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Coping with Land Scarcity and Official Land Classification.
A Comparative Study of Livelihood Strategies
In Ban Mae John and Ban Tha Khu Lek,
Northern Thailand

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Abstract

This report is a comparative study of the livelihood strategies, depending on land scarcity, land classifications and the closeness of Sri Lanna national park, in the villages Ban Tha Khi Lek and Ban Mae Chon in Northern Thailand. The study has been carried out as an interdisciplinary and intercultural study with Danish and Thai students.

It was found that there is a difference to some degree between the livelihood strategies in the two villages. Due to the low validity and reliability of the limited data it is difficult to assess the reasons for these differences. It can be due to the closeness of the national park or differences in other factors such as ethnicity, citizenship, the implementation of the Thai government economic and development politics in the local level, the physical factor of topography or a combination of the mentioned factors.

Acronyms

AD	Agricultural Development
A-zone	Agricultural uses
ALRO	Agricultural Land Reform Office
BAAC	Bank of Agriculture and Agricultural Co-operatives
BMC	Ban Mae Chon
BTKL	Ban Tha Khi Lek
CDO	Community Development Office
CF	Community Forestry
CFN	Community Forestry Network
CM	Community Meeting
C-zone	Conservation forest
DAEO	District Agriculture Extension Office
DDF	Dry Dipterocarp Forest
DFO	District Forestry Office
DL	Department of Lands, MOI
DO	Dissolved Oxygen Levels
EC	Electric Conductivity
E-zone	Economic forest
GDP	Gross Domestic Product
GI	Institute of Geography
GIS	Geographical Information System
GO	Governmental Organisation
GPS	Global Positioning System
KU	University of Copenhagen
KVL	Royal Veterinary and Agricultural University
LAI	Leaf Area Index
MDF	Mixed Deciduous Forest
MOAC	Ministry of Agriculture and Co-Operatives
MOI	Ministry of Interior
NESDP	National Economic and Social Development Plan
NGO	Non Governmental Organisation
NPK	Nitrogen Phosphor Potassium
NTFP	Non Timber Forest Products
PBT	Land Tax Receipt
PRA	Participatory Rural Appraisal
RFD	Royal Forest Department
SLNP	Sri Lanna National Park
SLUSE	Sustainable Land Use and Natural Resource Management
SPK	Sor Por Kor
TAO	Tambon Administration Organisation
UHDP	Upland Holistic Development Project
WWF	World Wildlife Fund

Introduction

Literature Review

Thailand is exceptional in Southeast Asia economically as well as politically, by the fact that the country has been a constitutional monarchy since 1932, and has never been colonised. It has, since the end of the absolute monarchy, had relative political stability with some coups and coup attempts along with a period of communist insurgents in the North. Thailand has however been spared the ravages of war, and has indeed profited to some extent from the Vietnam War, where the USA constructed large infrastructure projects. (Kaosa-ard et al., 1995)

As one of the “Tiger Nations”, Thailand enjoyed tremendous GDP growth from the 1960’s until the collapse in 1997, raising per-capita income from US\$ 130 in 1965 to US\$ 2.113 in 1993 (Kaosa-ard et al., 1995) (Bello, 1998). This growth was partly at expense of the forested areas, with the forest-cover decreasing from 53,33% in 1961 to 26,02% in 1993 (Kaosa-ard et al., 1995). This is however not the only reason to deforestation. Along with the communist insurgency, the Thai armed forces deforested large areas thought to be hideouts for the rebels (Kaosa-ard et al., 1995). The most devastating was however the migration of rural people from the central plains. Here landless people faced tenure problems so severe that they had to move. These migrants, ignorant of forest practices, used the forest in the same way as the concessionaires who were often “creaming” the forest with detrimental consequences. (Bello, 1998)

To counteract the accelerating deforestation commercial logging was banned in the 1980’s and the Royal Forestry Department (RFD) declared 45,9 % of the total area in Thailand as National Reserved Forest area. This land was in 1992 divided into three different land-use zones, namely the Conservation forest (C-zone), Economic forest (E-zone) and Agricultural uses (A-zone), according to planned land-use (Rasmussen et al. 2000). The creation of the forest reserves has not cured the problem though, rather it has added to it. Around one million farm households are now squatters on forest reserves (Kaosa-ard et al., 1995). They have no land tenure rights, and are the poorest 25% in Thailand with 43% of these living in the Northwest. Besides, they often belong to an ethnic minority (Iversen, 1995). The difference of land-use is depending on ethnicity, with some groups being more forest destructive than others. Unfortunately, these factors are not a part of RFD’s plans (Bello, 1998). Deprived of the possibility of loans and land security, the “squatters” and other farmers living close to the forests are caught in what is in reality a political power struggle (Kaosa-ard et al., 1995).

Political developments have followed the crisis in 1997. A new constitution aims to change the power structures in favour of strong decentralisation, increased influence and participation of the citizens, and not least in relation to the management of natural resources and the environment. In 1999 a law of decentralisation, aiming at transfer of functions and finances from the central to the local level, complemented the change of constitution. As in many other places the implementation of decentralisation and real power devolution has however proved to be a huge and difficult task. (Udenrigsministeriet, 2002)

Such combinations of environmental, social and political developments constitute important basic factors in relation to the livelihood possibilities of rural people. This goes as well for the study area for the SLUSE Field Course in Thailand this year; Mae Tor Watershed, Tambon Chiang Dao North West of Chiang Mai, Northern Thailand. Five groups, mixed by Thai and Danish students were spread out in this area in a village each and given a research question based on real issues of this kind relevant for the village in question. Working team 5 placed in location four, stayed in Ban Tha Khi Lek, and worked both here and in Ban Mae Chon.

Description of the Study Area

Common

The area is situated in a hilly area. The hills are limestone and well drained. The area is under influence of the monsoon, with prolonged dry periods. All of the area lies within the boundaries of the Natural Reserved Forest area. Both the villagers are also situated outside Sri Lanna national park, although Mae Chon is much closer to the border than Tha Khi Lek.

Tha Khi Lek

There is some flat land around the village proper, with increasing slopes to the south. In the upland agriculture area it is steeper slopes. The areas that are steepest are used for community forestry. Half of the village land is lies within the E-zone and half in the C-zone. There are 20 households in Tha Khi Lek. (For further information see map 1 and 2 in the chapter Land use mapping team pp. 16-18).

Mae Chon

The village is situated in a sloped area, with mountains to the south. All of the agriculture is on more or less sloped land of up to 38°. The forest is placed at the base of and on top of the mountains. Most of Mae Chons' village land lies within the national park and all of the village land lies within the C-zone. There are 22 households in Mae Chon. (For further information see map 1 and 2 in the chapter Land use mapping team pp. 16-18).

Objectives of the study and research question

The task of this working team was to compare the differences in livelihood strategies due to land scarcity and official land classification between the two villages. The objectives of the study were therefore to establish a comparative study design that would take us into matters that influence the choices and activities of the villagers.

We were given the following research question:

Is there a difference in livelihood strategies in the villages Ban Mae Chon and Ban Tha Khi Lek and can this be related to differences in access to land and official classification of land?

Definitions of Key Concepts

Land Scarcity

We consider 'land scarcity' as the lack of land resources either in absolute/physical terms or as lack of access to land resources due to legislation.

Livelihood Strategy

"A livelihood comprises the capabilities, assets and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base." (Carney *et al.*, 1999).

A 'livelihood strategy' is thus the choices and activities of a group or an individual pursuing the aim of establishing a sustainable livelihood.

Methodology

Framework

Our working team developed a common framework with inspiration from various sources (Reenberg, 1998), (Gilmour & Fisher, 1991), (Carney et al. 1999).¹

Working teams

We chose to divide the work in three parts according to our disciplines in order to obtain the best possible results within our fields. These groups all have the same objective, namely to find relations between the vicinity of the national park and the livelihood strategies of the villagers.

The findings were then gathered and analysed across disciplines to obtain an interdisciplinary and holistic understanding of the problem.

Common Methods²

Community Meeting³, a PRA session

We conducted a community meeting, CM with the aim to obtain knowledge of the villagers' perceptions on some parts of the various subjects in our framework, and also in the hope to establish trust and facilitate contacts with possible respondents through informal conversation. Our main inspiration for the design of the PRA is Oksen (2002).

Physical Map

At the CM the social team facilitated the creation of physical village maps. In Tha Khi Lek a group of women drew a map of the village infrastructure, which included locations of houses, road, stream, fields, church, school, and indication of family structures and ethnicity. In Mae Chon we did it a bit differently. There we still got the village infrastructure with location of the road network, houses, temple, school and tourist houses, but we excluded the location of fields and focused instead on ranking of wealth, amount of land, and period of stay in the village. The group of villagers that created this map – both men and women – did the ranking according to a system of scoring from 1-5, we asked them to use, 1 being low and 5 being high. So e.g. if a villager is rich and has much land he/she will score 5 in the criteria of wealth and amount of land, and 1 if he/she is relatively poor and has a small amount of land. In relation to the criterion 'period of stay' the participants related the 1-5 scoring to the following self-invented system; 1: 2-3 years, 2: 4-5 years, 3: 6-10 years, 4: 11-20 years, and 5: >20 years. (Oksen 1997)

Maps of Internal and External Relations

The social team also facilitated the creation of a map of internal and external relations in both villages.

¹ See appendix 13

² We, the Danes, give deeper descriptions of the activities we participated in ourselves.

³ We presented ourselves at a separate meeting in Tha Khi Lek, and at the CM in Mae Chon.

Crop calendar

The agricultural team facilitated the creation of a crop calendar, where the participating villagers helped us draw when they were cultivating what. We also had some general discussions concerning the agricultural problems in the village. This was done in both the villages⁴.

Map of the land

The forest team facilitated the creation of a forest and land map where all boundaries to neighbours and to the national park were drawn. They also drew where the different types of forest were.

Interviews

All working teams carried out different kinds of interviews⁵. We always introduced our project and ourselves and informed the respondents about the purpose of our stay, especially that the information would not be published or shared with others than our teachers and the NGO (“Basecamp”). We always ended the session by offering the possibility to the respondents to ask us questions back. Some actually did that, and it often created a nice closing atmosphere.

Observations

All the time while staying in Tha Khi Lek or Mae Chon as well as the forest and land around, we observed our surroundings. This was conducted in a non-systematic fashion, where we would simply stop and ask or look at things we thought would be interesting.

This gave a lot of information we didn’t think of ourselves, and it stresses that informal chatting is a good way of developing ideas. It also provided crosschecking of our data, whether the data we have been told could be verified.

Literature Study

We studied literature to obtain the basic background information, to reach inspiration for a relevant framework and to qualify our attempts on explanations of our findings.

⁴ See appendix 1 for crop calendar and information obtained during these meetings.

⁵ These are described in each team chapter.

Agriculture

Methods and discussion of methods

Semi-structured interviews

From the general questionnaire⁶ the social working team had done, five farmers in each village were selected. The criterion used was how much land they used measured in rai⁷. Two farmers were selected with a lot of land (21-30 rai), two farmers with average amount of land (6-15 rai) and one farmer with little land (3 rai). The reason to use this criterion was to obtain a selection of the farmers who could give a varied view of the land use in the village. After this selection was made a semi-structured interview was conducted with each of these farmers.⁸

To use a general questionnaire to get an overview was a good idea, although due to lack of experience the work with these questionnaires started quite late. The questions both in the questionnaires and in our interview guide had to be corrected over time, as we realised the difficulties of getting useful information. In many cases though the information from the general questionnaire concerning how much land the villagers used was not in accordance with the information the agricultural working team obtained in our interviews. Semi-structured interviews are a good way to obtain information, although the interview must be kept at a reasonable duration and the questions must be specific, both in respect to content and choice of words. Due to language and cultural barriers it is difficult to be sure whether the respondent understood the question and actually gave the answer intended. Due to time constraint we still interviewed the selected people although they maybe did not quite fit with the original criterion. It would also have been desirable to have one more interview in each village with another farmer with little land. It is also difficult to compare the interviews from the different villages, since our interview skills developed. We first did all in Tha Khi Lek and then all in Mae Chon.

Soil sampling

When the interview was finished the farmer showed where he had some good soil and some bad soil according to his/her opinion. We took one mixed (the soil coming from 1-5 different spots in the field) soil sample from each of these areas and analysed it with a NPK test kit for nitrate-, ammonium-, phosphor- and potassium content.⁹

Due to the few soil samples gathered and the inaccuracy of their collection and analysis these are not so valid and reliable. They might give an indication of the nutritious value of the soil, though.

Estimation of yield

For the estimation of yield, information was obtained from the general questionnaire as well.

This is however difficult to validate since not all the respondents answered the question concerning yield and the answers were mostly arbitrary and not precise.

Water sampling

Physical qualities of the water of the stream that runs through Mae Chon and Tha Khi Lek were tested. Temperature, pH, electric conductivity (EC) and dissolved oxygen levels (DO) were tested. The samples were taken upstream, in the village and downstream from both Mae Chon and Tha Khi

⁶ See the chapter named Social, for details.

⁷ 1 rai = 40 x 40m

⁸ See appendices 2 and 3 for questions and answers to interviews.

⁹ See appendix 4 for the soil sample data.

Lek respectively. The reason for testing the water quality was to see if the agricultural use of the land affects the water and if the quality changes downstream.¹⁰

The critique of the water samples is similar to that of the soil samples. More sampling would have been needed to validate the results and other parameters could have been measured, for example the concentration of E. coli bacteria, but due to time constraints this was not done.

Land use intensity

The slope of the steepest cultivated field in each of the villages was measured to see how much of the potential land they use in comparison to the slope maps from the GIS database and the agricultural land-use map.

To measure the slope of the steepest cultivated field to see if all the agricultural potential were used considering slope can give a rough indication on land use intensity. It is not certain that the slopes measured actually were the steepest. Also, there are many factors that play a part in the agricultural use of the land such as water access, soil fertility, soil cover, illegality due to the national park, or others.

Findings and discussion of findings

Ban Tha Khi Lek

The findings in the comparative study of these villages were that in Tha Khi Lek the people are mainly Karen and all have Thai citizenship and some villagers have SPK¹¹-documents on all or some of their land. They also lived legally in their village on an area selected by the government. In Tha Khi Lek they had paddy fields, that is, they had invested time and labour into the building of terraces. They had also invested in an irrigation system for these paddy fields by building a dam and irrigation canals. Mainly co-working within the village provides the labour. The labour is to some extent mechanised, by the use of a hand tractor. Several villagers have the possibility to use this, either by owning it, renting or borrowing it.

They are not allowed to expand their agricultural land, because the village is situated in a Natural Reserved Forest area and most of the fields within an E-zone, and some within a C-zone. On the question whether the villagers want to expand their agricultural land the answer is there is no for most villagers. Only the one with little land would have liked land expansion, but could not do this due to the closeness of the national park, he said. On the other hand, on the question if they have any agricultural problems land scarcity is the most mentioned one. The reason for this discrepancy can be due to differences in language and perception. The villagers maybe need more land but cannot expand since this is illegal. On the question do you want to expand, their answer is no, we do not want to do that. Maybe what they mean, but do not explicitly say is that they do not want to expand, since this is illegal and might cause reprisals. To the farmer with little land this question is more urgent and therefore he tells us about his wish to expand.

The soil fertility is low. Ammonium and Nitrate show low levels and very low levels. Phosphor shows low and Potassium high levels. The reason for low nutritious value of the soil can be due to long use and no or little fertiliser input. The pH is between 7,0-8,0 and indicates that Nitrogen and

¹⁰ See appendix 5 for the water sample data.

¹¹ The Thai expression for Sor Por Kor. A usufruct certificate issued by ALRO. The usufruct status means that the holder of the document is allowed to collect use and make money from activities conducted on the land, but according to the transfer rights he/she is not allowed to sell the land, only to transfer it by inheritance, and he/she is not allowed to use it as collateral. Furthermore the certificate holder is not allowed to change the conditions of the land.

Phosphor might be more accessible and Potassium not. This statement has to be modified according to Breuning Madsen (1987), who states that Nitrogen and Potassium are accessible for the plants at this pH, whereas Phosphor is less accessible due to the synthesis of Calcium Phosphates. This discrepancy can be due to misunderstanding on my behalf due to lack of soil chemistry knowledge.

The cultivated field with the highest slope measured 30°. In Tha Khi Lek there is practically no areas above 38° of slope, which was the steepest cultivated field in Mae Chon. Although all land in Tha Khi Lek is potential agricultural land with respect to slope much of the land on less slopes than 38° is uncultivated (forest). This indicates that it is not the slope that is the limiting factor in the cultivation of the land.

The yield/year of the different crops is in kg/rai as follows:

Table 1: Yield/year in kg/rai in Tha Khi Lek

Crop	Maximum	Minimum	Average
Maize	824	388	560
Red bean	480	80	266
Paddy rice	600	490	545

As can be seen when compared with table 2 the average yield/rai is higher in Tha Khi Lek. The reason for this can be more intense use, different parent material or the fact that the land is more flat and thus less exposed to erosion.

Other problems mentioned in agriculture are no or few land documents, lack of water and low soil fertility, as is confirmed by the soil sample analysis.

Concerning their livestock management the villagers seemed to have less knowledge about their animals' condition, i.e. what kind of health problems the animals were suffering from and what to do about it. More pigs were scavenging and there were no sties. The chickens were smaller and in a less good condition than in Mae Chon.

Ban Mae Chon

In Mae Chon the concern of security is more profound than in Tha Khi Lek. People are concerned about being evicted. Most of the people in the village are Palong and they have no Thai citizenship, though most have green or white cards¹². None of the villagers have any papers or documents on their land and since Sri Lanna national park encloses the village all agricultural expansion is illegal, although some villagers want to expand. This wish is both from the one with little land as well as the ones with average amounts of land. There are no terraces in Mae Chon and only a smaller irrigation system based on a water tank with pipelines for collecting rainwater. They also use water from nearby streams when this is available. Also in Mae Chon co-working within the village provides most of the labour. The labour is carried out with hoes. So the mechanisation level is lower. However, the reason for this can be lower intensification, lack of money for investment or that the topography is unsuitable for that kind of equipment. According to the villagers there is no conflict with the officials as long as they only use the land they use today, although most of the existing agricultural land is inside the national park.

The soil fertility is low in Mae Chon as well as in Tha Khi Lek. The pH is between 7,6-8,0.

The cultivated field with the highest slope measured 38° and in a comparison with a slope map of Mae Chon and the agricultural land-use map it is shown that much of the land on less slopes than

¹² Some confusion of the colours of the ID cards has occurred. We think the white card is actually a blue card. (Vichit, 2003)

38° is uncultivated (forest). Actually not much land within the village land area has slopes higher than 38°. This indicates that it is not the slope that is the limiting factor in the cultivation of the land. See slope map in the land-use mapping chapter p 18.

The yield/year of the different crops is in kg/rai as follows:

Table 2: Yield/year in kg/rai in Mae Chon

Crop	Maximum	Minimum	Average
Maize	1000	142	421
Red bean	360	83	202
Upland rice	300	90	180

The main problems in agriculture are no Thai citizenship, lack of land documents, land scarcity, lack of water, and low soil fertility. The animal keeping in Mae Chon is seemingly more organised than it is in Tha Khi Lek, since most of the villagers are following vaccination programs, keep their pigs in sties and also have some imported animals. The condition of the animals was better and the villagers seemed more aware of the animals' condition and diseases than in Tha Khi Lek. One reason for this could be that the animals are actually theirs and could be brought along in case the villagers would have to leave. The more likely explanation is the presence of a NGO who focus on the keeping of livestock and has assisted the villagers in their animal management.

Water samples

The oxygen content in the water lies in all the samples between normal to good, but declines the further downstream the samples are taken. The reason for the decline can be that the stream may be used for dumping human wastes and wastewater. The pH is alkaline probably due to the limestone bedrock. EC levels are normal except for in one of the samples, which show higher value.¹³ The reason for this can be either measurement mistake or it can indicate soil erosion, e.g. agricultural run-off water or from deforested hill slopes.

Partial conclusion

Some indicators such as paddy fields, irrigation, some use of animal manure and some labour mechanisation point in the direction that Tha Khi Lek has in some sense intensified their agriculture. It is however hard to say if this is due to the fact that the village is outside the national park, the villagers have Thai citizenship, has SPK-documents, or due to the topography, for example relatively flat land and better access to water.

Mae Chon, where most of the villagers are Palong and therefore lack Thai citizenship and also land documents, seems to have less intensified agriculture. Again, it is difficult to say if these differences mentioned above are found due to the closeness of the park or physical, ethnical or political differences between the villages.

¹³ See Appendix 5.

Forestry

Methods

Walk-about

A walk-about is a walk through some part of the forest in order to get an idea of the resources, possibilities and layout of these. These were conducted in company with a local resource person, in Tha Khi Lek the medicine man, in Mae Chon the leader of the community forest, so as to get guidance through the forest. We also used these persons to get information about NTFPs and other forest uses through informal conversations and direct questions.

These walks gave a good impression of the overall forest status. We should have had more time for them however. They were not conducted well enough, as we had a fairly large area. In order to use these data, it is very important to have some map data to correlate with, something we didn't realise until almost finished.

Plot-sampling

This was done as a 10 x10m random plot. In the square we measured all plants of more than one meters height with diameter, estimated height and estimated leaf area index (LAI) and found out which species they were. The most numerous undergrowth species was indicated as well. A drawing was created for future reference with a GPS point in one corner.

The goal was to do six sample plots in each forest in order to be able to classify the forest according to type, species richness and how much it was damaged by human action.

