

Farming Systems at Telaus Longhouse Batang Ai Oil Palm Estate

A SLUSE Joint Basic Course Assignment

Made By

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LIST OF CONTENTS

1. INTRODUCTION	2
1.1 GENERAL OBJECTIVES	2
2. METHODOLOGY	2
2.1. APPROACH.....	2
2.2. PREPARATION	3
2.3. INITIAL CONTACT.....	3
2.4. RESPONDENTS	3
2.4.1. <i>Selection of group respondents</i>	3
2.4.2. <i>Selection of individual respondents</i>	4
2.5. INTERVIEWS	4
2.5.1. <i>Interview with farmer</i>	5
2.5.2. <i>Interview with headman</i>	5
2.5.3. <i>Interview with state manager</i>	5
2.5.4. PARTICIPATORY APPROACH.....	5
2.6. <i>Participant observation</i>	6
2.6.2. <i>Mapping</i>	6
2.6.3. <i>Ranking</i>	7
2.7. QUESTIONNAIRE	7
2.8. INTERPRETER.....	8
3. RESULTS	8
3.1. INTRODUCTION.....	8
3.2. SALCRA	8
3.2.1. <i>Land use management</i>	9
3.2.2. <i>Uses and management of external inputs</i>	9
3.2.3. <i>Transport and sales of cashcrops</i>	9
3.2.4. <i>Salaries for labour input</i>	9
3.3. TELAUS	9
3.3.1. <i>Nanga Telaus</i>	10
3.3.2. <i>Ulu Telaus</i>	10
3.3.3. <i>Land uses and crops grown</i>	10
3.3.4. <i>Bedurok</i>	11
3.3.5. <i>Income</i>	11
3.4. THE CASE OF FARMER 1	11
3.4.1. <i>Background information</i>	12
3.4.2. <i>Land uses</i>	12
3.4.3. <i>Inputs</i>	14
3.4.4. <i>Labour</i>	14
3.5. THE CASE OF FARMER 2.....	14
3.5.1. <i>Land use in Ulu Telaus</i>	15
3.5.1. <i>Land use in Nanga Telaus</i>	15
3.5.2. <i>Compensation</i>	16
3.6. QUESTIONNAIRE	16
4. DISCUSSION	17
4.1. DISCUSSION OF RESULTS	17
4.2. DISCUSSION OF METHODS.....	18
4.2.1. <i>Respondents</i>	18
4.2.2. <i>The interview situation</i>	19
4.3. PARTICIPATORY OBSERVATION.....	20
4.3.1. <i>Direct observation</i>	20
4.3.2. <i>Mapping</i>	20
4.3.3. <i>Ranking</i>	21
4.4. QUESTIONNAIRE	21
4.5. INTERPRETER.....	21
4.6. RELEVANCE OF METHODS CHOSEN.....	21
5. CONCLUSION	22
6. PERSPECTIVES	24

1. Introduction

The following paper contains a presentation and evaluation of the objectives, methodological approaches, results and the discussion of these, for the field study focusing on the farming systems practised at the Talaus longhouse situated in the Batang Ai Oil Palm Estate, Sarawak.

1.1 General objectives

- To examine which components are included in the farming systems practised by the resettled farmers at Talaus longhouse situated at the Batang Ai Oil Palm Estate.
- To establish to what extent the resettled farmers have alternative agricultural production and systems beyond the areas included in the Batang Ai Oil Palm Estate.
- To establish the extent to which SALCRA influences on the farming systems conducted by the resettled farmers in Talaus longhouse.

2. Methodology

2.1. Approach

Our point of reference for conducting the field study in the Batang Ai Oil Palm Estate was to look at the different aspects of the farming system and agricultural production of the resettled farmers in the area. In order to do so we chose the approach of staying in the researched longhouse (Nanga Talaus) during the whole research period. This enabled us to obtain a more in-depth knowledge of the Iban people and their everyday life. Furthermore the approach created a kind of confidence towards us within the longhouse, and the work that we were doing there.

For us to be able to collect the information needed to fulfil our objectives, a selection of qualitative methods were used, such as qualitative interviews (semi-structured and topic focused), and participatory methods like, direct observation, mapping, ranking and matrix scoring. The participatory methods provided more visual and specific data about the farming system and the longhouse inhabitants, information that could not have been obtained through

the conducted interviews. Furthermore a brief questionnaire was used in order to generate more quantitative data.

Using different qualitative and quantitative methods like the above mentioned made it possible to continuously cross check information that was obtained.

2.2. Preparation

In order to prepare for the fieldtrip we read through literature and followed lectures about the area. On basis of this, objectives were constructed, methods chosen and prepared (matrix, mappings, questionnaire) and the framework for the whole research elaborated. Furthermore we had to envision the context in which we were to operate in.

