

**Changing Livelihood Strategies under
Current Land Holding Conditions in Non Sao-
e, Nakhon Ratchasima Province - Thailand**



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Project Work in Interdisciplinary Land Use and Natural Resource
Management Course (ILUNRM)-SLUSE Program

April, 11-2006
Denmark

Abstract

This research investigates the adaptation of new livelihood strategies by the villagers under the changing land holding conditions in the village of Non-Sao-e in Nakhon Ratchasima Province, Thailand. Main objectives of this study are to embody the main income generating activities, current land holding conditions and their impacts on the livelihood strategies of villagers and to look into how the villagers are coping with new livelihood strategies from being farmer to being labor.

The adaptation of new livelihood strategies are characterized to full extent by the fact that most of the villagers in the above mentioned village have sold their land and have switched to labor jobs and further those who still holds the land have moved to livestock production. The main reasons behind this great shift are the lack of money, soil degradation, and debt problems. It is also because crop production requires a lot of investment entries to be considered as feasible and profitable. Those who have not sold their lands are also leaving crop production due to mentioned reasons, they are employing themselves livestock production instead.

Acknowledgments

We first would like to thank our Thai colleagues Miss Sinprom, Miss Thongthum, Mrs. Kongmak, Mr. Douangdavong from Kasetsart University and their teachers and professors who were one of the biggest parts of entire SLUSE Program. We also would like to thank our own supervisors Dr. Kristine Juul from Roskilde University and Anders Jensen from The Royal Veterinary and Agricultural University, who helped and supported us in the field. We have to send our sincere gratitude to the people of Non Sao-e Village for their hospitality, participation and patience. We are especially grateful to Dr. Pity from Kasetsart University, BAAC official, village headman and his assistant.

Our special thanks go to our interpreters “Fame and J”, who helped us a lot in the field and made this field study much easier for us.

April 10th 2006, KVL

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1. Introduction

1.1 Local Context

Thailand is a newly industrialized country which over the last decades has experienced a fast economic growth. Thailand is export dependent, with exports accounts for 60% of the Thailand's GDP. From the last couple of years Thailand's economy is growing by 5% to 6% every year. It would not be wrong to say that agricultural development has been the engine of growth for Thailand in the last fifty years. Nearly 60% of the labour force is employed in agriculture. Rice is the country's most important crop. Thailand is a major exporter of rice in the world market. Other agricultural commodities produced in significant amounts include fish and fishery products, cassava, sugar, rubber, and grain. The ongoing growth of area under cultivation and crop production resulted in the decline in forest cover significantly in the last couple of decades. Even Thai government encouraged directly or indirectly in the late 1970's and 80's the logging of forestland in order to earn more foreign exchange for the country. (World Bank Report, 2005)

Since the beginning of the century, land in forest areas was freely occupied by Thai farmers with encouragement from the state. In the 1940s the government sponsored settlements in forest land, and started official land allocation programs. The first ever law on types of landownership was proclaimed in 1954. The Land Code of 1954 specified legal rights to land for agriculture, industrial and commercial use and housing, beside providing for four types of land documents.

In 1960s, as Thailand graduated from subsistence agriculture to market-oriented production and the population grew rapidly, the increased demand for food and rising prices of cash crops such as cassava, maize, etc. led to a considerable increase in the cultivated areas and encroachment upon huge tracts of forest. This necessitated a change in government policy to balance the environmental concerns arising out of large scale deforestation with the rising demand for agricultural land. In 1975 the Land Reform Act was passed to accelerate land reform as well as land allocation in degraded forest reserves. As a result of the changes in government policies at different times, there exists a host of institutions dealing with land issues, and 10 different types of land certificates ranging from land use permits to firm land titles (Feder et al.1988).

In the village of Ban Non-Sao-e livelihood strategies are changing as small land holders have sold out their land holdings to pay of the debts and for household expenses and moved to the off farm and on farm jobs. The land holders are also changing their livelihood strategies by investing more into the livestock production instead of agricultural practices. Main reasons behind this shift are the lack of natural resources, soil degradation and lack of choices in agricultural activities due to shortage of money. Nowadays they can get money from several government funds but the money they can ask is limited.

1.2 Study Area

Our field site is the village of **Ban Non-Sao-e** in the Nakhon Ratchasima Province. In the past most of the villagers grew maize and cassava. Starting from 1983-1984, most of the villager sold out their farmlands because of debt problems and to buy things needed to maintain their daily life and they thought that they would never get profit from growing crops because of high input costs, low fertility and natural calamities, all in all this trend still continues. Out of the total 119 households in the village 27 households still hold their land or a part of their landholdings. Majority of the land in the village is held under the Phor Bor Thor 5 deed known as local development tax receipt (Pitiyont et al. 2006). A very few of the land owners are involved in the agricultural practices and the rest are using their land for the livestock production. For the land owners the major source of income is livestock production which has to be read as cattle breeding in our context. There are about 600-700 beef cattle in the village. Villagers borrow money from the village fund to carry on the livestock production. Average selling price of a cattle is around 14000-15000 baths, since most of the villagers have sold their lands, they have become workers to earn their living. Most of them are employed in agricultural sector and a few of them work in non agricultural sectors e.g. factories. Labors earn about 120 – 150 baths per day.

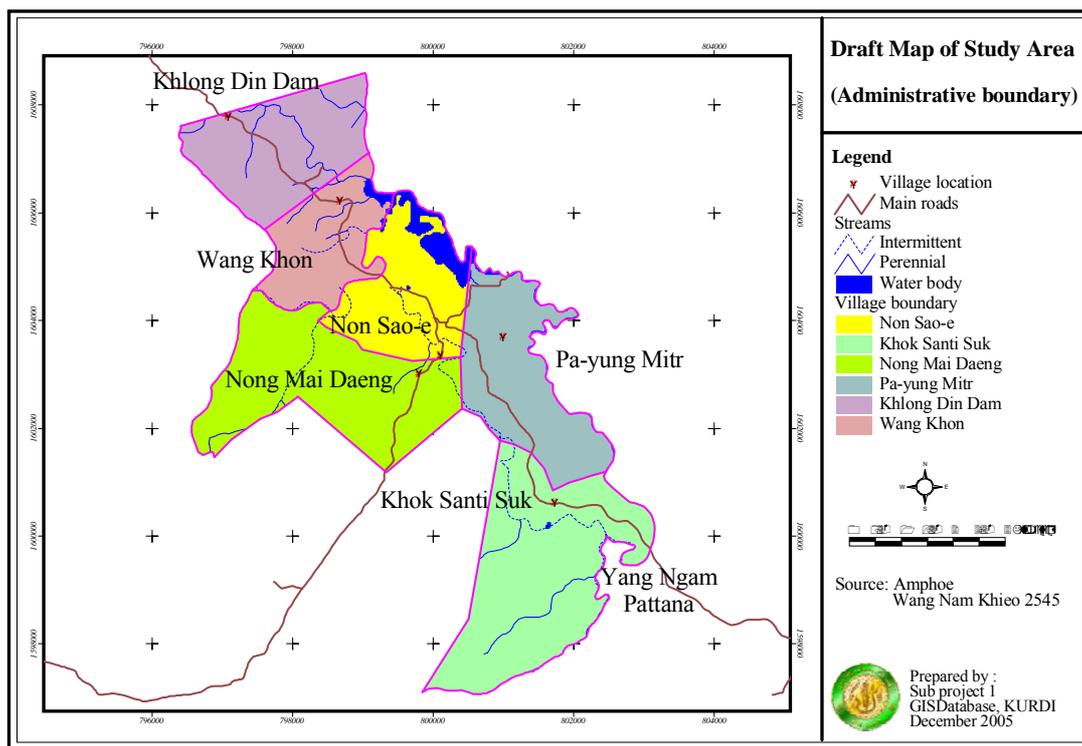


Figure 1: Study Area, Non Sao-e (Yellow colored), adopted from Basic Information for the SLUSE field course

The area of the village	3,630.29 rai
Total households	119
Total population	320
Number of land owners	27
The terrain characteristics	Plain extended on a slope of less than 2%
The main crops	Maize ,cassava , vegetables and fruit trees
Infrastructure	Health care center ,school, connected by road , electricity, running water,

Table 1: Preliminary data of the study area, Ban Non Sao-e village

1.3 Problem Formulation:

In the beginning we were interested in to investigate land tenure and land policies in Thailand, and its influence on the access to credit, livelihood security and land use. We prepared our synopsis keeping in mind the above mentioned topic of research. After reaching Thailand and discussing our proposal with our Thai counterparts, we found that in our study area (Ban Non-Sao-e) most of the villagers (almost 80%) have already sold their land and they are not holding any land title. What they have was only tax receipts from the government showing that they are using this land for so many years. Taking into consideration the changed circumstances, we changed our research question in consultation with our Thai counterparts from “*influence of land tenure on the access to credit, livelihood and land use*” to “*adaptation to changing livelihood strategies under the current land holding conditions*”.

2. Objective

The first objective was to look into the income generating activities in the village and our plan was to investigate the influence of current land holding conditions and their impacts on the livelihood strategies in Non Sao-e Village. Secondly, we have planned to investigate how the villagers cope with changing livelihood strategies from being farmer to being labor.

2.1 Research Topic

Adaptation to changing livelihood strategies under current conditions of land holding system in Non Sao-e Village.

2.2 Research Questions

- How do the current land holding conditions influence the livelihood strategy in Non Sao-e Village?
- How does the limitation of natural resources influence the livelihood strategy?
- What is the effect of (limited) financial resources on land use/holding?

3. Methodology

Denscombe (1998) suggests that, when it comes to selecting a method for the collection of data, certain strategies will tend to be associated with the use of certain research methods. In our investigation, association of the strategies was not only to collect data but also to maximize the productivity while working with a group which consists of people coming from different disciplines. Each individual contributed on formulating most suitable data collection methods. According to nature of the problem in the field, we had to reformulate the methods as well as the activity calendar as expected. The following social and natural science methods have been applied to obtain data. The methods are being described and discussed below.

- Questionnaires
- Semi-structured interviews
- PRA: *Labor (activity) calendar, timeline, problem ranking, well-being ranking and analysis*
- Soil sampling and analysis
- Direct observations

We sure would like to stress the importance of collaboration and being open-minded beside the concrete knowledge from books and courses when it comes to selecting appropriate data collection methods. It works!

3.1 Questionnaire

We have prepared questionnaires to obtain both quantitative and qualitative data which supposedly shed light on the reasons of changing livelihood strategies of villagers in the study area, we also aimed to see if there is any significant difference between land owners and landless people when it comes to the living conditions and also to understand the main reasons behind land selling trend among village members.

Questionnaires have been applied to the respondents who have been determined by stratified sampling. After stratification, the intention was to sample them randomly, however we had to end up choosing the respondents according to their availability. We had to make appointments with most of the respondents before applying our questionnaires. One has to remember that this sampling method would have led researcher biased samples in different situations such as when bigger sample size has needed or various characteristics in livelihood of the focus group have involved. But, due to the limited variations and characteristics in livelihood strategies in a small village like ours, it is obvious that our samples display almost all of the characteristics of the overall population as well as livelihood strategies.

