finance the resettlement.

When village boundaries are established and land allocation is completed, all resettlement from then on will become very difficult and problematic.

5.3 Ownership of agricultural land

It is difficult to approach the issue of traditional land ownership because it has never been founded on clear and explicit rules. It has always been fairly imprecise and settling individual cases when the situation asked for it, using consensus and common sense. One rule, though, seems to be that labour creates ownership of a certain area[62]. A plot of land can be appropriated if it has been transformed into a productive piece of land. When a person stops using the land, and if they have no plans to use it again, that person loses rights over the plot. There is no clear distinction between property and exploitation: "it is the real concrete rights over land by the evidence of its effective exploitation which matter" (BARL: 110). We cannot speak about land ownership instead we have to speak of ownership over the produce obtained by exploiting the land. The right to ownership is depending on productive work: land cannot play the role of capital. The division of land is not based on economic power. These rights to land and its produce apply within villages, but not always between villages (except in case these villages are located in that particular place for a long time). Beyond a certain distance from a village, forest can no longer be considered village property even if the concerned territory is included within village boundaries by law. The village property concerns only land surrounding the village. These are only user rights, since the general rule is that nobody can own forest.

5.3.1 Wet rice fields

For wet rice fields, the situation is a little different. Unlike shifting cultivation areas, the wet rice field is a lasting transformation of land. In this case, it can be owned. This land has been transformed for permanent production. But even in this case, when a field is left for too long without being used another person has the right to take it.

In the region under study, cultivation of wet rice is limited. Most fields were already under cultivation before the revolution. The fields are still communal property, and not private,

[62] "In this under populated country, its the action to clear land, the first act of exploitation, which is at the origin of all rights of land property" (BARL: 109)

which seems to be specific to Houaphan Province[63]. The Tai Kings/lords installed a system of traditional land ownership when they first settled in the area. They owned the land and redistributed wet rice fields to their subjects according to their hierarchy in the community, as tributes and in exchange for free labour. After colonisation and independence, the state took over from the Tai rulers but the system remained in place. Only wet rice fields created after 1986 are private property. As they are created later, a great many are quite far from the village and are thus less valuable. We observed few conflicts over their appropriation.

5.3.2 The forest and shifting cultivation

It may seem strange to discuss the ownership of forest and agricultural land for shifting cultivation together. However, for the people there is a strong link between both. A swidden field is considered to be only temporarily not being forest. When harvest is over, the field is left to fallow and returns to forest. As was shown in the chapter on organisation of territory and use of forest, traditionally, people do not consider it possible to own forest or land that is untouched by men. In this chapter, the appropriation process is addressed, from looking for forestland for shifting cultivation up to when land is left to fallow.

Sharing dry rice land and conflict resolution

Many people have upland fields within the boundaries of another village. While a few village headmen recognise that their own villagers practice shifting cultivation outside the community boundaries, most of them condemn outsiders who have fields on their village territory[64]. Despite these verbal attacks, I never heard a village member forbidding or making a formal complaint against this practice since the creation of village boundaries. The family who wishes to do shifting cultivation on the territory of another village must first ask permission from the village headman. Although the village headman may not be happy with such requests, and the land in question, has not been left to fallow long enough, he never refuses[65].

Scarcity of land for shifting cultivation

Villagers always look for upland fields as close to the village as possible. The more distant the field, the less valuable it is. In low populated areas (Müang Peu, Müang Kao), village territories are quite large. So when an outsider decides to do shifting cultivation on the territory of another village, he does this because he does not want to spend too much time travelling. This phenomenon is not very common and concerns only the peripheries of village territories. This hardly ever concerns land that is already in use. In more populated zones, village territories are sometimes so small that it is impossible to do shifting cultivation. Because the neighbouring village is often in the same situation, the villagers start looking for land around the edge of the inhabited area, which sometimes means in the district conservation forest.

How can we explain this paradox? It seems that the customary rights (any unexploited resource - like a fallow or forest - cannot be owned by anybody) are still more effective than the new system of ownership that was brought about by establishing village boundaries. Shifting cultivation is necessary to grow rice, the most important source of food. Nobody can

[63] It is difficult to say if this type of ownership is positive or not. Some argue it is not positive. For example, Chamberlain's last report shows that this is a primary reason for poverty in Houaphan. Most farmers say it would be better if everyone owned his fields, arguing that they would take better care of them. In my point of view, the positive result is that fields are redistributed every few years (often every 3 or 5) according to the availability of labour in the family. That entails an equal division. In addition, since the fields cannot be sold, rich people cannot acquire land from the poor thus landlessness is absent.

[64] It is difficult to say if this type of ownership is positive or not. Some argue it is not positive. For example, Chamberlain's last report shows that this is a primary reason for poverty in Houaphan. Most farmers say it would be better if everyone owned his fields, arguing that they would take better care of them. In my point of view, the positive result is that fields are redistributed every few years (often every 3 or 5) according to the availability of labour in the family which entails an equal division. In addition, since the fields cannot be sold, rich people cannot acquire land from the poor thus landlessness is absent.

[65] What is disapproved is when people do not ask permission from village authorities before making fields on the territory of that particular village.

conceive refusing a family the right to grow its own food. This is what farmers argue when confronted with the apparent contradiction between not approving of the outsiders "eating" their forest and their "*laisser-faire*" attitude.

Conflicts over forest products

As explained above, there is no real land ownership, but there are usufruct rights and ownership over produce obtained through the exploitation of land. This is why anyone can collect wild products (vegetables, woods, frogs, insects, etc) in his neighbours rice field - the area of a field belongs to nobody. Only the result of some maintenance (cutting, weeding) can be considered as property of the producer. The 'owner' has only the right to work the soil and collect the product of his labour. That is why fruit trees remain the property of the one who planted them, even though somebody else may cultivate the area where the fruit trees are.

A large number of villages in the National Park area, have the customary obligation to share a part of the meat of larger mammals such as deer or wild pigs when they kill them. Not only between relatives, but all the families of the village[66]. This sharing of game is from before French colonisation and has a number of reasons. It is impossible to eat a whole deer or wild pig with one family, but also sharing the meat means sharing the risks of hunting. For example, if a hunter kills someone's livestock by mistake, all the village families must help to pay the fine. However, the main reason is the fact that natural resources cannot be individually owned. Wild animals are not any one person's property, so therefore they have to be shared. In earlier times, hunters had to give part of their game to the community, or to the Tai master of the land. In the region, the communist government decided to transform the custom in law by saying the entire community should share the benefit.