2.3. Initial contact

The first contact to the people of Talaus longhouse were established beforehand, by one of the Danish supervisors as a preparation for the fieldtrip. The contact had to be in place before arriving to the study area due to the short timeframe of the research. At the first meeting with the people of Talaus longhouse it was primarily the Danish supervisor who made the first introduction and arranged the financial part of the stay in the longhouse. We then took over and introduced the specific project. The fact that the supervisor knew the area, the people and a bit of their language made the initial contact very easy.

2.4. Respondents

In the research individual respondents were used for the interviews and group respondents for the participatory methods. All respondents were contacted and found through the JKKK-committee. They selected the farmers from criteria put forward by us

2.4.1. Selection of group respondents

The committee did the selection of the respondents for mapping and ranking; they choose farmers who knew something about the topic in question. The information wanted were primarily facts and thus not, or only limited, subject to the farmers personal interpretations.

We did not put much emphasis on the gender aspect or power relations when selecting informants and this may have lead to some bias. As an example no considerations towards the

composition of the group of respondents in terms of equal number of men and women were taken. The rather casual selection of group respondents is a bias that has to be considered when using the data.

2.4.2. Selection of individual respondents

During the research 3 interviews with individual respondents were conducted. 2 of the respondents were selected based on their knowledge about the topic, in the third interview the respondent (a farmer) was selected from the following criteria:

- Farming should be his primary activity
- He should grow more than one crop
- He should be a part of the SALCRA oil palm estate.

2.5. Interviews

Interviewing is a qualitative method, which can be more or less structured, reaching from the informal conversational interview¹, to the more formal interview semi-structured, open-ended interview² (Casley and Kumar, 1988). In between the conversational and the semi-structured interview is the topic-focused interview, which follows a guide on topics, but is flexible in the way the questions are put. The method chosen depends on the information wanted, and the respondent in question.

In the research 3 interviews were conducted: the first with a farmer, the second with the headman of the longhouse and the last with the state manager. The type of information the interviews were aiming at was different in the 3 interviews; in the topic-focused interview with the headman we were seeking facts, and the headman was, because of his position, knowledgeable about the topic and functioned as a key informant. The information wanted from the farmer was more personal: how much land did he own, which crops did he cultivate, how much did he receive in compensation for lost land, expectations for the future etc. The farmer did not need any specific knowledge and served as a general respondent (Casley and Kumar, 1988). The state manager was a mixture of the key- and the general respondent; both

¹ Interviews conducted with no written guide, very flexible and suitable, because of the informal atmosphere, for encouraging the respondents to express their views and values. (Cashley & Kumar, 1988)

² Interviews with open-ended questions not requiring any strict yes- or no-answers. It is possible to put in new questions and pursue new subjects in semi-structured interviews. (Casley and Kumar, 1988)

exact knowledge about SALCRA's functioning were needed, but also his point of view upon some problematic topics mentioned by the farmers.

In each interview one of us would put the questions and the other take notes. We did this to prevent confusion and interruptions during the interview. The one taking note would furthermore make sure that all questions were answered

2.5.1. Interview with farmer

A semi-structured interview method were chosen for the first interview, because both specific questions were to be answered and some topics to be clarified. One of the advantages of this method is that if the informant feels insecure or timid, the structure of the interview will guide him through (Casley and Kumar, 1988). For example the farmer might answer very briefly and need a further question to go on with the topic.

2.5.2. Interview with headman

The interview with the headman of the longhouse was a topic-focused interview concerning land tenureship. At that specific time of the research (see appendix 1) this topic seemed central and important to be able to continue the research. The interview started out with the following question: "*How is the tenureship structured in the Telaus longhouse area?*" and then the following questions were spontaneous to make sure we understood and got around the topic.

2.5.3. Interview with state manager

The third interview was conducted together with the SALCRA research group and also conducted with focus on certain topics.

2.5.4. Participatory approach

Since the agricultural practices of the Iban people are strongly influenced by the cultural and social environment in which they live (Freeman, 1992), a participatory approach was taken in order to get access to information that could fulfil our main objectives. This approach included living in the longhouse in which we were doing research and using participatory methods like participant observations, mapping, ranking and matrix scoring. These

approaches gave us a better picture of the people and the reasoning behind the farming practices.

2.6. Participant observation

According to Casley and Kumar (1988) participant observation is “...a type of qualitative data-gathering method that requires direct observation of an activity, behaviour, relationship, phenomenon, network, or process in the field”. Our use of this method by living in the longhouse and going to the field to conduct direct observations could be termed participant observation even though the optimal use of this method would be a more prolonged stay with the people that are to be observed.

2.6.1. Direct observation

We used direct observation in the field (field, being the agricultural plots, which were observed) in participation with our informant by following him to his particular fields and conducting semi-structured interviews at the plots and asking questions about the things that was observed at the sites.