In order to create comparison entries, we first stratified our samples into two different categories as land owners and non-owners. This has been done by the village headman

and his assistance by means of the list of village members. Then, we pre-tested our questionnaire to see the amount of time or any changes needed. Pre-test has been done with two different persons from two different categories. It turned out that each questionnaire took round-about 35 minutes and needed slight modifications. Consequently, the necessary adjustments have been made and the questionnaires have been applied afterwards (Appendix A).

Our village consists of 119 households and 27 of them were land owners. We have applied 39 questionnaires altogether, 10 questionnaires have been applied to the land owners and the rest 29 to the landless villagers.

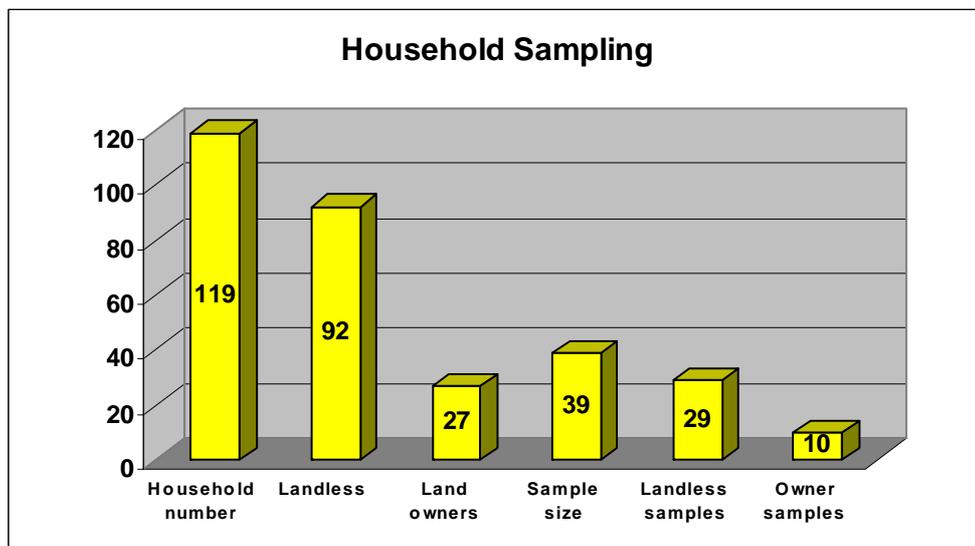


Figure 2: Sample size

3.2 Semi Structured Interview

The interview method that we preferred to apply to the key informants was semi-structured in-depth interviews. The reason for constructing the interviews as semi-structured is that this method was least time consuming and allows the informants to give additional information which may have been overlooked by the researcher.

At the beginning, we had planned to make the interviews with two professionals and prepared our interview guide (Appendix G) for the two persons as well, which were subject to change. Luckily, we manage to make interviews with three different persons, one with village headman, one with the economics professor from Kasetsart University (Dr. Pity) and the other one have been made with the BAAC official. The informants have been chosen according to their expertise and knowledge about both local and general context; it is obvious that their academic/professional backgrounds allow them to give us important information which helped us to see the issues from different point of views. We had been looking for qualitative data and we aimed to gain insight about

available funds & credits and their availability for the villagers and the current status of social security system in the country.

The interview guide consists of 7-10 open-ended questions. The duration of the interviews depended on the interviewee and the scope of the interview itself. They have been made as natural conversation instead of following precise questionnaire pattern. During the interview, some questions have been eliminated or added up.

3.3 PRA

It is well known that Participatory Rural Appraisal (PRA) is a methodology which helps to identify community problems and to plan solutions with the active participation of community members (Selener et al., 1999). In our case, PRA methods have been used to gain quick insight and maximum understanding of villagers' common opinion/knowledge which influence their decision on changing their very own livelihoods for good. Therefore, our exercise could be also defined as RRA (Rapid Rural Appraisal) due to its aim and the way of execution.

Except the Labor Calendar, each PRA exercise has been executed in the same day consecutively in community center along with 40-50 participants. PRA exercises has started with community meeting, each group member has introduced themselves and gave a small speech about how do they feel and what are they doing there. Each group member has taken different parts in different exercises. Thanks to our counterparts, it was a one big organization where games, draws, food and lots of fun involved. On the other hand, we have been faced with some difficulties as it is expected. It has not been always easy to allow the villagers to take the lead of the sessions or to determine the agenda of the meetings, since we were focused on specific information. Language constraints were also one of the biggest challenges we faced on application of PRAs. There have been long discussions among the villagers during the sessions that we could not understand, moments like these, we have tried to catch up the participants by pushing our interpreters and taking notes. However these challenges seemed only for us and they neither affected the willingness of villagers to participate to the activities nor the quality and quantity of information that we were seeking. This is mainly because we have discussed the key points with our colleagues before going to field and made ourselves sure about what we were expecting from those PRA exercises. As a result, we have managed to conduct following PRA methods to collect data respectively.

The main purpose of *Labor Calendar* was to reveal the main income generating activities within the labor class in the village and to see how much time have been spent for each of these activities. It is very important to clarify the amount of generated income from each occupation and see which one is the most profitable for the village members. Moreover, we have expected from labor calendar to help us to understand in which manner the villagers decide on selecting their occupation e.g. income generating capacity, free time, social security etc.

The Labor Calendar has been prepared in house of village headman's assistant with the village members from two different categories as land owners & landless and from

different occupations such as labors in factory, oil-palm plantation or maize-cassava field and livestock production. There were 10-12 participants present during this session. We have planned to do this exercise as late as possible in the evening knowing that village members, especially the labors would have been only available after 7:00 pm. This exercise took 30-35 minutes.

The **Timeline** was made to know basically what the most important events in the village were so far and their influences on the villagers' livelihood as well as the villagers' reactions to these events. We have expected to see if there is any correlations e.g. between the construction of tarmac roads and agricultural activities or the prosperity level and the school etc. Thereby we might have concluded that intensification of agricultural activities led the soil degradation, which incited land selling trend etc.

Timeline has been executed in community center of the village. The participants consisted of from different backgrounds such as young and elderly, men and women, land owners and landless. Each group member was present during the session and it took 1,5 hours to complete. (Appendix D)

We aimed by **Problem Ranking** to see the most important problems of both land owners and non-land owners having been facing regarding their livelihoods. Knowing these problems would have helped us to analyze our research question in more detailed way. Problem ranking was the most important PRA method for us it is simply because the data gained from this exercise is based on first hand information and would tell us the main reasons of choosing the livelihood strategy.

To apply this exercise we have divided the participants into two different groups as land owners and landless, we as a group also have been divided into two different sub-groups. Afterwards we simply ask them to list their problems in regard to their livelihood, after determination of the problems we prepared two different matrices for two different focus groups. This is followed by putting the problems in matrix and ranking them. This exercise took 45 minutes (Appendix E).

The main reason of **Well-Being Ranking** was to see a clearer picture of villages' socio-economic level and see the differences between our two different focus groups in terms of possessions, income level etc. We were also seeking if there is any significant relation between the income level and land owning. Before completing the ranking, we asked from participants to determine the indicators of being considered as rich, medium or poor. We have determined the indicators along with 5-6 participants including village headman, his assistant and 2 or 3 knowledgeable village members. However, it was not possible to finish up to put every village member, which constitutes 119 households, on the map since it was already late in the evening. Next day, three group members went to village again and met the headman and finished the last part of the exercise by putting every house hold on the map according to indicators which have been determined a day before. We have given color codes to the households according to their economical situations and they appeared on the map with different colors. (Appendix F)

We expected some biased information from this exercise because it has been completed next day only with village headman. Despite the fact that the prosperity criteria have been determined along with the different participants, village headman might have made mistakes on showing in which group the households belong to.

Some group members managed to construct a brand new community map for the community center based on new information from our well-being ranking exercise. (Appendix C)

3.4 Direct Observation

While doing our field work in the village, direct observation was used mainly as validation/verification tool of findings from questionnaires. For instance, what did the villagers mean by livestock production or in which conditions do they work in oil palm plantation etc. Aside from individual observations, we made a small excursion to the oil-palm plantation where some of the villagers work and took a walk around the village with village headman while completing well-being ranking on the map. By seeing livelihood indicators with our own eyes allowed us to understand the local context which in our case, were priceless if one aims to gain insight about the livelihood strategies such as foreigners like us with limited knowledge. The only constraint was time to expand the scope of this exercise, we did not have chance to fix a day or two to make excursions with local people.

3.5 Soil Sampling

Soil samples were taken from 5 different locations which were determined randomly among our land owner respondents. We applied soil sampling to validate the fact that the area is suffering from low fertility. Therefore the selection of the fields is not vitally important and the results should be seen as indicative of general soil characteristics in the study area. Soil samples have been taken from three different locations of the fields and they mixed in a plastic bag and then labeled by the name of the owner of the plot and date. Samples have been analyzed by soil sample kit after waiting for one day to dry out. The results demonstrated the N, P, K, NH₄ and pH level of the sampled plots.

4. Results

The following section presents the main findings from our field research. The data from questionnaire, semi-structured interview, PRA exercises and soil sampling have been summarized and used to analyze our research topic.

Ban Non Sao-e consists of 119 households and 27 of them are still holding their lands, whereas the rest of the households are landless due to different reasons. There is no illiteracy in the village, it is possible to have education up to 9th grade at school. There is a healthcare center and two doctors are present all the time. Each household have access to electricity and there is infrastructure for running water, however due to lack of maintenance and drought, it is not possible for every household to utilize running water system. Rainwater is stored and used for household consumption. The main income generating activities are livestock production and labor. Livestock production is increasing its popularity in Non Sao-e due to high profit.

4.1 Questionnaire

Labor, livestock production and micro enterprise (small business) are the main income resources for the village members. Within 10 land-owners, there are 3 household dealing with only livestock production and there is only one household employing itself only in crop production, the rest of the land-owner households are dealing with the mixture of livestock production and the labor or small business, whereas overwhelming majority (%93, 27 respondents out of 29) of landless village members are occupied with on-off farm labor to generate income.

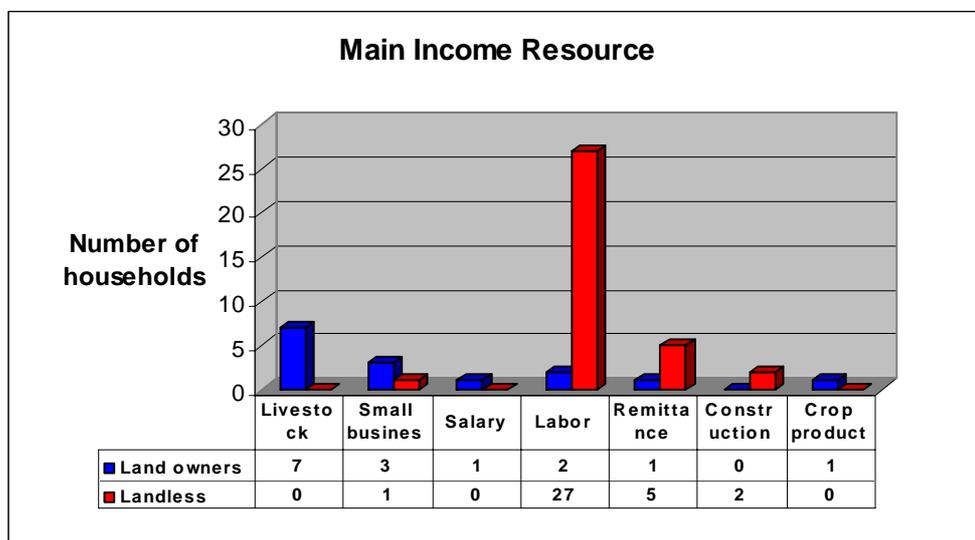


Figure 3: Income generating activities

As it can be seen from the chart below, there is big difference between the yearly income level of land owners and landless villagers. The data shows that having land have tremendous effect on income level as the land owners' income level is twice as much as

landless villagers' income level. The data from questionnaire indicated that regardless the size of area, having land has been influencing the average income positively.