Ownership of honey and wax

The same notion of communal ownership of natural resources is applied to honey and wax. Because this is a rare and valuable resource, it can not be exploited individually. All villagers should participate together and decide how the expedition will be organised. The making of a long bamboo ladder (it can be as long as 30 metres) is the main activity in which everybody participates. After appeasing the rock's spirits, a man goes up the ladder and pushes the hive with a bamboo stick until it drops. Because of the risks he takes by climbing the ladder, he will get a bigger share in the benefit. All other expedition members will get an equal part. In some villages, the benefit is not individual (as in Ponexong), but collective (as in Bouamphat). In that case it is used for communal services such as the school and so on.

It seems that most village conflicts concern profitable forest products such as cardamom, orchids, and sometimes *po sa*. Because of new opportunities to market them, these products have become an important source of village income. The existence of a market makes the collection of these resources more intensive, and their relative scarcity calls for an agreement between villages (and between inhabitants of the same village). Thus, the previously vague borders of village territory take on a new importance. Within a village, some people begin to collect products like cardamom too early, before it is ripe. The only way to control this, like in Sobiang, is to decide collectively on the first date of gathering and also collect the produce together. For other products, such as *po sa*, some begin to look for fields where *po sa* grows and by cutting the grass around the plot, they have expressed their ownership of the products.

Only when forest products are concerned villages actually claim the rights they derived from the establishment of the new village boundaries. It is forbidden for people from outside to

[66] There are some variations in how the meat is shared. Some only offer a meal, others give everything except the head and/or back of the animal killed. It also happens that the meat is offered to the headman, who divides it among all villagers, sells it to raise income for communal village purposes, or sells it cheaply to poorer families.

collect forest products within the boundaries of a village they do not belong to. It is surprising that conflicts arise about forest products, while shared agricultural land, the basis of production, give rise to few problems. In subsistence agricultural societies, everyone has an equal access to the means of production, each according to their need, and only labour makes the difference. Farmers still think, and may not be completely wrong, that forests are plentiful. However, when it comes to forest products with a cash value, then solidarity has gone.

Conflicts with the Vietnamese about forest products
The only problems come from the Vietnamese who come to hunt on uncontrolled territory. As these hunters are not from neighbouring villages, this should not be allowed.

The argument to justify the absence of conflict on land for shifting cultivation does not apply to (commercial) forest products: it is not essential for villagers, but it involves cash income, which no longer calls for solidarity.

5.4 Land allocation

It is difficult to assess the extent of the process of land allocation in the area[67]. Only a small number of villages seem to have been completed. District authorities say they carried out land allocation in five villages in 1995, with the help of provincial staff[68]. In one of these villages the actual situation is quite far from what was initially proposed. The district authorities has ordered every family to engage in perennial cultivation (fruits trees, teak, *po sa*, etc) in a garden of at least 0.3 hectares. For other villages, district staff is expecting the Nam Et Phu-Loey Project to assist.

5.4.1 Objectives of land allocation

The aim of land allocation is as follows: *"The Government has a policy of encouraging villagers who have practised shifting cultivation to adopt sedentary forms of agriculture. The aim is to reduce the area of upland or sloping land being used for annual crop production through the adoption of permanent crop production and to maintain the area of forested land"* (p. 3). More detailed objectives which have been announced are:

- allocating agricultural land on a temporary basis to provide farmers with land security,
- encouraging farmers to take better care of the land, and invest in inputs to improve the productivity of the land allocated,
- increasing the area of land developed for wet rice production,
- encouraging the planting of annual and permanent cash crops to increase income and food security,
- increasing opportunities for villagers to participate in commercial tree planting and wood production.

The principles underlying this project include:

- reducing, stabilising and controlling shifting cultivation and its surface area,
- drawing up a property register of land for reliable tax collection,
- encouraging the possibility of land privatisation,
- permanently fix village boundaries and its population.

[67] A tentative control and management of land has been implemented in 1953 and 1957 (BARL 120-121). Forgotten after the war, the issue of land allocation reappears again at the beginning of nineties, notably after the National Land Use Planning and Land Allocation meeting, and the implementation of Land Use Planning Sub Project of the Lao Swedish Forestry Program in 1996.

[68] The land allocation process in the whole of the province covered 126 villages, 6.020 families, and a total of 14.269 ha, in 1998.

It may be useful to discuss whether land allocation is or is not the best way to achieve those objectives, whether it is a solution that can be realised and whether there will be a gap between theory and practice. But we will first explain the concrete process of land allocation.

Land allocation is carried out in three steps:

1. defining the village territory and its boundaries;
2. conducting forest zoning;
3. allocating land to each family.

The principle is to divide the agricultural land of a village between families, giving each the right and obligation to cultivate it. That concerns mainly land used for shifting cultivation. Land where a farmer has already been growing perennial crops will be directly allocated to him (and the village territory should possess a specific reserve of land for families who have begun to grow perennial crops). According to district staff, the land allocated to a family is calculated on the basis of being able to produce 360 kg of rice per active person and 180 kg of rice for other members of the family per year[69].

5.4.2 Advantages and disadvantages of land allocation

First of all, the process will give rural people official right to land, which is what many ethnic groups and rural people all over the world demand. However, this right could be allocated on a communal basis instead of on a family basis. Abolishing the communal land management system will decrease the advantages of villages and families dividing the land themselves. For one, it would increase inequalities within villages. Presently, families use the land according to their needs, which change periodically according to the composition of a family. A family of 20 persons could be reduced to two, just as a family of two persons can grow to 20. In its current design, land allocation and its rigid and fixed ownership would undo some of the advantages of the flexibility of the present system. Allocating individual parcels of land could also lead to organisational problems. For example, communal fencing work or sharing labour could become difficult if the parcels are not close to each other. Finally, soil fertility, which varies from one place to the other, may become an issue. The number of hectares can be equally divided, but it is not easy to also taking the soil fertility of the various plots in to account.