The plot samples take even longer time than the walks. In order to do it correctly, you have to measure the exact location of each tree, measure the height and the width and find out which species it is. All tree species are determined according to Gardener et al. (2000). Since all of the species were given in Thai on the plot and translated at a later date into Latin at a location away from the forest, we cannot use the data found with any certainty. However, they can give some indications on the forest types and of the human interaction. Also, due to illness we did not have time for all the plots we would have liked, and reached only six plots in Tha Khi Lek community forest and three in Mae Chon community forest.

Interview

We conducted five semi-structured/open-ended interviews.

Of these interviews, only one was conducted in English, the rest was in Thai. This means that we only have the second hand translation and cannot as such use the data with any amount of certainty. This unfortunately means that a lot of the data on NTFPs are "lost" to us since this is what the four interviews were about. We intend however to use the data as indicative in the assignment.

Questionnaire

A part of the questionnaire made by the social team examined whether the villagers used NTFPs, and if they did, what they used and for what.

Results

Common

The forest around the villages consists of two parts, Dry Dipterocarp Forest (DDF) and Mixed Deciduous Forest (MDF). All of the forest is secondary forest. The DDF is dominating the higher and dryer areas whereas the MDF dominates the lower more moist areas. Both the villages used all of the forest for NTFP gathering depending on season and produce. These are used primarily for

household consumption although a few are sold primarily because there is not enough of it. From the questionnaire it was estimated that Mae Chon uses more varieties of NTFPs and in greater amounts than Tha Khi Lek. This was also concluded from the interviews, but this conclusion could not be verified.

Tha Khi Lek

Most of the DDF has a large upgrowth of new dipterocarpacea but very few large trees. The MDF is dominated by bamboo, and there are generally very few large trees. The DDF is primarily used for collecting firewood, and the MDF is primarily used for bamboo cutting. One part of the MDF has some large Teak (*Tectona grandis*), but these are few and widely separated. However there is much upgrowth of *Tectona grandis* localised throughout the MDF. The villagers claim there has been no agriculture encroachment since 1995, and the observations support this.

The main problem named by the locals was outsiders, who cut down trees and extract NTFPs..

Mae Chon

The forest area is on slopes of up to 50°. The forest is divided into two parts, the utilisation part East of the village and the conservation part to the South. There was no knowledge of the boundaries between the village and Sri Lanna national park. Actually the entire forest area is located inside the national park boundaries.

The DDF has few large trees, and heavy upgrowth of new dipterocarpacea. There is in some places logging. The MDF has some large trees, but these are mostly of limited commercial value. In the lower parts of the MDF there are everywhere signs of elephant devastation with broken trees, torn-off branches and crushed bamboo. The upper part has as the primary species bamboo and *Shorea* (sp.), and is used for logging and bamboo collection. The elephants are used for the timber extraction. In Mae Chon there is great fear that the park authorities will evict the villagers because of their location in Sri Lanna national park. We actually met some soldiers one of the days who were patrolling the forest to look for illegal logging.

The community agreed not to clearfell for agricultural purposes in 1993. The penalties are from a warning up to fines of 800 baht according to how many times the person has done it. It was also found during the social survey that some villagers from a nearby village had been in prison because of this. It was however observed that the encroachment took place.

However, at the same time they are destroying the surrounding forest by logging and elephant keeping. When asked about this they answered; where else should we put the elephants? They also said that the main buyers of timber were not locals.

The main problem named by the locals was again outsiders and lack of legal access to the forest.

Conclusion

Overall, the major difference between the two villages seem to be that the villagers of Mae Chon use the forest for logging and elephant keeping and thereby destroys it to a great extent, whereas the villagers of Tha Khi Lek uses the forest primarily for NTFP gathering. Also it seems that the villagers of Mae Chon are much more dependent on the forest as a source of income.

The primary similarity between the two villages was the problem of the outsiders. Apparently there is great pressure on the forest areas that are adjacent to the larger villages surrounding the forests and there seems to be larger destruction in those parts of the forests.

Land use mapping team

Methods

All land measurements were conducted with GPS while either walking the boundary or driving on motorbike. The measurements were taken with the aid of the villagers who told us where the boundaries were, which means that they may not be the same as the ones made by the RFD, but these are the actual ones used by the villagers.

Results

The results of this study are presented as maps on the following three pages.

Social

Methods and Discussion of Methods

Structured Interviews/Questionnaires, 'In-Depth' Interviews and 'Key Informant' Interviews¹⁴

The social team planned to start with a structured survey in the form of questionnaire-based interviews of representatives from each household, i.e. a full sample, in the two villages Tha Khi Lek and Mae Chon. The questionnaire was composed of questions we found relevant in relation to the research question and structured around the subjects from the framework. The structured design and the full sample make it look like a 'quantitative' method, but the primary aim was not to use it as basis for statistics. The purpose was to get a broad idea about the situation in the two villages and to create a basis for selection of relevant respondents to 'in-depth' interviews, where we would dig a little deeper into more focused subject areas. This makes the questionnaire survey more 'qualitative'. Besides these two kinds of interviews we planned to conduct what we called interviews with 'key informants', where we would interview a person chosen according to his/her position in relation to one of focus areas in the framework. We expected these persons typically to be local governmental officials in various agencies and leaders/employees of NGOs.

In principle we succeeded to complete this process of various interview methods, but in terms of practical work we met a lot of challenges. The following list should indicate some of the tasks to be dealt with along the way:

1. To agree on the subjects to be covered in the questionnaire.
2. To agree on questions to be deleted or reformulated, or new questions to be added along the process. We added and omitted questions, and we changed some of the questions along the way. This means that some questions are not asked to all the respondents, and some questions are not asked in the same way to all the respondents.
3. We found different kinds of representatives from the household to be in when we came to do the interviews. Because of time constraint we could not make appointments ahead in each case, so we simply just showed up. Ideally it should be considered which representative from the household that should be selected for the interview, and we tried to get hold of the head of the household, usually the oldest male, but in many cases he was not home. Often we interviewed his wife – or else, a younger member of the household, who often seemed well informed and keener on answering than the older ones.
4. At the interviews the Thai members of the social group would be challenged by the dialects spoken of the Karen and the Palong. They could only understand each other within certain limitations, so they would sometimes not be able to comprehend the answers. The Danish member of the social group worked with a Thai translator, who had the same challenge towards the Karen and Palong as the other Thai, and added to that the Dane and the Thai interpreter was challenged by the English language they spoke together, (as goes for the Danes in the two other groups as well.) In this situation communication skills and courage becomes important, and 'chemistry' amongst the two persons would definitely be an advantage. We were lucky to enjoy each other's company and dared to ask several times to be sure of the right understanding.

¹⁴ We define 'in-depth' interviews as deeper and more thorough interviews dealing with a more narrow focused topic with respondents who has participated in the answering of questionnaires and had been selected on basis of the information from the questionnaires.

We define 'key informant' interviews as interviews with strategic selected informants also on topics more narrowly focused. The topics will partly take their starting point in the information from the questionnaires, but the informants may not have participated in the answering of the questionnaires.

The interview methodology is primarily based on Casley and Kumar, (1988).

5. To find time enough to translate and transcribe the questionnaires when done.
6. Reliability¹⁵ of the data from some of the questionnaires was challenged by the fact that some were done by memory when we ran out of written copies.
7. The validity¹⁶ was challenged by many various factors, as the language barriers, different perceptions of concepts between the interviewer, translator and respondents, the written and oral formulation of the questions, and lack of answers due to misunderstandings or lack of concentration. Some times we felt that the respondents, quite naturally, lost interest during the process, even if they politely carried on. As a special problem we also experienced difficulties with posing hypothetical questions. Furthermore, some of the answers will indicate that we are only scratching the surface of reality.
8. The questions in the questionnaires define the information you get hold of, here is a certain risk that you miss relevant information.
9. Sometimes the information from the questionnaires is too general. You ask yourself, why you did not ask the respondent to specify. Some explanation is that you constantly had to keep pace with time, and sometimes it was a hard task to keep the overview when sitting in the interview situation, and always to be sure of the right balance between relevant and irrelevant information.
10. During the interview sometimes other people came along, and sometimes some of them would comment on the questions and answers. Usually we felt this was not a problem, only an advantage to obtain more information, and sometimes corrections and clarifications. It seemed that in general the villagers had the same opinion in most of our questions, and they often answered on behalf of the family or the whole village rather than individually. On the other hand it was difficult for us to detect if there were diverging points of views that the respondent would hide in the presence of the newcomers.

Structured Interviews/Questionnaires conducted in Tha Khi Lek and Mae Chon

In Tha Khi Lek we conducted questionnaire-based interviews in 19 of 20 households, one was cancelled due to a motorbike accident. We finished the interviews in almost all the households in Tha Khi Lek before we went to Mae Chon. In Mae Chon we conducted exactly the same process of interviews in 18 of 22 households, four respondents were not willing or able to answer for various reasons. The largest part of the new questions was added when we started in Mae Chon. After we finished the interviews in Mae Chon we went back to Tha Khi Lek and did the last ones there.

'In-depth' Interviews

'In-depth' interviews were conducted on some of the various subjects from the framework, i.e. 'tourism', 'external relations', 'culture', and 'ID, tenure and credit'. We planned to select the respondents for the 'in-depth' interviews on basis of information from the questionnaires, but due to time constraint we had to interview the ones who were present. In general the same reflections in relation to reliability and validity goes for these interviews as for the questionnaires. The advantage of the 'in depth' interviews is, of course, that you obtain a deeper knowledge of the viewpoints of the selected respondent on the chosen subject.

'Key Informant' Interview

Several 'key informant' interviews were conducted with some of the external relations to the two villages. Eight interviews with representatives from the following GOs; District Office-Registration Section/Chiang Dao, ALRO/Chiang Mai, SLNP, DFO, DAEO/Chiang Dao, CDO, DL/Chiang Dao, TAO/Chiang Dao. Two interviews with representatives from the following NGOs; UHDP/Chiang Dao, CFN and WWF in Chiang Dao. One interview with the main middleman in Tha Khi Lek and

¹⁵ The degree to which results can be replicated. (Flowerdew and Martin, 1997)

¹⁶ The degree to which a survey measures what it was intended to. (Ibid.)

Mae Chon Mr. Khaeg. It was our assessment that it would have been an advantage to use more time on fewer interviews.

One ‘key informant’ interview was conducted with Mr. Janesak Wichawutipong, a RFD representative from Bangkok and Mrs. Pat, a former employee at RFD, on the focused subjects ID, tenure and credits.

Results

Community History and Ethnicity

The Karen¹⁷ people (plus two Moser¹⁸ families) now staying in Tha Khi Lek started to move there from Mae Chon back in 1974 due to an organised resettlement implemented by the RFD. Reasons for the movement were that the area is a water source area, and that the villagers would come closer to government services like health-care. The Palongs and local Thais (plus three Moser families) now staying in Mae Chon has moved there mainly from Fang District back in 1979, and some from Doi Ang Khran near the border to Myanmar (NE from Chiang Dao) due to an ethnic conflict in a warfare-like manoeuvre with Myanmar soldiers forcing people to move.

Religion and Internal Organisation

Tha Khi Lek is divided into a Buddhist and a Christian group apparently co-existing peacefully, whereas in Mae Chon all are Buddhists. In both Mae Chon and Tha Khi Lek they have mixed traditional beliefs with more modern Thai traditions¹⁹. Their internal relationships are still characterized to a great extent by kinships implying a mutual duty to assist each other in various livelihood matters. About the internal organisation, besides the religious groupings, we found that Tha Khi Lek is only loosely organised around the head of the extended family Boonmee, Mr. Pud Boonmee, the village headman. Besides this a couple of group-like formations existed in relation to the CF and the water system exist. In Mae Chon the internal organisation is characterised by several leaders; the village leader/village headman, the assistant headman, the forest leaders of the conservation forest and the utilisation forest respectively, the water leader, the agricultural leader, the woman weavers leader, the spiritual leader and the temple leader. It seemed like if they were more organised ‘in the exterior’ in Mae Chon, while they seemed more organised ‘mentally’ in Tha Khi Lek. This could be explained due to the fact that the people in Mae Chon has a weak ‘sense of place’²⁰ due to their illegal but tolerated occupation of the area.

External relations

The most important external relation in both villages might for the moment be the middlemen, of which Mr. Khaeg, Chiang Dao/Mai is the most dominant. Almost all villagers have a ‘contract-farming’ like relationship with him, selling their farm products, primarily beans and maize. Our data indicates that the relationship was stronger in Tha Khi Lek than in Mae Chon, the former having a paternal-like relation, the latter selling to some other middlemen as well. In the scheme below is listed the organisations/agencies we were told about, with the reservation that we have not always clear information of the character and extent of all the activities, and some villagers are not aware of the activities.

¹⁷ The Karen prefers to call themselves ‘Pa Kha Ka Yor’.

¹⁸ The Moser prefers to call themselves ‘Lahu’.

¹⁹ The spiritual life in the villages is dominated by the animistic belief in the tutelary spirit, and ceremonies in relation to agriculture are common.

²⁰ Here we use the concept ‘sense of place’ as the attachments that people have to a place. (Johnston et al. 1994)

Table 3:

External relations between the villages Mae Chon and Tha Khi Lek and their societal surroundings.

Village	Organisation/Agency	Activities
Both	<u>Agricultural related GO's</u> ALRO	-There have been no issues of SPKs from the office in Chiang Dao for a long time and there are no plans for new projects.
	DAEO	-No activities due to national park and national reserved forest area.
Mae Chon	<u>Forestry related GO's</u> DFO	- Rehabilitation programme in utilization forest. - Educate villagers on laws related to forest resource management. Pilot Project on community based forest management.
	Both Mae Chon	RFD SLNP - Control of forest activities - Monitor and law enforcement on illegal use of NTFPs and timber products. - Taking care of tourists in the area - Information and awareness raising activities (They plan to increase their staff.)
Both Both	<u>Social Development related GO's</u> DO, Registration Section CDO	- Organise the mobile registration service to all highland villages. - 3 Funds*: - One mio Bath Loan - Poverty Alleviation Fund (280.000 Bath per village) - Village Saving Fund
	Both	TAO** - No budget for the villages. High competition for the funds available. Occasional social welfare support from emergency fund.
ThaKhiLek	<u>NGO's</u> CFN/WWF	- CF activities: - Water system - coordinate government representatives, scholars and villagers to mutual understanding of forestry management - facilitate conflict management - support the Community Forestry Bill
	Mae Chon	UHDP - Christian organisation, support Palongs. Demonstration plot and education in what they find to be appropriate technology in upland farming: - Water Supply - Soil Conservation - Integrated Farming Systems - Livestock Management - Promote Christianity
Mae Chon ThaKhiLek	Non Formal Education Chrisjak	- Kindergarten, Pre-School, Adult Education (Thai Language) - Christian organisation, work with Karens. Promote Christianity and give donations of food and clothes.

(* Only three persons in Tha Khi Lek has the one mio Bath Loan, due to problems with collateral, and the satellite²¹ status of the villages, which means lack of representatives in Tao.)

The TAO** has no activities in the area despite the villagers wishes of improvements of infrastructure like road construction, electricity and water supply, and social development initiatives like for instance better education for their children.

Income sources

The main occupation of the villagers in both villages are primarily subsistence and 'contract' upland farming. They sell some crops yearly and use the income primarily for herbicides, pesticides, rice for consumption when last years harvest has been used up, and for purchase of few items like

²¹ The villages in the area are grouped and numbered, but Mae Chon and Tha Khi Lek has not their own numbers, they belong to Village no. ??

detergent, and school fees. The list below shows other activities than farming and selling of crops that gives the villagers in both villages' cash income and non-cash incomes:

Table 4: Cash and non-cash income sources
(non-farming)

<p>CASH INCOME SOURCES:</p> <p><u>Wage Labour at other farms</u> Ploughing Planting Collecting Harvesting</p> <p><u>Wage Labour in Tourism</u> Care for tourists – Only in Mae Chon Dance and play for tourists – Only in Mae Chon Elephant rider/caretaker</p> <p><u>Tourist Houses</u> Guest House activities – Only in Mae Chon</p> <p><u>Souvenir and Food Sale to Tourists – Only in Mae Chon</u> Sale of purchased items to tourists. (Carried out by women and children).</p> <p><u>Weaving</u> Selling of weaving products to tourists.</p> <p><u>NTFPs</u> Sale of NTFPs – occurs only to a limited extent.</p> <p>NON-CASH INCOME:</p> <p><u>NTFPs</u> Collection of NTFPs improves nutrition and spare expenditures.</p> <p><u>Weaving</u> Weaving of products used within the household.</p>

We have not exact information on the amount of production and income from these activities, but our data indicates that few of the villagers, the richest (i.e. those who have most land), only cultivates land for a living, most of the villagers, the average group, both cultivate land and perform wage labour, and few of the villagers, the poorest, only perform wage labour for a living. The wages for wage labour is typically 100 Bath per day for men and 80 Bath per day for women. This, along with the income from the other income generating activities is not enough for the villagers to save money for long-term investments. The data indicates thus that the villagers in both villages are just coping with life, and this explains to some degree their lack of plans and dreams for the future. Many villagers wish a better life for their children, but they do not have the capacity themselves to pay school fees.

Tourism

In Mae Chon there is several activities within the tourist business. There are three guesthouses for tourists and three households (not the same) have elephants they use for trekking with tourists. Related activities in the form of souvenir selling of purchased items and homemade weaving products and cultural/ethnic dancing occur in Mae Chon, while in Tha Khi Lek the tourist related

activities are selling of homemade weaving products and a few young men working as elephant riders/caretakers.

The founder/leader of the tourist business in Mae Chon is Mr. Ong, who came to Mae Chon due to a conflict in Ban Pang Daeng Nai with Mr. Nikon from CFN. He cooperates with the tourist companies “Lock” in Bangkok and “S. K. Tours” in Chiang Mai, who advertise and arrange the travel of tourists to Mae Chon. Mr. Ong organises the souvenir sellers in the sense that he only allows them to sell to the tourists between breakfast and lunch, and since the tourists mostly bring their own food the income for the villagers is limited.

The elephant trekking tours are not licensed officially. This does not prevent the negative impacts they cause on the forest resources. The elephants cause damage due to walking and eating and this occurs occasionally for the agricultural crops as well.

ID, Tenure, and Credits

ID

All Karen in Tha Khi Lek has full Thai citizenship, partly because they have stayed there for more than 20 years. In Mae Chon the Palong only have the green or white card, which they get after they have stayed in the area in 12 and 15 years respectively. The cardholder of a green or white card is restricted in terms of travel and access to various forms of credits and land documents.

Tenure/title

Both Tha Khi Lek and Mae Chon are situated in the same National Reserved Forest area. Tha Khi Lek in both a E-zone and a C-zone and Mae Chon in a C-zone, with consequences for the tenure/title situation. Only 35% of the villagers in Tha Khi Lek have SPK title deeds on all or some of their land. This form of documentation is issued by the ALRO under MOAC in specific areas related to the Agricultural Land Reform Act from 1975. The legal status of the document is so that it is a usufruct certificate.²² (Mingtipol et al., 2002) In Mae Chon absolutely no one has any kind of land documentation, due to the location in a C-zone and the enclosure by Sri Lanna national park. The target from the National Forest Policy in 1985 of maintaining 40 % of Thailand’s total area as National Reserved Forest areas²³ means that the areas around Mae Chon and Tha Khi Lek is gazetted as a National Reserved Forest area. According to the division in 1992 of the National Reserved Forest areas into A, E and C zones (Rasmussen et al., 2000) Mae Chon is located in a C-zone, and Tha Khi Lek is located in an E-zone. (Dontree 2002)

Credits

The situation in relation to credits is similar in the two villages. In both villages the farmers have a ‘contract farming’ relationship with the middleman Mr. Khaeg. This means that most of them have loans with him. They borrow cash from him to buy rice for consumption, herbicides and pesticides, or seeds. The conditions are in their opinion reasonable and flexible. They pay back at harvest times

²² The usufruct status means that the holder of the document is allowed to collect use and make money from activities conducted on the land, but according to the transfer rights he/she is not allowed to sell the land, only to transfer it by inheritance, and he/she is not allowed to use it as collateral. Furthermore the certificate holder is not allowed to change the conditions of the land.

²³ Before 1989 the aim was that the 40% should be divided between 15% conservation forest and 25% economic forest. After 1989 this ratio was reversed to 25% conservation forest and 15% economic forest. This was stated in the 7th NESDP for 1992-1996 and re-stressed in the 8th NESDP for 1997-2001. The background for this situation is related to the fact that a serious flooding in southern Thailand back in 1988 was explained by progressing deforestation, and led to the so-called ‘logging ban’ in 1989. (Rasmussen et al., 2000)

(It says the following in the 8th NESDP: “Rehabilitate and protect forest areas covering no less than 25 percent of the entire Kingdom, and demarcate reserve forest zones, within the period of the Eighth Plan.” (8th NESDB 1997-2001) That is, not explicit use of the term conservation zone.)

either in money or by subtraction in the payment of the yield they have provided for him, at an annual interest rate of 10%. The villagers describe the relationship with Mr. Khaeg as friendly and unproblematic. If it is problematic for them to pay back on time, e.g. due to a bad harvest, they usually get the payment postponed until they can. It is also common among the villagers in both Tha Khi Lek and Mae Chon to borrow money or rice from relatives. As referred to (under external relations) nine people in Tha Khi Lek have applied for but only three obtained the one million Bath Loan. This could be due to problems with collateral in form of land, and the satellite²⁴ status of the villages, which means lack of representatives in TAO from the villages. The 100.000 Bath Loan and the BAAC Group Liability Loan only few has heard about, but many would like to be further informed about these credit possibilities and to obtain access to them. Many though, do not consider the possibility of getting access to these loans to be realistic, due to their lack of either proper ID or permanent land title. Also they point to the risk that they would have to pay for insolvent members of the joint group.