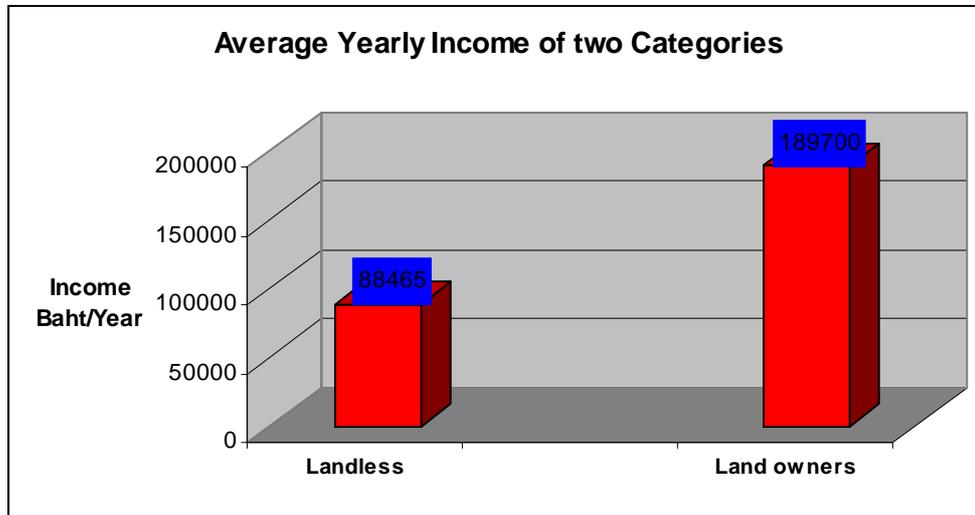


Figure 4: Income differences of two groups

There is an ongoing land selling trend in Non Sao-e village. The 51% (15 households out of 29) of landless respondents have sold or have been selling their lands due to different reasons. As it can be seen from the chart below the main reason of this appeared to be “landlocked field” situation which can be exemplified as landlocked countries that do not have access to the sea because it has been surrounded by the other countries. The person, who ended up with landlocked field, has to deal with quite a range of problems such as losing the access to the field itself or access to water stream etc.

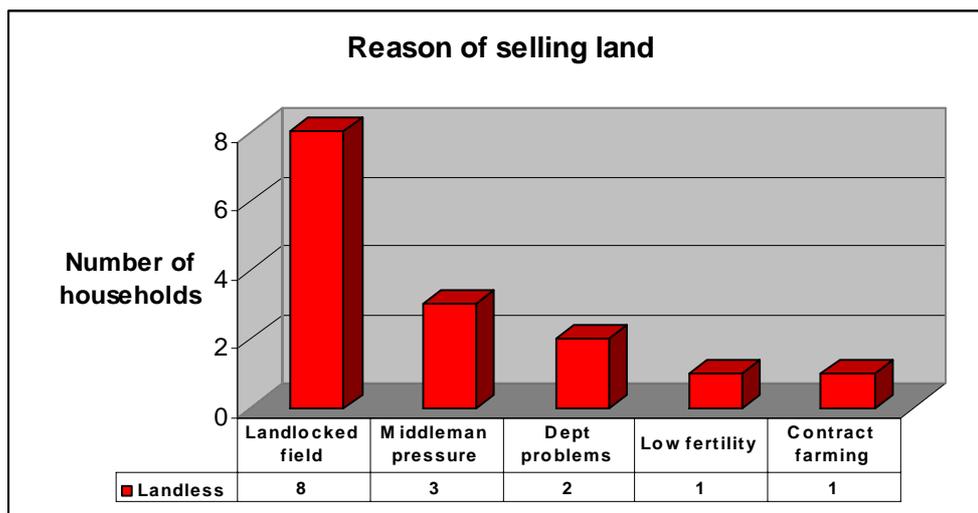


Figure 5: Reasons of land selling

The village funds seem to be very important to the villagers to maintain their daily livelihood, unexpectedly a vast majority of the labor class respondents have been using the funds to effort their household expenses and only small number of the village members have been using the funds for investment. As it can be seen from the chart below, contrary to landless villagers, usage of funds within the landowners is very limited and they used the funds generally to expand their livestock production. It is worthwhile to see that, even though none of the landless villagers mentioned livestock production or crop production as main occupation, four of the landless respondents declared that they asked for loan to invest livestock and another two respondents asked for loan to invest crop production.

Except two respondents, everybody used guarantor for collateral which is enough for applying loans from village fund and it is confirmed by village headman and bank official that the village members uses only village fund run by village committee, there was only one village member who applied to bank for credit, who was not one of our respondents.

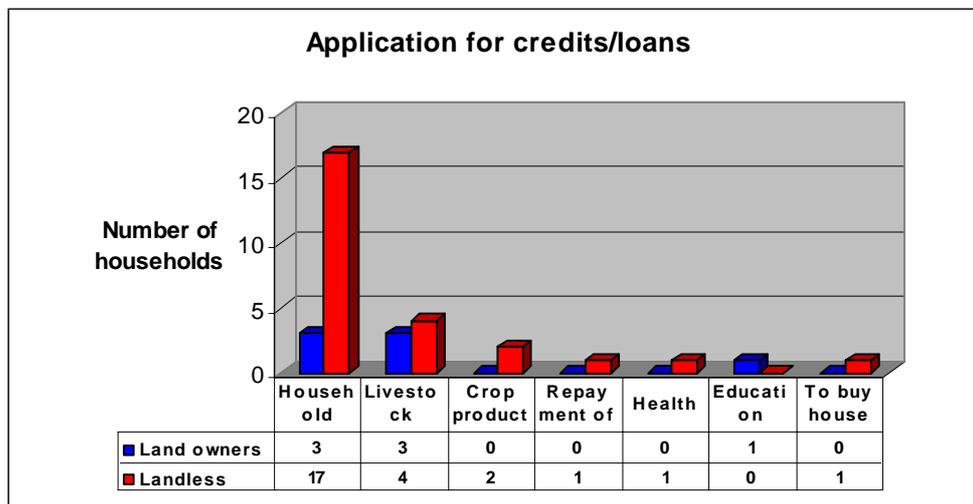


Figure 6: Purpose of credit use

The land title deed seems to be important for both categories as only 1 respondent from land owners and 6 respondents from landless group think that having land title is not important. According to the respondents from both categories, title deed was seen mainly as security for future generations and it allows access to credits and loans from different resources.

Feder and Onchan (1987) suggest that ownership security affects both investment incentives and availability of resources to finance investment. The supply of credit, especially from institutional sources, frequently depends on borrowers' ownership security. Provision of collateral is a common prerequisite for commercial bank loans, especially for medium and long-term loans. However, land is useful as collateral only if ownership by the borrower can be proven. Hence, a legal ownership document enhances

the owners' access to institutional lenders, who typically lack personal knowledge about the potential borrower and his background.

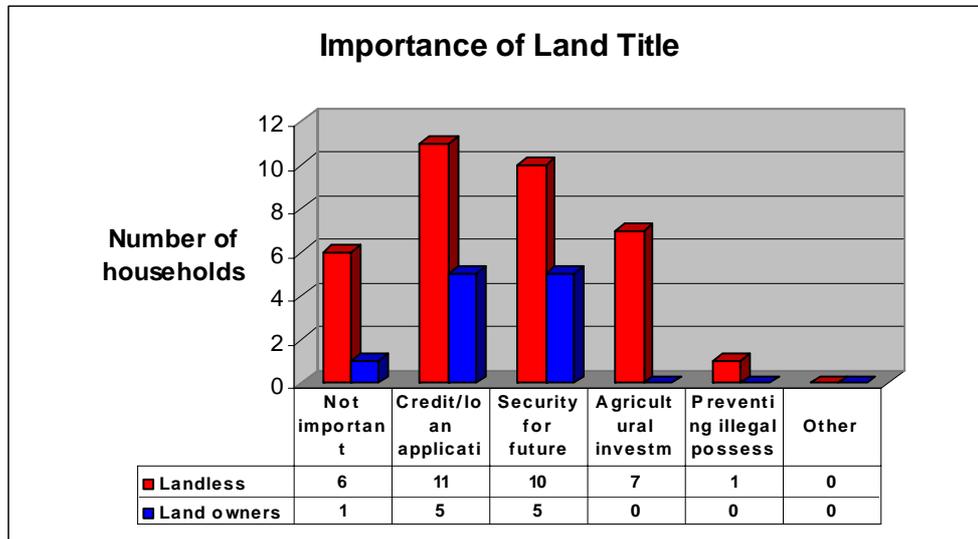


Figure 7: Importance of land title

To summarize, the data from questionnaire indicated that the people who have land are better off compared to landless village members as it can be seen in income difference chart of two groups. Land has positive effect on the livelihood, especially when it comes to livestock production, which is rapidly growing business in Non Sao-e village. The data from questionnaire also indicated that the landowners use their lands to feed their livestock and only small number (2) of them invests to these fields to incite grass growth. Therefore, for those who have land, the expenses for livestock production are low and the profit generated by livestock is high.

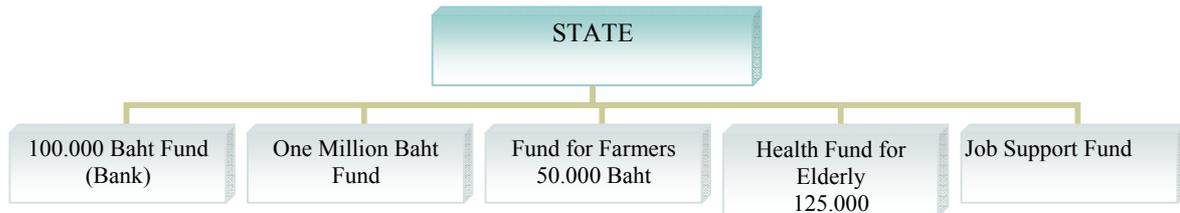
4.2 Semi structured interview

The idea of doing the semi-structured interview was to find out the credit facilities available for the villagers through the village fund and the agriculture bank (BAAC) as well as the criteria and conditions the villagers have to fulfill to get access to the funds. We did three in-depth interviews with three different key informants, one with the BAAC official, one with the village head man and the last one with the economics professor from the Kasetsart University.