A second advantage of the new system is that it would become possible for farmers to manage fallow land on long-term basis. In the present system a farmer does not have the right to keep a plot of fallow land for cultivation for future use (see also paragraph 2.2.1 Shifting cultivation). With land allocation, farmers could decide to cultivate a smaller area, but wait longer to obtain a bigger biomass, with less grass, which would give him a better yield with less work. However, this point is contradicted by the project. First of all, farmers need to secure a big enough yield to be able to feed the family. If the allocated plot is not large enough, they would not be able to leave land to fallow for a long enough period (and a maximum of 4 years rotation will not be enough).

Reducing the fallow period would necessarily lead to a decreasing yield and to an increase in labour (weeding) and soil erosion. After a while, upland fields that have been left to fallow for too short a period become less and less productive, until in the end it will be infested *with*

[69] The average yield of rice grown on swidden fields is estimated and the area necessary to obtain this production is calculated on the basis of this estimation. Then the number of hectares of the area is multiplied by the number of years a plot is left to fallow in the village. This number is a compromise between the area suitable for shifting cultivation (village territory minus forest reserve) and the number of families (with a maximum of five parcels). The formula is [No. Active persons + (No. passive persons/2) * 360] * (1/ average yield per hectare) * 3 to 5 (No. of parcel possibly allowed).

cylindrica imperata grass. If no alternatives are open to farmers, they will have no choice but to start a new field... in old forest, which is already happening in the Müang Hiam area. This would defeat the whole purpose of the land allocation process.

5.4.3 Conclusions

The under-population that has always characterised Laos has generated very little pressure on the land. So far, that has allowed the inhabitants to regulate the occupation of land on the basis of pragmatic and flexible customary rights without the occurrence of major conflicts. These customary rights were flexible enough to allow families to increase or decrease their plots when the composition of the family asked for it. Low population is not the only explaining factor. In addition, a productivist or cumulative mentality is absent in these societies. Instead, production is adapted to the needs of a family. Only this can explain why farmers do not use their new land ownership to prevent outsiders using the land. However, the current rise in population and resettlement that creates an unequal division of the population, can lead to crises. This is not the case in the area under study, except for villages that are resettled in a densely populated area without being allocated enough land to grow paddy rice.

5.5 Forest management implementation

In this paragraph it is examined what the new law on forestry management implies, and how local authorities have implemented this in the area. The objective is to understand how farmers may conceive, appreciate and accept the forestry law, as they are the first to be affected by its implementation. The result can help to apply this law in a better way, by a reconciliation of farming and environmental conservation.

5.5.1 The official organisation of forest management

The law specifies five types of forests, here given in Lao language and explained in English. Although the objective of the division is clear, it is not explained what concrete repercussions this may have for farmers: what is allowed and what not in which forests. Information gathered from texts on land allocation may give some insight, but accuracy cannot be guaranteed. The ecological cover, their use and the need for protection defines the forest types. These criteria create some comprehension problems for farmers, but also for provincial and district staff.

Table 91: Forest types and definitions under the land allocation programme.

Lao name	Definition and objectives	Banned activities	Permits needed
Sangouane	Preservation of flora and fauna, bio-diversity, cultural heritage and others	Shifting cultivation Wood cutting Hunting Gathering	None needed
Axalengnam	Protection of watershed against erosion, natural disaster, military purposes	Shifting cultivation Wood cutting	Hunting Gathering
Pa palit	Collection of forest products for domestic consumption and economic development	Shifting cultivation	Hunting Gathering Wood cutting
Feuneufou	Young forest that could be reforested and transformed into dense forest	Shifting cultivation Wood cutting	Hunting Gathering
Soutsome	Degraded or defoliated forest attributed to individuals or organisations, for reforestation or permanent agroforestry activities, grazing of livestock or others	None	Shifting cultivation Wood cutting Hunting Gathering Pasture

These five types of forest should cover all village territory, except for the permanent arable land, water and dwellings.

5.5.2 Traditional forest management

For the inhabitants of the area, organisation and management of forest is based on a pragmatic view determined and structured by shifting cultivation. For most of them, traditional forest management is not well defined. We hardly came across a piece of forest where shifting cultivation was forbidden or reserved for another use such as forest product reserves[70]. All appropriate land around village can be turned into swidden fields.

This fact can be explained by practical reasons. Firstly, few important products are found only in dense forests and most of them are not often used. It does not matter if they are far because the villagers will go looking for them only once a year. For products that can be sold, farmers will go when they are ripe (cardamom) or when middlemen come to buy it (rattan, *mak tao*, orchid). Wood for construction comes preferably from areas near the village, the forest circle protecting the village against fire. Secondly, there is always some place in the village territory that is unsuitable for shifting cultivation (cliffs or steep slopes, areas along rivers, mountains without drinking water etc.). In comparison to all these forest products, shifting cultivation is still the main priority. To a farmer the forest's main purpose is shifting cultivation. But because there are places impossible to use for shifting cultivation, and because of land which is left to fallow, a big enough area with great ecological diversity is guaranteed where farmers can find all the products they need, so they do not require a special forest management system. Finally, they do not need to manage their forest by reserving space for specific activities because shifting cultivation system itself already manages it in useful and sustainable way (depending on villagers needs, and not necessarily according to ecological consideration).

5.5.3 Knowledge of the law

Inquiries about the knowledge and understanding concerning the forest management system of the government show a big gap between the actual system and the information villagers retain after explaining the system. Some farmers reduce the classification to two types: forest where they may do shifting cultivation (*pa het hai*), and the "forbidden" forest (*pa ham*). Even to provincial and district authorities the official classification is not clear. Common misunderstandings include whether or not it is forbidden to gather forest products, and the issue of reforestation.

[70] There is of course the village 'spirit forest' and sometime Müang 'spirit forest', but the area of such forests is always very small. The only reserves we heard of were areas around villages where some villages had decided forbid shifting cultivation to protect the village against fire. In doing so, they keep this circle of forest as a reserve for construction timber.