2.6.2. Mapping

In order to get a general view of the distribution of land and how it was used we chose to introduce the method of participatory mapping, with emphasis on;

The land possessions in Nanga Telaus; In this mapping the informants drew the agricultural plots surrounding the longhouse which was given to the individual families when resettled. The map included the names of the people cultivating the plot, the size of the plot and what was grown. In order to structure this mapping we made use of a mapping of the families, with names and number of people, living in the whole longhouse, that another group (Rattan group) had made previously. The main function of the agricultural plot mapping was to use the map as a reference source when planning which future questions had to be asked in order to obtain further elaboration on specific issues (ownership, which families grew which crops, etc.). The mapping of the plots furthermore made it possible to conduct a brief questionnaire to sum up loose ends in the last two days of our stay.

Distribution of agricultural plot in Ulu Telaus; This map was drawn during our stay at Ulu Telaus. 2 farmers from Nanga Telaus, drew the surrounding agricultural plots, which they and other families from Nanga still cultivated, in the old native customary rights area, Ulu. This map included names of the people cultivating the fields and location of the fields situated next to the Batang Ai River.

A map showing which families from Nanga Telaus owned a door at Ulu Telaus; This map was drawn when staying at Ulu Telaus. The map was drawn mainly to establish if there was a pattern as to which families were using the Ulu longhouse and the number of agricultural plots in Ulu Telaus. Another use of this map was to be able to check the information that we had received from the mapping of the agricultural plots.

When conducting mappings we set the frame as to what information we wanted to receive, the interpreters acted as facilitators and the participants was free to draw with no or little interference from us.

2.6.3. Ranking

We chose to conduct an matrix scoring and ranking of crops grown after an interview session to take advantage of a well functioning group of participants. The purpose of this ranking was to establish which crops had the most important value opposed to several uses (cash, food, labour, etc. see appendix 2). Since the ranking had to be introduced spontaneously there was not much time to prepare the actual issues to be ranked. This created some confusion and it took some time to explain exactly what information we wanted to obtain and how to do the ranking e.g. scoring from 1-7 using matches, which way to rank horizontal or vertical, which crops to rank, which values to rank upon, etc.

2.7. Questionnaire

A questionnaire can be conducted with open-ended or closed questions, again, as in the interviews, primarily depending on the information wanted.

At the end of the research a questionnaire were conducted. It was a closed questionnaire, with yes, no or a number as answering possibilities. The questionnaire was very brief (see appendix

3), concerning facts about the households³, the respondents use of their old area Ulu, and their connection to SALCRA's oil palm estate. The main purpose of the questionnaire was a household survey, to investigate if there were any patterns (for example patterns for who used the Ulu area) in relation to the whole longhouse..

Because the questionnaire was conducted the 2 last days of our research, it was not possible to get to talk to all the families of the longhouse, as 10 out of the 34 families were not there.

2.8. Interpreter

We made use of an interpreter at all the conducted activities (interviews, mapping, etc.). The interpreter also engaged as the facilitator of the first contact to the people involved in the different activities. At times it was necessary to make use of two interpreters (Iban and Malay speaking) and this could at times be confusing as to the validity of the information received. The use of a good interpreter is essential for the information gathering, but there is always some information lost in the interpretations, especially nuances.

3. Results

3.1. Introduction

According to the information that has been collected there are two main actors' (SALCRA and Talaus longhouse) who influence the farming systems. In order to understand the context of the main findings these two main actors will be introduced. Further more the results from interviews, direct observation, mappings etc. with two informants will be presented in order to extract more specific information. Finally a summary of the farming system existing in Talaus longhouse will be presented.

3.2. SALCRA

As has been mentioned in the general introduction, SALCRA is managing the Batang Ai oil palm Estate, where Talaus longhouse is situated. The back payment on the loan given when resettled, and the fees for electricity and water are deducted from the money SALCRA pays the farmer back for his rubber.

³ A household a group of people who live and eat together (Casley & Kumar, 1988, p 60)

SALCRA has impacted the traditional farming system⁴ in various ways:

3.2.1. Land use management

In 1984, when the longhouse was resettled, SALCRA planted the cashcrops cocoa and rubber in order to create income for the resettles. Recently SALCRA has replaced the cocoa by oil palm (Aug. 1998), because of bad performance and no profit was made from the cocoa. SALCRA has divided the land available (state land bought from 2 other longhouses) to the farmers into 30 plots of oil palm (3 acres each with 160 oil palms), 30 plots of rubber (5 acres each with 500 rubber trees) and 30 plots of individually owned land (one acre each). (See appendix 4)

3.2.2. Uses and management of external inputs

SALCRA provides herbicides and pesticides to the oil palm fields and the rubber fields. The cost of these is deducted from the farmers income when harvesting.

3.2.3. Transport and sales of cashcrops

Rubber produced by the farmers is sold to SALCRA who also arranges the transportation of rubber by picking up the rubber in the fields. SALCRA pays a fixed price (independent of the world market price) of 50cent/kg for the rubber.

3.2.4. Salaries for labour input

The farmers are paid for maintaining the oil palms until the palms start producing. They are paid for pruning, fertilising, spraying of herbicides and pesticides and weeding. The farmers are paid 8 ringit - 1 ringit (pension) = 7 ringit/workday. They work approximately 20-22 days per month. When the oil palm start to produce the farmers earn according to what they harvest.