By interviewing the BAAC official, we got the in-depth information regarding the credit facilities available to the villagers, how they can apply and for what purpose, and which are the different conditions they have to fulfill before they can get access to the credit from the bank. According to the bank official, Bank does not provide loans to the landless villagers because bank needs land as collateral. But they can apply for the loan by making a group of five persons, one applies for the loan and rest of the four as guarantors. Bank has a system in place to check whether the money is being used for the purpose for which it has been given. According to the BAAC official only one person in

the village has taken loan from the bank. The reason for that is, all the land owners do not have any land title, and they are just holding the tax receipts. In this case they need to make a group of five persons to apply for the loan from the bank.

By interviewing the village head man we obtained valuable information regarding the village funds and how these are being managed and distributed to the villagers. There are five different types of village funds are available for the villagers.



- One million Bath funds were provided by the present government. This fund is also called the Village and urban community fund (VUCF). It was a one time payment as promised in the elections, given to the villagers five years ago. It is a revolving fund allocated to every rural village. The objectives of this fund are to provide revolving funds for the individuals and the households to promote local communities and stimulate the grass root economy. Any individual or a household can get the loan from the fund for investment purposes and emergency expenses (Chandoevrit, 2003).
- 100.000 Baths fund was given to the village by the bank as bank was forced to give this loan to the village without interest by the government. This fund is given to the village for five years. After the completion of the five years, village has to return this money back to the bank.
- Fund for the farmers, available for the villagers who are involved in the agricultural practices and livestock production. Total amount of this fund is 50000 Baths.
- Health fund for the older people. It was provided by the government around 20 years ago. Total amount is 125000 Baths.
- Fund for the job support, it was provided this year. Conditions on which this fund is to be used is not clear yet. Moreover villagers are not willing to use this fund because of the unsuccessful experience of the other villagers.

Furthermore according to the village head man these funds are not enough for the village except for million bath fund. The information from village headman during the semi-structured interview regarding land selling, it started around 23 years ago and still they are selling their land holdings. Main reason of selling is the high cost of production and no profitability. Overall conditions are now better as compared to the past. Now they get money every day by doing labor jobs. They feel more secure in this way.

By interviewing economics Professor Dr. Pity we have found that there is a 30 Bath health care program for the villagers provided by government. After searching the

literature we reached the detailed information says, the 30 Baht Health program, was started from 2001, aims to provide equal accessibility and quality health care services to all people. Those covered by the Health Welfare for State Employees' scheme or Social Insurance scheme are not eligible for the 30 Baht Health scheme. This program is only for villagers and low income informal workers (Chandoevmit, 2003).

About the case of selling the land, there is no particular policies to protect farmers to sell their land, government only have some extension services to promote profitable livestock production activities. Dr. Piti also mentioned during the interview that this area has some tourism potential that's why it is attracting big capitalist from big cities like Bangkok. They are buying land to built resorts and other recreational facilities.

4.3 PRA

The historical *timeline* (Appendix) indicated that history of the village has started with the migration, this is followed by the construction of temple and finally intensification in agriculture. Fifty years ago *Lam Phra Phloeng Watershed* was virgin forest. The first agricultural settlements were established in the early 1960s. Since then, the watershed has almost completely been developed into smallholder farmland, with predominantly maize-based cropping. (Cho et al., 2004)

From this PRA session we have found out that, the recent policy dynamics of the governments have had impact on current land selling trend and intensification in agriculture, this finding was also confirmed by the literature; Thai government has viewed the inability of converting property into usable asset as an urgent issue for economic development, especially agricultural land in the rural areas. Thus, giving the empirical evidence in the literature of land rights and investment incentives, the Thai government believes that development of agricultural performance can be achieved by providing poor farmers more secure and transferable land rights, and access to working capital.

The Thai government's recent policy on land rights and transferability (called capitalization policy¹) has a view toward providing better incentives for intensifying agricultural production to help the poor to earn enough income to overcome poverty. The government hopes that its capitalization policy will result in improved agricultural productivity through increased use of credit, investment in land and land quality, and through the redistribution of land to more efficient farmers (Sompolvorachai, 2004). In our case, this policy does not seem to have any significant effect on development of agricultural performance, since 80% percent of our village members have sold their lands and those who are still holding their lands shifting to livestock production.

¹ The "capitalization" policy was implemented in 2003 with a goal of providing the poor with better access to credit by making land collateralization easier.

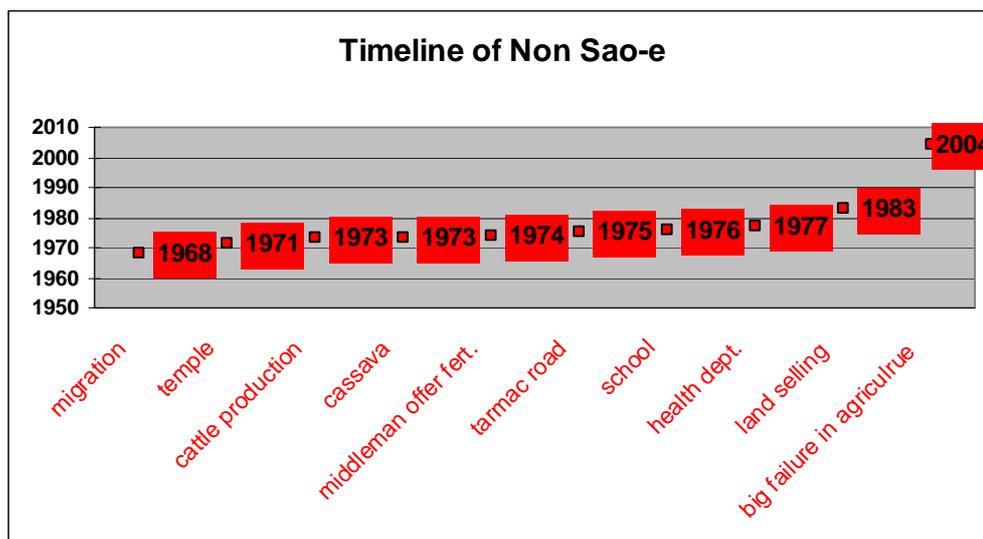


Figure 8: Historical timeline of Non Sao-e

As our main objective of making the *labor calendar* was to find out the main income generating activities of the villagers and to find which one is more profitable for them, we found that villagers were involved in many types of income generating activities during the year. One of the most important activities was on farm jobs. Landless villagers are involved in on-off farm jobs. They carry out different farm jobs depending on the cropping pattern. From September to December they usually work in the maize fields and they earn about 150B to 250B per day depending on the time from sowing to harvesting. In the case of cassava they work for two months i.e. March and April and earn about 150Baths per day.

Some of the landless villagers were involved in livestock labor (salaried herders), earning about 35000Baths per year. Some of the them were employed in the factories and construction industry earning about 150Baths to 200Baths. But construction jobs are more seasonal in nature, usually in the months of August and September. They also do mushroom collection in the nearby forests during August and September, which constitutes out of growing season, thereby they earn about 150 to 300 Baths per day. During the months of October to December they do fisheries only for the household consumptions. A few of the villagers are employed in the oil-palm plantations and orchids, earning 158Baths per day from oil-palm jobs and 100 to 120 Baths per day from orchids.

	J	F	M	A	M	J	J	A	S	O	N	D
Maize												
Cassava												
Livestock pro.												
Construction Busin.												
Factory												

4.5 Soil Sampling

Soil-quality is a key component of sustainable agriculture. It is very difficult to define soil quality because it depends on many factors such as land-use, soil management practices, ecosystems, environmental interactions, social and political priorities, etc. (Doran *et al.* 1996). In general context, soil quality has been defined as the ability of a soil to produce sufficient high-quality food while protecting human and animal health and maintaining environmental quality (Lal, 1997). Our analysis of soil samples indicated that the level of main nutrients to maintain sufficient crop production (N, P, K, NH₄) varied between medium and very-low. The current pH levels do not have significant effect on characteristics of the soil. Our findings have also been verified by the literature.

Soil attributes	Location 1 Mrs. Loy	Location 2 Mrs. Na	Location 3 Mrs. Jum	Location 4 Mrs. Pritsana	Location 5 Mrs. Tun
pH	5.5	6.5	5.5	4.5	7.5
N	Very low	Medium	Very low	Very low	Very low
P	Low	Very low	Low	Low	Low
K	Low	Low	Low	Low	Low
NH ₄	Very low	Low	Low	Low	Very low

Table 3: Results of soil analysis

The soils in the *Lam Phra Phloeng* Watershed, *Nakhon Ratchasima* Province, are dominantly reddish-yellow Ultisols (*Korat* Series) and Oxisols (*Pak Chong* Series) (LDD, 2002). Overall, the soils are low in nutrients and high in clay dispersion, pointing to inherently low fertility and high erodibility. The soils in the remaining secondary forests, including the relatively recently re-afforested areas in demarcated buffer zones, exhibit significantly higher levels of soil organic matter and lower bulk densities than the arable soils. (Cho *et al.*, 2004)

5. Discussion of Results

While looking at the results from our questionnaires, PRAs and interviews, we have found out that the villagers manage to adapt changing livelihood strategies, as our data indicated that they are not illiterate people and their physical infrastructures are above average and there are functioning institutional organizations within the village. They do have access to extension services provided from both government and private companies.

The villagers seem to be giving up crop production in Non Sao-e village due to high investment requirements of soil to maintain profitable production. After analyzing the questionnaires and semi-structured interviews it became clear that the villagers are moving from being farmer to labor, because of higher expenses, lack of money and low fertility of the soil. Those who have sold their entire land holding became labor, on the other hand those who has not sold or sold only a part of their land holdings moved to livestock production. Livestock production seems to be taking a major part in case of landowners in Non Sao-e due to high profit and regular income and extension service from government. In the case of labor class, they do also feel secure as they are being paid on daily basis, which fulfill their basic daily needs.

Aside from low productivity of the soil, there are different reasons influencing the decision making process of the villagers regarding their livelihood.

Tourism potential and very low prices of the land (refer to semi-structured interview with Dr. Piti) in this area picks the interest of capitalists from outside. As one may expect, the result of this bargain land market is the middleman reality and their pressure on the villagers to make them sell their land holdings. Rattanabirabongse (1998) suggests that, legal title is the main factor in explaining differences in land prices. It was found that titled land was between 75 and 197% more valuable than land without any documents. Land title is itself an important factor on making decision regarding to farming practices.

With agricultural development, land rights are an important issue. A number of studies have demonstrated that security of landownership has a substantial effect on the agricultural performance of farmers. As 90% of our land owner respondents and 80% of landless respondents stated having land title is important because it allows applying for credits from different sources. Land tenure security relates to investment in agriculture through demand and supply-side effects (Feder et al. 1988). On the demand side, an enhancement in tenure security would increase farmer demand for medium to long-term land improvements (investments on land). This increase in demand is derived from the fact that better tenure security will increase the likelihood that the farmers will capture the returns from investments. As a result, demand for short-term inputs (farm chemicals, labor) will increase as well. Assuming no missing labor and credit markets, the existence of viable technologies, access to inputs and extension advice, an improved tenure security will lead to higher investment (Besley, 1995) and, hence, higher yields. Our impression is that in spite of the low fertility of the soil, in the case of land ownership security almost all of the respondents are interested in going back to agricultural practices.