Table 92: Village headmen interpretation of Govt. forestry zones (synthesis of recurrent answers gathered in 30 villages)

Lao name	Definition and objectives	Banned activities	Permits needed
tangkanpalit	A forest used for all "production" purposes	None	Shifting cultivation Cutting wood Hunting Gathering
sasoy	A forest reserved (mainly) for timber cutting for construction - thus no shifting cultivation allowed	Shifting cultivation	Cutting wood Hunting Gathering
sangouane	A conservation forest , (for preservation purposes, animal reproduction, scenery, government resources reserve)	Shifting cultivation Cutting wood Hunting (Gathering)	None granted
houangham	A forbidden forest, for tree protection (against global warming, against cilyndrica imperata grass, for scenic beauty)	Shifting cultivation Cutting wood Hunting (Gathering)	Gathering (Hunting)
haxalengnam	Watershed protection forest usually to protect the source of drinking water or for paddy field irrigation	Shifting cultivation Cutting wood	Hunting Gathering

Tangkanpalit

Everybody believed that what they call *tangkanpalit* is not a specific kind of forest, but the total village territory minus other types of forest where shifting cultivation is forbidden. Most did not mention it when asked for the different types of forest in the village territory.

*Regeneration and degraded forest (*feneufou and soutsome*)*

"Regeneration forest" is not included in the list as under a shifting cultivation regime, many village forests are in a state of regeneration, and are in fact a part of the so called 'production forest'. *Soutsome* forest is also rarely mentioned, as maybe there is confusion with "production forest" (*pa tangkanpalit*). The only degraded areas people mentioned were *nya kha* grassed areas. As this cannot be used, to villagers it does not matter what it is called, whether it is a *feneufou, soutsome* or any other kind of forest.

*Protected forest (*sangwane*)*

This forest is the real forbidden forest for farmers. All people know this term, which has been in use for a long time in the area, but not everybody can explain what it means. Most people interviewed had no clear understanding of conservation and they just said that this forest should be conserved for itself, without any other reasons. "It needs to be protected because it is pretty," some said when we asked again what the reason for protection was. But nobody really seemed to care about the beauty of the forest[71]. Some villagers referred to the idea of protection of plants and animals, as the law explains it. Sometimes people said: "It is forbidden to hunt in this forest because it is reserved for animal reproduction. But we can hunt them if they leave this part of the forest". When perceived as an animal reserve, this forest is comprehensible and appreciated.

*Forbidden and watershed protection forest (*houangham and axalengnam*)*

Forest for protection of the watershed is well understood although this is mainly the case in village cultivating paddy rice. Everybody there knows the importance of water for this type of cultivation. But this understanding is only limited to the protection of resources necessary for irrigating paddy fields in their own village. The situation is different for villages mainly

[71] Esthetical appreciation of nature is non existent, the more people depend on nature, the less they think of nature in esthetical terms.

practising shifting cultivation. Villagers also have problems understanding the necessity of this type of conservation when, for example, it is for the purpose of making sure that water keeps on flowing to a hydropower dam and the electricity generated there will never reach the village[72]. We noticed frequent confusion between *pa houangham*, which does not exist according to the law and *pa axalengnam*. For the paddy cultivator, the meaning of the former is often clear. For other villagers, either they only refer to *pa houangham*, which they define as forest for tree conservation, but where hunting is allowed, in stead of "protected forest" - *pa sangouane*, or they distinguish each as a separate type of forest.

*Forest for construction timber (*maysasoy*)*
Everybody is happy with the existence of what they call *pa maysasoy* (or *sasoy*) which they define as a forest reserved for construction wood and other domestic purposes. In these forests, villagers can cut big trees near the village. This is important when we know a house will last for 15 years or less. When building a new house, cutting and transporting wood takes a lot of time.

From the above, it becomes clear how villagers understand and transform (often not explicitly) the forest law and this can help us to understand how they perceive forest conservation. It is obvious they interpret forest management with their practical interests and aims: what are they allowed to do and how it can be useful for them. Ecological criteria do not have any priority in their way of thinking. Villagers did understand the use for some types of forest. Everybody liked the forests as reserves for timber collection. Forest for watershed protection is well understood by paddy field cultivators who know the importance of water control. Even protection of forest for bio-diversity is appreciated when villagers think of it as a wildlife reproduction reserve. But what the ecological composition, exact location, and surface area of such forest is, villagers could not tell (a headman merely knows that the forest for watershed protection should be near a spring and include a zone of 100 m round the spring). These details were left to the village authorities. It is often the villagers who organise these management details, and they implement it according to their practical (agricultural) interest. As an example of forest management the implementation process in two contrasting zones, the Müang Peu zone and the Müang Hiam zone, is described.

Implementation in remote areas: Müang Peu
Despite of what district representatives explained, the villagers did not want to have a new type of protected forest designated near the village. Instead, they preferred to nominate the forest where nobody goes, to be protected. Only villages with a lot of paddy land, such as Bong, chose to have a protection and conservation forest near the village, because they did not need to use it for shifting cultivation. Other villages who designated conservation forests were motivated by practical reasons: Sobtiou selected the place where they usually went to look for forest products and Sobiang nominated the area where they gather bamboo shoots and other wild food. The only type of forest that is always located near the village is the forest for construction wood, which reduces the time to transport the timber. Finally, we noticed that none of the protected forests was located in an important area. All were far from the village, or otherwise quite small. It seems that when the new forest management system is implemented in this way its is appreciated because it relates to the interest of villagers.

[72] This is the case for the Müang Hiam dam, which provides electricity to only one of the three villages from which land have been declared to be forbidden for shifting cultivation to protect the watershed.

Implementation in densely populated areas: Müang Hiam

In this area, which is directly under control of the district authorities, the implementation of the forest management system did not go very well. Often a village selected only one type of forest, saying that it had to be protected because scenic beauty. These forests are not very important for villagers because there are usually very few forest products and animals in these forests. Only the designation of timber forest was appreciated. The difference with the Müang Peu area is that in Müang Hiam village territories are very small, not even big enough for shifting cultivation. In Müang Peu, villages use less land than they actually have, whereas the opposite is the case in Müang Hiam, where many villagers open new swidden fields in the officially protected state forest.

The conclusion may seem cynical: forest management does more or less function in remote areas but not in areas with a high population density. In areas where population density is low, forest management is not a priority. In areas with a high population density, where conservation and preservation of forest is a necessity, the management system is not working. However, this is partly caused by village territories being too small. In a way, it would be better if the protected forests of these villages should be taken from them and included in national state forest. But if this would be the case, where does this leave the village participation in forest management?

QUOTED AND CONSULTED BOOKS AND ARTICLES

ANON.