The above mentioned means in reality that for the moment the villagers only have access to the smaller loans, the maximum limit is 3000 Bath, from Mr. Khaeg, who does not claim any ID or title deeds from the loan taker. It is often proposed that there is a relation between holding of title deeds, access to credits and long term investments. Here credits are obtained without land documentation, but only smaller loans, too small for long-term investments.

The BAAC Group Liability Loan²⁵ should in principle be an alternative credit possibility for the villagers in the area. An explanation for that none of them has this loan, seems to be the issue of collective responsibility. Some of them express the interest in obtaining the BAAC Group Liability Loan, but they point to the risk that they would have to pay for insolvent members of their joint group.

A reflection in relation to the BAAC Group Reliability Loan:

“When evaluating an application for a Joint Reliability Group loan, BAAC pays attention neither to location of land, nor legal land documents. Like this, the lending policy of BAAC indirectly facilitates farming in forest reserve areas where land documents cannot be obtained. Thus a dilemma arises as BAAC on one hand provides an important aid to farmers, and at the same time in effect counteracts the conservation policies of RFD.”²⁶

Lastly on PBT-tax²⁷: Only few of the villagers have heard of this and none we spoke to paid it. Mr. Janesak (RFD representative) said that it would never happen that people in the area obtain ownership of their land.

²⁴ The villages in the area are grouped and numbered, but Mae Chon and Tha Khi Lek has not their own numbers, they belong to Village no. 9.

²⁵ See the conditions of the BAAC Group Liability Loan in appendix no. 14.

²⁶ Traynor et al., 2002, p. 57.

²⁷ “The Thai government officially established villages in forests and collected land taxes and issued PBT5 receipt. In 1955 villagers could apply for SK1 document issued by the government, which was perceived by villagers as a land ownership document although it in reality was not. Therefore villagers thought the government encouraged them to clear forest (Ganjanapan, 2000: 39)” (Traynor et al., 2002, p. 47)

SK1 stands for Sor Kor Neung, a claim certificate from DL, MOI (Basic Information, 2003, p. 28)

Partial conclusion

The following table lists the main conclusions from the social team:

Table 5: Main conclusions

Subject	Tha Khi Lek	Mae Chon
Religion	Buddhists Christians	Buddhists
Internal relations	Kinship Headman	Kinship Various leaders
Middleman	Mr. Khaeg, 'contract farming' Paternal-like	Mr. Khaeg, 'contract farming'
External relations	Few NGOs TAO absent	Many NGOs TAO absent
Farming	Subsistence, 'contract farming'	Subsistence, 'contract farming'
Other income sources		
Cash	Wage labour	Wage labour
Non-cash	Collection of NTFPs Weaving	Tourism Collection of NTFPs Weaving
ID	Thai citizenship	Green cards
Tenure	SPK	None
Credit	Middleman Relatives	Middleman Relatives
PBT	None have heard of it, none pay it	None have heard of it, none pay it

Discussion

Methods

To divide into disciplinary groups was good because we could use our disciplines efficiently and triangulate the data. We looked at the problem from different disciplinary angles. The width assures that we can focus on many different aspect of the problem. More can be achieved in short time. Each student gets an insight into the other disciplines way of work.

Some difficulties were to maintain communication between all the members in the interdisciplinary group. The exchange of information was difficult to achieve. It is time consuming and requires lots of patience and an open mind. Sometimes it is difficult to integrate the data from the different groups. Because of the disciplines present, some data relevant to the research question may stay unknown.

It was good we dared to jump into doing a community meeting. The sessions went well in both villages, and the advantages we experienced could be listed as follows; a fine opportunity to establish contacts with the villagers, to create trust, to engage the children (which can promote trust), it is fun, it is cheap and low-tech, it is creative and inventive (which can be of importance in the process of discovering the villagers way of thinking), chance to have informative informal conversation in a cosy atmosphere, the villagers perceptions is in focus. Of disadvantages the following can be stated; risk of un-precise or wrong information, biases according to who made the map and who did not. E.g. in Tha Khi Lek as many women and children as men participated, while in Mae Chon the majority were men. It can also be difficult to control the process, so it is important to be well prepared and to explain explicitly what information you wish to obtain, so language and perception barriers is an issue. There is no guaranties following this method, we were lucky to meet open and friendly people willing to participate and share their knowledge with us, which will probably not always be the case. The attitude and behaviour of the facilitators can probably be of crucial importance.

The methods we chose were relevant, but more experience in the conductance would have been desirable. We learned along the way and changed our investigation accordingly. For instance we found out that a question is not simply a question, you have to ask about the same thing many times in different words, and then maybe you'll get the answer to the original question.

Preparation is everything. The more prepared you are and the better you are at what you do the more flexible you are able to be. Since you can only be as prepared as you know you should be, experience is a key word.



Working through an interpreter and with counterparts and respondents from another part of the world with different language, culture and perceptions proved to be very difficult. These barriers can be overcome with communication skills and consideration to other people.

A framework is a useful mean of communication. It can be used as a starting point for a common way of thinking. Though, it is important to remember this is only a model of the reality and does not describe the reality as such.

The interdisciplinary approach is better for handling complex problems than the single discipline approach.

Discussion of results

The object of this report was to find whether or not a difference could be detected in livelihood strategies between the two villages *as a consequence of one village being enclosed by a national park and one outside it, and thereby maybe one being more prone to land scarcity than the other.*

The differences found are:

- The differences in land documentation; in Tha Khi Lek some people have SPK-documents, whereas people in Mae Chon does not. This could be attributed to the fact that Mae Chon is in a C-zone or to the fact that it is enclosed on all sides by the national park or both.
- The differences in forest use; In Tha Khi Lek the forest is used for the villagers' own consumption, whereas in Mae Chon the forest is used for illegal logging and elephant "storage" as well. The reason for this could be that the villagers in Mae Chon have less sense of security to their forest and do not expect to keep on having it, and so have decided to bring out some of the valuables.
- The differences on security perception; In Tha Khi Lek they generally have a sense of land ownership security, whereas in Mae Chon they constantly worry about eviction.
- The differences in acquiring the land; In Tha Khi Lek they have been given the area and moved there *from* Mae Chon, whereas in Mae Chon they have moved there illegally from Myanmar afterwards.
- The differences in agricultural practices; In Tha Khi Lek they have terraces and an irrigation system, in Mae Chon they do not have large investments in fields. This difference can also be due to lack of citizenship and land documents. They have invested more in animal husbandry. This could indicate that the villagers in Mae Chon keep their investments to more mobile assets. A more likely reason is the help from the NGO who focus on livestock.
- The differences in ID-card ownership; In Tha Khi Lek they have Thai citizenship, whereas in Mae Chon they have a green card, white card or nothing. This could be due to the location, but probably stems from the question of ethnicity instead.
- The differences in income generating activities; In Tha Khi Lek they have wage work, selling of cash crops, production of minor items, whereas in Mae Chon they have wage work, selling of cash crops and NTFP, production of minor items, logging and tourism. This may be because of the vicinity of the national park, (the tourists come fortrekking in the park), but it may also be because of the ethnicity or the dependence on local power relations.
- The difference in the assistance from NGOs; In Tha Khi Lek there is little or none and in Mae Chon there is some help. It's difficult, however, for us to define the reasons for this. It can be because of ethnicity.

We can be biased because we lived in TKL and spent at least 2/3 of our time there.

Conclusion/Perspectives

Although some of our results indicate that the differences found can be due to the vicinity of the national park, we cannot be sure. The listed differences can also be due to other factors such as ID/citizenship, topography, resource access such as water, ethnicity, power relations, and politics.

However the more destructive use of the forest and the lower investments in agriculture in Mae Chon can be due to lack of security and belongingness, which is due to the lack of land documents, which in turn can be because of the village location in/nearby the national park.

Due to many factors, we cannot claim to have data that are valid and reliable. This means that we can, at most, reach vague conclusions, but they can still be used as indications of trends and relationships among the different factors examined. Our fieldwork can to some degree be used as a pilot study for further investigations. Some suggestions to new investigations could be;

Why doesn't the villagers of Mae Chon have SPK?

Who profits from the logging in Mae Chon?

Will buffer zone management alleviate some of the problems?

Are the problems in reality dependent on ethnicity?

What are the power relations in the area?

How does or could the locals organise?

Is there basis for social movements to evolve and influence the process of development?

What is the importance of Thai citizenship and ethnicity in relation to access to land?

It seems to us like if the following statements are of high relevance in relation to the issues of livelihood strategies in Tha Khi Lek and Mae Chon:

“The main problem is uncertainty in food security due to official status such as citizenship and land status.” Answer given by Mr. Nikom to the question of what are the problems of the villagers in remote highland areas.

”Deprived of the possibility of loans and land security, the “squatters” and other farmers living close to the forests are caught in what is in reality a political power struggle. (Kaosa-ard et al., 1995)

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Appendix 1: Crop calendars and information obtained during community meetings in Tha Khi Lek and Mae Chon.

Crop calendar from Ban Tha Khi Lek

Crop	J	F	M	A	M	J	J	A	S	O	N	D
Maize			→							→		
Red bean	→											
Lap-lap bean			→									
Soybean			→									
Rice										→		
Mango										→		
Longan										→		

Wage labour: In Feb and March and August and Sept.

Maize and red beans or lap-lap beans intercropped. This is a rain fed system. Insecticide sprayed after harvest of maize and before the planting of beans.

Rice and soybeans are intercropped. Irrigated system. Mango and/or longan intercropped with maize and beans.

Maize is grown as a cash crop. Sold as animal feed.

Longan was introduced 2 years ago and has not yet borne fruit. This fruit give more income than mango but it's more expensive to buy the seeds and the trees demand more work, than do mango trees.

Harvesting: The villagers use co-workers (other villages). This is exchange of labour, not money. This co-working is also done when preparing the soil and planting. When all work is done they celebrate by slaughtering chickens and arrange a fest.

Animals: Chickens and pigs. No cattle because of lack of money to buy them for. Sell some animals. Use some for ceremonies. Feed for pigs: rice husks, marrow from banana tree, hogplums and green papaya. Chicken feed: maize, rice, left-overs, scavenging. Both pigs and chickens fed twice a day.

The beans are grown for re-fertilising the fields. Sometimes left on the field as fertiliser.

No fallow due to lack of land and extra work from re-preparing the land.

Knowledge comes from a locally influential person who is investor and middleman and he is a link between the village and the city. This man decides what will be grown and loan money to the villagers so that they can buy seeds, herbicides and insecticides. The harvest is sold to this man and subtraction for the money the villagers has borrowed is made.

The price on agricultural products depends on the amount of the product. If many villages grow the same crop this gives lower price.

Rice has to be bought at the end of each year by most villagers. This is because of lack of water and fertiliser.

Crop calendar from Ban Mae Chon

Crop	J	F	M	A	M	J	J	A	S	O	N	D
Maize	→											
Black bean	→											
Red bean	→											
Lap-lap bean	→											
Groundnut	→											
Upland rice												→
Sticky rice								→				
Mango				→	→							
Longan				→	→							
Rattan	→											
Banana						→	→	→				

Mango and longan intercropped with maize and rice.

Banana trees planted 1,5 years before first harvest. Planted in May and harvested in July.

Rattan has to grow 5-8 years before they can be harvested. Sometimes intercropped with maize, sometimes grown on their own field.

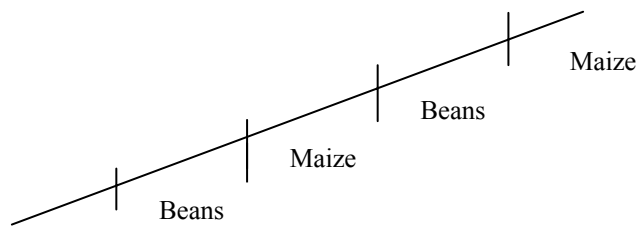
After harvest maize stalks are left on the ground as fertilisers. After harvest of beans and groundnut the whole plant is taken away.

Herbicides are being used 4-5 days before planting beans and maize.

All farming is rain fed systems. Rains from June to December. No irrigation systems. There are no paddy fields in the village area.

In April and May they cut weed before planting upland rice.

Maize and beans intercropped in sections on the hillsides:



There are no flat fields in the village. All agricultural production is on slopes. When rice is harvested the land is left fallow till next rice planting season. They cannot grow enough rice. Many villagers do wage labour on farms outside the village.

Agricultural problems: Lack of land, lack of land documents, lack of water (April-May), no road, no electricity. The road is wanted to increase access to the market.

The villagers are co-working with land preparation, planting and harvesting.

The soil on the slopes is stony and when the rains come there is erosion.

They cannot clear more land, although some wants to, since they are in the National Park, and land clearing is therefor illegal. As long as they only use the land they already use it's okay. There is no conflict with officials.

Maize, groundnut, rattan, red-, black- and lap-lap beans are cash crops. Upland rice is grown for home consumption. Mango and longan is also grown mainly for home consumption, if there is more it's sold.

Government organisation helped with the present agricultural system. This organisation is a part of the Agricultural Ministry.

Market: Sell to middlemen. He orders what to grow and comes from Chiang Dao and buys the products. Villagers get loans from middlemen to buy inputs. Pays back the loans with subtractions from sold products.

Livestock: Pigs and chickens. Mainly for home consumption (first) and ceremonies (second). The villagers eat meat every day. This meat is bough from outside the village, from middlemen.

An alternative education system from TAO showed the villagers how to feed pigs. They have no problems with diseases in the animals.

They conserve water in a tank for the dry season. There is pipelines leading to the tank that collects rainwater.

The land is being used continuously due to land scarcity. They leave the land fallow in the dry season (Feb-May) due to lack of water.

Prices this year for: Maize	3 bat/kg
Red beans	5 bat/kg
Black beans	8 bat/kg
Lap-lap beans	9 bat/kg
Groundnut	120 bat/tang (1 tang app. 12 kg)
Longan	20 bat/kg
Mango	2 bat/kg
Rattan	3 stems give 5 bat
Bunch of bananas	1,50 bat

Every three month they can harvest one bunch of bananas. This year there has been less rain than usual.

Appendix 2: Topics asked during interviews with farmers

Farming systems

Type of crops

Crop variety

Number of rai (owned, rented used, cultivated?)

How did you get your land?

Type of land

Land tenure (documents and if yes what kind?)

Type of soil

Pest management

Labour

Water source

Fertiliser

Yield in kg/rai

Prices of yield

Purpose of crops

Market

Yield differences the last five years

Knowledge source

Land use period

Land expansion

Agricultural problems

Livestock, what kind of animals

How many

How keep them

How feed them

What purpose do they have

Income from animals

Problems

Appendix 3: Interviews of farmers in Ban Tha Khi Lek and Ban Mae Chon

Ban Tha Khi Lek

Date: 20/1-2003

Household no: 47

Farming system: Upland farming and paddy fields.

Type of crops: Maize, red-, black-, lap-lap beans, rice, soybean.

Crop variety: Maize- red-, black-, lap-lap beans, and paddy rice-soybean.

No of rai: 6: 3 rai paddy rice-soybean, 3 rai maize- red-, black-, lap-lap beans.

How did you get the land? Inherit.

Type of land: Lowland, some upland.

Land tenure: SPK.

Type of soil: Lack of nutrients because it has been cultivated during a long time.

Pest management: Herbicide Gamaxon on maize. Round-Up is used before planting if weed. Gamaxon used twice a year.

Labour: Co-working with other families. No hiring of labour from outside, but they can hire hand-tractor.

Water source: Rain fed maize, irrigated paddy field.

Fertiliser: Non.

Yield: Maize: 5000 bat/rai, red beans: 80 kg/rai, black beans: 40 kg/rai, lap-lap beans: 80 kg/rai.

Purpose of crops: Rice: home consumption, maize: sale, beans: mostly sale, some home consumption.

Market: Middleman provides knowledge and inputs and order products. After harvest middleman comes and by crop. Subtraction for inputs on the price.

Yield differences the last 5 years: Increasing due to the use of more herbicides.

Knowledge source: Generation to generation.

Land use period: Continuously for many years.

Land expansion: Don't want it because of the risk for deforestation.

Agricultural problems: Lack of land, lack of documents, low price on products, weed, low quality on products.

Livestock, pigs:

No of animals: 4

Where: Tied under house, sometimes scavenging.

Feeding: Twice a day, chopped banana stem, papaya and rice husks. The feed contains a lot of water so they don't give them extra water.

Purpose: Mainly ceremonial use. Sometimes sale.

Income: App. 2000 bat/year.

Problems: Parasites. Gives anthelmintics twice a month. Also some nutritional imbalances.

Livestock, chickens:

No of animals: 15-20

Where: Scavenging.

Feeding: Twice a day, rice and maize.

Purpose: Mainly ceremonial.

Income: App. 500 bat/year.

Problems: Predators, such as birds of pray and mongoose.

Date: 20/1-2003

Household no: 46

Farming system: Paddy fields and upland farming.

Type of crops: Upland rice, maize, red beans, mango, longan, paddy rice and soybeans.

Crop variety: Paddy rice- soybeans, upland rice-fallow, maize- red beans, mango and longan intercropped with the maize.

No of rai: 21

How did you get the land? Government gave land to the village. Villagers decided who would get what land.

Type of land: Lowland and upland.

Land tenure: SPK.

Type of soil: Clay. Good nutritious value.

Pest management: Gamaxon twice a year on maize, in August and October. Once a year, when paddy rice is one month old. If much weed, use Round-Up on maize.

Labour: Only from household, except for harvest, then co-working.

Water source: Paddy fields irrigated. The rest rain fed.

Fertiliser: Make their own from pig and chicken manure, mixed with crop residues and leaves. Apply once a year in June on paddy fields, when rice is one month old. Upland farming, that is, on maize and upland rice, twice a year, January and March. Also use fertiliser on mango and longan before blooming. Fertiliser applied on crops shortly after up coming.

Yield: 520 kg rice/year/rai.

Purpose of crops: Rice and mango for home consumption, maize and red beans for sale, since no fruits from longan yet, price unknown.

Market: Middleman orders, provide inputs. Subtraction of inputs from price.

Yield differences the last 5 years: Increasing due to less vermin (rats and mice). There is less vermin because they chase them away.

Knowledge source: Generation to generation. Longan: from farmers in Chiang Dao.

Land use period: Continuously for 50 years. Upland rice fields only used half of the year, but still every year.

Land expansion: No need.

Agricultural problems: Lack of water.

Livestock, pigs:

No of animals: 5

Where: Fenced when crops in the field, otherwise scavenging.

Feeding: Twice a day, chopped banana stems, rice husks, boiled leaves.

Purpose: Ceremonies. Some for home consumption, some for sale.

Income: Small pig (app. 50 cm long) 1000 bat, if big (app. 80cm long) 3000 bat.

Problems: Parasites. Give medicine in liquid or powder form only when the animals are apparently sick. Give a shot with antibiotics when pig has diarrhoea. Give it themselves. Buys it in Chiang Dao. Only give it when the animal is apparently sick.

Livestock, chickens:

No of animals: 10

Where: Fenced at night-time, scavenging at daytime.

Feeding: Twice a day, rice.

Purpose: Home consumption.

Income: Non.

Problems: Predators, such as wild cats, birds of prey, and diarrhoea. Give them a powder for this, which they buy in Chiang Dao.

Livestock history: 8 years ago some villagers had buffaloes for traction. 3-4 years ago they sell, because of lack of grazing areas due to agricultural expansion. The prices on buffaloes were reasonable 8 years ago. Now more expensive.

Crop history: Started to grow maize 30 years ago because of increase in price of product. Red beans introduced by Lisu and Aka.

Date: 21/1-2003

Household no: 44 (Lahu)

Farming system: Upland farming.

Type of crops: Maize, red-, black-, lap-lap beans and groundnut. Upland rice this year and the last two years, but not next year since it costs too much.

Crop variety: Maize- red-, black-, lap-lap beans, groundnut. Upland rice-fallow.

No of rai: 30

How did you get the land? Inherit.

Type of land: Upland.

Land tenure: No documents.

Type of soil: Red and black soil, not good quality, gives low yield.

Pest management: Herbicides on maize, insecticide on red beans, nothing on groundnut. He cannot recall what brands.

Labour: Hire people from Ban Pang Daeng Nok at planting, soil preparing. Only family labour at harvest. Sometimes hire people also for harvesting if they don't have time to do it themselves.

Water source: Rain fed.

Fertiliser: Non.

Yield: Maize: 1500 bat/rai à 3,50 bat/kg, red beans: 7000-8000 bat/rai à 7 bat/kg, ground nut 2000 bat/rai à 100 bat/tang (1 tang app. 12 kg).

Purpose of crops: Maize, red beans, lap-lap beans, groundnut cash crops. They buy rice for home consumption.

Market: Different middlemen. Only borrows money from maize middleman. Buy the inputs himself. No ordering.

Yield differences the last 5 years: Decreasing due to lack of rain.

Knowledge source: Generation to generation.

Land use period: Continuously for 2-3 years.

Land expansion: No need.

Agricultural problems: Decreasing yields, low quality soil, lack of land documents, and conflicts with RFD. Sometimes RFD warns him, because it is in conservation forest.

Livestock, pigs:

No of animals: 2

Where: Always in sty, otherwise they would destroy crops.

Feeding: Twice a day, chopped banana stem and papaya.

Purpose: Family consumption, some sale.

Income: Practically non.

Problems: Non.

Livestock, chickens:

No of animals: App. 20

Where: Scavenging daytime. Locked up in a small hen-house at night. If they don't do this, they believe it to be a sin to eat the chickens.

Feeding: Twice a day, rice.

Purpose: Family consumption.

Income: Non.

Problems: Birds of prey.

Date: 22/1-2003

Household no: 115/1

Farming system: Upland farming.

Type of crops: Maize, red beans and mango.

Crop variety: Maize- red beans, mango intercropped.

No of rai: 3

How did you get the land? Inherit.

Type of land: Upland.