Our data indicated that there is a distinct income difference between land owners and landless village members, and it can be seen from our well-being ranking, there is a relation between land and prosperity level, those who have land considered as either rich or middle class. There are no poor people among land owners. On the other hand, those who do not have land went into the criteria considered as rich, medium or poor depending on the labor job they do. Nevertheless, income level between two categories might have change under larger number of land owner samples. It is difficult to explain whether the relation between income and land holding is significant from present data. We could have investigated this relation i.e. by asking the land owners if the land is remittance or do they use this land to pay dept etc.

While analyzing the data from the questionnaire we have also found out that some important points were overlooked, which were crucial for assessing the true income. We needed detailed expense entries of livestock production i.e. employee salary. In addition, after reformulating our questionnaire we ended up with irrelevant answers that we could not use. The other very important question needed to be asked was that why did not the villagers apply for a proper land title by the time of the government's project "Thailand's 20 year program to title rural land"², which has started in early eighties, because we know that having landownership security by the title is very important when it comes to accessing credits or funds from different sources. We also needed the first hand information about the land tax receipt that each land owner is holding right now. Knowing, for instance, weather the land is transferable to the next generations (heritage) by this receipt or not would increase the quality/reliability of our data.

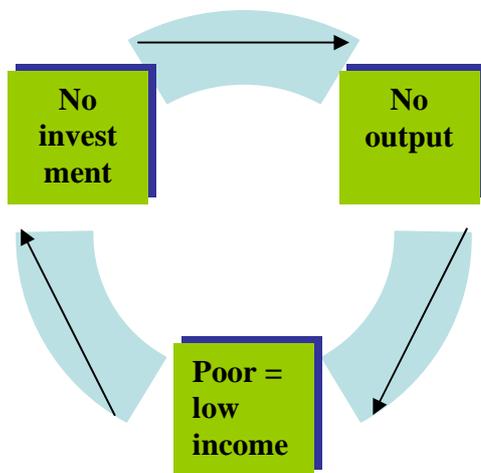
After analyzing the data from the labor calendar, we realized that the labor calendar should have been prepared for two different categories, as land owners and landless people thereby we had a chance to look into the labor investment of land owners and get the net income entries i.e. $\text{Net Income of Land owners} = \text{Agricultural output} - [\text{Labor Investment} + \text{Agricultural Expenditure}]$

Despite the importance of moisture level of the soil was relatively low in our case, the results from soil analysis are open to discussion. It is mainly because of the time constraint we have waited only one day to let the samples dry out, in addition the samples needed to be taken at least 5 different points within the field in order to present the soil characteristics, we have taken the samples from 3 different spots within the field.

² Thailand's 20 year program to title rural land, National Social and Economic Development Plan (NSED, 1981-1985)

6. Conclusion

Our main conclusion from the study is that the members of Non Sao-e village manage to adapt to the new conditions for the time being. Most of the villagers preferred to sell their lands to deal with their dept problem or to ease of the problems regarding to agricultural activities such as drought, low fertility and low profitability. Those, who became labor, feel more secure now compared to the past because without dept problem they seem to be able to cope with daily expanses by the salary they earn. But it is our impression that, for the long run, despite the mentioned problems, having land is a key factor when it comes to investment and income level. Landless people seem to be stuck in a vicious circle, that it is very difficult for them to break that circle unless they have been supported by government in terms of low interest credits, job support or larger social security etc.



This inference raises the importance of land ownership security once again, since most of the landless respondents expressed their wish on going back to agricultural practices under secure land ownership conditions.

Another conclusion is that, the topographic features of the study area is not very suitable for crop production as it has steep slopes which leads erodibility and requirements for effective soil and water management and it is a verified fact that the area is suffering from low fertility. One of the main problems regarding to villagers' livelihood is lack of funding, so the village members are not interested in investment for land use practices. It is expensive, in other words crop production does not pay off. On the other hand, livestock production looks promising for the future of the village. However, lack of money prevents to invest in livestock production on a large scale as the money from village fund, which is the only money source for the village members within the current land holding conditions, is not enough.

List of References

- Besley, T. (1995), “Property Rights and Investment Incentives: Theory and Evidence from Ghana”, *Journal of Political Economy*, 103: 903-937
- Chandoevhit W., TDRI Quarterly Review, Thailand’s Grass Roots Policies, June 2003
- Cho K. M., Zoebisch M. A., Ranamukhaarachchi S. L., *Land-Use Dependent Soil Quality in Lam Phra Phloeng Watershed, Northeast Thailand*, Asian Institute of Technology, 13th International Soil Conservation Organisation Conference – Brisbane, July 2004
- Doran, J.W., Sarrantonio, M and Liebig, M. A., 1996. Soil health and sustainability. *Advances in Agronomy*, 56: 1-54
- Feder G., Onchan T., *American Journal of Agricultural Economics*, Land Ownership Security and Farm Investment in Thailand, Vol. 69, No. 2 (May, 1987) , pp. 311-320
- Lal, R. 1997. Degredation and resilience of soils, *Phil. Trans. R. Soc.Land. B.* 352, 997-1010
- LDD, 2002. Soil Education, Scientific and Technology Exhibition Guide. 17th World Congress of Soil Science, 14-21 August 2002, Bangkok, Thailand. Land Development Department (LDD), Ministry of Agriculture and Cooperatives, Bangkok, Thailand.
- Monticha S., *Land Tenure Security and Investment Incentives; the case of Thailand*, A proposal submitted to the JASTRO-SHIELDS GRADUATE RESEARCH SCHOLARSHIP AWARD, University of California, Davis, May 2, 2004
- Pitiyont B., Kaveeta R., SrijantrvP., Waramit N., Jintana V., Narangajavana P., PotitN R., Kantangkul P., Mungkung N., Jongkroy P., Kamyia T., Promchote P. and Wisarat T., Basic Information for the Sluse Field Course 2006 in Nakhon Ratchasima Province Noertheastern Thailand
- Rattanabirabongse V., Eddington R. A., Burns F. A., Nettle K.G., The Thailand land titling project-thirteen years of experience, *Land Use Policy*, Vol. 15. No. 1 pp. 3-23, 1998
- The World Bank Report, Thailand Economic Monitor, April 2005

List of Appendices

A: Questionnaire

B: Fieldwork Calendars

C: Community Map

D: Timeline

E: Problem ranking

F: Well-being ranking

G: Semi-structured Interview Guides

H: Final Synopsis

Appendix A: Questionnaire

Date: _____ Time: _____ Household number: _____ Familial position: _____

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Respondent Profile

Name: _____
 Gender: _____
 Age: _____
 Marital Status: _____
 Level (year) of Education: _____
 Occupation: _____
 Number of family members: _____
 Main source of income: Agriculture Other _____

Livelihood Security

1. How many other members are there in your household?

Members	Age	Gender (M/F)	Years of education	Main occupations

2. Do you own animals? Yes No

If Yes,

Type	No. of animals	Use
Chickens		
Buffalos		
Cows		
Pigs		
Others		

3. Income Generating Activities

Household members	Activity (source of income)	Estimated yearly income
	Crop production	
	Livestock production	
	Forest	
	Farm labor	
	Small business (handicraft, trading, etc.)	
	Remittance	
	Others	

4. Expenditure

Type of expenditure	Estimate of costs	Seasonality of expenditure
Food		per day-month-year
Education		per day-month-year
Health		per day-month-year
Consumer goods		per day-month-year
Agricultural expenditure		per day-month-year
Repayments of loans		per day-month-year
Others		

5. Possessions

Indicate whether the household possesses the following items and how many.							
Car		Lantern		Agricultural implements/machinery		Others	
Motorcycle		Radio		Tv			
Bicycle		Refrigator		Money Savings			
		Sewing machine					

Land Tenure

6. For how long have you lived in this area? _____

7. Do you own any land? Yes No

If yes,
Number of plots? _____

Size of each plot?

P1) _____

P2) _____

P3) _____

P4) _____

(If no skip the next question)

8. Do you have a title deed? Yes No
If yes, when did you get it? _____ The type of the title? _____
9. Do you think having title/certificate is important? Yes No
If yes, why?
Allows applying for credits/loans or subsidies
Security for future generation
Allows investing for inputs (fertilizer, machinery, irrigation, etc.)
Prevents illegal possession
Other, specify: _____
10. Do you rent any land? Yes No
If yes, do you apply agricultural practices? Yes No
Livestock production Vegetal production Both
- Number of plots? _____ Size of each plot?
P1) _____
P2) _____
P3) _____
11. Is the land enough to support your household? Yes No
12. Have you sold of your land holding? Yes No
If yes, when _____
13. What was the reason?
Prices were high (profit)
Management difficulties (too big)
Due to dept problems
Due to land quality
Little or no profitability
Other, please explain _____
14. Have you ever bought a piece of farm land? Yes No
If yes, when _____
Size _____
15. What was the reason of buying?
Prices were low (high profit)
To increase the production
Long term investment
Other, please explain _____

Credit

16. Have you applied for credit, loan etc. from village or bank? Yes No

If yes,

17. For what purpose did you applied for? _____

18. Has anything been required for collateral? Yes No

If yes, explain _____

Labor

19. What kind of labor job do you do? _____

20. Are you being paid on daily or monthly basis?

Agricultural Practices and Land Use

19. What kind of crops do you grow? Why? Size? (cash, fodder, own consumption, etc.)

For how long have you been growing these products?

Plot 1) _____

Plot 2) _____

Plot 3) _____

Plot 4) _____

20. Do you apply conservation methods? Yes No

If yes, specify: _____

21. What is your main problem regarding to agriculture? _____

22. What is your main problem regarding your livelihood? _____

23. Do you think having land is important for you? Yes No

23. If you have a chance to get land, would you like to do farming? _____

Appendix B: Fieldwork Calendars

Date	Activities
06/03/2006	Arrival to Bangkok ↪
07/03/2006	Danish and Thai students intro meeting
07/03/2006	Danish and Thai students intro meeting, group formation.
08/03/2006	Presentation of common research project, developing questionnaire
09/03/2006	Transport to field area, (3 hours drive), deciding on focus group, community meeting, pre-test of the questionnaire, reformulation of the questionnaire, observation by walking around the village
10/03/2006	Drawing of the map of the village with the headman (for well being ranking) (2 hours), 6 questionnaire, observations, evaluation of findings & last modification of the questionnaire
11/03/2006	Questionnaire ×16 (35 minutes each) (done by the 3 subgroups)
12/03/2006	Questionnaire ×14 (subgroups), semi structured interview with village headman, evaluation of findings (done by the entire group)
13/03/2006	Evaluation of findings, mid-way presentation ⓘ, Questionnaire ×2, labor calendar
14/03/2006	Questionnaire ×2, evaluation of findings, random Check Soil Series & Direct observation (taken some pictures), soil sampling, labor calendar, evaluation of findings (entire group)
15/03/2006	Preparation for the field research (PRA exercises), soil sample analysis, problem ranking, timeline (entire group), well-being ranking
16/03/2006	Preparation of presentation, completion of well-being ranking (2 subgroup)
17/03/2006	Debriefing and presentation of results to the villagers
18/03/2006	Transport to Bangkok
19/03/2006	End of field course Ⓞ