- 2000. « Aspects of forestry management in the Lao PDR », Watershed, Vol. 5 N°3, p. 57-64.

ARCHAIMBAULT, C.

- 1973. *Structures Religieuses Lao (rites et mythes*). Vientiane, Vithagna.

BOULBET, J.

- 1975. *Paysans de la forêt.* École Française d'Extrême Orient, Paris.

BOUTE, V.

- 2001. *Socio-economic survey on the subject of some socio-economic data and the picking up of images of the project activities by the actors of development*. Phongsaly, Lao PDR-European Cooperation.

BOUTIN, A.

- 1924. *Les populations du Tonkin occidental et du Haut-Laos.* Hanoi, Cahier de la société de géographie de Hanoi.
- 1937. Monographie de la province des Houa-Phan. *Bulletin des Amis du Laos*, n°1, pp. 69-119.

BRUNEAU, M.

- 1978. « Ray et utilisation des terres hautes dans la Thaïlande septentrionale », *Études de géographie tropicale offerte à Pierre Gourou*, Paris, Mouton, pp. 101-118.

CHAGNAUD, F & INTHAVONG, C.

- 1990. « Alternatives au développement de l'économie marchande des peuples de la forêt. La valorisation des sous-produits agro-forestiers, une opportunité pour le Laos ». Communication du 10^{e} congrès forestier mondial.

CHAMBERLAIN, J., ALTON C. & CRISFIELD, A.

- 1995. *Indigenous Peoples Profile. Lao People's Democratic Republic*. Care International, Vientiane.

CHANDA, N.

- 1982. « Economic Changes in Laos, 1975-1980 », in Stuart-Fox (ed.), *Contemporary Laos*, p. 116-128.

CHAZEE, L.

- 1998. *Évolution des systèmes de production ruraux en république démocratique populaire du Laos*. Vol. 1 et 2, Thèse de doctorat.
- 1990. *The mammals of Laos and the hunting practices*. Vientiane.
- 1993 *Les pratiques d'essartages au Laos. Les systèmes actuels et leur devenir*. Vientiane.
- 1994 *Oiseaux du Laos, Identification, distribution et chasse*. Vientiane.

CLARIDGE, G., SORANGKHOUM, T. & BAIRD, I.

- 1997. *Community fisheries in Lao PRD : A survey of techniques and issues*. IUCN Lao PRD, technical Report, Vientiane.

CONDOMINAS, G.

- 1970. *L'espace social. A propos de l'Asie du sud-Est*. Flammarion, coll. Science, Paris.
- 1972. « De la rizière au miir ». *L'espace social. A propos de l'Asie du Sud-Est.* Flammarion, coll. Science, Paris.

DANG NGHIEM VAN,

- 1971. « Aperçu sur les Thai du Viet Nam ». *Données ethnographiques I, Études Vietnamiennes*, N°32, pp. 163-223, Hanoi.
- 1973. « Les Khmu ». *Données ethnographiques II, Études Vietnamiennes*, N°36. pp. 69-148, Hanoi.

DAOROUNG, P.

- 1997. « Community forest in Lao RDP : the new era of participation ? », *Watershed*, vol. 3, N°1, p. 38-44.

DROUOT G.

- 1999. « Pouvoir et minorité ethniques au Laos. De la reconnaissance constitutionnelle à la participation effective à l'exercice du pouvoir ». *Mousson*, 99, pp. 53-74.

DUCOURTIEUX, O.

- 2000. « Agriculture and Deforestation in Laos. The machete : an alibi for the chain saw ? ». PDDP/CCL. Typescript.

DUFOUR, R.,

- 1994. « The Lao-American project and shifting cultivation ». *Shifting cultivation systems and rural development in the Lao PDR*, Nabong Agricultural College Project, Ministry of Agriculture and Forestry, pp. 252-257, Vientiane.

DUFUMIER, M.

- 1996. « Minorité ethniques et agriculture d'abattis brûlis au Laos ». *Cahier des Sciences humaines*, 32 (1), pp. 195-16.
- 2000. « Une riziculture aux multiples visage ». *Biofuture*, 203, pp. 24-29.

DUSSAULT, L.

- 1920. « Exploitation géologique de la province de Sam Neua, Laos », Bulletin du service géologique de l'Indochine, IX (II), Hanoi.
- 1924. « Les populations du Tonkin occidental et du haut Laos ». Cahiers de la Societe de Geographie de Hanoi, 5:1-47.

EVANS, G.

- 1990. *Lao peasants under socialism and post-socialism*. Silkworm books, Bangkok.
- 1998. *The politic of ritual and remembrance. Lao since 1975*. Silkworm books, Bangkok.

FAHRNEY, K., BOONNAPHOL, O., KEOBOULAPHA, B. & MANIPHONE, S.

- 1997. *Indigenous management of paper mulbery (broussonetia papyrifera) in swidden rice fields in northern Laos*, Paper submitted for presentation at the regional workshop on Indigenous strategies for intensification of shifting cultivation in Southeast Asia. Bogor, Indonesia, 23-27 June 1997.

FAO / ADB Cooperative Programme.

- 1998. *Lao PDR : Shifting cultivation stabilisation project preparation*, Report N°98/025 ADB Lao.

FOPPES, J. & KHETPHANH, S.

- 1997. « The use of non-timber forest products in Lao PDR. », IUCN, Department of Forestry, Vientiane.

FOROPON, J.,

- 1921. « La province des Hua-Phan (Laos) », *Extrême Asie, Revue Indochinoise*, pp. 90-106.

GAY, B.

- 1995. *La nouvelle frontière Lao-Vietnamienne. Histoire des frontières de la Péninsule Indochinoise 2*, P.B. Lafont (ed), coll. Recherche Asiatique, Paris: l'Harmattan.

GOUDINEAU, Y.

- 1997. *Resettlement and social characteristics of new villages : basic needs for resettled communities in the Lao PDR : an ORSTOM survey*. Vientiane, PNUD.

Handicap International & UXO Lao.

- 1997. Province and district report, *Province of Houaphan (07).* National Study on the Socio-Economic Impact of Unexploited Ordnance, Vientiane.

HAUDRICOURT, A.

- 1962. « Domestication des animaux, culture des plantes et traitement d'autrui », *L'Homme* II (1) : 40-50,.

HUBERT-LEMOINE, A.