3.3. Talaus

The people of Talaus longhouse lives in Nanga Talaus, but still make use of their old area: Ulu Talaus

⁴ Traditional meaning the shifting cultivation the farmers practised in the old Talaus area, Ulu Talaus, before this was flooded.

3.3.1. Nanga Telaus

The Nanga Telaus longhouse is situated close to the road leading to the Batang Ai dam. A gravel road leads to the longhouse, and one family in the longhouse owns a van.

The Telaus longhouse consisted of 22 households when resettled in 1984, who all were compensated individually by SESCO, for lost land, trees and longhouse. Today the community has expanded to include 34 households due to children reaching adulthood and having their own families within the longhouse area. 30 acres of land are owned by 28 families in the longhouse (one acre each; except for two families who own 2 acres each). Further more 10 families cultivate the Native Customary land situated in their old area; Ulu Telaus. The longhouse is organised in the traditional Iban way, with JKKK, *Tuai Rumah* etc. (see general introduction).

3.3.2. Ulu Telaus

Ulu Telaus is situated in the old Telaus area, upriver the Batang Ai river. The construction of the dam has flooded their old farmland leaving only the steep hilltops possible to cultivate. The most of the area is covered with secondary forest.

All families of Nanga Telaus can cultivate in Ulu Telaus. To own a piece of land you have to cultivate the plot for at least one year. After that others have to ask if they want to cultivate that plot. At the same time the farmers often borrow plots from each other making their practice of shifting cultivation a flexible system.

Of the 10 families cultivating in Ulu Telaus 9 of them are cultivating in clusters, with their fields close to each other. This is organised in a meeting just after harvesting time.

3.3.3. Land uses and crops grown

The farmers of Telaus longhouse practice permanent cultivation in Nanga Telaus and shifting cultivation on the remaining hilltops at Ulu Telaus.

In Nanga Telaus the main cashcrops grown are oil palm, rubber and pepper (pepper is grown on the farmers own initiative and land). The main food crop is paddy, but intercropped with various other foodcrops like cassava, corn, sugarcane, cucumber, pumpkins, indigenous vegetables etc. Traditionally the paddy is very important for the ibans, and highly prioritised.

In Nanga Telaus a matrix scoring and ranking of crops showed that paddy is important as a foodcrop, low in productioncost, and important as a part of their “adat” (see general introduction)

The one privately owned acre is used to grow mainly pepper, paddy and fruit trees. Each farmer decides which crops are grown, which results in a variation of the crops grown in each field. (See appendix 4). Further more some farmers cultivate paddy on state owned land, between the newly planted oil palms and next to the rubber trees. Formally this is illegal, but the local supervisor closes his eyes.

In Ulu Telaus primarily paddy, also intercropped with different vegetables, is cultivated. After harvesting the paddy, casawa and potatoes is sometimes planted. There are some fruit trees and rubber trees remaining after the flooding.

3.3.4. Bedurok

In order to maintain the different fields, especially in peak workload situations, the farmers practice a kind of work-exchange called “*bedurok*”. Each year, before planting the paddy, the farmers organise themselves as to who is going to assist each family in the fields. The practise is mainly based on friends and family helping each other out.

3.3.5. Income

The families at the Telaus longhouse derive their main income from pepper, rubber and a community fishpond. Pepper and fish are sold directly to the market, while sales of the rubber goes either through a middleman (black market) or through SALCRA. The remaining income comes from migration work

3.4. The case of Farmer 1

The case of farmer 1 are based on conducted open-ended and semi-structured interviews and direct observations of his paddy, rubber and oil palm fields in Nanga Telaus.

3.4.1. Background information

Farmer 1 and his family (his wife, and their adoptive girl (two adult children have moved away from Telaus)) lives in a separate house that he himself has build, next to the Telaus longhouse and are a part of the Telaus community. The farmer was resettled to Nanga Telaus in 1984 with the other families. His parents live in Nanga Telaus and his brothers in Miri and Brunei. Farmer 1 has previously been employed in the Malaysian army for 10 years.

Farmer 1 and his family have stayed in Ulu for the past 5 years because the cocoa in Nanga Telaus was not productive and hence not enough cash could be earned in order to obtain a proper living standard. They then moved back to Nanga Telaus last year (1997), due to the watershed was rising threatening his land at Ulu, his health was decreasing, and due to the decision that was made of changing the non-productive cocoa at Nanga Telaus into oil palms.

3.4.2. Land uses

Since the farmer only cultivates in the Nanga Telaus area, the main agricultural system is permanent agricultural fields combined with slash and burn practise in-between crops. All activities in the fields are non-mechanised and traditional methods like using a stick for planting the paddy and manual weeding with a knife is still practised. After participating in the SALCRA scheme the farmer has been introduced to more excessive spraying practises of herbicides and pesticides with a sprayer that is born on the back. Furthermore a more systemised application of fertilisers are practised.