Land tenure: No documents.

Type of soil: Good and fertile.

Pest management: Gamaxon twice a year, when maize is one month old and one month before harvest.

Labour: Only the farmer.

Water source: Rain fed.

Fertiliser: Non.

Yield: Maize: 6000 bat/3 rai à 3 bat/kg (8000 bat/3 rai à 3 bat/kg last year), red beans: 5000 bat/3 rai à 5 bat/kg last year (This years red beans has not been sold yet).

Purpose of crops: Maize and red beans cash crops, mango for home consumption, buys rice.

Market: Middleman orders, lend money for inputs, subtraction from price for inputs.

Yield differences the last 5 years: Decreased.

Knowledge source: Generation to generation.

Land use period: Continuously used for 30 years.

Land expansion: Would want to, but can't due to the National Park.

Agricultural problems: Lack of money to buy fertiliser. He works as wage labourer during harvest time for other farmers, so difficulties with his own harvesting.

Livestock, ducks:

No of animals: 3

Where: Scavenging day-time, make a bed beside the house at night.

Feeding: Non.

Purpose: Pets.

Income: Non.

Problems: Non.

Livestock, chickens:

No of animals: 10

Where: Scavenging day-time, bed at night.

Feeding: Non.

Purpose: Family consumption.

Income: Non.

Problems: Non.

Date: 22/1-2003

Household no: 100

Farming system: Upland farming.

Type of crops: Upland rice, maize, red-, black beans, groundnut, mango and longan.

Crop variety: Upland rice-fallow, maize- red-, black beans, groundnut, mango and longan intercropped.

No of rai: 12: 9 maize and beans, 3 upland rice.

How did you get the land? From the government. He cleared the land himself.

Type of land: Upland.

Land tenure: SPK on all.

Type of soil: The soil for the 9 rai with maize is mostly of good quality. The 3 rai with upland rice is of bad quality, that is, lots of stones. This land gives low quality rice.

Pest management: Gamaxon before planting beans. Round-Up before planting maize.

Nothing on rice.

Labour: Mostly from family (3 pers.). Co-working if needed.

Water source: Rain fed.

Fertiliser: Non.

Yield: Maize: 20 000 bat/9 rai à 3 bat/kg, red beans: 200 bat/9 rai à 6 bat/kg, black beans: 200 bat/9 rai à 7 bat/kg.

Purpose of crops: Maize, red-, black beans, groundnut, mango and longan cash crops. The rice he grows is not enough and of low quality, so he also has to buy rice.

Market: Maize, red-, black beans and groundnut are sold to middleman. Mango and longan he sells to anyone who wants to buy. Most of his fruit trees don't bear fruit yet, but some do.

Yield differences the last 5 years: Same.

Knowledge source: Learned by himself.

Land use period: Continuously for 50 years.

Land expansion: No need.

Agricultural problems: Paloung cuts down big trees and destroy the forest upstream, which effects the stream so it dries up.

Livestock, pigs:

No of animals: 3

Where: Tied under the house. Sometimes scavenging.

Feeding: Twice a day, chopped banana stem, leaves from **bai saa????**, rice husks.

Purpose: To get more pigs (as an investment).

Income: App. 1000 bat/year.

Problems: Parasites. He doesn't do anything about this.

Livestock, chickens:

No of animals: App. 7

Where: Scavenging.

Feeding: Twice a day, rise husks.

Purpose: Food.

Income: Non.

Problems: Diarrhoea that leads to death. Not contagious, not treated. Birds of prey another problem.

Ban Mae Chon

Date: 25/1-2003

Household no: (2)

Farming system: Upland farming

Type of crops: Upland rice, maize, lap-lap beans, red beans and black beans

Crop variety: Upland rice-fallow, maize-lap-lap and red beans, maize-black beans

No of rai: 30, plot 1: 10 upland rice, plot 2: 10 maize-lap-lap and red beans and plot 3: 10 maize-black beans

How did you get the land? Local Thais immigrated to the city and they took over the land. The Thais had cultivated the land too.

Type of land: Upland

Land tenure: No documents

Type of soil: In plot 1: black soil, good quality, in plot 2: soil and sand mixed with stones and plot 3: black soil good quality

Pest management: Plot 1: Allmix 1 a year when rice is about 30 cm high. 20 litres/year. Plot 2 and 3: 1 a year 4 days before growing beans. 15 litres/year in total on plot 2 and 3. Gamaxon is bought in Chiang Dao.

Labour: Co-working with other villagers. No hiring of labour. 30 people for 10 rai of rice harvesting

Water source: Mainly rely on rain. Plot one is close to small stream that is dry in winter, while plot 2 and 3 are close to creek where there is water all year round, and they use buckets to get the water out on the field.

Fertiliser: Non

Yield: Rice: 200 tang/10 rai (1 tang app. 15 kg), maize: 30 000 bat/20 rai a 3,59 bat/kg

Purpose of crops: Rice: family consumption, maize, red and black beans: cash crop

Market: Middleman orders, but do not help with loans.

Yield differences the last 5 years: Steady

Knowledge source: Middleman taught them some 20 years ago

Land use period: Continuously for 20 years

Land expansion: Don't want to because they are afraid of the authority

Agricultural problems: Water, since they are depending on rain, lack of documents, they want them to feel secure, they don't know their rights and the laws concerning land

Livestock, pigs:

No of animals: 2

Where: In a sty all the time

Feeding: Twice a day, papaya, rice husks, and chopped banana stem mixed together

Purpose: Must have pigs for wedding ceremonies for their children

Income: Non

Problems: Vaccination by veterinarian once a year. No charge, arranged by animal husbandry organisation in Chiang Dao. They don't know the name.

Livestock, chickens:

No of animals: Around 50

Where: Scavenging day-time, confined in chicken house during the night

Feeding: Twice a day, rice

Purpose: Home consumption, sacrifice on ceremonies to spirits

Income: Non

Problems: No problems. Veterinarian give liquid drops in nose of hens and in eyes of chickens against New Castle. No charge

Date: 25/1-2003

Household no: 44 (3)

Farming system: Upland farming

Type of crops: Rice, mango, longan, banana, papaya, maize, red beans, black beans, lap-lap beans and ground-nut

Crop variety: Rice-fallow, maize-red-, black-, lap-lap beans and ground-nut. Mango, longan, papaya and banana is intercropped with the other crops

No of rai: 12, plot 1: 8 rai maize-red-, black-, lap-lap beans, ground-nut, plot 2, 4 rai, is divided into two parts: Half with rice-fallow and half with maize-red-, black-, lap-lap beans, ground-nut.

How did you get the land? Pioneer, cleared the land himself more than 10 years ago

Type of land: Upland

Land tenure: No documents

Type of soil: Plot 1: black soil, quite good quality. Plot 2: brown, also good quality

Pest management: Herbicide (He can't remember brand, thinks it is Gamaxon) twice a year on maize when one month old and one month before harvest. Allmix once a year on rice when it's one month old

Labour: Co-working, only people from the village

Water source: Rain fed

Fertiliser: Non, except for in his house garden, where he uses manure from pigs and grow vegetables

Yield: 20 000 bat/8 rai a 3,50 bat/kg for maize last harvest, rice: 12 tang this year.

One year ago 140-150 tangs of rice, due to long usage (5 years). He will grow maize and beans on his former rice field to improve soil quality. Some of the maize area will become rice fields. Lap-lap beans preserve soil quality better than red- and black beans.

Purpose of crops: Rice: home consumption, maize, black-, red-, lap-lap beans and ground-nut: cash crop

Market: Middleman order, provide loan for inputs and buy products. They have to buy the inputs themselves.

Yield differences the last 5 years: Steady

Knowledge source: Generation to generation

Land use period: Continuously for more than 10 years

Land expansion: Don't need more land

Agricultural problems: Red-, black-, lap-lap beans and ground-nut eaten by insects. He is afraid that insecticides will damage the crop. The insects eat the roots. Lack of water source, lack of land documents. Wants them for security, so he could invest money and grow what he wants. Low quality soil.

Livestock, pigs:

No of animals: 4

Where: In sty all times

Feeding: Twice a day, maize, black beans, ground-nut, chopped banana stem, papaya; all is grounded and mixed

Purpose: Selling is main reason, if they have more home consumption

Income: Normally 20 000-25 000 bat/year, but this year all pigs went to his sons wedding, so zero income.

Problems: No problems, veterinarian vaccinates pigs once a year. His parental stock of pigs is imported. The mother is from Taiwan and the father from Burma. He demonstrates how to feed pigs for tourists and other villagers.

Livestock, chickens:

No of animals: 30

Where: Scavenging daytime, in a cage at night.

Feeding: Twice a day, rice

Purpose: Home consumption

Income: Non

Problems: No problems. Vaccination of chickens once a year

Date: 25/1-2003

Household no: (18)

Farming system: Upland farming

Type of crops: Maize, mango, black-, red-, lap-lap beans and ground-nut

Crop variety: Maize-black-, red-, lap-lap beans and ground-nut. Mango intercropped all the time

No of rai: 3, all in one plot

How did you get the land? Pioneer, cleared the land himself

Type of land: Upland

Land tenure: No documents

Type of soil: Mixed quality

Pest management: Herbicide thinks it is Gamaxon, twice a year, once before planting maize and once before planting beans

Labour: Co-working with other villagers

Water source: Rain and from a small stream in May. Rainy season June- Dec.

Fertiliser: Non

Yield: Maize: 3000 bat/3 rai a 3,50 bat/kg, black beans: 1000 bat/3 rai a 7 bat/kg, red beans: 1000 bat/3 rai a 6 bat/kg, lap-lap beans: 1000 bat/3 rai a ?, ground-nut: 1000 bat/ 3 rai a 105 bat/tang

Purpose of crops: Mango home consumption. Maize, black-, red-, lap-lap beans and ground-nut: cash crops

Market: Middleman buys. No ordering. He works as a labourer so he doesn't have to take loans. He has to buy rice from market in Chiang Dao. Since he has been working as a labourer for many years he doesn't have time to cultivate more land.

Yield differences the last 5 years: Seasonally fluctuations. Sometimes seeds of bad quality

Knowledge source: Generation to generation

Land use period: Continuously the last 14 years

Land expansion: If they could get land documents he would have liked to expand so he could grow enough food. They are seven in the household and 3 rai is not enough.

Agricultural problems: Lack of land. Government doesn't allow expansion. In the village they have had a community meeting where they decided they would not expand. Lack of documents is also a problem. They have only white cards, so they have no nationality. These expires after 4-5 years and they have to go to District Office to get a new one. Bad road and with that access to market is another problem.

Livestock, pigs:

No of animals: 2

Where: Sty all the time

Feeding: Twice a day, rice husks, papaya, chopped banana stem

Purpose: Mainly for sale, if more it's for home consumption

Income: Since they started to have their own pigs last year, have they yet no income from pigs.

Problems: Non. If animals well no reason to vaccinate.

Livestock, chickens:

No of animals: Around 10

Where: Scavenging daytime, cage at night

Feeding: Twice a day, rice

Purpose: Home consumption

Income: Non

Problems: Young chickens 1-2 weeks old get diarrhoea and die from this. No vaccination. When the veterinary is there the animals are well and therefore no need for vaccination

Date: 26/1-2003

Household no: (6)

Farming system: Upland farming.

Type of crops: Upland rice, maize, red-, black-, lap-lap beans and groundnut.

Crop variety: Upland rice-fallow, maize- red-, black-, lap-lap beans, ground-nut.

No of rai: 15: 10 Upland rice-fallow, 5 maize- red-, black-, lap-lap beans, groundnut.

How did you get the land? Inherit.

Type of land: Upland.

Land tenure: No documents.

Type of soil: Good soil on rice fields, on the maize field some soil is good and some not so good

Pest management: Herbicide, Allmix, once a year on maize, when maize is four month old (in October, it's planted in June) once before growing red-, black-, lap-lpa beans and groundnut. Nothing on rice.

Labour: Co-working, only people from the village.

Water source: Rain fed, a little from a small stream on the rice field.

Fertiliser: Leaves on maize, when maize is drying (When they start to harvest maize).

Yield: Normal rice yield is 200 tangs (each tang app. 15 kg/20 litres). This year he got about 100 tangs due to drought. So this year he had to buy rice. Maize: 100 packages of 50 kg each this year. He couldn't sell his red beans last year due to vermin (mice had eaten on the crop). Black beans: 15 tangs. Groundnut: 15 tangs last year, 30 tangs this year due to more land this year for this crop. He extended his groundnut area since it gives a good price: 120 bat/tang. He started growing lap-lap beans this year so he hasn't got any yield yet.

Purpose of crops: Rice, lap-lap and some groundnut are for home consumption.

Maize, red-, black beans and groundnut cash crops.

Market: Middleman, he gives loans for inputs or for buying rice.

Yield differences the last 5 years: Decreased due to seasonal fluctuations, bad quality seeds.

Knowledge source: Generation to generation.

Land use period: Continuously for 15 years.

Land expansion: Don't want to expand due to good soil quality and because it's illegal, he doesn't want any trouble.

Agricultural problems: They don't have ID cards (No Thai-citizenship). Because of this they can't get ownership over land. They are worried about being kicked out. No other problems.

Livestock, pigs:

No of animals: 5

Where: Always in sty.

Feeding: Twice a day, chopped banana stem, papaya, rice husks, all mixed together.

Purpose: Wedding ceremonies main reason. Some family consumption.

Income: Non.

Problems: Parasites. Injection of liquid in colon three times a year. This doesn't help. They also give powder twice a year.

Livestock, chickens:

No of animals: 6 hens, 50 chickens.

Where: Scavenging day-time, in a cage at night.

Feeding: Twice a day, rice.

Purpose: Home consumption.

Income: Non.

Problems: Some insect eats their eyes so that they get blind, this is quite common.

Date: 26/1-2003

Household no: 49 (7)

Farming system: Upland farming.

Type of crops: Upland rice, maize, red-, black-, lap-lap beans and groundnut.

Crop variety: Upland rice-fallow, maize- red-, black beans (beans at the same time but not at the same place), maize-red-, black-, lap-lap beans and groundnut.

No of rai: 27: Plot 1: 20 rai maize-red-, black-, lap-lap beans and groundnut, plot 2: 5 rai maize- red-, black beans, plot 3: 2 rai upland rice-fallow.

How did you get the land? Local Thai emigrated to Chiang Dao, so Paloung took over.

Type of land: Upland.

Land tenure: No documents. 4 years ago the official state was here and looked at his land and said that he might get documents.

Type of soil: Plot 1: good quality soil, plot 2: red soil, good quality, plot 3: red and black soil, good quality.

Pest management: On plot 1: Gamaxon once a year before growing red beans, 1 litre/2 rai if not too high weeds (under 25 cm.). Plot 2: Gamaxon once a year before growing beans, 1 litre/2 rai. Plot 3: Non

Labour: Co-working. No machines.

Water source: Rain fed, they have no pipelines so they can't use water from small stream, and there is no water tank. They are collecting money to buy pipelines.

Fertiliser: Non. Leave crop residues from red beans as fertiliser. Nothing for rice. On the same plot of land grows first rice-fallow-maize-beans-fallow rice, that is, shift crops.

Yield: Maize: 100 packages of 50 kg each from 20 rai last year. 3 bat/kg gave 15 000 bat. Since it was raining too much, there were less black beans than usual, 10 tangs each of 15 kg. This was not sold. Red beans: 30 tangs, not sold yet. Lap-lap beans: 10 tangs, not sold yet. Groundnut: 2 tangs, not sold yet. (1 tang is a 20 x 20 x 40 cm box)

Purpose of crops: Rice is for home consumption. Maize, groundnut, red-, black-, and lap-lap beans cash crops.

Market: One middleman buys maize, red-, black-, and lap-lap beans, another middleman buys groundnut. The middlemen provide money for inputs. No orders, they decide what to grow themselves.

Yield differences the last 5 years: Same.

Knowledge source: Generation to generation.

Land use period: Continuously for 15 years.

Land expansion: No need.

Agricultural problems: No problems at all. Problems with not having land documents. He only have white cards, if he could get ID card, he can get land documents on the he uses. There is an agreement between state and people; they have to pay taxes if they have documents. He would use the same amount of inputs even if they owned the land. He could afford the taxes. 10 bat/rai/year.

Livestock, pigs:

No of animals: 4

Where: Always in sty.

Feeding: Twice a day, papaya, rice, rice husks.

Purpose: Wedding ceremonies.

Income: Non.

Problems: They are following a vaccination program that is free of charge (6 bat/injection). A veterinarian comes once a year to give the pigs a shot.

Livestock, chickens:

No of animals: 50

Where: Scavenging day-time, night-time they are in a cage if the household has time to put them there, otherwise scavenging even during the night.

Feeding: Twice a day, papaya, rice, rice husks.

Purpose: Home consumption.

Income: Non.

Problems: Insects eats the eyes of the chickens so they go blind. Chickens also get injection once a year from veterinarian.

Appendix 4: Soil samples

Here follows a table on the soil samples taken in Ban Mae Chon and Ban Tha Khi Lek. First comes the description of each item, followed by the date the points were taken and then the GPS points.

The slope of the field, what is grown there today, what has been grown, herbicide use, fertiliser use, water source, yield, land use period and special notes follow.

Lastly there are the levels of ammonium (?), nitrate, phosphor and potassium and the pH in the soil.

The question mark after ammonium indicates confusion whether we measured this or not. Question marks indicate that the data is unknown since we were in these fields with another farmer than the owner.

As can be seen in the table the slope varies widely between the different plots where the samples were taken. This can also affect the results, e.g. the more slope the more exposed the land is to soil erosion and with this more nutrients has leaked out.

Appendix 4: Soil samples

Number	Description	Date	Position	Easting	Northing	Degrees slope	Grows now
1	Household 47, TKL, good soil	2003-01-20	47 Q	502620	2138474	Less than 10	Red beans just harvested
2	Household 47, TKL, bad soil	2003-01-20	47 Q	502548	2138412	Less than 10	Maize just harvested
3	Household 46, TKL, good soil	2003-01-21	47 Q	502732	2138101	Less than 10	Black beans will be harvested next month
4	Household 46, TKL, "bad" soil (not bad, but his worst)	2003-01-21	47 Q	502800	2137924	Less than 10	Maize harvested in beginning of Jan
5	Household 44, TKL, good soil	2003-01-21	47 Q	502951	2137932	Less than 10	Red beans will be harvested in Feb
6	Household 44, TKL, bad soil	2003-01-21	47 Q	503033	2138089	Up to 15	Not in use, burnt 1 month ago
7	Household 115/1, TKL, good soil	2003-01-22	47 Q	502746	2138291	Less than 10	Red beans
8	Household 100, TKL, good soil	2003-01-22	47 Q	502513	2138358	Less than 10	Red beans, black beans and ground-nut planted 4-5 days ago
9	Household 100, TKL, bad soil	2003-01-22	47 Q	502455	2138273	Up to 25	Just planted red and black beans
10	Steepest cultivated field in TKL	2003-01-21	47 Q	502945	2137656	30	Beans
11	Household (2), MC, good soil	2003-01-25	47 Q	504125	2137133	Up to 20	Just harvested upland rice in Jan
12	Household (2), MC, bad soil	2003-01-25	47 Q	504267	2137468	5 to 20	Red-, black- and lap-lap beans, red and black harvested now, and lap-lap in Feb
13	Household 44 (3), MC, good soil	2003-01-25	47 Q	504244	2137674	10 to 25	Red-, black-, lap-lap beans and ground-nut harvested this month
14	Household (18), MC, bad soil	2003-01-25	47 Q	504083	2137148	30	Ground-nuts will be harvested now
15	Household (6), MC, not so good soil	2003-01-26	47 Q	504014	2137560	Less than 10	Red and black beans
16	Steepest cultivated field in MC	2003-01-25	47 Q	504083	2137169	38	Beans

Appendix 4: Soil samples

Number	Description	Grew before	Herbicides	Fertiliser
1	Household 47, TKL, good soil	Maize	Gamaxon 2 a year	Non
2	Household 47, TKL, bad soil		Round-Up 2 liters/3 rai before planting and Gamaxon 1 litre after planting	Non
3	Household 46, TKL, good soil	Maize	Gamaxon when maize one month old	Non
4	Household 46, TKL, "bad" soil (not bad, but his worst)	Fallow	Gamaxon when maize one month old	Non
5	Household 44, TKL, good soil	Maize	Insecticide used in Dec	Non
6	Household 44, TKL, bad soil	Maize 1 year ago	Gamaxon 2, 5 litres each time on 2 rai	2 bags a 50 kg each on 2 rai; Rabbit 13
7	Household 115/1, TKL, good soil	Maize	Gamaxon 2 a year on maize when 1 month old and 1 month before harvest	Non
8	Household 100, TKL, good soil	Maize harvested in Nov	Gamaxon 2 a year on maize, but didn't work, so he did it manually	Non
9	Household 100, TKL, bad soil	Red and black beans 3 month ago	Gamaxon before planting and Round-Up i month before harvest	Non
10	Steepest cultivated field in TKL	Maize	?	?
11	Household (2), MC, good soil	Fallow	Allmix	Non
12	Household (2), MC, bad soil	Maize	Gamaxon 1 a year	Non
13	Household 44 (3), MC, good soil	Maize harvested in Aug	Herbicide (He doesn't remember brand) used 2 a year	Non
14	Household (18), MC, bad soil	Maize harvested in beginning of Jan	Non	Non
15	Household (6), MC, not so good soil	Maize on some and upland rice on some of the plot	Allmix 1 a year on maize	Green manure (Leaves) on maize
16	Steepest cultivated field in MC	Maize	?	?