- 1971. « Le Nouvel An Yao ». *Bulletin des Amis du Royaume Lao*, pp. 82-12.

IUCN, WCS & CPAWN.

- 1999. *Wildlife in Lao PDR, 1999 Status Report*. IUCN ed., Vientiane.

IZARD M., BONTE P.

- 2004. Dictionnaire de l'ethnologie et de l'anthropologie. Paris : PUF.

JEANNEL, M.

- 1998. « La cardamome du plateau des Bolovens ». *Agroforesterie et Produits forestiers,* Acte du séminaire, ORSTOM,PTEF,PROFEF, Vientiane, pp. 80-90.

JOUVES, E.

- 1999. *Les pratiques agro-forestières et l'accès aux ressources dans le district de Viengthong, Province de Houaphan, RDP Lao*. IRD/FAF, ENSAIA.

JOUVES, E. & SCHLEMMER, G.

- 1999. *Quelques informations sur 55 villages du district de Viengthong* (non edited report), Project IRD/FAF.

KETPHANH, S. & FOPPES, J.

- 1997. « The use of non-timber forest products in Lao PDR ». Paper presented at the workshop on Protected Area Management, Xishuangbanna, 3–8 November 1997. National Agriculture & Forestry Research Institute. Forest Research Center. Vientiane. Lao PDR.

KONING (de), M.

- 2000 (a). *The promotion of cardamom as an incentive for conservation*, unpublished papers, Nam Ha NBCA Management Unit, Luang Namtha.
- 2000 (b). *Feasibility study for the promotion of non timber forest product*, unpublished papers, Nam Ha NBCA Management Unit, Luang Namtha.

KUNSTADTER, P.

- 1972. « Usage et tenure des terres chez les Lua' (Thailande) » *Études Rurales*, N°45, pp. 449-466.

LAO PDR.

- 2000. *Lao agricultural census, 1998/1999, Huaphanh province.*
- *The Forestry Law.*

- *The Law on agriculture*.
- *The water Law*.
- *The environmental Law*.
- 1999. Order (*kamsang nenam)* n° 71/99, signed by the director of Agricultural Service of Houapanh, M. Somtit Somvanta.
- 1998. List of endangered species (in Lao). Typescript.

LAO RDP, External Affaire Offices in the World Bank's East Asia and Pacific Region.

- *Forest Management and Conservation Project. The Facts, the Background, Questions and Answers*. Typescript.

Lao Swedish Forestry Program, Land Use Planning Sub-program.

- 1997. *Manual on Participatory Land Use Planning and Land Allocation*, Edition 1. Ministry of Agriculture and Forestry. Department of Forestry, National Office for Forest Inventory and Planning, Vientiane.

Lao Swedish Forestry Program, LAO PDR.

- 1997. *Manual on Participatory Land Use Planning and Land Allocation*. Ministry of Agriculture and Forestry, Department of Forestry, National Office for Forest Inventory and Planning.

Lao-American Project.

- 1999. Document published for the10th anniversary of the project.

LEBAR, F., HICKEY, G. & MUSGRAVE J.

- 1964. *Ethnic Groups of Mainland Southeast Asia*, Human Relation Area Files Press, New Haven.

LEE G.

- 1982 «Minority Policies and the Hmong», pp. 199-219. In *Contemporary Laos*, Stuart-Fox ed., St Lucia: University of Queensland Press.

LEMOINE, J.

- 1972. *Un village Hmong Vert du haut Laos. Milieu technique et organisation sociale. CNRS.*
- 1997. « Panorama des auteurs français sur les Taï du Viêt-nam occidental et leurs prolongements au Laos ». *Peninsule,* N°34, pp. 39-80.
- 1998 « Dialectique des ethnicités et des nationalités en Chine », *L'Homme*, N°148, p. 231-250.

LENCLUD, G.

- 1969. *Agriculteurs "intégraux" sur brûlis en Asie du Sud-Est*, Master Degree dissertation, Paris V ,1969. Musée de l'Homme, Paris.

LÉVY, P.

- 1974. *Histoire du Laos*, coll. Que sais-je ?, PUF, Paris.

MOIZO, B.

- 1996. « Le dieu de la terre et de l'eau et le messianisme en milieu Pwo Karen (Thailande). Etude Rurales », N°143-144, p. 67-80.

PHANJARUNITI, S.

- 1994. *Traditional Child Rearing Practices among Different Ethnic Groups in Houaphan Province, Lao People's Democratic Republic*. UNICEF,Vientiane.

PHASAYVOLAVONG, S.

- 1999. *Collect and use of animal forest products in the Viengthong district*. Dissertation for the grade of technicien supérieur. FAF-UNL-IRD, (in lao).

PHOMPHAKDI, V.

- 1999. *Collect and use of vegetal forest products in the Viengthong district.* Dissertation for the grade of technicien supérieur. FAF-UNL-IRD, (in lao).

Provincial Department of Agriculture and Forestry of Houahan.

- 1998. *Report on agriculture and forestry in Houaphan province* (quoted RAFPH), (translated from lao by S. Sanyarath).
- 1999. *Rules concerning use of land and forest* (quoted RUTFP). (translated from lao by S. Pamot).

ROSSI, G.,

- 1998. « Etat, minorités montagnardes et déforestation en Asie du Sud-Est ». *Cahier d'Outre Mer*, 51 (204).

SAPHANGTHONG, V.

- 1999. *Relation between stock farming and irrigated rice field development in the Viengthong district.* mémoire pour le diplôme de technicien supérieur. FAF-UNL-IRD, 71 p, (in lao).

SAYAVONG, K.

- 1999. *Evolutions of shifting cultivation's practices in the Viengthong district.*, mémoire pour le diplôme de technicien supérieur. FAF-UNL-IRD, (in lao).

SCHLEMMER, G.

- 2000 (a). *Présentation des problèmes agricoles et d'élevages dans le district de Viengthong*, Vientiane, IRD-FAF/UNL.