Individual Field Schedule: Isik Ozturk

Date	Activities
06/03/2006	Arrival to Bangkok ~
07/03/2006	Danish and Thai students intro meeting
07/03/2006	Danish and Thai students intro meeting, group formation.
08/03/2006	Presentation of common research project, developing questionnaire
09/03/2006	Transport to field area, (3 hours drive), deciding on focus group, community meeting, pre-test of the questionnaire, reformulation of the questionnaire, observation by walking around the village
10/03/2006	Drawing of the map of the village with the headman (for well being ranking) (2 hours), 6 questionnaire, observations, evaluation of findings & last modification of the questionnaire
11/03/2006	Questionnaire ×4 (35 minutes each), together with Miss Sinprom and one interpreter.
12/03/2006	Questionnaire ×5), together with Miss Sinprom and one interpreter. , observant during the semi structured interview with village headman, evaluation of findings (done by the entire group)
13/03/2006	Evaluation of findings, mid-way presentation ①, labor calendar
14/03/2006	Evaluation of findings, soil sampling, observant during labor calendar, evaluation of findings (entire group)
15/03/2006	Preparation for the field research (PRA exercises), soil sample analysis, problem ranking (landless villagers), observant during timeline, determination of criteria for well-being ranking
16/03/2006	Construction of new community meeting, completion of well-being ranking with village headman and Mr. Douangdavong
17/03/2006	Debriefing and presentation of results to the villagers
18/03/2006	Transport to Bangkok
19/03/2006	End of field course ↻

Individual Field Schedule: Sukhwinder Singh Saini

Date	Activities
06/03/2006	Arrival to Bangkok ~
07/03/2006	Danish and Thai students intro meeting
07/03/2006	Danish and Thai students intro meeting, group formation.
08/03/2006	Presentation of common research project, developing questionnaire
09/03/2006	Transport to field area, (3 hours drive), deciding on focus group, community meeting, pre-test of the questionnaire, reformulation of the questionnaire, observation by walking around the village
10/03/2006	Drawing of the map of the village with the headman (for well being ranking) (2 hours), 6 questionnaire, observations, evaluation of findings & last modification of the questionnaire
11/03/2006	Questionnaire ×4 (35 minutes each), together with Mrs. Kongmak along with one interpreter.
12/03/2006	Questionnaire ×5, together with Mrs. Kongmak , semi structured interview with village headman, evaluation of findings (done by the entire group)
13/03/2006	Evaluation of findings, mid-way presentation ①, labor calendar
14/03/2006	Evaluation of findings, observant during soil sampling, observant during labor calendar, evaluation of findings (entire group)
15/03/2006	Preparation for the field research (PRA exercises), soil sample analysis, problem ranking (landless villagers), observant during timeline, determination of criteria for well-being ranking
16/03/2006	Preparation and translation of PRA (labor calendar), bought gifts for villagers for the community meeting along with Miss Sinprom, Miss Thongthuum, Mrs. Kongmak,
17/03/2006	Debriefing and presentation of results to the villagers
18/03/2006	Transport to Bangkok
19/03/2006	End of field course ↻

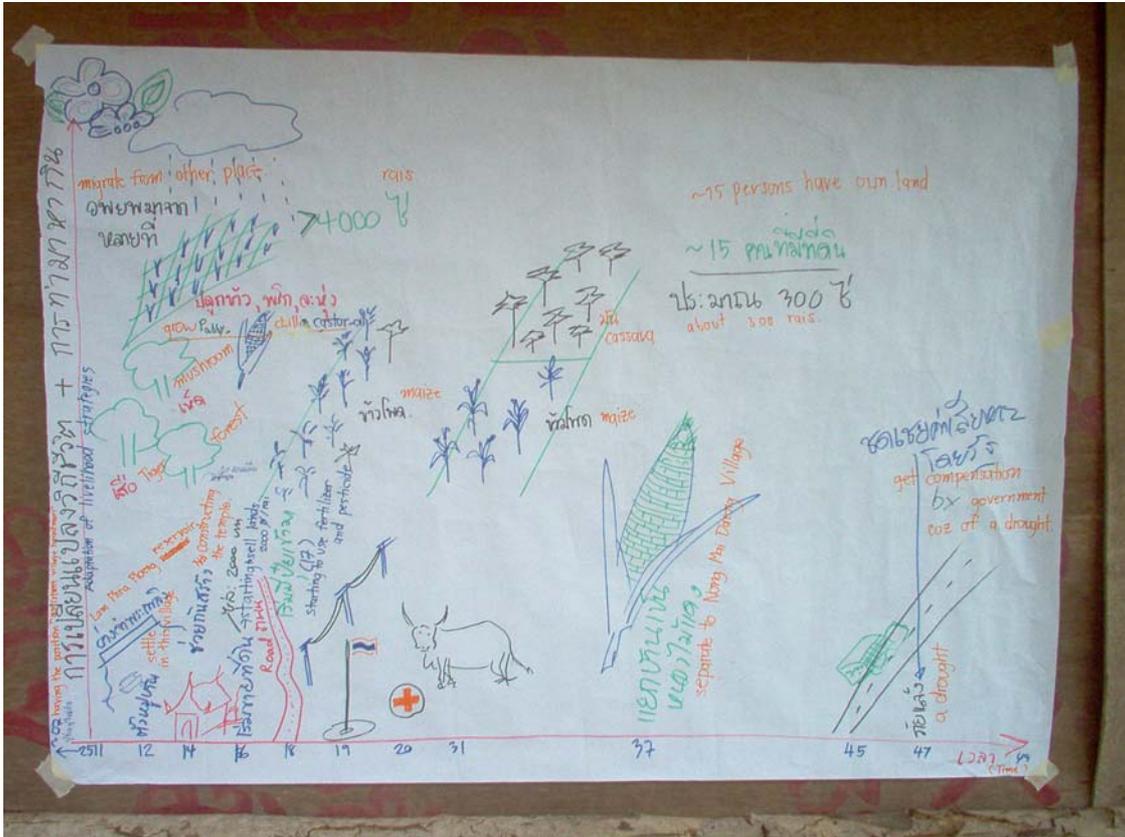
Individual Field Schedule: Tuerxunbieke Sulitang

Date	Activities
06/03/2006	Arrival to Bangkok ~
07/03/2006	Danish and Thai students intro meeting
07/03/2006	Danish and Thai students intro meeting, group formation.
08/03/2006	Presentation of common research project, developing questionnaire
09/03/2006	Transport to field area, (3 hours drive), deciding on focus group, community meeting, pre-test of the questionnaire, reformulation of the questionnaire, observation by walking around the village
10/03/2006	Drawing of the map of the village with the headman (for well being ranking) (2 hours), 6 questionnaire, observations, evaluation of findings & last modification of the questionnaire, semi-structured interview with BAAC official
11/03/2006	Questionnaire ×4 (35 minutes each), together with Miss Thongthuam
12/03/2006	Questionnaire ×5), together with Miss Thongthum, semi structured interview with village headman, evaluation of findings (done by the entire group)
13/03/2006	Evaluation of findings, mid-way presentation ①, labor calendar
14/03/2006	Evaluation of findings, observant during soil sampling, observant during labor calendar, evaluation of findings (entire group)
15/03/2006	Preparation for the field research (PRA exercises), soil sample analysis, problem ranking (landless villagers), observant during timeline, determination of criteria for well-being ranking
16/03/2006	Translation and preparation of PRA exercises (problem ranking), bought gifts for the villagers for community meeting along with Miss Sinprom, Miss Thongthuam, Miss Kongmak and one interpreter, semi-structured interview with Dr. Pity
17/03/2006	Debriefing and presentation of results to the villagers
18/03/2006	Transport to Bangkok
19/03/2006	End of field course ②

Appendix C: New Community Map of Non Sao-e



Appendix D: Timeline of Non Sao-e



Appendix E: Problem Ranking

Landless

RANKING	Problem	no Savings	High Exp	no free time	no constant income	Total Points
	Problem					
	NO Savings (money)		High Expenditure	no Savings (money)	no constant income	1
	High Expenditure			High Expenditure	High Expenditure	3
	no free time				no constant income	0
	no constant income					2

Land owners

RANKING	Problem	High Input cost	Lack of Fund (no enough money)	Soil Quality (Soil Fertility)	Low Product Prices	Natural Causes	Total Points
	Problem						
	High Input Costs		High Input costs	High Input costs	Low product price	High Input costs	3
	Lack of Fund (no enough money)			Lack of Funds	Lack of Funds	Lack of Funds	3
	Soil Quality (Soil Fertility)				Low Product price	Natural Causes	0
	Low Product Prices					Natural Causes	2
	Natural Causes (disasters)						2

Appendix F: Well-being Ranking

Criterion

ร่ำรวยดี (rich)	พอมีพอกิน (middle)	ขาดแคลน (poor)
มีที่ดิน > 100 ไร่	มีที่ดิน 20 ไร่ - 100 ไร่	ไม่มีที่ดิน
มีวัว > 20 ตัว	มีวัว 10 - 20 ตัว	ไม่มีวัว
มีรถยนต์	ลูกหลานส่งเงินมาให้	ไม่มีเงินส่งลูกเรียน
มีเงินให้กู้	รับจ้างไถที่ส่งดง	รับจ้างไถที่ดง
มีรายได้อื่นๆ	ค้าขาย	



Appendix G: Semi Structrued Interview Guides

Interview guide for BAAC officer

1. What are the conditions one should fulfill to apply for ag. Loan?
2. How long does it take to process the loan application?
3. What is the importance of land title in getting the ag. Loan?
4. If a farmer does not have a land title, is there any possibility for him to get ag. Loan?
5. If due to some natural disaster or any valid reason a farmer fails to pay back the loan on time, what are the policies of the bank in that case?
6. On what criteria you decide on the amount of loan to be released to the farmers?
7. If the farmer uses the loan amount to some other non agricultural activities, is there any monitoring mechanism in place by the bank?

Interview guide for village head (chairman)

1. Is there any financial support provided by the government?
2. What kind of financial supports are available for the villagers?
3. To whom you provide the money and for what purpose?
4. If due to some valid reason, a farmer is not able to pay back the loan, in that case how you deal with this?
5. Are there enough funds available for the villagers?
6. When the villagers have started selling their lands?
7. Are the living conditions getting better with time as they have been changing their livelihood strategies (from being a farmer to full time labor)?
8. Is there any extension service available in the village?

Appendix H: Final Synopsis

Synopsis

**Land Tenure Security and Its' Impact on
Access to Credit, Land Use and
Household Livelihood in Lum Phara
Pleung Watershed**

By

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Project Work in Interdisciplinary Land Use and Natural Resource
Management Course (ILUNRM)-SLUSE Program

March, 01-2006
Denmark

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1. Introduction

Other than labor, land is the most important factor of agricultural production. Without clearly defined rights of access to land, or land tenure, production is more difficult to carry out and incentives are weakened for a long-term investment in land to raise its productivity. Land tenure is one of the most important pillars of rural economies and societies that help to increase livelihood security and efficiency of natural resources management.