Appendix 4: Soil samples

Number	Description	Water source	Yield	Land use period
1	Household 47, TKL, good soil	Rain fed	6000 bath/rai a 3,40 bath/kg for maize	Continuously for many years
2	Household 47, TKL, bad soil	Rain fed	4000 bath for this plot a 3,40 bath/kg	Continuously used for many years
3	Household 46, TKL, good soil	Rain fed	Not harvested yet	Continuously used for 50 years
4	Household 46, TKL, "bad" soil (not bad, but his worst)	Rain fed	Not sold yet	Continuously used for 50 years
5	Household 44, TKL, good soil	Rain fed	Not sold yet	Continuously used for 2-3 years
6	Household 44, TKL, bad soil	Rain fed	Not sold yet	Used for one cropping period/year for 2-3 years
7	Household 115/1, TKL, good soil	Rain fed	Not sold yet	Continuously used for 30 years
8	Household 100, TKL, good soil	Rain fed	20000 bath/9 rai for maize a 3 bath/kg	Continuously used for 50 years
9	Household 100, TKL, bad soil	Rain fed	Red beans 200 bath/9 rai a 6 bath/kg and black beans 200 bath/9 rai a 7 bath/kg	Continuously used for 50 years
10	Steepest cultivated field in TKL	Rain fed	?	?
11	Household (2), MC, good soil	Rain fed	10 rai gave 200 tangs this year. 1 tang ca 15 kg. For home consumption	Continuously used for 28 years
12	Household (2), MC, bad soil	Rain fed	Maize in Nov gave 30000 bath/20 rai a 3,50 bath/kg, beans not sold yet.	Continuously used for 10 years
13	Household 44 (3), MC, good soil	Rain fed	Maize last year gave 20000 bath/ 8 rai a 3,50 bath/kg	Continuously used for 11-12 years
14	Household (18), MC, bad soil	Rain fed	5000 bath/3 rai a 3,50 bath/kg	Continuously used for 14 years
15	Household (6), MC, not so good soil	Most of the year rely on rain, but in Sep-Oct use water from water-tank if inadequate rain	100 packages a 50 kg each from 5 rai last maize harvest	Continuously used for 10 years
16	Steepest cultivated field in MC	Rain fed	?	?

Appendix 4: Soil samples

Number	Description	Special notes	Ammonium	Nitrate	Phosphor	Potassium	pH*
1	Household 47, TKL, good soil	1 sample	Low	Very low	Low	Low	7
2	Household 47, TKL, bad soil	1 sample	Low	Very low	Very high	High	8
3	Household 46, TKL, good soil	1 sample	Low	Very low	Low	High	8
4	Household 46, TKL, "bad" soil (not bad, but his worst)	1 sample	Low	Very low	Very high	High	7
5	Household 44, TKL, good soil	1 sample	Low	Very low	Low	High	8
6	Household 44, TKL, bad soil	1 sample	Low	Very low	Very low	High	8
7	Household 115/1, TKL, good soil	3 samples mixed, lots of weed, new road built through it, elephants eat crops while passing by	Low	Very low	Low	High	8
8	Household 100, TKL, good soil	5 samples mixed, some of the field flat some up to 25 degree slope. He will burn bean residues, that has been left on the field since last harvest three month ago.	Low	Very low	Low	High	8
9	Household 100, TKL, bad soil	5 samples mixed, patches of ashes everywhere, some dry maize stalks left, maize of bad quality, quite many mango and longan grows along. He grew rice 4-5 years ago, but bad harvest so he switched to maize and beans.	Low	Very low	Very high	High	8
10	Steepest cultivated field in TKL	5 samples mixed. We only know what we saw since we were not there with the owner	Very low	Very low	High	High	7
11	Household (2), MC, good soil	5 samples mixed. Rice June-Jan each year. Fallow in between	Low	Low	High	High	8
12	Household (2), MC, bad soil	5 samples mixed. Some banana-trees and some mango-trees but only a few.	Low	Very low	Low	High	8
13	Household 44 (3), MC, good soil	5 samples mixed, Quite many banana-trees at one place, some papaya and mango-trees, but only a few.	Low	Very low	Low	High	8
14	Household (18), MC, bad soil	5 samples mixed. Last maize harvest gave 7000 bathh/3 rai a 3,50 bath/kg, difference is due to no use of herbicides this year, due to lack of money	Low	Very low	Moderate	High	8
15	Household (6), MC, not so good soil	No soil samples taken, since not enough time to dry them. Some mango- and papaya-trees in field.					
16	Steepest cultivated field in MC	No soil samples taken. Don't know more since we were not there with owner					

Appendix 5: Water samples

In the table below is shown the data gathered from the water sampling. The date is when the sample was taken, then come the GPS points, followed by a description on where the sample was taken. Dissolved oxygen level, DO, mg O₂/litre, % oxygen in the water was tested as well as temperature (in the shade), pH and electric conductivity, EC. All this data was measured with a Consort Multimeter. The turbidity was assessed visually. Values concerning mg O₂/l are considered low between 0-3, normal between 3-5 and good between 5-8. What is the case when the value exceeds 8 is unknown. Maybe very good or calibration mistake? The EC values are normal between 50-250 Siemens/cm (S/cm) and high between 251-500 S/cm. The question marks in the table indicate confusion concerning the figures. In the column about % O₂ the reasons for values above 100 could be that the sample was taken in or close to violent movement of the water such as a small waterfall or to a mistake in the measuring or calibration. The question mark in the column about the EC is due to confusion of which value is the actual measured value. All samples were taken in running water.

Number	Date	Position	Easting	Northing	Description	DO, mg/l	mg O ₂ /l	% O ₂	Temperature, degrees °C	pH	EC (S/cm)	Turbidity
1	2003-01-26	47 Q	504425	2137073	Upstream MC	168	11,55	132 (?)	21,5	7,99	135	Clear
2	2003-01-26	47 Q	504098	2137263	Midstream MC	168	11	126,5 (?)	21,7	7,98	135	Clear
3	2003-01-26	47 Q	502840	2137695	Downstream MC	194	10,55	122 (?)	20,6	7,52	338 (171?)	Clear
4	2003-01-19	47 Q	503122	2137327	Upstream TKL	82	10,5	98	19,5	8,47	162	Clear
5	2003-01-19	47 Q	502843	2137706	Midstream TKL	76	6,95	90	21,4	7,76	166	Clear
6	2003-01-19	47 Q	502615	2138917	Downstream TKL	88	6,75	85	25,1	7,9	170	Clear

Appendix 6: Notes forestry

180103

NTFP walk with Boon, Kham and Muey

NTFP found:

32 Bamboo shoot, for eating, 4 species

- Mole, bush meat
- Bamboo worms, for sale and eating. 1 kg is 300 baht.
- Dipterocarpus turbinatus and D. tuberculatus, both used for roof thatching. D. turbinatus is the best of the two.
- Cymbidium (sp.), Habendia (sp.), Aemidaes (sp.), Dendrobium (sp.) and Lorilla (sp.) all orchids.
- Hog Plum, Spondias pinnata, used for fodder and food both leaves and fruit. Incredibly bitter!
- Sap for torches from D. turbinatus
- Medicine plant for “dysentery” in form of red flower
- Medicine plant used for the flu
- Large leafed plant massaged into muscles works as a muscle relaxant
- Banana stock, used for pig feed when boiled

Saw several Teak, *Tectona grandis* both as upgrowth and as large trees.

We walked along the eastern part of the boundary of the community forest. It seems that Ma Chon has a NTFP forest collection area next to Tha Khe Leks. I was informed that there has been Teak plantings.

180103

Community meeting, informal conversation

Q Who controls the NTFP collection?

A Nobody, it's every man for himself.

Q How are the trees managed?

A If a tree is cut, another must be planted, also only half of a given resource is taken.

Q Do you collect and cut for sale?

A Yes, NTFP are sold. No timber is sold, they only cut for own uses.

Q What are the major problems?

A Outsiders that come and steal trees and do no care about the sharing or the sustainability. If they are non-destructive they may cut bamboo in their forest. Also the village is too small to use all of their resources so it is difficult to control.

Q What rights do you have to the forest and land?

A We have SPK, that is usufructuary rights, these papers are held by the village elder.

Q What is the yearly income from sale and use of NTFP?

A Between 2000 and 2500 baht.

190103

Interview with Janesak Wichawutipong, director for community forestry extension and management.

Q What is the RFD policy on villages like Ma Chon and Tha Khi Lek?

A RFD will give information to the landuse department. They will in the E-zone give title deeds for farming and when the bill is agreed upon, community forests. In the C-zone, the national park division is responsible. These areas are primarily hilltops. Some E-zone will still be under RFD especially community forests. Ma Chon is probably under national park administration.

Q How do you see the future in community forestry in these two villages?

A First you have to quantify what a community forest is. The official version is forest land where forest acts such as NTFP collection and sustainable logging is permitted. It has to be both the villagers and RFD in a participatory fashion. It will be usufructuary rights only and the key point is sustainability. But also important is teamwork between RFD and the villagers. Mostly only one is active. For Mae Chon it depends on the government because of the current proposal says that all areas regardless of location can become community forests. They are currently voting, but cannot agree. In his opinion all villages should have a community forest even in the national park; these should however be more restricted.

Q How do the villagers get a land grant or a title deed? How is this made permanent?

A If they are in an A or a E-zone they can get a titled deed from the land use department for usufructuary rights only, no permanent ownership. The responsibility is supposed to shift from MOI to the ministry of natural resources. They cannot expand because of the forest.

Q Didn't RFD provide seedling for reforestation?

A RFD has no duty to provide seedlings, the villagers have to provide themselves. With the community forest rights comes the responsibility of management including providing for these. RFD will off course help.

Q What do you see as the biggest problem concerning these villages?

A Misunderstandings of participation and ownership. Community forests have to be teamwork but mostly only one part is active.

Q How do you look upon the problem of agricultural expansion?

A On an overall basis we have to make land reforms. Few people own the most land and this has to be redistributed.

Q And what happens when the villagers cut down the national park for agricultural expansion?

A I don't know. There is much confusion about responsibility because of a new structure. It will take at least six years to figure it out. The biggest problems are in fact agricultural expansion, not illegal logging. Agricultural expansion uses slash and burn techniques that are very destructive regarding biodiversity. Illegal logging on the other hand only targets a few species and does not have a big impact on the overall biodiversity.

Q Do you use buffer zone management?

- A There are five tryouts in five different locations. This is a pilot project with EU support and experiences so far are good. I expect that this will be implemented on a larger scale but the responsibility is with the ministry of the environment.
- Q How are the protected areas created, patrolled and controlled?
- A To make them we first measure the boundary with GPS. After that the land reform department or the RFD will patrol the boundary without GPS.
- Q Is there biodiversity mapping?
- A No, we haven't thought of that. It is very large areas with difficult terrain so there is only boundary control. But it is a good suggestion, perhaps we should.
- Q Who makes the community forest management plans?
- A RFD and the villagers together.

The end.

After the interview it came to be known that Ban Tha Khi Lek is currently applying for a community forest and are waiting for the law to be passed.

190103

NTFP walk in the western part of the forest in TKL with Boon, Kham, Muey, Pud, Pungsap and Pichay.

Purpose: to walk the western boundary with GPS and observe the general condition of the forest.

GPS pt. Finding on or between waypoints.

- 1 Pruning of fruit trees, leaf litter under the trees. If they are not pruned they give no fruit. *Dimocarpus longan*, like a litchie but smaller and brown
- 2 National park boundary marker. Apx. 10 meters firebreak between fields and forest. Forest is on very steep slope towards hill. On top are *Fraxinus floribunda* (*this is probably very unlikely to be true, ed.*).
- 3 Entered community forest, North of point is national park, South is community forest. Found "Papuya" which helps against indigestion and "Kang Hô Mô", (*Holigarna kurzii*), which helps against sore lips by giving moisture. There was some upgrowth of Teak, (*Tectona grandis*).
- 4 Found new *Pterocarpus macrocarpus* growth, they use this for medicine for urinating.
- 5 Exit forest. Moser fields recently cut and burned (within five years). Stumps all over the field.
- 6 Towards hilltop is a bat cave. They are eaten as bushmeat in the season (spring).
- 7 Found "Sapai Kwai/Du Kweir", (*Sphenosdeme pentandra*) which is boiled and used for making alcohol. The area is split between Moser and Tha Khi Lek. On the Moser side all trees are cut within 10 years.
- 8 Midpoint of Moser field, old boundary NP. Some places are still smoldering. TKL villagers are mad that the Moser treat the forest so. Observed soil erosion on Moser fields.
- 9 Midpoint. Charcoal production site. Two large trees makes eight or nine bags. Sells for apx. 100 baht/bag.
- 10 Forest encroachment, new field. The new field is smoldering with a very heavy smell of fire. Behind in what is obviously "untouched" forest is a

- clearing of bamboo and trees. It is not burned. This is on a very steep slope. Found red ants nests, these are a delicacy.
- 11 Boundary Pan Dang ?/Moser/TKL community forest. Heavy clay soil, recently burned on Moser side, “old” agriculture on Pan Dang side. TKL forest is very disturbed with almost impenetrable borders primarily with bamboo. It is like a wall. There are many burnmarks.
 - 12 Boundary Pan Dang ?/TKL/National Park. Found “Mae Koon” (*Cassia fistula*), when this tree has yellow flowers, it means that the dry season comes. Found “Mae Joke” (*Lagerstroemia tomentosa*). The villagers eat the fruit and uses the wood for cutting blocks. It means good luck to have some of the tree in the house.
 - 13 Road intersection MC and TKL.
 - 14 River crossing road
 - 15 River crossing road, freshwater crabs on river bank. Found “Yaa Kha” (*Imperator cylindrica*), used for roof thatching.
 - 16 River crossing road
 - 17 Boundary of MC and TKL community forest.
 - 18 Found signs of illegal logging, girdled trees, lots of bamboo cuttings. Encountered an outsider who were cutting bamboo and fishing in the natural dam with batteries. He had a whole bag of small fish. Uncle Pud shouted at the man and asked him where he was from and what he was doing. He was acting very threateningly. The man didn’t answer but took his bike and left. Pud says he knows him, he is from Ban Mai Yah. They have many problems with them. They are not hilltribe (don’t know ethnicity).
 - 19 End of community forest, start of paddy fields.

End song.

The eastern part of the forest has some boundary problems. It looks at some spots very damaged and there are several places with much destruction. This has as consequence that the villagers don’t use these parts as much, and so do not look so much after it.

200103

Plot sampling

We did three samplings of 10x10 meters.

Plot one was found to have much new growth of bamboo and *Broussonetia papyrifera*, which is used as a fiber crop. The bark from *B. papyrifera* is beaten, rotted and spun (like hemp!). We found *Pterospermum cinnamomum*, which is used instead of toothbrushes. Bamboo cuts litter the ground and the leaves from fresh plants fills most of the canopy.

Conclusion; This is a fairly disturbed but regenerating MDF with some bamboo cutting. There is no signs of logging..

Plot two was primarily three species, *Dipterocarpus tuberculatus*, *D. turbinatus* and *Shorea siamensis*. It was a very open forest dominated in the underground by grass and new dipterocarpaceae. No bamboo, maybe not enough moisture? There were many other species standing alone. This part is used for fuelwood and NTFP collection. *D. turbinatus* leaves are used for roof thatching, sells for three to five baht

for 10 leaves. The forest lacks trees above 10 meters and above 100 cm. diameter, looks logged through some time ago. Is currently not logged, regenerating.

Karen will not cut trees with two stems as they believe these trees to be inhabited by two souls. They are called “two-woman trees”.

Plot three consisted of VERY dense bamboo (we had to cut our way in) with some teak in it. There were a single teak of >20 meters height and >100 cm. width. Wide spacing between trees, all new upgrowth is bamboo and the canopy is completely closed by the bamboo with the teak standing above. This looks like a very disturbed MDF, and the villagers have taken steps to change this by cutting the bamboo around the trees to let them grow. If they come above 4 meters, there is no need to “clean” around them. This is the only active management I saw. Found *Baulinia* sp., the bark is boiled and used for bathing the Buddha image in.

Conclusion: There are similarities between area one and three. Both are heavily used and has lots of bamboo whereas location two is used for NTFP and firewood gathering only. In all, there were few or no signs of logging. The villagers say they use the forest in a non-destructive way and the observations support this. The problems in the forest probably stem from the cutting of the primary forest. For the future if they wish to gain more from the forest they should do some more active cutting and clearing, and in the end harvesting of trees.

220103

Forest walk and Plot sampling in MC community forest.

GPS pt Finding

- 32 MC village square. very steep slopes around. Maize and beans, some erosion on steeper slopes. Behind is MDF on high slopes, looks to be rather undamaged.
- 33 Very moist dipterocarp forest. Elephant tracks and feeding ground. Very damaged with broken branches, very little bamboo.
- 34 Also elephant damaged MDF
- 35 “Elephant pen”. Very disturbed MDF, all bamboo eaten/broken. Found *Croton roxburghii*, used by new mothers to heal better in the womb (?) Apparently used a lot in Japan.
- 36 Encountered a sleeping elephant.
- 37 Did a plot sample, found that there is over 10meters spacing between trees, with the main species being “Mae Pao” (*Shorea siamensis*). The forest is filled with stumps, many are recent. The ground is dominated by bamboo, this has been “grazed”. The slope is above 45° Found *Phyllanthus columnaris*, the fruit is chewed to make the water taste sweet.
- 38 More dense forest. Canopy cover apx. 50%, trees above 20 m. They are primarily dipterocarpaceae, and many different kinds. There is no teak, this has been cut. This is the present cutting area for timber. The logs are transported by elephants. While sitting there I asked our guide why they cut the trees at a so remote place and he answered that there is no-one who owns these trees, that they preserve the nearby forest to keep it as a water collection area. Some wise old men have told them this. I then asked him who had given them the community forest, and after several tries I finally got out of him that

it is Mr Nihon from the community forest network who said what they should do. While I asked these questions, there was sounds from chainsaws not far away, and our guide got anxious to move on.

39 Plot sample. The undergrowth is primarily grass with some small trees. No bamboo and many orchids. The ground is very rough with limestone protruding here and there. The primary tree species were dipterocarpaceae.

40 Same as 39, but this was dryer, less grass with some bare spots. Signs of erosion.

41 Cut *D. turbinatus*. They cut it on top and slide it to the bottom, then use the elephants to pull them out. The slope is above 40°. They burn the forest every yer to enhance mushroom growth. All the trees have burnmarks.

42 Agricultural encroachment, still smouldering trees and stump, burned undergrowth. Exit community forest.

Appendix 7: COMMENTS

Comments

To the process of conducting the questionnaires

The following considerations in relation to the conducting of the questionnaires are divided into practical, technical and interpretive categories.

Practical issues are issues related to factors like time, physical access, conditions out of hands that influence the possibility of the feasibility of the interviews.

Technical issues are issues related to the structuration of the questions, the formulation of the questions, that influence whether the right answers will be given to the right questions.

Interpretive issues relates to the interaction of perceptions. Language and communication skills helps to prevent wrong interpretations of questions and answers. The capacity of the interviewer, the interpreter and the respondent in these matters are important.

Practical

It took quite an effort to control the process of conducting the questionnaires and to keep order in the results coming in.

Ideally it should be considered which representative from the household that should be selected as the respondent for the interview. We tried to get hold of the head of household, usually the oldest male, but in many cases he was not in, and then we interviewed the wife - or else a younger member of the household would naturally be the respondent, because he or she seemed best at understanding and answering the questions, or simply was the only one in.

During the interview sometimes other people came along, and sometimes some of them would comment on the questions and answers. Usually we felt this was not a problem, only an advantage to obtain more information, and sometimes corrections and clarifications. It seemed that in general the villagers had the same opinion of most of our questions, and they often answered on behalf of the family or the whole village rather than individually. On the other hand side it was difficult for example for us to detect if there were diverging points of views that the respondent would hide in the presence of the newcomers.

I did many times forget to write down the start and end time.

I/we did not expect the questionnaires to take that long time. It should have been a short introductory process. It ended up taking long time, and therefore I/we felt that some issues should be added, issues that I else had expected to cover through the selected in dept interviews and key interviews. That made the process even longer, but I felt that we had to get started on the added issues also.

We primarily asked for village leaders in Ban Mae Chon, but also at the few interviews we conducted lastly in Ban Tha Khi Lek.

Many of the answers lead to further questions, but in most cases we had to continue due to the time constraint.

We did not make an economic profile of the households. (An economist would have been practical.)

We always introduced ourselves and our project and informed the respondents about the purpose of our stay, especially that the information would not be published or shared with other than our teachers and the NGO. To create trust.

We always ended the session by offering the possibility to the respondents to ask us questions. Could create trust and valuable informal information.

The challenge of communication could easily create frustrations.

Often they do not answer comprehensively to the questions. Most often short answers are not followed up because the point of the questionnaire was to move fast through the villages and quickly get a broad picture of the situation.

I estimated roughly the direction of N, S, E and W by looking at the sun and my watch.

Often the NTFP formula was not filled out completely.

Motivation within the group could be a problem if you had an idea you would like to carry out.

Technical

The questions in the questionnaires defines the information you get hold of, there is a certain risk that you miss relevant information.

Sometimes the information from the questionnaires is too general, not specific enough. You ask yourself, why you did not ask the respondent to specify. Some explanation is that you constantly had to keep pace with time, and sometimes it was a hard task to keep the overview when sitting in the interview situation, and on the spot to be sure of relevant versus irrelevant information.

The questions have to be precise but not too complicated, balance.

The headline of topic No. 7 is not precise. It says 'access to natural resources', but it only deals with land-related resources like forest and agricultural land, and not with e.g. water sources.

There is some confusion of the categories of wage labour, other income generating activities and migration, non-migration.

'Migration' work: When members of a household migrate to perform wage labour in another area, and might send money back.

'Non-migration' work: When members of a household perform wage labour or other income generating activities in the village or in villages near by.