- 2000 (b). *La cueillette de la cardamome et de la man one ling dans le tasseng de Muang Peu*, Vientiane, IRD-FAF/UNL.
- 2000 (c). *Limites villageoises, territoire et propriété au Nord Laos*, Vientiane, IRD-FAF/UNL.
- 2000 (d), *Le zonage forestier, théorie et pratique. Reflexions à partir du suivi de sa mise en place dans un district du Nord Laos*, Vientiane, IRD-FAF/UNL.
- 2000 (e). *Inscription des modes culturaux dans l'environnement et utilisation de la forêt. Rapport sur la mission de Muang Peu, District de Viengthong, Province de Houaphan*, Vientiane, IRD-FAF/UNL.
- 1999. *Utilisation des produits de chasse et de cueillettte dans le district de Viengthong, (Houaphan*). Preliminary report, Vientiane, IRD-FAF.

SPENCER, J.

- 1977. *Shifting cultivation in south-eastern Asia. University of California press, Berkeley, Los Angeles, London.*

State Planning Committee.

- 2000. *Poverty in The Lao PDR*, Participatory Poverty Assessment, Vientiane.

State Planning Committee, National Statistical Centre.

- 1997. *Results form the Population Census 1995*, Vientiane.
- 1999. *The Households of Lao PDR, Social and economic indicators, Lao Expenditure and Consumption Survey 1997/98* (LECS 2), Vientiane.

STUART-FOX, M.

- 1982. *Contemporary Laos*, Stuart-Fox editor, St Lucia : University of Queensland Press.
- 1997. *A History of Laos*. Cambridge, Cambridge University Press.

SURYADHAY, I., CONDOMINAS, G., GRANIER, J. & TAILLARD, C.

- 1971. « La propriété foncière selon les pratiques coutumières lao », in *Bulletin des Amis du Royaume Lao*, (coted BARL), pp. 109-122.

SVENGSUKSA, B.

- 1998. « Le bois d'aigle et sa mise en culture » » *Agroforesterie et Produits forestiers*. Agroforesterie et Produits Forestiers :Acte du séminaire, ORSTOM, PTEF, PROFEF, Vientiane, p.96-102.

TAILLARD, C.

- 1989. *Le Laos, stratégie d'un État-tampon*. Montpellier, G.I.P. Reclus.

TAILLARD C. & SISOUPHANTHONG B.

- 2000. *Atlas de la République Démocratique Populaire Lao. Les structures territoriales du développement économique et social*. CNRS - Libergéo - La Documentation Française.

TAYANIN D. & LINDELL, K.

- 1991. *Hunting and Fishing in a Khamu village*. Studies on Asian topic, n°14. Scandinavian Institute of Asian Studies.

THOMAS F.,

- 1998. « Écologie et gestion forestière dans l'Indochine Française », *RFHOM*, n°319, p. 59-86.

United Nation World Food Programme.

- 2000. *Laos PDR : Vulnerability Analys, a first look*. DRAFT.

VIENNE (de) M. & NEPOTE, J. (ed).

- 1995. *Laos, 1975-1995, restructurations et développement, esquisse d'un premier bilan de l'état économique.* Les cahiers de Péninsule n°3, Études Orientales / Olizane.

WEKKIN, G.

- 1982. « The Rewards of Revolution : Pathet Lao Policy Towards the Hill Tribes since 1975 », in Stuart-Fox (ed.), *Contemporary Laos*, p. 181-198.

ZAGO, M.

- 1972. *Rites et cérémonies en milieu bouddhiste lao*. Documenta Missionala 6, Rome, Universita Gregoriana.

ANNEX 1

VILLAGE QUESTIONARY*

** The space between questions and the number of tables 'columns are not respected*

NAME OF THE VILLAGE :

POPULATION : NUMBER OF FAMILIES **NUMBER OF INDIVIDUALS (M/F)**

Are some women family headmen ? Why:
Do some older women unmarried ? Why
Average, low and high price of the bride ?
Free labour for parent in law ?
Possibility of divorce ? Case in the village ?

1) RICE SUFFICIENCY

	2000	%	1999 (+ / -)	Before (+ / -)
+				
=				
-				
How many months				
Total				

- How many recurrent families are suffering from rice shortage?
- Why ?
- How do they do to get rice?

2 Health

- Knowledge of medicinal plants?
- Medicine bough ? Where ? How many persons sale it ?
- Number of person who went to the hospital in 2000? In 1999 ? For which disease? How many times? What expenditure (average, low, high) ?
- Source of water: specify how does the place look and its property:

3 SCHOOLING

Level	Place	Distance	Students currently going			Students supposed to go	
			total	W	M	M	W
PO1							
PO2,…							

- Ethnic group and origin of teachers?

4. TRADING, INDUSTRIES AND SERVICE

Products bought	Number of traders	Origin of the traders	Periodicity

- Number of person doing trade in the village ? What do they buy ? Where do they sell products?

5 CREDIT AND FINANCE

- Average cash capital per family

Rough average	N° Family	comment
Less than 100 000		
100 000 to 500 000		
500 000 to 1 million		
more		
maximum		

6. AGRICULTURE AND FORESTRY

PADDY FIELD

Real surface:
Cultivated surface in 2000:
Possibility of extension:
Condition:

Modern irrigation (ha)	Trad. Irrigation (with bamboo canals)	No irrigation (rain fall)

- Way of distribution if communal (per which purpose, every how many years)

Ha public lowland rice-field	Number Family	Ha private lowland rice-field	Number Family	Date of effective building

	motorized cultivator	buffaloes	Price of location
N°			
N° F			

- How do families without motocultors or buffaloes manage to cultivate lowland rice fields?
- Organisation of the production (families, groups – fixed or not, communal works…).

SHIFTING CULTIVATION

- Average years of fallow, maximum and minimum?
- Rotational cultivation?
- Average yield per hectare (cunt in "bag" and give examples)
- Average number of weeding per year
- Is there any alternation of crop plantations in shifting plots.
- Way of sharing shifting plots (communal decision or not)
- Organisation of the production (family, groups – fixed or not, communal work…).