According to Farmer 1 there is only a verbal contract between SALCRA and farmers as to what are to be paid in salaries, inputs, changing of crops, etc.

Paddy; Farmer 1 grows paddy intercropped with corn, leaks, sugarcane, cucumber, pumpkins and, indigenous vegetables, next to his rubber field. Initially the land, where he presently is growing paddy, was supposed to be planted with rubber trees but since there is not enough land available to the farmers at Telaus, SALCRA allows a certain amount of the fields designated to rubber plantation to be used for paddy production. Furthermore he grows paddy in-between the newly planted oil palms as does most of the farmers in Telaus, although it is not allowed according to SALCRA.

Rubber; Farmer 1 has been producing rubber for 7 years in Nanga Talaus, yielding approximately 10 sacks a week weighing 35 kg. The farmer cut and taps the rubber 2 times a week in the rainy season and 3-4 times a week in the normal season. SALCRA pays him 50 cents per kg, and pick up the rubber bags at the fields by tractor twice a month.

According to Farmer 1, SALCRA sometimes are very slow in picking up the rubber from the fields and he sells to a middleman called the "china-man" at a price of 40 cents a bag. The biggest advantage for the farmer by selling to the middleman is the instant cash that are received, but then the farmer also has to carry the bags down to the longhouse by himself. So there is a lot more work involved in selling to the middleman.

The biggest problem regarding the rubber production is that in the rainy season the rain spoils the tapped rubber when it rains into the bowls, and according to the farmer this accounts for a substantial loss of income. On the other hand the farmer expressed that he and other farmers were reluctant to tap rubber when it was raining because they were afraid to get sick.

Pepper; as mentioned in the introductory to SALCRA 1 acre of the promised 3 was given to the farmers for their own cultivation. Farmer 1 has chosen to grow pepper plants for production of black pepper as a cash crop, inter-cropped with chilli, cassava, yams, tjanko manice, and palms for tapping palm wine, for self-consumption. Farmer 1 has planted his pepper 1 1/2 years ago and has to wait until the plants are 3 years in order to harvest.

He fertilises the plants three times a months. This practice will secure the optimal production of the pepper stocks for the next 4-5 years (if the pepper plants are not fertilised the plants will only produce for 1 year). The production cycle of pepper is 3-4 months and each stock produces app. 3 kg. The farmer expects to gain app. 15 Ringit per kg black pepper when the plants start producing (but the price depends heavily on the world market price).

Oil palm; Farmer 1 recently received a plot of land for growing oil palms and has planted 160 oil palms in August 1998 with the help of his wife and her brother. SALCRA provided the tractor in order to transport the heavy seedlings to, and around the field. His plot and the other 29 plots with oil palms had until recently been cultivated with cocoa. According to the farmer, the decision to replace the cocoa was a collective one requested by all the farmers at Nanga

Telaus in order to gain some cash income. The oil palms will start producing in 3 years and until then the farmer and his wife work as wage-labours applying fertilisers, spraying herbicides and pesticides and pruning, until the oil bunches can be harvested and generate an income.

The farmer has planted paddy in-between the oil palms and will continue to do this until the palms grow so tall (4 years) that nothing can grow underneath due to shading. This practise is not approved by SALCRA who dictates that a non-crop legume is to be planted in-between the oil palms in order to control weeds, moisture and erosion. SALCRA however, seems to silently allow this practice, mostly due to the lack of available farmland in the area.

3.4.3. Inputs

SALCRA provides for the fertiliser, herbicides and pesticides, that are to be used at the oil palm and rubber fields and only starts charging for the products when the cash-crops starts producing. Fertilisers, herbicides and pesticides are furthermore subject for state subsidies.

3.4.4. Labour

Farmer 1 and his wife have a ½ day helper (mainly family and friends) in order to maintain the fields which is part of the practised “*bedurok*” system. In turn they also help family members and friends in maintaining field.

The rotation pattern is 2 activities everyday. The helpers work ½ a day at the oil palm field and ½ day at the paddy field for 2 days at a time and then they rotate. The farmer and his wife both are a part of this system and work an equal amount in the field.

3.5. The case of farmer 2

At the longhouse door of farmer 2 lives 6 adults and 2 children: farmer 2 and his wife, two grown up daughters, two sons in law and two grandchildren. Farmer 2 origins from another longhouse, but his wife is from the Telaus longhouse. The land he cultivates he received from his parents in law, and relatives.

During the last 9 years farmer 2 has been cultivating both in Nanga Telaus and in Ulu Telaus. His daughters and sons in law are taking care of the farmland in Nanga Telaus, while him and his wife goes to Ulu Telaus 3-4 days a week to cultivate. He has an apartment at the Ulu

Telaus longhouse and owns a longboatengine. He would prefer to cultivate only in Nanga Telaus, but the land available to farmer 2 is not sufficient to keep an acceptable living standard for the family.

3.5.1. Land use in Ulu Telaus

Farmer 2 owns two plots of farmland, some fruittrees and rubbertrees in Ulu Telaus.