There can be overlap between the categories of tourism, wage labour/migration, wage labour and other income generating activities/non-migration.

It was difficult to ask hypothetical questions and questions related to the future like "What will the children do when they finish school?".

Some of the answers indicate that we are only scratching the surface.

The villager's description of the ceremonies tells a lot about their perception of life and way of thinking.

Question 11.a has probably been misunderstood or asked in an unclear way. We wanted to know whether some members of the household had migrated and stayed out of the area and might send money back, but in most cases we got answers in relation to the actual members of the household, whether they migrated or not, which they by nature did not, since they were staying in the village. They might perform wage labour in the vicinity but not far away from the area. Only in one case (Household No. 8 (Our No.)) the respondent told that 9 persons stay out of the household, but hardly send money back.

Question 4.a. Some answers indicate that the respondent only answers about what he is growing for the moment, and not about what he is growing all the year round.

There is sometimes overlap between topic no. 4, main occupation, and the topics no. 9-11, tourism, migration wage labour, non-migration wage labour and other income generating activities.

The topics 8-9-10-11-12 all consider money income.

Interpretive

How did Boom understand my questions, how did she ask the questions, how did she understand the answers, how did she translate the answers to me? There is a certain un-security in the translation process.

In the transcription a certain interpretation takes place. What did the respondent actually mean with the answer?

The point of the questionnaires was to get a quick hold of the situation. It was a process too long, too slow, and too irrelevant and not focused enough. We should have been quicker to discuss the relevance of the questions in relation to our 'light tower', the research question.

Some times it was difficult to be sure of the use of grammatic times in English, if the translation corresponded with the questions or answers or if the respondent said something but meant something else.

Maybe respondents do not answer truthfully because they are afraid of consequences.

The person who says that there are not enough NTFPs to be used for sale, do maybe not have the right to collect NTFPs before others have been collecting? Custom rights.

You have to remember to be careful about or check how the interpreter ask the questions, to be sure that you actually get an answer to the question you think you are asking.

Interesting that Uncle Khrum has nothing bad to say about the tourists. Does he not relate the tourists to the elephants that destroy his forest and crops?

A three-layer rocket: Your own perception/formulation of the questions, the perception/formulation of the questions of the interpreter, and the perception of the question of the respondent. And then the whole way back: The answer, the interpreter, and the interviewer.

Consider the advantages and disadvantages in relation to the middleman Mr. Khaeg.

What is the importance of in the transcription to write the answers literally as they were formulated, or in your own word as you think it was meant?

The comment from the villagers on lack of support from the TAO does not correspond with the statement in the 8th NESDP of creation of an enabling environment, e.g. in relation to what is called consolidation of families and communities. (8th NESDP 1997-2001, p. 36)

In the transcription a certain interpretation takes place. What did the respondent actually mean with the answer?

Interpretation, translation, understanding, pronunciation, subjectivity, objectivity.
Related issues.

Topic No. 6 External relations

- 6.a What organisations/agencies work with the village, and what are their activities?

Topic No. 7 Access to natural resources

- 7.a Number of plots
Location of plots (Inside/outside the village. The local name of the area, pointed out at CM-map.)
Size of plots (rai)
Land use (Residential, orchard, paddy field, fallow, forest.)
Land tenure (Inheritance, bought, rented/self-cleared, community, state.)
Land title (STK, SPK 4-01, NS-3, no documentation.)
- 7.b NQ Would you like to have land documentation/title deed on the land?
- 7.c NQ Why?
- 7.d NQ Do you have a home garden, and if yes, what do you grow in it?

Topic No. 8 Income sources/Marketing of agricultural products

- 8.a Do you sell any products to a market? (Products (NTFPs, crop/livestock), market (local, external), middlemen, prices.)
- 8.b What income do you get out of this?

Topic No. 9 Income sources/Tourism

- 9.a Are you involved in the tourism in the village, and if yes, what is your position? (Owner, wage labourer, saleswoman.)
- 9.b What is your monthly income from this?

Topic No. 10 Income sources/Wage labour - migration

- 10.a Did any members of the household migrate out of the village area to perform wage labour?
- 10.b Where do they work?
- 10.c What do they do?
- 10.d How much is the income?
- 10.e NQ Do they send money back to the household?

Topic No. 11 Income sources/Wage labour or other income generating activities - non-migration

- 11.a Do you perform wage labour in the neighbourhood or do you perform other income generating activities, and if yes, what activities do you do, and if you produce any products, where do you sell them? (Farm work like ploughing, planting, harvesting or washing, sewing or weaving.)
- 11.b What income do you get out of it?

Topic No. 12 Use of forest

- 12.a Do you collect any NTFPs?
- 12.b What do you use the products for? (Consumption, utilization, sale, NQ: Do you use some NTFPs for fodder?)
From where do you get the products? (CF/NP, distance from the village.)
- 12.c Are there any problems in relation to the collection of NTFPs?
- 12.d NQ Who established the CF?

Topic No. 13 Children's future

- 13.a NQ What would you like your children to do in the future?
- 13.b NQ What do the children do today, when they have finished primary school?

Topic No. 14 Observations

- 14.a Number/purposes of buildings
Agricultural tools/machines
Motorbikes

Topic No. 15 Future plans/strategy/dreams (possibilities/problems)

- 15.a NQ What plans/strategies/dreams do you have for the future?

Topic No. 16 Loans

- 16.a NQ Do you have loans? (Money or products.)
- 16.b NQ From where/whom do you have the loans? (Family, friends, village members, bank (BAAC), organisation (NGO), agency (TAO), middlemen.)
- 16.c NQ How do you use the loans?
- 16.d NQ Are the loans big enough?
- Conditions**
- 16.e NQ What are the conditions of the loans? (Interest, pay back time, collateral.)
- Paying back**
- 16.f NQ Is it a problem/not a problem to pay back?
- 16.g NQ How do you get the money to pay back? Or do you pay back in products?
- Possibilities of loans**
- 16.h NQ Where can you go to get a loan? (Family, friends, village members, bank (BAAC), organisation (NGO), agency (TAO), middlemen.)
- Need of loans**
- 16.i NQ How often do you need a loan?
- 16.j NQ Would you like to get access to more/other loan-possibilities, and if yes, from where?

Topic No. 17 PBT

- 17.a NQ Do you know of the PBT-tax and do you pay it, and if yes, why, and if no, why not?

Appendix 9:

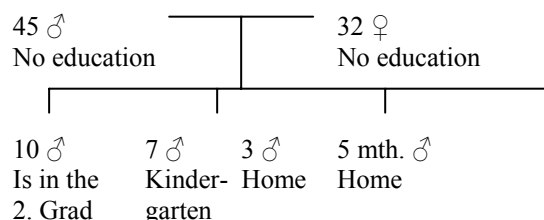
Household No. 1 (Our No.) House No.: No number Ban Tha Khi Lek

This interview was carried out in the evening around the bonfire with other villagers both adults and children curiously listening and giving comments, and with dogs appearing and disappearing in and out of the dark.

The interviewer: Name: Mrs. Helene

The respondent: **Name:** Mr. Seuk Tha Na
Age: 45
Ethnicity: Karen
ID: NQ -

Family tree + Topic No. 3 Education



Topic No. 1 Community history

1.a-c Mr. Seuk Tha Na was born here.

Topic No. 2 Religion

- 2.a Mr. Seuk Tha Na calls himself a Buddhist.
- 2.b Mr. Seuk Tha Na first says that he do not carry out any ceremonies, he goes to the hospital when he is sick.
- Later he says that in February and July he participate in the ceremony where Buddhist tie white cotton thread around their wrist.
- In February he celebrate the Hilltribe New Year.
- In July he goes to the temple, because the monks are there for a period.
- 2.c Ceremonies in relation to the forest and agricultural livestock:
- Mr. Seuk Tha Na does not carry out any ceremonies in relation to the forest and the agricultural livestock.

Ceremonies in relation to the agricultural crops:

- In relation to the agricultural crops he pays respect to the spirits before planting.

Topic No. 4 Main occupation and role in the community

4.a Main occupation:

- Mr. Seuk Tha Na is a farmer and a wage labourer at other farms near by.

He cultivates maize and red beans on his own farm.

- His wife does the same, and besides that she weaves. She weaves only products for the family, because it is too expensive to buy thread to produce products for sale.

4.b NQ Role in the community:

- Mr. Seuk Tha Na has no special role in the community.

Topic No. 5 Village groups

5.a+b Mr. Seuk Tha Na is not a member of any group, there are no groups in the village, he says.

5.c NQ He would like an agricultural group to be established in the village, because he is a farmer, and he think it would be easier for a group to sell farm products, than for individuals.

Topic No. 6 External relations

6.a According to Mr. Seuk Tha Na there is no organisations/agencies working with the village.

Topic No. 7 Access to natural resources

7.a Number of plots 1

Location of plots North of the village.

Size of plots 6-7 rai

Land use Intercropping of maize, wetland rice and beans.

Land tenure Mr. Seuk Tha Na has inherited his land from his father.

Land title SPK

7.b+c NQs Mr. Seuk Tha Na has SPK on his land, and he think this is important, because he need the SPK to be able to rent big machines to support his cultivation.

7.d NQ -

Topic No. 8 Income sources/Marketing of agricultural products

8.a Mr. Seuk Tha Na sells maize and beans through the middleman Mr. Khaeg.

8.b The income from maize is 8000 Bath/field, and for beans 1000 Bath/field.

Opposite he has to spend money on rice; 5000 Bath/year.

Topic No. 9 Income sources/Tourism

9.a+b Mr. Seuk Tha Na do not involve in the tourism in the village.

Topic No. 10 Wage labour/migration

10.a-e They do not migrate to anywhere to do wage labour. (* The question was probably not asked precise enough.)

Topic No. 11 Wage labour or other income generating activities/non-migration

11.a Mr. Seuk Tha Na and his wife both do wage labour.
He works on farms in other villages near by, she work on farms in Ban Tha Khi Lek.

11.b They harvest maize and do other kinds of farm work.
They both get 100 Bath/day for the work, and they work about 3-6 days/month.

They do only use the money for subsistence in the household. She uses some of the money for student fee.

Topic No. 12 Use of forest

12.a They do collect NTFPs.

12.b Consumption: +
Mushrooms, bamboo, insects (red ant eggs),
herbs, pak gud, lasia, bananas, other
fruits, orchids.

÷
Pak wan is not found in their area.
They do not collect/hunt wild animals,
honey, rattan.

Utilization: Fire: Firewood
House construction: Bamboo
Medicine: Herbs
Decoration: Orchids

Sale: They do not sell any of the collected products besides bananas, which they sell through middlemen in Chiang Dao District at a price of 1-2 Bath per bunch of 5-6 bananas.

CF/NP: Collection from the CF: Wood, mushrooms, bamboo,
herbs, pak gud, lasia, fruits .
They grow bananas around their own fields.

Distance from the village:
Near by: Bamboo
1-2 km away from the village: Wood,mushrooms
2 km in all directions: Orchids
2-4 km NV of the village: Fruits
5 km N of the village: Herbs

Near the stream:	Pak gud, lasia
By the fields:	Bananas
Around and in the village:	Insects

12.c They have problems with outsiders who intrude into their area and collect bamboo and cut trees. They cannot do anything about it because of the small size of their community.

12.d NQ -

Topic No. 13 Children's future

13.a NQ Mr. Seuk Tha Na would like his children to study on a higher level but he lack the money to pay for that.

13.b NQ He wants his children themselves to choose what to do when they have finished the primary school. He says that they could choose to be monks, because monks have the possibility to study on a higher level.

Topic No. 14 Observations

14.a	3 buildings:	1 house, 1 kitchen, 1 storehouse for maize
	Agricultural tools:	Hoe, spade, long + short knives
	Motorbikes:	None

Topic No. 15 Future plans/strategy/dreams (possibilities/problems)

15.a NQ Mr. Seuk Tha Na would like to earn more money by cultivating mango and longan.

Topic No. 16 Loans

16.a-j NQs Mr. Seuk Tha Na has no loans.

Topic No. 17 PBT

17.a NQ -

Appendix 10:

'In depth' interviews

The Questions

BTKL/BMC

The 'in depth' interviews were conducted in a somewhat more chaotic way than the sequence of questions listed here indicates. The order of this list is an attempt to put the information from the interviews in order. Besides answers to these questions, answers to some other specific questions are to be found in the notes from the individual interviews.

INTRODUCTION

1. Explanation of the maps. The National Reserved Forest area, the National Park, the Classification of Land, the location of Ban Mae Chon and Ban Tha Khi Lek.

2. I explain that I would like to talk about issues around ID, entitlement, and credit.

QUESTIONS

3. What do you have of ID, land documentation, and loans?

ID

4. What would you like to happen about the ID situation? (Policy process.)

TITLE

5. What would you like to happen about the tenure/title situation? (Policy process.)

6. What are the most important barriers? What is your opinion on a solution?

7. What do you think is going to be the future development of the size of population and the situation about land documentation in this area?

CREDIT

8. What opportunities for loans do you have?

9. What do you use the loans for?

10. Are loans a good or a bad thing? And are the current opportunities for loans satisfying?

11. Are there problems of access to credits? (Lack of collateral, mortgage, ID, land title, information/communication/clarity/understanding.)

Table: We filled a credit table at each interview, about the various kinds of loans; from family, friends, village members, the Village Group Loan/1 mio. Bath Loan, the

BAAC/Group Reliability Loan, the 100.000 Bath Loan. In the table it is stated whether title is needed to obtain the loan, whether it is possible and/or attractive to the respondent to obtain the loan, and what the problem is if it is not possible for the respondent to get the loan.

DEVELOPMENT

(Intensification, expansion, internal organisation, articulation, infrastructure, external support.)

12. Would you like to intensify or expand your farming processes, or both?
13. About internal organisation and articulation, what do you think/do?
14. What importance would a road construction have?
15. What is in your opinion the role of the TAO in relation to these issues?

Appendix 11:

'In depth' interview Wife of former village headman/Ban Mae Chon

This interview was carried out in the morning at the long table outside the house.

The interviewer: Name: Mrs. Helene

The respondent: The wife, Mrs. Boon, to the former village headman, Mr. Mag.

Q = Questions

A = Answers

(No.) Numbers in brackets relate to the questions on the question list. If the question asked were the same as the one written on the question list, then it is not written down here, but if the question, when asked, were put in a bit different way, it is written down here.

In between some comments are noted, which Mrs. Boon gave besides the questions along the talk.

ID

A: (3.) She shows us her and her husbands ID cards. They are white/light blue ID cards. It is green cards, and the valid period is 1996-2002 (2539-2545), which means that they are expired. She says, they all, she and her husband and children, will get the full Thai citizenship next month. (Sounds un-realistic, see 4+5.)

Q: (4.) What does the ID card mean to you?

A: She says, that the ID card is necessary for her, to allow her to go anywhere she wants.

A: (4.) She says that a government officer came here and asked everybody if they would have the full ID citizenship. (We wonder whether we misunderstand her statement. See 3+5.) She says that after 3 times of renewal of the Hill Tribe ID card, they can get the full Thai ID card.

She is Karen, she says, not Palong, but because they stay in Ban Mae Chon, they dress and talk like Palongs.

TITLE

A: (3.) She has no documentation on the land.

Q: (1.) Do you know of the reservation of the forest and the classification of the land? I show her the maps of the National Reserved Forest areas and the National Park, and the Forest Classification map.

A: She says, she knows about the forest reservation and the national park, but not about the classification of land.

Q: (5.) Would you like to have documentation on the land?

A: Yes, she says, she would like to have a form of documentation on the land, that can secure for her that no one can take the land from her. She says, that she only needs a small piece of land. She would like to have SPK or any other kind of documentation.

She would like to have both the SPK and the ID, she says, and she has no other idea to obtain it than to ask again. (This confirms our wondering about her statement in 3.)

Q: Would you ever sell the land if you were allowed to do that?

A: No, she says, she would never dream of selling the land. She would keep the land with the purpose to give it to her children. If she sold the land she would not have any place to stay.

A: (7.) POPULATION

Mrs. Boon thinks the population in the area will increase slightly and slowly, and she thinks there will be land enough for her own children. She does not want newcomers to come and stay in the area.

TITLE

Mrs. Boon would like to have SPK documentation on her farmland, but she is not sure of the probability of it to happen. She does not know exactly what could be the solution, but she thinks that ID is important in relation to entitlement.

She cultivates land and runs a tourist house for a living.

CREDIT

(The 16.- questions are copied from the questionnaire. Even if they had been answered in the questionnaire, we asked again, it was her husband who answered the questionnaire.)

16.a (3.) She has no loans for the moment. She used to take loans before.

16.b She did lend money from the middleman Mr. Khaeg.

Now she gets rice for consumption from Mr. Khaeg.

Most of the villagers get loans from Mr. Khaeg

(8.) The Palongs sell all their crops to the middleman Mr. Khaeg. Mr. Khaeg is the 'power-man' of the area, she says.

- 16.c (9.) When Mrs. Boon takes loans from Mr. Khaeg, she either get it as rice for consumption, or she get money she uses to buy rice for consumption. If she uses the money in relation to her farming activities it would be on purchase of herbicides. (* As often it also here was hard to be sure of the respondent's way of thinking in relation to time. It is unclear whether the respondent does take loans for herbicides, or if she had done it, or that she might would do it.)
- 16.d (10.) A loan of 4000 Bath/year would normally be enough for her.
- 16.e (10.) The interest of the loans at Mr. Khaeg is 10% per year, the pay back time is after the harvest of maize (October/November according to the crop calendar) and there is no collateral.
- 16.f (10.) It is not a problem to pay loans back.
- 16.g They pay back in money they get from selling maize.
- 16.h (8.) They only take loans from Mr. Khaeg.
- 16.i They need a loans once a year.
- 16.j (10.) Mr. Boon does not wish to get access to more/other loan-possibilities.
- A: (10.) Loans are not good, she says, but they are necessary.

She finds the opportunities for loans satisfying in the sense that everyone trust her here in Ban Mae Chon, so if she has no money she can get credit here, and she can also get credit in Chiang Dao. (Also, about the last question, see above.)

- Q: (11.) We ask if she knows about the BAAC group reliability loan?
- A: (11.) She has not heard of it. When we ask, she says yes, she would like to get information from government officers about he BAAC group liability loan.

Type of loan	Title needed	Possible	Attractive	Problem
Family/relatives	No	No		They are poorer than her.
Friends	Do.	Do.		Do.
Village members	Do.	Do.		Do.
Village Group Loan/ 1 mio. Bath Loan	Depends on the loantakers possibility of providing collateral.	She could not imagine to take this loan. She only takes loans with the middleman Mr. Khaeg.	She knows about this loan. Many people try to gather as a group to get this loan. But she will not join them because they are also poor, so she thinks she will come to pay back for them. There are a group of people from Ban Pa Lai who has asked her to join them. They are as rich as her, but she will still not join them.	Collateral. 3 persons with land.
BAAC Group Reliability Loan				She never heard of this.
100.000 Bath Loan				Do.

DEVELOPMENT

A: (12.) EXPANSION

She would never expand her farming area, she knows that for sure. She knows she is not allowed to do that, and is afraid of the consequences if she did. She says, she would be arrested by the RFD and others if she expanded.

She tells:

Many, 14, years ago people in Ban Pang Daeng Nok were arrested. Because of the restrictions they were not allowed to expand their farmland, but they did that. They cut trees and cleared land. They were put in jail in Chiang Mai for 5 years and 9 month for their actions. It was the RFD who arrested them. Now they are free again.

There is or was a drug addict in Ban Mae Chon, who was arrested.

A: (14.) INFRASTRUCTURE

They made the current dirt road to the village themselves by hand. They would like an external organisation to come and improve it by machines.

A better road would mean easier transportation and more investment would come to Ban Mae Chon.

A: (15.)

EXTERNAL SUPPORT

When we ask her about her idea of external support, she says that she would like external organisations to come and help the villagers to develop Ban Mae Chon.

She thinks the TAO should support them with lunch and milk for the children.

At the last part of the interview her husband joins us. He has been occupied by the sale of black beans. They grow maize, upland rice, black and red and lap lap beans.

Furthermore I mentioned that we had found out that in Ban Mae Chon the villagers/farmers had no documentation on their land, and in Ban Tha Khi Lek only few (ca. 35%) had SPK² on all or some of their land.

The in advanced prepared questions:

1. Where are the policy heading, when it comes to tenure/title for the villagers in the area (Mae Tor Watershed) who has no documentation on their land?
2. Where do you think the policy process should be heading? How do you imagine that the livelihoods of the people in the area could be improved?
3. What is your opinion of the significance of security in relation to the often stated relation between land documents, credits and investments, in the sense that it is often believed³ that security in the form of land documents, that can be used as collateral, leads to improved access to credits, which in turn creates the basis for investments/intensifications (fertilizer, machines, etc.), which in turn lessen the incitement for expansion?
4. If people pay the PBT-tax with the expectation to, in the long run, that the payment will lead to ownership of the land – would their expectations ever be fulfilled?
5. Would you in any way describe the lack of documentation on land in this area in terms of conflicts related to the ethnic minorities of the hill tribes, rather than land scarcity? Should the lack of issuing of ID cards be seen in this perspective?
6. How do the public and private sectors work together in relation to these issues, and how should they, in your opinion, be cooperating?
7. Who should the forest, in your opinion, be protected for?