Main products of shifting cultivation :

Product	N° F	production	use	Q sale (F)	Q sale (total)	Price (kg)	Total

Mains products of "gardens":

Product	N° F	Surface (F)	Surface (tot)	production	use	Q sale	Price (kg)	Total

N° opium smoker: N° smoker less than 50 years

- Price paid for one agricultural day work
- Price of one kg of rice

LIVESTOCK

Number	Pigs	Cows	Buffaloes	Chicken	Ducks
Total Village					
In 1999					
In 2000					

Is the number of cows in the village increasing/diminishing this last 10 years? Why?
Is the number of buffaloes in the village increasing/diminishing this last 10 years? Why?
How many families do have more than 10 buffaloes or cows?
How many families do not have any buffalo or cow?
- N° of cow/buffalo scarified in 2000 (why) 1999 (why)

- Way to graze pigs :
- Advantage, problem :

- Area where cows and buffaloes are raised:
  - Choice of the place? Fenced?, burned?, surface?…)
- Advantage, inconvenient (tigers, distance…)

NTFP

NTFP	Kg 2000	1999 (+/-)	1998 (+/-)	N° F	Tot kg	Price kg	Tot price
Product 1							
Product 2…							

- problems regarding the sale:

HUNTING

N° gun *kep* (traditional gun)	N° military gun	Public	Private	N° *mong* (large fishing net)	N° *hee* (fishing net)

Animals hunted	N° deer	N° wild boar	N° monkey	N° wild coks	Other	Other
In 2000						
Before (+/-)						

- Share of the meat between the hunters? Between the villagers? Sale of the meat in the village?

	Order of importance	If possible, precise Kg / F
Fish		
Sat nam (aquatic animals)		
Bird		
Rodent (squirrels, mice, rats)		
Ground game		
Others (*ngou*, *nyen*, *men*)		
TOTAL		

WOODS UTILISATION
Fuel wood collected: average m3 per family.
Only dead wood or sometime cut wood.
Place/distance for finding it
Time of work

Type	N°	Main characteristics	Duration	Price	N° big trees	N° small trees	N°m3	N°1999	N°2000	N°2001
1, etc…										

- N° house with iron roof ?
- Age of the oldest trees
- How many trees per hectare
- Problem and needs.

TIME OF WORK

	Main production activities	Main other activities	Order of importance
1			

LAND ALLOCATION

- Village boundaries made which years:
- Advantage/inconvenient village boundaries:

- conflicts with others village (forest resource, hunting, fishing) ?

- How did they solve it?

- How many years ago do the Forest zoning was implemented:

Type	Meaning	forbidden	allowed	surface	distance	ecology

distinguish production forests : for cut wood, for special sort of NTFP, for shifting cultivation

- Advantage/inconvenient village boundaries:

- conflicts with others village (forest resource, hunting, fishing) ?

- How did they solve it?

Village cash income, 2000

Rice				
Sesame				
Job spear				
Maize				
Silk				
Fruit				
Chilly				
Pumpkin seeds				
Ginger				
Vegetable				
cucumber				
Opium				
Chicken				
Duck				
Pig				
Cow				
Buffalo				
Dog				
Fish				
Others animal				
Honey				
Wild meat				
Alcohol				
NTPF				
Cut wood				
Metal work				
Sin and clothe				

TOTAL kip $
Average per family $

ANNEX 2

FAMILY QUESTIONARY*

** The space between questions and the number of tables 'columns are not respected*

Village
wealth level

FAMILY

Family composition
Noting : age, schooling level (finish or not), year of each weeding, location of married childrens, origin of wife
How many children dead age
Actual number of children is a lot ? Ideal number of children? explain
History of the family

SEXUAL DIVISION
Number of actives
Who work more between men and women ? Why

SCHOOLING
About scooling level of parents: why?
About children who stop schooling: why this level
About children not finishing: up to what level? Why?
Advantage/ inconveniences of schooling?
Cost of schooling per years (2000) ?

WEALTH
Disease in 2000: (precise therapeutic way: first, second, third action)
Last persons who have been to hospital: which years:
for what,
how many time,
what expenditure
Medicine expenditure in 2000:
How many 'mo sen' in 2000 (why) in 1999
how many 'bassi' in 2000 (why) in 1999

FOOD PROCEEDING
How many hours per day for food ?
How many meal with meat per weeks / month ?
How many kg of fish per year
How many time family did eat dear (killing, buying, sharing?) / wild pig ?
More wildlife or domestic eaten ?
Principal wildlife product products
Time for hunt
More wild or planted vegetable eaten:
Principal product

WOOD UTILISATION
How many cubic meter of firewood per house:
Only dead wood or sometime cut wood:

Description of the house
Age of the house
House durability
for house construction : How many old trees (name and age) / How many small trees / How many cubic meter
Real cost of the house (money, food…)
Estimated cost of the house
Problem? Needs? Project?

PRODUCTION

	surface	production	plough	production
napi				

Problems:

surface	distance	fallow	Nights spend	N° weeding	fenced	production

Surface 2001
Surface 1999
Why difference (if):

Rotation?
Limitation / Problems
Self sufficiency:
If, sale?
If not, why:
What family did:

Alcohol production (litter/bottle) *precise the product (rice, cassava, maize)*

	made	buy	sale	price	total
Lao lao					
Lao hai					

Hai plantation:

product	production	use	Sale Q	price	total

Swan
Number of:

product	surface	distance	fallow	production	use	Sel Q	price	total

Banana, sesame, job spear, sugar cane, opium, maize, cassava, house garden product
Limitation and problem

Fruit trees:

type	nb	Where/ surface	age	durability	Prod.	Sale (kg)	price	total	buyer

Difficulties, problem and need

LIVESTOCK

	nb	Nb sale	price	Mo, bassi	Other activity	eat
Buffalo M/F, cow M/F, pig…						

Time allowed cow and buffalo
Grazing technique

Other activities (handicraft, business, silk, work for other)

	Q sale	Price kg	total

NTFP and WILDLIFE (sale)

product	Q sale	price	month	Time/month	Hours/time	Sale to

Problems and needs

	1	2	3	4	5	6	7	8	9	10	11	12	
GLOBAL													
Hai, na, swan, animals, gathering …													

Cash reserve (kip) man:

EXPENDITURE OF THE FAMILY

Rice, wild meat, domestic meat, other food, kitchen tools, material of production, clothes, blanket, medicine, schooling, tax, alcohol, transportation, salt, essence, other work for them)

Possession:

object	price

Radio, bicycle, motorized cultivator, hongsi, electric motor, machine à coudre….

Other needs (What do if more money):
Mains limitation for production (why not more rich?)
Project in the future. Project of change in the production / What they will do if hai is forbidden

SUMMARY OF FAMILY INCOMES

Verify the income is not inferior to expenditure; if it is: ask why