Paddy; He practices shifting cultivation for his paddy production, using the 2 plots of his own, a plot borrowed from his father in law and a plot borrowed from relatives. Since 1993 farmer 2 has shifted between only 3 fields: from 1993 to 1996 he cultivated the same field every year; in 1997 a new field was cultivated (See appendix 5). This year a very steep field was slashed and burned before planting the paddy. It was cultivated last time 9 years ago, where a lot of the harvest were lost because of monkeys. The paddy is intercropped with several other crops (cucumber, chili, corn and some indigenous vegetables), and farmer 2 uses pesticides (1,5 liter) and herbicides (1 liter) for the production. The yield is app. 25-35 sacs á 50 kg.

Farmer 2 is considering planting pepper on the field next year.

Fruit and rubbertrees; Farmer 2 owns 50 rubbertrees which were not flooded, but he does not tap them, because the rubberprice is low. Further more he owns fruit trees (rambutan, mango, lommua, competan, jagus, and engkabang) which are for self-consumption.

3.5.1. Land use in Nanga Telaus

In Nanga Telaus farmer 2 owns (but his 2 daughters and their husbands is managing) one acre of land with permanent cultivation, and is part of the SALCRA oil palm estate, managing 5 acres of rubbertrees and 3 acres of oil palms. Among the oil palms farmer 2 cultivates paddy as a supplement to the paddy cultivated in Ulu Telaus – the yield of paddy is approximately 3-4 sacs á 50 kg, and it is, together with the paddy production in Ulu Telaus, enough for self-consumption. If the production of paddy between the oil palms next year is prohibited, he will cultivate more paddy in Ulu Telaus.

On farmers 2's one acre he cultivates pepper and vegetables.

3.5.2 Compensation

When farmer 2 was resettled he was compensated for lost land and pepperfields (9500 ringit), for lost rubbertrees, (2000 ringit) and for lost fruittrees (7500 ringit). He is satisfied with the size of the compensation, as long he can cultivate the hilltops at Ulu Telaus. He has spent all of the compensation mainly for education for the children and helping his family.

3.6. Questionnaire

The questionnaire provided a general view of some of the components in the farming system of Nanga Telaus longhouse. In the questionnaire 24 households out of the 34 answered the questions. The percentages signifies positive answers and are as follows:

Tabel 1. Results obtained from the conducted questionnaire (Nanga Telaus).

Oil palm	83 %
Rubber	83 %
Paddy	88 %
Pepper	79 %
Door at Ulu	58 %
Cultivate at Ulu	25 %
Longboat	42 %
Engine to longboat	67 %

There are some comments of interest connected to the percentages.:

- The percentage of oil palm and rubber derives from the fact that only 28 of the 34 households are participating in the oil palm estate.
- Paddy is the main foodcrop, The 11 % who do not cultivate paddy are either not farmers but are working for cash, or single female who do not have the manpower to cultivate the paddy..
- The pepper is cultivated on the household's private land and on their own initiative. At the time being the prices are going up, and when taking the households who are planning to grow pepper into account, the percentage rises to 87 % .

Of the households who do not cultivate in Ulu, 22 % explained that they did not have the necessary manpower to cultivate both in Nanga and Ulu Telaus. Another explanation could

be, that the households without engine, have no frequently access to transportation to Ulu Talaus. Further more the actual percentage of households (10 out of 34) is 29 %.

- The somewhat curious combination of 42 % having a longboat, and 67 % having an engine, could be explained by having an engine it is possible to borrow a longboat (a longboat is relatively cheap and easy to repair), but if you only buy the longboat it will be more difficult to borrow an engine which is a bigger investment and possibly difficult to repair.

One last comment to be made on the results of the questionnaire is that it does not show any information on the ways the farmers combine the different components of their farming system. Thus it does not show the complexity of the farmers' different choices concerning their farming system.

4. Discussion

4.1. Discussion of results

When the families from Talaus were resettled into the Batang Ai Oil Palm Estate, problems arose among SALCRA and the resettled families from the very start. Due to the multitude of the problems between SALCRA and the resettles, the focus in this discussion will be on problems that have influenced the farming practices of the resettled families.

The first problem to emerge was the lack of a standardised compensation rate⁵ (Ngidang, 1995). Furthermore when the families were in fact resettled in 1984, the resettlement area had not been developed (rubber trees, oil palms and cocoa had not been planted) according to the timeframe put forward by SALCRA. Because of the government difficulties in finding suitable and large contiguous areas of land for the resettlement, families also found at that time that, the land they were promised for their own cultivation (3 acres) could not be obtained. Another factor that was heavily criticised by the resettles was that they were of the opinion that they were to receive free housing, electricity and water supply, but was billed for these benefits (loan on house, bills for water and electricity) after being resettled. Another critic was that the area wherein they were resettled had no expansion possibilities. This means that future generations have no possibility of obtaining new land for cultivating.

⁵ This was the cause of great dissatisfaction among the resettles towards SALCRA, because people felt that some families got more money than others did and different sums of money were given for land, trees, etc.