The quest to occupy, own and use for land is always on, and land settlement is a continuous and burning issue in many developing countries where people still move from one area to another in search of free agricultural land in the remote and frontier areas, and more particularly in forests. Thailand is such a typical country where, in the search for land, groups of individuals are intruding on forest areas, whether these are already degraded or reserved. The land is very quickly cleared by logging and burning as well as gradually converted to agricultural fields and areas of new settlement. The issue is very complex and complicated almost everywhere in most of Thailand's provinces, and is creating conflicts between the common people, the administration and forest managers.

In general terms, recently Thailand has significantly improved the status of agricultural development through market-oriented, commercialized production and the adoption of modern technology and input services. In this context, access to credit became one of the most important determinants of the success of small-farmer development programs. Lack of proper land title effectively blocks access to formal sources of institutional credit. Farmers with secured legal ownership of land will have greater incentives and a better ability to invest due to lower perceived risks and favorable access to institutional credit (Feder et al., 1988). It is well established that a positive correlation exists between secure land rights and agricultural productivity. In the context of land use, efficiency has short-run and long-run dimensions. While the efficiency refers to encouraging of allocations of land uses, which currently yield the highest economic productivity, it also means stimulating appropriate management of the land resources and investments for sustaining and improving its productivity and increasing livelihood security over time.

In Thailand land rights and laws have historically been chaotic. In our study area, about 95 percent of farmers had their own land, but 72 percent of the farmers hold papers from Office of Land Reform for land title, 24 percent did not have any papers, 4 percent hold receipts of land tax payment which was not considered land title (Tokrisna et al, 2002). The objective of this study is to examine how the land tenure affects the access to credit and land use management as well as livelihood security.

1.1 Area of study

Changes in population densities can lead to important tenure changes. Extended drought and famine can depopulate a formerly crowded area, followed by resettlement on a new man/land ratio (Bruce W. J. 1998). In our study area, most of the populations migrated from other districts and other provinces. It is not only a resettlement on a new ratio, but

more for an ecological niche area. Consequently, this can lead to important livelihood, agricultural productivity and natural resources management changes.

The study area, Wang Nam Khieo district, has five sub-districts (Wang Nam Khieo, Wang Hmee, Ra Roeng, Udom Sap and Thai Samakkee), in Nakhon Ratchasima province, northeast Thailand. These sub-districts are located in the southern part of the province, about 234 kilometers from Bangkok. Klong Sathorn village is located in Wang Hmee sub-district in Wang Nam Khieo district. It is located to the west of Pak Chong district. To the north of Klong Sathorn village are the villages of Tha Wang Sai and Bu Krating, to the east is Klong Nok Gaeow village and to the west is Sun Gumpaeng village. Pong Ta Long Sub-district, Pak Chong district and Khao Yai National Park are to the west of the village. The total area of the village is 25 square km (15,365 Rai), approximately. The average rainfall is 1,000 mm per year. There are two clear periods of rainfall, between March and June with a monthly average rainfall of 87 mm and between August and October with a monthly average is 166 mm. The majority of the agricultural areas of farmers are both upland and lowland in which some areas are hilly and gently undulating. Therefore, most of the agriculture is rainfed. (Tokrisna R. 2002). The main crops in the study area are maize and cassava. There are also oil palm plantations, vegetables and orchids.

The average annual rainfall	1,000 millimeters
The average annual temperature	25° Celsius
The main streams	Lam Phra Phloeng 1 and Lam Se Ma
The terrain characteristics	Undulating terrain and mountainous terrain
The main crops	Maize and cassava
Land use classification	1. Forest area (7,496 Rai, 49% of the village) 2. Agricultural land (7,400 Rai, 48% of the village) 3. Old clearing land (428 Rai, 3% of the village) 4. Water body (41 Rai, 0.3 % of the village)
The infrastructure	Ban San Chao Pho – Nong Khum asphalt road

Table 1: Preliminary data of the study area-Klong Sathorn village

1.2 Land tenure policy in Thailand

In Thailand, as in many other developing countries, land use does not necessarily imply legally recognized land rights. Traditionally, all land in Thailand belonged to the king. Because of land was available and agricultural activity was primarily for subsistence, any Thai citizen could claim land in order to provide for his family however. Widespread clearing of forest, settlement, and cultivation were allowed few restrictions and little government control until fairly recent times. In the 1940s the government sponsored settlement in forest land, and started official land allocation programs. The first law on types of land ownership was passed in 1954. The Land Code of 1954 specified legal rights to land for agricultural, industrial and commercial use and housing, besides providing four types of land documents (Feder 1988). In 1960s, as Thailand graduated

from subsistence agriculture to market-oriented production and the population grew rapidly, the increased demand for food and rising prices of cash crops such as cassava, maize, etc, led to a considerable increase in the cultivated areas and encroachment upon huge tracts of forest (Tokrisna R. 2002). This necessitated a change in government policy to balance the environmental concerns arising out of large-scale deforestation with the rising demand for agricultural land. In 1975 the Land Reform Act was passed to accelerate land reform as well as land allocation in degraded forest reserves. As a result of the changes in government policies at different times, a host of institutions dealing with land issues has merged, and 10 different types of land certificates ranging from land use permits to firm land titles. (See appendix D)

1.3 Objective

The main objective of this study is as follows:

How does the security of land tenure influence the access to credit, land use methods and household livelihood security under the existing social and legislative structures in Lum Phara Pleung Watershed?

To understand the relation mentioned above we derived 3 working questions to go through during the field study.

1. Land title deeds and access to credit: *How do land title deeds influence the access to credits to the land titleholders in the study area?*
2. Land tenure and land use: *What are the impacts of the current state of land tenure system on the management of land use?*
3. Land tenure security and household livelihood: *How is land tenure security influencing household livelihood in the study area?*

1.4 Definitions of terms

In order to understand the main terms used in this study, they are briefly defined as following:

Land tenure can be simply defined as a right to use land and prevent others from using it, a right to derive income and transfer all or part of it to heirs or others. (Norton, R. D., 2004)

Tenure security means the clarity in defining a user's right to the land and stability of the right over time. (Norton, R. D., 2004)

Household Livelihood Security is the adequate and sustainable access to income and resources to meet basic household needs; including adequate access to food, potable

water, health facilities, educational opportunities, housing, and time for community participation and social integration (CARE, 2006).

2. Methodology

To investigate the influences of the current types of land tenure systems on livelihood strategies in the study area, we will be collecting different kinds of data. We are planning to get detailed information about the types of land tenure system prevailing in the area as well as agricultural trends, cropping pattern and land use methods, additionally we will be trying to compare how these activities are affected by current land ownership system in two different villages. During our field study, we plan to utilize following methods to gather data. One has to bear that in mind that methods will be changed depending on the situation in the study area.

2.1 Social science methods

- *PRAP*; participatory mapping, institutional diagram, crop (seasonal calendar), well being ranking and analysis
- *Questionnaires*; household survey
- *Interviews*; semi-structured (in-depth) interviews with key informants

2.2 Natural science methods

- Terrain mapping (GPS)
- Direct observations based on our backgrounds

2.1.1 Participatory Rural Appraisal and Planning

A spatially explicit understanding of local knowledge about land use and tenure is fundamental to developing and assessing sustainable management options (Robiglio, Mala, 2005). In order to gain this understanding, we would like to encourage the villagers to depict their mental maps of housing, topography, natural resources and land cover of areas surrounding their villages. *Participatory mapping*, should as well allow us to get an impression about the study area before we start our actual field work such as household survey and interviews.

The institutional diagram, will presumably give us information about village-based and external organizations to which villagers belong and how these organizations function. (ILUNRM lecture notes, 16/02/06). It is also expected that institutional diagram will help us to determine our key informants whom we are planning to make the in-depth interviews. Moreover, we plan to make the *crop calendar* of the village to find out the production trend and which crops have been grown, when, and for what reason. Finally we would like to use *well being ranking and analysis* to identify the levels of wealth being in the household of the community; thereby we will expect to reveal socio-economic groups in the community. Ideally, we will try to establish correlations between prosperity levels and land title deed. Since this exercise deals with delicate and private

issues and requires high degree of trust between facilitators and the community, it will be conducted after the other methods have been completed (Selener et al., 1999).

2.1.2 Questionnaire and Interview

In order to develop both general and specific overview of households facing the land tenure problem in the areas we prepared a questionnaire in the form of semi-structured interview consists of 4 different sections, which will also guide us on devising in-depth interviews. The main reason of choosing semi-structured interviewing method is that this method will give us the flexibility to adapt the dynamic nature and the limited time of study by allowing the interviewee to provide additional information (answers) which may be overlooked. The overpoweringly positive feature of the interview is the richness and vividness of the material it turns up (Gillham, 2000). We will be maximizing the amount of data by encouraging the respondents to tell their opinions. However, what people say in an interview is not the whole picture, adequate research and in particular adequate theorizing, needs to take account of that (Gillham, 2000). Being aware of that, we will be cooperating closely with our Thai colleagues to construct most appropriate questionnaire. In order to make sure that our samples are representative we will use stratified sampling method, because of the time constraint it is predicted that 9-10 questionnaires will be applied in each village.

After having an overall idea about our focus group, we are intending to conduct in-depth interview with key informants. As the name signifies the meaning, we are planning to get in-depth information in regard to our research questions by talking to key informants such as headman of village, money holders (bank officials or individuals) or extension workers in the area. We are planning to make it as back & forth conversation rather than following precise questionnaire pattern.

2.2.1 Terrain Mapping

The objective of mapping is to present visual and quantified data on land use of selected households and to see exact boundary and size of the fields as well as the distance between the field and water resources or the distance between the fields and households, thus to gain deeper knowledge on possible reasons for low productivity or sustainability level of the current farming systems. By means of GPS, we are also planning to estimate the topography of the fields so we can evaluate the agricultural practices in more detailed way, for instance elaborating the necessity of investment such as terracing or other water and soil conservation methods under sloped conditions etc.

2.2.2 Direct Observations

Direct observations will be conducted either by individually or as a group. The objective of observations is to try to see the relevant results/indicators of current land tenure system from different point of views. Each group member has different educational backgrounds; as a result everybody will see the relevant issues from different aspects i.e. social, economical, environmental etc. and collect various forms of data. Several excursions

have been planned and our intention is to request from some of the villagers accompany us in order to ask questions which may shed light on the issues that we do not come up with an explanation. It is also predicted that this method will help us to save precious time. The external attendants will be determined upon arrival the study area.

3. Collaboration with Counterparts

We are going to join the Thai group, having the same area of interest. We are going to work closely with the Thai students on the research theme. Initially there will be some points of differences that we hope to overcome by discussing all the point of differences. We expect to make some changes in the research theme, when we discuss it with our Thai counterparts as they have more local knowledge and in depth information regarding the local issues and surrounding conditions. After merging with the Thai group, we plan to divide our group into small sub-groups. As we need to collect as much as possible information /data in a short period, each sub-group will focus on its own area to collect the useful information and data which will be helpful in carrying out the research. We see Thai students' local knowledge as the major benefit to our research.