Presentation of the interview:

The answers does not always entirely correspond to a specific question, so in the following presentation of the interview, the answers are related to the questions it fits most closely with. When subjects are repeated, it reflects that we jumped fort and back between the questions during the session, sometimes to clarify, sometimes to

² SPK is acronym for the Thai expression Sor-Por-Kor. This form of documentation is issued by the ALRO under MOAC in specific areas related to the Agricultural Land Reform Act from 1975. The legal status of the document is so that it is a usufruct certificate meaning that the holder of the document is allowed to collect, use and make money from activities conducted on the land, but according to the transfer rights he/she is not allowed to sell the land, only to transfer it by inheritance, and he/she is not allowed to use it as collateral. (Basic Information 2003, p. 29)

³ The background for asking this question is partly the following statements from the Song Papers: “The expansion of agricultural activities in the forested highland areas is closely related to the potential for agricultural intensification in the lowland (Ganjanapan, 2000: 63; Scoccimarro and Walker, 1999: 7)”, “One of these [critical factors that triggers the process of autonomous intensification] is flexible tenure rules and arrangements that may provide the farmer the security needed for making larger long-term investments... (Hyden *et al.*, 1993: 410-13; Tiffen *et al.*, 1994: 275; Mortimore and Tiffen, 1995: 77; Feder *et al.*, 1998: 3)” Thus, tenure arrangements may have a significant influence on land use, and may furthermore be an important factor in curtailing agricultural expansion in the highland and hence deforestation through its potential role in the agricultural intensification. However, empirical evidence for the relations in Thailand is weak (Feder *et al.*, 1988: 8) which may indicate that other factors are

take a new point of departure on the same subject. Occasionally some answers/parts of answers are missing due to the fact that it sometimes was hard to both listen and write at the same time.

RJ = Respondent, Mr. Janesak

RP = Respondent, Mrs. Pat

IH = Interviewer, Mrs. Helene

IB = Interviewer, Mr. Benjamin

() The keywords in each answer is stated in brackets and italics

To start with Mr. Janesak wants to clarify for us that the land area in question is not under the Land Law, it is still forest, a piece of state land. He tells us (what we already are familiar with) that the SPK usufruct certificates are issued by the ALRO, that their transfer rights imply that they cannot be sold, only inherited, and that the temporary STK usufruct certificates are issued by the RFD, and that these also only can be inherited. Both the SPK and STK cannot be converted into NS-3 (more secure, allows transfer by selling, use as mortgage). What were not sure of was that the SPK document is also temporary.

The he also wants us to be familiar with a definition from one of his latest publications: "Forest means land which has not been taken up by or acquired by any other means under the Land Law." (We think the point is that the area of Mae Tor Watershed is still under the Land Law, and therefore considered as forest.)

In relation to question 1., 2. and 3.: (*Permanent title, collateral, credit, encroachment*) In the future it will be allowed to use the SPKs as collateral, this is the GO policy. The idea is, that the SPK should be permanent (or transferred into a permanent form of documentation?) and thereby be possible to use as collateral in relation to credit, he says. Mr. Janesak does not like this idea. His idea is that this would be unfair to some people. If people who has encroached a land area can obtain permanent land documentation by doing that it will be unfair to other landless people, and he points to the fact that it is state land, that we are talking about. The problem is, he says, that if encroachers get permanent land documents, they will sell the land and then encroach further into the area, and this will happen in all zones.

In relation to 3., 5.: (*Intensification, education, access to credit, ID, minorities*)

RJ: "We have to educate people to intensify", Mr. Janesak says.

I: "How will it be possible to intensify without access to credit?", I asks.

RJ: Mr. Janesak: "We cannot give everything."

also important, or that adequate tenure security exists even without official land documents. (Traynor *et al.*, 2002: 45-46)

I: “What is your opinion on the situation of the ID cards, the fact that people with only a green card do not have the possibility to obtain even temporary land documentation and therefore has a long way to go in obtaining title deeds usable as collateral?”

RJ: “The ID cards is really not my responsibility, but... We have to consider that the minorities are immigrants. You have to live here 20 years before you can have an ID card. Some of their children go to school, that is progress. And some of the Karens are actually rich. All Thai boys at the age of 20 has to join the army, the minority-boys don't have to do that, they are free. We actually have given the minorities a lot. For instance some Karen monks who moved into the lowland of West Thailand we have given ID cards, the full Thai citizenship, and we gave them land. We also have to think of security, the Palongs for instance have a problem with drugs. (It seems like if Mr. Janesak wants to give the impression that Thailand has been large towards the minorities.)

In relation to 6.: (*Rearrangement of the political infrastructure*)

There are some rearrangement going on for the moment of the responsibilities of the various departments under the MOI and MOAC. Until now the title deeds NS-3, NS-4, etc. has been issued by the Department of Lands under the MOI, and the STK by the RFD, and the SPK by the ALRO, the latter two under the MOAC. As I understood Mr. Janesak, his opinion was, that it would be problematic if forest related land issues should come under the responsibility of other departments than the RFD in the future. There is conflicting interests within the Department of Lands (DL/MOI) and the RFD (MOAC), both within each department and among the two. Different officials/departments are heading in different directions.

In relation to 3.: (*Intensive versus extensive farming, lesser incitement for expansion*)

Mr. Janesak thinks that it is necessary to change the extensive way of farming into intensive farming. I ask how this should happen, and he says, that the solution should be found in relation to CF. (Through green manure? The CF could by deliverance of edible NTFPs lessen the need for expansion?)

In relation to 2., 7.: (*Resettlements, removal of people or forest?*)

Mr. Janesak says that some rearrangement of the communities will have to take place. He finds that resettlement is a hard thing to implement, but in the long run the problems cannot be ignored. He says that a specific solution has to be created for each community and that a long-term focus and constant re-planning will be necessary.

In relation to 4.: (*Payment of PBT-tax as political pressure*)

Mr. Janesak says that payment of PBT-tax will never be a way to obtain ownership over the land.

In relation to 3.: (*Loans without collateral in the form of land title/title deeds*)

I: “Could the state consider to provide loans without land collateral? (Even if the point of the BAAC Joint Liability Group system should be that the farmer does not need land documents as collateral, at the time when this interview was conducted we had not heard of any in Ban Mae Chon or Ban Tha Khi Lek that had got access to credits, besides at the middleman, without collateral in the form of land.

RJ: Mr. Janesak explains, that there already are a lot of funds that do not demand land collateral.

RP: Mrs. Pat adds, that only Thais have access to these funds.

In relation to 3.: (*Intensification versus expansion*)

I: “So, intensification is preferred to expansion?”

R: Mr. Janesak: “Yes.”

In relation to 5.: (*Nationality problem*)

Mr. Janesak: “The big problem here is the nationality.”

In relation to 7.: (*People versus forest*)

I: “Could you imagine to let people into the NP?”

RP: “That would be to take action opposite the idea in the government policy.” Mrs. Pat says. She explains (what we already are familiar with) that the target for the government is to establish and maintain 25% of forest (conservation forest) and 15% of plantations (economic forest) (See note 1.) Now the level of forest area reaches about 12-14-15%, she says.

Summing up: (*Funds are enough, drugs are the problem*)

Mr. Janesak: “So, the funds are enough, the problem is the ID card, the hill tribes has to stay very long in the area before they get it, and the problem of security in relation to drugs is important. If people are rich and well functioning the problems are smaller.

Mrs. Pat: “This is very difficult. These people are very poor and their way of living is not legal. There are problems under the surface that are related to drugs like amphetamine and heroine and mixtures. Before the amphetamine was used just to wake up. People using heroine end like drug addicts. You can read about drugs everyday in the news.”

After ‘my session’ Mr. Benjamin Edgar Antezana Berton took over:

Mr. Benjamin says that in Ban Pan Daeng Nok the Thais have Nor-Sor-Sarm/NS-3 and Sor-Por-Kor/SPK documents.

(Peoples livelihood)

IB: "How can you improve the livelihood of the people here?"

RJ: Mr. Janesak: "What should we say to this? Do you have any idea Pat?"

RP: Mrs. Pat: "The RFD officers try to push people out of the area."

RJ: Mr. Janesak: "There was a forest plantation here. It was a forest plantation before the encroachment."

(Illegal households, enforcement)

IB: "There are 4-5 illegal households on the other side of the road here. They have had some negotiations with the RFD. The RFD does not enforce the law. What is your opinion, should the RFD ignore the violation of the law or enforce the law?"

RP: "This is not our area of responsibility. An RFD officer cannot do anything just because he/she has seen remnants of cut trees."

RJ: "They clear, but they also plant trees, to secure themselves. If RFD officers catch someone in the act of cutting a tree, then they can enforce the law. They also monitor from helicopters."

IB: "What livelihood strategy should people ensue, if not clearing some area to farm? People came from the other side of the border."

RJ: "Because the RFD has very limited instruments of enforcement, they have a possibility to encroach the area."

IH: "Who can actually enforce the law then?"

RP: "You have to go through the police and the court system, they have the right to arrest."

(ID cards)

IB: "So, there is this problem of immigration, and people must have ID card to be able to pursue a proper living, how long shall they stay before they can get it?"

RJ: "More than 20 years. After they have had a temporary ID card. The sequence goes: temporary ID card, permanent ID card, temporary title deeds, permanent title deeds."

RP: "The map is inaccurate. Mr. Benjamin, the villagers and the RFD has different maps." (Does this answer relate to *, see below?)

(Education, 'supermarket')

IB: "How could you teach the people to manage the forest in accordance with your targets?"

RP: "It is very difficult."

RJ: "The forest is the 'supermarket' for these people."

RP: "It is very difficult, they are poor, it is difficult to tell them only to take a little bit from the forest."

(Biodiversity, CF)

IH: “Is there a problem in relation to the biodiversity due to the collection of NTFPs, and how do you deal with this?”

RJ: “We try to establish food banks in the CFs with edible and medicinal plants.”

(Fairness)

RJ: “If you want to have SPK you have to do something, much more than the others, otherwise it would not be fair.”

(Communal versus private ownership)

IB: “But if they are poor, how can they pay to obtain land legally?”

RJ: “There is/should be community land provided, not private land, for the poor. To secure that they do not sell the land.” (And increase the encroachment.)

(Authority, sustainable CFs)

RJ: Mr. Janesak would like the RFD to get the authority over the forest areas, so they can create more sustainable CFs.

(People versus forest)

* IB: “How do you consider the situation before and after 1992?” (The division into A, E and C zones)

RJ: “This meant that the security for the farmers increased, because they have their own piece of land now. So it was better for the people in that way. But it was bad for the forest, because, and now Mr. Janesak is upset, the E-zones was moved to be under the responsibility of the Land Department (MOI). The problem is that when the RFD committee has to look into the forest activities in the E-zone, the law on top so to speak is the Land Reform Department (probably ‘same same’ as Department of Lands, DL/MOI). They set the conditions and cooperation is very difficult. There has to be done some checks and balances on the function of this new structure.

Summing up:

As it is now, the District Land Office (under the DL, MOI) issues the permanent title deeds like the NS-3, NS-3 K, and NS-4, which allow the farmer to transfer the land by selling. These documents are issued for plots of land outside the National Forest Reserves. (Basic information 2003, p. 26) The RFD issues the temporary document STK inside the National Forest Reserves, and the ALRO issues the SPK in specific areas. A farmer needs to have either a Thai ID card or a title deed (the latter you can only obtain with a Thai ID card) to obtain access to more official forms of credits (in the case of local middlemen it is a different story), that is most often a necessary basis for investments and intensification. The current political structure of the senate, the law, the representatives and the last 5 year plan (the 9th) create the limits and

possibilities for the future development of this situation, and the different ideas and power relations of the various politicians defines what and whose influence is going to count.

Appendix 13: Framework

Appendix 14:

Transcription of meetings group 5 location 4

170103

Meeting day one!

Chan introduces plan. Some of the girls have to rearrange, 3 girls go to another location to work better. Working centre/headquarters is where we work, we keep all material here. Radio contact is possible. Food schedule is 0700-0730 breakfast and dinner 1730 to 1800. Laundry, put it into bag along with 15 baht per set, give to cook. Transportation, no pickup here, can arrange with village headman or Basecamp. We pay 250 baht for a whole day with car, 100 for motorbikes. We do not pay for interviews, pay about 100 for field trips etc. Kek comes later today with softdrinks for the community meeting. Tonight introduction, tomorrow community meeting.

Peter tells about the supervision. He is teacher not leader. We have to organise ourselves. He will provide help. Remember to share with all others what you do or have done.

We review the timetable. On the 20th 2 go to location 2 for a common meeting. No preparation to talk about activities. If you want to have any meetings, you co-ordinate here. The 23rd we all go to mid-term evaluation, preparation in the morning and presentation in the afternoon. The 24th is day of.

We have a daily meeting, with a rotating chairman from each group.

A warning note about drugs from Peter; say you don't smoke, always wear nametag.

Put a sign on the house so the headman can see where the SLUSE students are staying. Kek will bring water with the food.

We plan introduction to take place at 1800 and will prepare questionnaires after.

180103

Evening

Chan:

Went to MC this morning. Met the village headman, made a proposal. Maybe meeting on the 21st or 22nd. Maybe collection of data in MC all of us. MC is Pa Loung, 15-16 households. Northern Thai owns elephant tour. Pa Loung are mostly Buddhist so they have a temple, non-formal education, conservation farming. MC has power relation to the chairman of Chiang Dao district. Many companies from Chiang Dao come on the tourist tour. Signs along the way about the community forest conservation/utilisation forest they seek to establish. There is intermarriage between Christians and Buddhists. Uncle Kham goes to meetings, other person takes care of water management. Village headman attitude towards loans: he is of subsistence thinking. Does not dare to take the risk of taking the loan, too difficult to pay back. Uncle Kham is herb/medicine man. School pupils from Pang Dang come to him.

Preeda+Helene: Did physical map, occupation, structure. Got all houses numbered with infrastructure. Got colour coded family structure map, blue-male, red-female, orange-children. Numbered paddy fields. Musa was put on (2 houses), a mountain/caves and Buddhist temples was mapped (seen from here). School in Pan Dang. Will go and use the maps for interviews because economy would be "pushy" or take map around village and ask. Could have had more put in with more time. Think it went well.

Goi: About beliefs: When some insects make noise it will be dry/drought (local bee). If the red ants are higher than usual it won't be very windy that year. If the tamarind is curved it will be cold. If the owl makes noise, bad things happen/strangers come. There is a ceremony every month.

Helene: When finished, I asked and all women weave. Went and looked, she weaves from early (0800) to late (1700) sells for 400 baht. Glad for tourists, makes money.

Pong: Got many things from villagers. Walked around community forest with GPS. Land is divided high- and lowland, there are two landuse types. Highland zone is only rainfed lowland is irrigated. There is a natural dam; this is where the irrigation comes. Mapped mountain and natural park boundary. I have many details about immigration.

Kik: Two agricultural systems, contract and subsistence. Main crop is maize for fodder (contract) and rice for consumption. They eliminate weeds, if small herbicide, if long, they cut it. Plant in May harvest in November. Maize grows with lap-lap beans and red beans. Locals prefer maize and red beans, then lap-lap beans, they believe it will conserve the soil in the rainfed area. After harvest there is land preparation with herbicides and grass cutting. Conclusion; an increasing no. of villagers tried mango, got low prices and replaced with Lam Yai. They emphasise rice planting with soy, all year cultivation, and no fallow.

190103
Morning

Agriculture:

Kik finished English version of questionnaire. Today will do soil and water samples.

Forestry:

Boon, JF and Muey will look at NTFP around NP. Sampong will measure with GPS.
JF will meet with RFD official concerning government views on community forests.

Social:

Start reviewing questionnaires.
Helene suggests Chan is there so he can make suggestions-> OK.
Chan made an appointment with Ban Ma Chon (MC) and will inform village headman that we will not all stay at MC. In the afternoon he will meet with keypersons and discuss common problems. Will also discuss time for meet with villagers of MC on the 21st.
Helene: rest of social will do questionnaires.

Sampong:

Suggest lunchboxes for Agriculture and forestry groups.

Boon:

There is a printer in camp which can be used for pictures and other prints.

Peter:

Goes to Basecamp at 1300, will be back for dinner.

Kik:

Is there a possibility of getting a digital camera?

Peter:

As soon as the camera is emptied, it is ready. Agri-group, where will you take the soil and water samples, have you discussed with the other groups?

Kik:

We will go with a local resource person.

Peter:

But have you discussed where?

Kik:

With Anna.

Peter:

Perhaps it is a good idea to try new and old fields. Work with the social group in order to make the sampling give the best information. How is the soil affected by agriculture? Everything we do has to be part of the overall question. Remember the overall problem!

Chan:

Social is not ready yet, but we have a general idea and has thus far seen two groups; one has paddy fields, the other has upland rice. The last group is poorer. Will you look into this as well?

Peter: If you have poor and rich, take samples from their soils and see if the soils are different. Maybe information from the social group can explain the differences and visa versa. This is interdisciplinarity.

Helene: How do we get the questionnaires from the agri-group?

Kik: It is finished.

Pong: Could everybody please take of the shoes before going into the house?

Peter: We will put up a mailbox if there is need for something from Basecamp. Today there will be 20 lunchboxes!

Pong: Next meeting at 1900.

Evening.

Pong: What did you do today? Keep it short please.

Forest: Boon: We went to look at NTFP, used GPS to map the boundary to the NP and the community forest in Ban Tha Khe Lek (TKL), and saw the dam that makes irrigation possible. After that we looked at TKL forest uses. Tomorrow we'll review data and find the correct species.

JF: I will go tomorrow and make some random plots in the western parts of TKL forest.

Agriculture: Kik: Went and measured water in 3 different locations, and took soil samples. Tomorrow it is interviews in TKL.

Social:

Helene: Spend all morning with questions from agri-group, only later to find out that it was allready done, and that the agri-group will do the questions themselves anyway. Total waste of time. Tomorrow it is interviews and mapping with the villagers. Jesper promised to be a beating stone if anybody feels like punching something or someone. We have learned that we have to be 1000% sure when we talk together in order to be sure this type of thing doesn't happen again.

Chan: It had been said.

Helene: And that is the problem. We misunderstood it and made it all again unnecessarily. We missed a whole day where we could have been interviewing. Tonight I'll talk to Chan and Goi and exchange information.

Pong: Went to MC and made GPS measurements and got information on their landuse. Want to talk with forest group about community forest (CF) boundaries. When the villagers were asked, they included the village in the forest, but for us the boundary is only for the forest not the village.

Helene: Can the social group use your data?

Pong: I only mapped the boundaries.

Helene: Could you map the houses in the villages?

Pong: ->OK. He knows about the CF boundaries, and wants to find the true forest boundary. To find out, the forest group should ask a RFD official.

JF: Nearest is in Chiang Mai.

Pong: (Shows map) CF is the crossed area, and this is the official area.

Chan: The point is, Pong wants to clarify with the forest group about the correct map. The officials may include the village too. He wants to talk to forest group and RFD official.

Peter: Maybe this is a part of a misunderstanding. Perhaps the villagers aren't sure where or what it is. We need a definition. You should talk to the villagers and find out; where it is, what it is. Perhaps the villagers say that all of it is CF, perhaps only a small part.

Helene: For sharing of information, please write your results in english preferably on the computer. Everybody should do this.

Boon: For the CF, many villagers are waiting for the new forest bill.

Helene: Chan, how is the credit situation.

Chan: I have already done a lot.

Helene: We have to do questionnaires to make the interviews. I would like to co-ordinate about his items (tenure) to get started. How will Pong do his mapping tomorrow? Maybe we'll go together and agree on each?-> OK.

Chan: Do commitments from the 20th, maybe go and prepare for the 21st activities. It will be around 8 or 9. I'll talk to the assistant village headman in MC. Expect 1 person per household.

Helene: Make arrangements for both introduction and community meeting.

Chan: Yes, we need clarification on the community meeting in MC.

Helene: We do the same as in TKL.

All: Yes.

Chan: I asked the assistant village headman in MC if they had a map, and then copied the one they had. After that I talked to the village leader and the Tambon leader, both in TKL. They have a lot of activities, and maybe a plan, but they seem very passive and unorganised and the headman is not doing much.

Helene: Who wants the villagers to be more active, outsiders?

Chan: Me! That was the link to this afternoon. They seem to be disorderly, they have many projects but not enough initiative. They could have access to money if they have initiative. I made a drawing with ideas to villagers because I don't really use questionnaires.

Helene: For me questionnaires is OK. I just want to have time for my own questions. Tonight I need the before mentioned items.

Chan: Their key problems are:
Lack of infrastructure. The officials say they can have no bridge, no road even though they have been living here for 40 years and this means less access to health care.
Lack of water, consumption is a problem in May and April, and they have to walk far to get it. For agriculture it is a major problem as there is no water in the dry season. Some has a lot of fields, some have very few, has to be verified.
Income, because of little resource base, and difficulties in going out, they have small incomes.

Goi: What is the cause of low income?

Chan: All of the above. Lastly, what are the women's problems? Lack of loans to generate income activities. From a revolving fund preferably. They usually use their time weaving, but would like to gain access to better markets and increase production. Also they would like to have more pigs and chickens for sale and so get more money. There are a lot of problems, and I asked them about their dreams; one said that in 5 years there would be enough water, electricity, a road, another said land rights, another said extensions (women and farming). How would they achieve this? They have tried to get a road but couldn't because of the NP. I suggested that they get organised. Maybe they should make a caregroup with the headman as a member. They should become members in the local commune system so they can all get agreements on what to get.

Pong: Tomorrow we have to represent at 1900, 1 Thai and 1 Dane. Who wants to go?

Peter: There will be a pickup here for 2-3 days and we can use that.

Helene: I would like to escort, not present.

JF: I'll present.

Helene: I would have loved to be at Chan's meeting, it sounded very exciting.

Chan: Perhaps each group could make a list of persons you would like me to talk to, tourism, NGO's. Please find out.

Helene: If I have to concentrate on credits, I need info from Chan.-> OK

ASUG: Goi and Chan, what do you do tomorrow?

Chan: Interviews and plan the community meeting in MC.

Goi: In-depth interviews. Today I interviewed about history (Pud) and did some mapping with Helene.