These controversies between SALCRA and the resettles have resulted in a poor and defensive communication, which again have lead to accusations from both sides. The people at the Telaus longhouse distrusted SALCRA and talked of SALCRA, SESCO and the government as one and the same. This especially became obvious when doing the mapping of the land at Nanga Telaus (see appendix 3) where issues of land tenure was discussed and no differentiation was made between the three when asked who was to blame for their troubles. The farmers furthermore tended to personify their distrust towards the Estate Manager for being the cause of all the wrong doings of SALCRA, but on the other hand the Estate Manager also had a tendency to patronising the farmers.

These disputes have a negative influence on the way farmers look upon the obligations towards SALCRA. An example could be the selling of rubber to the middleman; farmers see upon this as a necessity because SALCRA is too slow in picking up the rubber from the fields and the farmers need the money. SALCRA on the other hand looks upon the selling of rubber to a third party as an illegal act and that the farmers are stealing from SALCRA.

As such the main problem for both SALCRA and the farmers is that the lack of communication generates a lot of conflicts that maybe could be avoided if the trust between the two parties were to be re-established. For the time being the farmers feel misled and without any influence on the decisions that are made from SALCRA and SALCRA on the other hand is frustrated that the production rates are much lower than they ought to be.

4.2. Discussion of methods

The methods which lead to the before mentioned results, have their limitations and the risk of misinterpreting or biases is always present when conducting qualitative methods. Some of these limitations and misinterpretations/biases will be dealt with, as will some of the benefits of the methods. This will be followed by an evaluation of the participatory approach and its relevance for the objectives of the research.

4.2.1. Respondents

During the whole research the selection of respondents depended on the JKKK-committee. This meant that the committee could choose the farmers they meant would represent the longhouse favourable or choose the farmers close to the "elite" of the longhouse, that is, close to the committee, and thereby impose a unintended bias. For example both farmer 1 and farmer 2 was members of the committee.

In the methods where a group of respondents were needed there might have been some, for us, unknown power relations between the respondents, which could have had an impact on which information were given, or more interesting, which information were not given. For example the headman, or one of the other central persons from the committee, was always present when conducting mappings or ranking, and often before a e.g. stick were laid (in the ranking), the others would look at the headman to see if he agreed.

The gender aspect in our selection of respondents. We did not conduct any surveys exclusively with women. In the interview with farmer 1 a matrix of division of labour in the household was made, but he and his wife did not really see any division in their daily work and we did not pursue the topic. As a consequence of this unconscious neglect, gender related information, which might be of great importance for the understanding of their farming system are not included in the research.

4.2.2. The interview situation

In an interview situation there is a continuous interaction going on between the actors present. The attitude of the interviewer, the way he/she listens, asks questions, has got an impact on the respondent; especially if the respondent is insecure and uncomfortable with the situation. We were very attentive to this in the interview with especially farmer 1, in the sense that we were almost too "nice", and not pursuing more sensitive topics in order not to make the farmer feel uncomfortable.

The communication between the farmers and us was sometimes complicated by our different conceptions. For example we had a hard time finding out the production cycle of a certain crop. The misunderstanding were caused by us thinking in time as months, weeks and years, whereas the farmer was thinking in seasons or in relation to other crops eg: the farmer 2 said: *"the cassava is planted in the middle of the rice season, and harvested just after the rice is*

questionnaire at the beginning of the research, containing all the names of farmers and their wives and other basic informations could also be a solution.

4.3.3. Ranking

The system with matches used at the ranking did not work very well, due to lack of space on the paper used for the ranking and the participants' confusion as to what was asked of them. It should be mentioned that translation problem also was to be accounted for some of the confusion that arose. The main experience from the conducted ranking was that it takes more time than anticipated to introduce the method and participants has to be thoroughly introduced to how such a ranking works. Furthermore ranking should be conducted as a separate activity with participants that have not participated in any activity beforehand.

4.4. Questionnaire

The group of people who had been our respondents and been surrounding us socially as well, must somehow be considered the "elite" of the longhouse. The questionnaire gave us the opportunity to get a broader picture of the longhouse. Knocking on every door of the longhouse we also met the less fortunate families; the widow with no children and no relatives in the longhouse, the single mother and the family who didn't receive land from the farm scheme. It showed us a much more complex picture of the longhouse. To enhance the out put of the questionnaire, some more questions could have been added e.g. questions on compensation received from the resettlement.

4.5. Interpreter

The fact that the interpreters acted as facilitators made the discussions run more freely without many interruptions. One drawback was that some information was not passed on to us mostly due to interpreter problems, such as linguistic misunderstandings or us not explaining well enough about the methods chosen on beforehand.

4.6. Relevance of methods chosen

In the question of relevance of the methods we will evaluate the general approach.