List of References

- Bruce W. J., A Perspective on Indigenous Land Tenure Systems and Land Concentration, *Land & Society in Contemporary Africa*, University Press of Newhempshire, 1998
- CARE, 2006, accessible at www.kcenter.com/phls/
- Feder G, Onchan T, Chalamwong Y, Hongladarom C., *Land Policies and Farm Productivity in Thailand*, 1988. The John Hopkins University Press
- Gillham, B. 2000, *The research interview*. Continuum. London. Chapter 1-6 and endnotes
- Norton R. D., *Agricultural Development Policy, Concepts and Experiences*, John Wiley & Sons, Ltd., 2004
- Robiglio V., Mala W.A., [Integrating local and expert knowledge using participatory mapping and GIS to implement integrated forest management options in Akok, Cameroon](#), *Forestry Chronicle*, 81 (3): 392-397 MAY-JUN 2005
- Selener D., Endara N., Carvajal J., 1999. Participatory rural appraisal and planning, International Institute of Rural Reconstruction. Quito Pp. 3-7, 18, 29-42, 46-51, 56-84. Guidelines for the application of several rapid appraisal tools useful in natural resource management.
- Tokrisna R., *An Interdisciplinary Study on Existing Land Use in Klong Sathorn Village, Kasetsart University-Sustainable Land Use and Natural Resources Management Project*, (2002)

List of Appendices

A: Data Needed

B: Time Schedule

C: Questionnaire

D: Land Documents Issued by Various Departments of the Thai Government

E: Interview guide

Appendix A: Data Needed

Working questions	Data Needed	Source of information	Methods to be used
<p>Land title deeds and access to credit: <i>How do land title deeds affect the access to credits to the land titleholders in the study area?</i></p> <p>Land tenure and land use: <i>What are the impacts of the current state of land tenure system on the management of land use?</i></p>	<ul style="list-style-type: none"> • How do land titleholders get access to credit • What is the amount, duration and purpose of credit? • How easy to get the credit if they use their land as a collateral? • Type of land title • Field size • Field location • Availability of water • Cultivation methods • Cropping pattern • Agricultural inputs 	<p>Land titleholders, state rural bank, moneylenders, village headman or village committee, secondary data sources if available</p> <p>Village headman or committee, farmers</p>	<ul style="list-style-type: none"> • Questionnaires • Semi-structured interview • Semi-structured interview • Questionnaire • GPS mapping • Direct observation • Questionnaire

<p>Land tenure and household livelihood security: <i>How is land tenure security influencing household livelihood in the study area?</i></p>	<ul style="list-style-type: none"> • Livestock availability • Yield • Household structure • Land tenure status • Income generation activities • Off-farm income • Household expenses • Dept • Potential problems in farming 	<p>Households</p>	<ul style="list-style-type: none"> • GPS (yield estimation) • In-depth interview • PRA: Labor calendar, problem ranking, well-being ranking
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Appendix B: Timetable for SLUSE 2006 Fieldcourse

Date	Activities
18/03/2006	Transport to Bangkok
19/03/2006	End of field course 👍
07/03/2006	Danish and Thai students intro meeting
07/03/2006	Danish and Thai students intro meeting, group formation.
08/03/2006	Presentation of common research project
09/03/2006	Transport to field area, (3 hours drive), deciding on focus group, community meeting, pre-test of the questionnaire, reformulation of the questionnaire, observation by walking around the village
10/03/2006	Participatory mapping (2 to 3 hours), 6 questionnaire, observations (done by the subgroups)
11/03/2006	Questionnaire ×10 (35 minutes each) (done by the subgroups)
12/03/2006	Questionnaire ×10, semi structured interview with village headman, evaluation of findings (done by the entire group in one village-base camp?)
13/03/2006	Evaluation of findings, mid-way presentation ⓘ
14/03/2006	Questionnaire ×7, evaluation of findings (done by the subgroups in two different villages)
15/03/2006	Soil sampling, Terrain mapping (GPS), labor calendar
16/03/2006	Well-being ranking and analysis, , problem ranking (done by the subgroups in two different villages)
17/03/2006	Timeline, debriefing and presentation of results to the villagers

Appendix C: Questionnaire

Date: _____ Time: _____ Household number: _____ Familial position: _____

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Respondent Profile

Name: _____
 Gender: _____
 Age: _____
 Marital Status: _____
 Level (year) of Education: _____
 Occupation: _____
 Number of family members: _____
 Main source of income: Agriculture Other _____

Livelihood Security

1. How many other members are there in your household?

Members	Age	Gender (M/F)	Years of education	Main occupations

2. Do you own animals? Yes No

If Yes,

Type	No. of animals	Use
Chickens		
Buffalos		
Cows		
Pigs		
Others		

3. Income Generating Activities

Household members	Activity (source of income)	Ranking
	Crop production	
	Livestock production	
	Forest	
	Farm labor	
	Small business (handicraft, trading, etc..)	
	Remittance	
	Others	

4. Expenditure

Type of expenditure	Estimate of costs	Seasonality of expenditure
Food		per day-month-year
Education		per day-month-year
Health		per day-month-year
Consumer goods		per day-month-year
Agricultural expenditure		per day-month-year
Repayments of loans		per day-month-year
Others		

5. Possessions

Indicate whether the household possesses the following items and how many.							
Car		Lantern		Agricultural implements/machinery		Others	
Motorcycle		Radio		Tv			
Bicycle		Flash light		Bank savings			
Cart		Sewing machine					

Land Tenure

6. For how long have you lived in this area? _____

7. Do you own any land? Yes No

If yes,

Number of plots? _____

Size of each plot?

P1) _____

P2) _____

P3) _____

P4) _____

Location?³

³ Draw a participatory map and give number to each plot.

If no,
 Do you apply agricultural practices? Yes No
 If yes, Livestock production Vegetal production Both

(Skip the next question)

8. Do you have a title deed? Yes No
 If yes, when did you get it? _____ The type of the title? _____

9. Do you think having title/certificate is important? Yes No
 If yes, why?
 Allows applying for credits/loans or subsidies
 Security for future generation
 Allows investing for inputs (fertilizer, machinery, irrigation, etc.)
 Prevents illegal possession
 Other, specify: _____

10. Do you rent (tenant) or rent out any land? Yes No
 If one rents out,
 To whom? _____

Number of plots? _____	Size of each plot?	Location?
	P1) _____	_____
	P2) _____	_____
	P3) _____	_____

If one is tenant,
 From whom? _____

Number of plots? _____	Size of each plot?	Location?
	P1) _____	_____
	P2) _____	_____
	P3) _____	_____

11. Is the land enough to support your household? Yes No
 12. Have you sold of your land holding? Yes No

13. What was the reason?
 Prices were high (profit)
 Management difficulties (too big)
 Due to dept problems
 Due to land quality
 Little or no profitability
 Other, please explain _____

14. Have you ever bought a piece of farm land? Yes No

If yes, size and location _____

15. What was the reason of buying?

Prices were low (high profit)

To increase the production

Long term investment

Other, please explain _____

Credit

16. Have you applied for credit, loan etc.? Yes No

If yes,

17. Where did you apply to (village fund, person, private company, etc.)? _____

18. For what purpose did you applied for? _____

19. Has anything been required for collateral? Yes No

If yes, explain _____

Agricultural Practices and Land Use

20. What kind of crops do you grow? In which plot?⁴ Why? Size? (cash, fodder, own consumption, etc.) For how long have you been growing these products?

Plot 1) _____

Plot 2) _____

Plot 3) _____

Plot 4) _____

21. Are those plots irrigated? Yes No

If yes, how? _____

22. Do you apply conservation methods? Yes No

If yes, specify: _____

23. What is your main problem regarding to agriculture? _____

⁴ According to plot number on the participatory map.

Appendix D: Land Documents Issued by Various Departments of the Thai Government

Document	Class	Date of Introduction	Legal status	Survey methods	Transfer rights	Used as collateral	Restrictions
<i>Department of land: Land documents for plots outside the forest reserves</i>							
NS-4(Chanod)	Title deed	1954	Most secure, full owner ship title registered with provincial land registrar fully negotiable-sold ,rented, sub-divided, or mortgaged	Land demarcated by accurate ground surveyor rectified aerial photo map property marked by markers	Fully negotiable	Yes	Issued only for the land outside the reserve area If the land is fallow for more then 10 years ownership right can be challenged by the government or by other farmers
NS-3(Nor-Sor-Sarm)	Certificate of use	1954	Secure, farmers can sell, transfer, or mortgage	Surveyed in isolation by triangle tape method	Because of boundary distortions proposed transfers must be advertised for 30 days	Yes	Issued outside the reserve area, if land lies fallow longer than 5 years ownership right can be challenged
NS-3K(Nor-Sor-Sarm-Kor)	Exploitation testimony	1972	Secure, farmers can sell, transfer, or mortgage	Prepared from unrectified aerial photo map	Fully negotiable	Yes	Issued outside the reserve area, Issued outside the reserve area, ownership right can be challenged if land lies fallow for more than 5 years
NS-2(Bai-Chong)	Preamptive cetificate	1954	Authorizes temporary occupation of land,	Land described by meters and bounds	Only by inheritance	No	Issued outside the reserve area, to be used with in the 6 months of issuance

			after prescribed period and land use can be converted to NS-3 or NS-3K				
SK-1(Sor-Kar-Neung)	Claim certificate	1954(during the process of implementing the code)	Claim to ownership based on possession or use of land before the enactment of the land code, can be converted to NS-3, NS-3K, NS-4	Land described by meters and bounds	Certificate transferable, after transfer advertised	No	Issued outside the reserve area,
<i>Forestry department: Land documents for plots inside the forest reserves</i>							
STK(Sor-Tor-Kor)	Temporary cultivation rights	1981	Usufruct certificate	Varies	Only by inheritance	No	Issued only for land inside forest, covers the plot up to 15 rai (2.4 hectare) conversion to NS-3 or NS-4 is prohibited
<i>Public welfare department: Issued in specific areas under small official programs</i>							
NK-3(Nor-Kor-Sarm)			Can be used legally as loan collateral but can not be sold until 5 years after the issue date		Subject to restrictions	yes	Can be obtained after 5 years possession of NK-2

NK-2(Nor-Kor-Som)			Usufruct		Only by inheritance	No	
NK-1(Nor-Kor-Neung)			Usufruct		Only by inheritance	No	
<i>Land reform office: Issued in specific areas under official program</i>							
SPK(Sor-Por-Kor)			Usufruct		Only by inheritance	No	

Appendix E: Interview guide

Interview guide for BAAC officer

8. What are the conditions one should fulfill to apply for ag. Loan?
9. How long does it take to process the loan application?
10. What is the importance of land title in getting the ag. Loan?
11. If a farmer does not have a land title, is there any possibility for him to get ag. Loan?
12. If due to some natural disaster or any valid reason a farmer fails to pay back the loan on time, what are the policies of the bank in that case?
13. On what criteria you decide on the amount of loan to be released to the farmers?
14. If the farmer uses the loan amount to some other non agricultural activities, is there any monitoring mechanism in place by the bank?

Interview guide for village head (chairman)

1. Is there any type of village fund provided by the government?
2. What kinds of village funds are available for the villagers?
3. To whom you provide the money and for what purpose?
4. If due to some valid reason, a farmer is not able to pay back the loan, in that case how you deal with this?
5. Are there enough funds available for the villagers?