Pong: Tomorrow Preeda is chairperson.

200103
Morning
Preeda: Chan and JF will present in location 2 later tonight. We have our own car. Departure time is 1830-ish. In each group if you want data from the other groups, make a list and give it to one of them.

Social:
Helene: I suggest the group gathers after the meeting. I ask Pong how he will map the village. I will make last check on the questionnaires, and then go and make interviews and questionnaires.

Pong: This morning I will go to MC and do GPS measurements there, in the afternoon I will do it in TKL.

Helene: We have to make an agreement on how to measure it->OK
Peter: Comment. The Thai has to do their individual assignments later. The most important now is the interdisciplinary work. The whole idea is to do teamwork. If you only think as individuals, then there is no reason to do SLUSE. So, the priority is to work with the others and after that to make measurements for own work. You are being evaluated in SLUSE on interdisciplinarity the other things are less important. All the things you do have to fit in the group problem formulation. All other information is secondary! It is easy to combine. Do your specialist work for the group but remember to share the information and work with the others. Then you can get information for yourself and the group as well.

Chan: We have agreed to share information.
Peter: Just remember the focus.
Helene: Maybe we should make a box with information so others could see this information (in English). But I don't know if this is practical, maybe we could use the PC.

Preeda: The group always do that, I print it out for them.
JF: It needs to be translated into English.
Kik: The agri group will do interviews to collect data on the production systems.

Boon: The forestry group will make a summary of data and help the social group with questionnaires.

JF: And make plot sampling in TKL CF.
Preeda: As adjaan Peter says, we need to keep the focus and find out what information we have in order to make sure we answer our common overall question.

Chan: Tonight we make a review and find out what we should say at the meeting.

Helene: Progress of work, activities and problems. For the midterm evaluation, I have some questions; are we going to prepare in the morning or present?

Peter: We'll eat breakfast in Basecamp, then prepare. I'll check and see if that is still the plan. Tonight it is informal where we'll tell what we do/have done, only the interesting stuff. Chan and JF should meet with the others and find out what to say.

Helene: Could Chan start typing his data, and maybe share with the other groups.

Chan: I only have information flows, I keep my information close and only have indicators.

Helene: I ask you again as I did yesterday.
Chan: General and special information, OK. I am not clear, do we need to give all our problem?

JF: It is only an overview keep that in mind. All in Thai will be translated into English. We should set-up the next meeting before 18.00, perhaps at 16.30 and then get information on what to say at the later meeting at location 2.

Peter: I have to go to location 3 as they need help.

Evening:

Anna: In the agri-group we had a meeting with Peter and agreed upon rearranging the structure of the research. Now we have gone through the questionnaire, which covers half the village. What we have looked for is how many rai they have and whether or not they have documents. Now we'll choose some in each group. Then we'll visit the fields of the interviewed. We'll divide into poor and rich and ask what parts of their fields are good and bad. This we will then test. This morning we had an interview with 2 households and they had 21 and 16 rai. Tonight we'll go with them and do soilsampling with them.

Chan: One household only has 2-3 rai. They are very dependent on the forest and are newly arrived.

Pong: Today I used GPS and did village mapping. Now I'll take pictures of the households. Also I made interviews about landuse trends and looked at landuse trends.

Helene: What methods did you use?

Pong: In-depth interviews. Also went to MC to study landuse history and did mapping there. Has map from MC. For JF, took photos for general forest survey to prepare MC forest review for a guideline.

Boon: For the forest group, we made a plot survey in the community forest. 3 plots were made with GPS. All trees were drawn and measured and biological diversity assessed.

JF: I have written my notes so all can read what I have done. I suggest all do the same.

Helene: How does Pong think this trend figures in the lighthouse strategy?

Pong: I took notes when I went to the field. I TKL the changes of the land depends on government officials (GO) and the villagers. The paddy fields depend on SPK documents. The villagers cannot expand. In MC they depend on non-governmental officials (NGO) and themselves if they want to expand.

Explanation?: How do you find out of these things?-> By looking at their limitations regarding the surrounding national park and natural resource area that affect their livelihood strategies. For example MC is in the national park and the agricultural area is within the national park boundary so they have no rights and the villagers stay there illegally, and so their sense of belonging is different in terms of rights to their land. They have some alternative activities like tourism and other projects like Upland Holistic Development Project (UHPD), but they feel insecure because on lack of ownership. In TKL some have right, and so they feel more secure. Also it is in the natural reserve area. I asked the villagers directly about the land. I TKL there is no organisation, and there is one in MC, and this connects in a different way. This information cannot indicate sustainability so we need more information from the right groups. All of this information I will translate and write down.

Helene: If they were organised they would be better able to claim their land.

Pong: Will look into it.

Chan: The Land Reform Department (LRD) controls the granting of SPK and it is a long process.

Helene: Will they give more SPK?

Chan: The Royal Forest Department (RFD) will give control of the E-zone to the LRD. They can also give temporary certificates.

Pong: Will go for more in-depth information in MC.

Helene: What do you think of the general land situation? What would be good for the villagers? How do we find the solution? Just think about it.

Chan: First they would have to get organised in the villages.

Helene: Could all please enter the data in the computer first in English and then in Thai?

Boom: First they make it in Thai and then in English.

Chan: I would like to know how you want the data, some is information some is analysis?

Helene: We need both kinds, some of each.

Boom: They will sum up in Thai and then translate every day.

Helene: (Suggests method) How do I get information from Goi?

Goi: I have done the history in Thai.

Helene: It doesn't matter how it is presented, just readable and in English. What should I give to you?

Helene: Today I finished approximately half of TKL with the questionnaires. Tomorrow I'll finish TKL and start MC. Also tomorrow is introduction and community meeting in MC. Afterwards more work in TKL.

Chan: Make as much as you can today, tomorrow is going to be very busy. Hopefully we have the same as we had in TKL.

Helene: Today we will try as much as possible, and maybe we'll be forced to work tomorrow too.

Goi: I leave the 23rd.

JF: I have some information to Goi from the forest.

Helene: Chan, could you speak to the district official?

Chan: Don't know.

Helene: Chan, before you go to the evening meeting, show Boom about your notes concerning credit, tenure and access, then I'll work with it. -> OK Also remember to add in the questionnaires about loans.

Chan: Loans are dependent on business. The conclusion is that main loans are from Mr. Khet who supplies the contract farming. They have no person in the commune and so cannot get loans from the 1 million baht loan. In TKL only 2-3 has loan from these means. Most have from middlemen. The villagers depend on these.

Helene: I will do interviews later.

Preeda: Suggest that we don't necessarily use the questionnaires, but write it on a sheet of paper.

Helene: When do you translate?

Chan: Hopefully it is easier to translate with the new questionnaire.

Helene: I suggest Boom fills in some in the questionnaire, some about credit, it needs to be in the questionnaire.

Chan: The agri-group asks about whether credit is a problem. The major loans are for that.

Agencies wanted: District official, district forest officer, district agricultural extension officer, Sri Lanna national park official, Tambon official, NGO's, business people (elephant), middlemen, persons in lowland tun luk, land reform official in Chiang Mai, national park official about tourism, regional forestry official in Chiang Mai, statistic office for average crop production, forest research center.

210103
Morning
ASUG:

JF: Today introduction by Chan then community meeting by Helene. Then the agri-group will go back to TKL and conduct interviews. Depending on the time it takes to make the community meeting we will either go and make plot sampling or data review.

Helene: After the community meeting we come back to finish the interviews in TKL, if there is enough time. The mapping in the community meeting will be done.

Pong: After the meeting I will go with the forest group. Made a list of information about MC that will be distributed later today.

Chan: With the introduction we will follow the same procedure as last time. How about tomorrow?

Pong: The villagers in MC cannot remember the house numbers, but they will if asked to go to their house and show the number. Almost all have green cards and have emigrated from Myanmar.

Helene: 4 maps and drawings for the children like TKL.

Chan: Went to group yesterday. Each group should get problems from each drawing before we finish. Problem ranking.

JF: Doesn't have to be something big. There is a lot of informal talking, use this to get your information.

Peter: What time are we finished in MC?

Group: Maybe at 1300.

Peter: I go to Basecamp in the afternoon and come back for dinner. Same tomorrow.

Chan: Bring lunchpacks and any equipment we may need.

Helene: Something to sit on.

Pong: What time do we start? -> 0900

Helene: Can we get a map from Pong?

JF: I'll walk, anyone is welcome to join.

Chan: You must be there at 0900.

Evening

ASUG: What information did we get today?

Helene: The meeting in MC went very well. Adjaan Peter suggested we did a wealth ranking and this went well too. We think we can do the questionnaires quicker in MC because of this.

Chan: Goi interviewed about the village history and their ceremonies. I tried to identify community organisations. They have 5 village committees and all were represented by their leaders. Among key persons/groups, they provided leaders for the community forest, the agriculture group and the women's group. They are interlinked in the village through marriage. They have also married outsiders, Pa Loung and others in Pan Dang Nok and other places. They talked about external relations, GO project the district forestry official, about utilisation forest and that the RFD supplies seedlings through the district office. They are interested in citizenship as they only have the green card. The education provided is non-formal, and consists of Thai. Regarding the relations with the local government; the government will provide milk and lunch along with the non-formal education programme. Concerning NGO, there are the UHDP and the community forest network. For the private business they are dependent on middlemen. Regarding the tourism; one part with the elephants belongs to the chairman of the Chiang Dao subdistrict, and he runs it all. There are some group tours from Chiang Mai that stay in the village. The leader lives in MC, and has married there. The villagers try to interact with their neighbours to gain more power. I asked them what are your crucial problems? They answered; there are some rumours that the village will be moved, lack of citizenship, water shortage in the dry season.

JF: We found that the villagers had very poor knowledge of their forest resources and areas/boundaries. They have a community forest that is split into two parts. They do not get their timber from their community forests, but from somewhere else. They had no knowledge of the ownership of the timber they cut.

Pong: I focused on land use. Asked the villagers to zone their land. They said there were 2 zones, one for agriculture and one for forest. The villagers have very poor knowledge of their boundaries. They thought

they were outside the national park. There is a referendum among the villagers not to take more forest and convert it into agriculture it has been there for 10 years. The reasons are; RFD has threatened to kick them out. Some land in the community belongs to different persons in other villages. There are neither documents nor management. They have enough land. The villagers say that this year was OK, but they had to work outside the village. I want to study the differences in one place has much land, the other little.

Boon: Due to land scarcity; villagers have no ID, and are in the national park area. The focus on tourism, less on NTFP, most do wage labour for tourists.

Anna: The crop calendar was very different. All land is on hillsides, there are problems with erosion. There are no land documents.

Helene: I would like to show my map.

Anna: We need daylight to see it properly.

Pong: How do you do wealthranking?

Helene: We used their own ideas and criteria for it.

Anna: What with the rest of the day?

Helene: We did the last interviews in TKL and mapping of the village. Tonight we'll work with the data. Tomorrow we'll go to MC.

Chan: We need to look at the questionnaires again. -> OK

Preeda: When we do interviews, remember villager welfare. They need some time of too.

Chan: We have skipped 2 households. One is sick and the other was involved in an accident.

JF: Wrote my data in readable English, and am 2/3 finished. Please look!

Boon: Firstly, corrected the data and gave them to Muey to translate from Thai to Latin. Tomorrow we go climb a mountain and will survey their timber cutting area to see who owns it/uses it.

Pong: Today I reviewed information and translated with an interpreter. Went with Helene. Tomorrow I go with forestry. After we come back, I will do more mapping on motorcycle.

Kik: Today after the community meeting, we did soil samples and interviews with the Lahu.

Anna: Tomorrow same thing different day in MC.

Peter: Today's community meeting was super. Remember that it is a comparative study because TKL is outside of the national park and MC is inside it. This is however not so. MC is located in a small pocket in the national park. The area is still very small so there may still be a problem. So still we may be able to see the impact of the national park on a village. Don't worry about time, as you have as many households in total as the other groups. If you feel you cannot reach all in MC, make a sample. Now you know how much time it takes, you decide how.

Helene: We'll be quicker there.

Peter: I think so too.

Helene: We'll take it as it comes, we start with all.

Anna: Tomorrow, 0730, chairman Punt.

220103
Morning

JF: It is now 0730, any changes from last night?

Social: There are some few changes in the questionnaire. We will use the map to divide between us.

Chan: We need time for in-depth interviews.

Agriculture: No changes.

Forestry: Muey is sick, she will go with Helene, Boon will go with Jesper.

PPT: We will organise a PPT for the midterm evaluation. We will prepare in the morning, and after a couple of hours we will present.

Evening meet: We will decide who shall present one Thai one Dane. The presenters will discuss together.

Evening

1. What we did today
 2. What we do tomorrow
 3. Presentation tomorrow, Thai 1, Dane 1 or 2
- One from each group will discuss this after the meeting.

Agriculture: We did in-depth interviews and soil sampling. They own much more land than they said in the questionnaires. There may be some confusion because they have some land with documentation and some without. Also there are different answers from husbands and wives.

Peter: This type of inaccuracy is unfortunately very common. Not because of a bad job but because it is difficult. This is because people have different perceptions of the things we ask about; do they own land, do they cultivate for their mother e.g. a respondent does not include the land he cultivates for his mother if you ask for the land he owns. And e.g. he does not tell about all the land he owns, if you ask for the land he cultivates but just the land he cultivates this year. Ask several questions, to be sure you get the right answer.

Pong: We have to explain as exactly as possible when we do the questionnaire.

Chan: In MC they have backyard homegarden areas with e.g. a lot of fruit.

Pong: The land is belonging to the villagers and also to externals. E.g. local Thai moved out and Pa Loung moved in. 2 Musa families, some local Thai and Pa Loung cultivate the land.

Social: We wasted time bringing order in the questionnaires and sharing with agriculture. The wage labourers were busy today. They are building a new school/other purposes. Social discuss about strategy for questionnaires.

Forestry: We worked in MC community forest. We looked at the utilisation of the forest. there are impact caused by elephants. We can see obvious forest encroachment around the area; logged trees, burned leaves, burned land.

Peter: Did you find a special logging area you were looking for?

JF: The villagers are not sure where the area is.

Chan: What was the opinion of your guide?

JF: Someone tried to get GPS points and could not catch up. Tangmo survived.

Peter: Maybe they don't have a specific logging area?

JF: I think so, as we had to climb high to reach the area.

Pong: I saw some locals carrying building material, they said it was for the school, but they were not from MC. Old men said that middlemen are buying timber. They cut down the trees and use the elephants to drag it out. Today I did GPS points and land use zoning. My guide did not know about the national park boundaries. Outsiders from other villages encroach just behind the school but the villagers could not do anything about it. About the water; they do not use the stream now, but the new water system. There are some problems with the pipelines regarding chemicals. The solution was small banks to prohibit the fertiliser to get into the water. There is a black colour in the pond, maybe chemical?

Presentation: Goi and Preeda in Thai, Anna in English, breakfast at Basecamp at 0800. We leave at 0730.

????? Many young use amphetamine. Be careful, do not tempt people, and so hide away valuables. Tomorrow Goi is Chairwoman, at 0715.

240103
Evening.

Anna: Tomorrow?
Preeda: I will get information from external organisations and Pong.
JF: All meetings are the 26th/27th.
Preeda: Hmm, I know the meetings the 26th/27th.
Anna: Have they arranged themselves?
Preeda: I will go to MC and do interviews and questionnaires.
Helene: I will interview in MC, and have a meeting at location 5 at 1500 with Benjo to meet with RFD official. Perhaps I will exchange questionnaires with Preeda.
Pong: I will go to MC and do some GPS measurements to find the sizes of the plots that are belonging to the outsiders for the agri-group.
Helene: Can you make a map of MC?
Pong: Why?
Helene: To get better information for planning. Will JF take photos and give them to the villagers?
JF: If we can get the printer to work.
Helene: What now after the meeting?
Boon: We do the last of the survey.
JF: I plan to do one on MC from elephantback!
Preeda: I will do interviews on the elephant.
Anna: We will look at the social survey and then take the elephant back.

250103

ANNA 25

Morning

Boon leading.

He sends greetings from all to Jesper and wish he will become well soon.

Preeda: I found out that Musa house is only one household. It is a widow struggling with 4 children. Na Ong Tep Bun; outsider, has not settled his household in MC. Two respondents were absent.
Helene: has answer in own notes!!!
Preeda: The villagers do not intensify because they need many inputs to do that. They use beans as fertiliser.
Helene: has answer in own notes!!!
Kik: Looked at questionnaires and made sampling. Now the group want to do interviews in MC
Anna: About intensification: If they own the land they will invest more because they feel more secure. It also seems that they do not have paddy fields and they cultivate on steep slopes.
Boon: The SPK problem is significant. 5 years ago there was re-elections. If you sign this you will have to give your land to capitalists?
Pong: About SPK. Capitalists from Bangkok? Influential politicians. The SPK belongs to the politicians' relatives. Some monks have 400 rai land, they said they would set up a temple. This place was set up in a water source area.
Boon: Interview with the village headman. Met the RFD officer who should teach them to grow rattan and edible plants. Tomorrow; close look at the forest and more GPS. This forest is located on the East side of MC
Pong: Found plots of outsiders in MC. Made all data for the village mapping. Would like to ask Peter to help with the mapping. Tomorrow Boon and Pong will go together.
Boon: Thanks for being chairman.
Agri: Tomorrow at 0900 4 elephants will pick us up. Soilsample and test of water quality. Hopefully possibility for analysis at Basecamp. Peter leaves at 1300. Reservation: water analysis equipment 27th and 28th. Monday, soil analysis.

Pong: Tomorrow there will be possibilities to interview officials. Preeda would like to see Gam Na Thi Ding, local power person. Preeda will give the questions to Chan.

260103
Morning

Helene: 13 interviews are too many, must prioritise title deeds and land district office.
Chan: We already signed up on all.
Peter: We've seen that and know it is not possible. There has been some communication problems since the Thai-teachers have been in Chiang Mai.
Helene: I talked to someone in RFD yesterday. I want to talk to someone who issues land documents in the land reform department. What are your plans Chan?
Chan: I will talk to adjaan Pikul about meetings.
Helene: Book RFD and land issue and land district office for ID cards.
Peter: Interviews will probably be tomorrow since today is Sunday.
Chan: There is a middleman we want to talk to.
Peter: I don't know if we can identify him.
Helene: As soon as we have an appointment with those three we have to decide about the questions.
Preeda: I have questions about tourism.
Chan: It's the list I have.
Helene: I would like to see it.
Chan: We will reformulate questions.
Helene: ID cards, SPK and organisation of community meeting. Does agriculture have any questions?
Kik: Official statistics from Chiang Dao of yields/rai.
Chan: The office is around here in the sub-district. I'll do it tomorrow.
Helene: 4 is enough maybe do the last one on phone? How about forestry?
Boon: Will write it down.
Helene: Meeting at 1900 tonight. Social group should do 2 interviews here at TKL and uncle Pud. Thanx.
Preeda: Wants to do informal interview with elephant rider.
Peter: You need a receipt for transportation.
Helene: Preeda takes receipt.
Peter: I go to Basecamp for GPS, am back for dinner.
Chan: Limitations on questions for outsiders. I'll try to find the middleman.

Evening

Helene: Community meeting at 1700 at TKL because the board of SLUSE is coming. What do we do there? What did you do today?
Preeda: Interviewed key informants about tourism.
Helene: Finished questionnaire in TKL and MC.
Chan: Translated questionnaire did interview with; the wife of the tour operator in Chiang Dao, UHDP, village headman in village no. 7 about the community forest network. Found Mr. Khek's house, co-ordinated with the externalities plan. Tomorrow 1300, local government office (TAO) maybe district office Sri Lanna.
Preeda: Tomorrow data review.
Kik: Today we did in-depth interviews with rich and average persons judged by the amount of land owned.
Anna: Data review.
Pong: Did GPS points on the community forest boundary in MC, and made a map of the land use zoning and village map.

Boon: Made an interview with the community forest organisation in the community forest in MC near Sri Lanna. The community forest/RFD officer has supplied seedlings for rattan and bamboo as part of the foodbank project. Pong was used for mapping to merge data with JF.

JF: Tomorrow plot sampling.

Evening

Forest: Mapped last of TKL and did translating from Thai to Latin.
Agriculture: Did soil-and water analysis. Anna put GPS points in XL and did some typing of interviews.

Pong: Went to Basecamp and made maps.
Preeda: I interviewed the remaining and found out that his key informant is demented. She was previously concubine to a Chinese immigrant. MC used to be Thai, but they could not breed there. So the Thai gave the hilltribes the land. The Pa Loung cannot get ID because they are usually Myanmar and are therefore seen as illegal in Thailand (refugees). To change from Pa Loung to Thai is difficult. First they have to change to Karen. About tourism, they have to work with tourists in Chiang Mai after finding the route. Income with accommodations is 1000 baht/3 years. The main income goes to the local Thai, the Pa Loung only get fringe benefits. About the elephants, there will be details later.

Chan: Mostly business belongs to tour operator in Chiang Mai. I visited the district officer (who is also the tour operator). Visited NGO on community forestry and tourism, visited Sri Lanna, no one home. Called them and they can be there at 1400 tomorrow. I will not be there for the community meeting because of the meetings.

Helene: Made 5 interviews.
Anna: About the community meetings tomorrow.
Boon: MC is OK with the meeting and food. Maybe there is a show! Around 1000. TKL is OK with meeting, food and again maybe show. Around 1800. We start own meeting at 1600.

Anna: Suggest groups themselves find out what they want to say and then one Thai will put it forward.
Peter: Just present what you found out, maybe a few recommendations but you should be careful because of the limited data. Wrong recommendations may be wrong for the villagers and we would want none of that. Maybe you could produce some maps or prints. Maybe the villagers will interact with our results.

JF: I suggest Boon as master of the meetings.