The participatory approach, especially the stay at the longhouse, gave us a good idea of the every day life in a longhouse, even though the days we spent in the longhouse cannot be considered as “ordinary” days, because our stay there disturbed their daily tasks. But we got to know a bit of their customs, and talked to people we otherwise would not have contacted. Eg. in the evenings we talked to the young girls (one spoke a bit of English) about their life in Telaus and about our life in Denmark. We got information which were not directly connected to our research, but somehow still contributed to our understanding of their living conditions and ultimately their farming system.

Staying at the longhouse made the research very intensive, in the way that we were all the time surrounded by people, and consciously or unconsciously taking in information and impressions about their way of living. It was difficult to take a break and look at and think about the information we already had collected, and to take time to plan the next step in the research. As a consequence we now and then lacked the broad view.. Considering the type of information wanted and the time available, the research might have been more efficient and more data collected if we had conducted our methods through visits and not staying at the longhouse. The type of information we wanted were very much facts and not opinions on sensitive issues, which would require more confidence in the interviewer gained for example through a stay in the longhouse.

5. Conclusion

The agricultural production in Nanga Telaus is practiced through 2 farming systems: a shifting cultivation farming system in Ulu Telaus and a permanent farming system in Nanga Telaus. The permanent system contains a subsystem; the oil palm and rubber plantation managed by SALCRA.

They have only little influence on the production in the plantations, but in the management of the paddy fields both in Ulu and Nanga Telaus, and in the privately owned one acre the farmers are flexible.

The flexibility is seen in their choices of components⁶ in their farming system. For example they started intercropping paddy among the oil palms when the opportunity was there and they respond on changes in the market prices: farmer 1 started producing pepper when the prices were rising, and farmer 2 and several others are planning to do so soon.

The flexibility is also seen in the various ways the farmers combine the components according to their situation: Farmer 2 has got the manpower to cultivate both in Ulu Telaus and in Nanga Telaus. He cultivates his paddy among the oil palms and, primarily, in Ulu. Whereas farmer 1 has to combine the components available in Nanga Telaus in an optimal way, intercropping the paddy in both oil palm and rubber field, because he has not got manpower to send to Ulu Telaus.

A significant part of the farming systems, namely the plantation, is not under the farmers control, so along with their flexibility they follow the lines put out by SALCRA.

Some farmers from Nanga Telaus have an alternative or supplement agricultural production in Ulu Telaus. At the time being this is used by 25 % of the farmers. The importance of Ulu Telaus is the security it provides: for example when the only income farmer 1 had derived from his rubber production, and the rubber prices were low, he moved to Ulu Telaus where there was sufficient land to produce paddy and pepper. The Ulu Telaus area thus functions as a buffer the farmers of Nanga Telaus can make use of when necessary.

SALCRA influences the farming systems mostly by deciding which plantation cash crop are to be planted and by providing the necessary input to maximise production yields. Paying wagers for work done in the plantation are probably the most important influence, since the time spent on food crop production have been lessened, introducing the resettles to a monetary based form of livelihood.

The farmers have viewed the influence of SALCRA as both good and bad. Good, because of the access to a better infrastructure, income generating activities, benefits like electricity and water, schools for their children and health clinics. Bad due to various disputes that is discussed in the following.

⁶ Component meaning for example type of crops (cash, non-cash), intercropping, slash and burn, inputs (which and amount).

6. Perspectives

The main concerns with regards to the farming systems practised by the farmers at the Nanga Telaus longhouse is the sustainability of their practises, both in terms of land availability, the use of land and the uses of chemical inputs.

The most pressing issue of concern is the already evident lack of farmland for the future generations. This could lead to an uprooting of the traditional Iban culture that are based on being shifting cultivators.

SALCRA would argue that it is a good thing to enhance development for native people in order to increase their livelihood by providing an income through plantations, and opening up for a better infrastructure, access to schools, better sanitation etc. These are benefits that the natives are embracing, but in many cases development is happening too fast resulting in natives finding themselves deeply in debt, drinking and losing their cultural background when introduced to quickly into a monetary based lifestyle.

In Telaus a change was seen from the generation that had originally been resettled and their children whom for the most parts had moved away from Telaus to engage in different careers in the peninsular, Brunei, and some bigger cities in Sarawak and Sabah. The few young families that were left had either inherited land or were landless and engaged in other jobs.

As for the use of the farmland in the Telaus area, one would fear that with the practise of permanent agriculture on the relative poor soils a depletion of nutrients from the soils is unavoidable. This will in the long run effect the future yields of especially food crops, which the farmers have to buy the input for in the form of fertilisers, herbicides and pesticides, themselves. These fields will therefore not receive the optimal amount of fertilisers due to high costs. There is also a urgent need to stabilise the soils to avoid erosion. This could be done by terracing the paddy fields, which furthermore could prevent loss of nutrients

Regarding the present use of especially herbicides and pesticides one can wonder why farmers do not receive instructions and courses in correct use of these chemicals from a organisation like SALCRA. Farmers are seen spraying pesticides and herbicides bare footed, next to streams, rivers and lakes posing a severe threat to their health and the environment.

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DATE AND LOCATION	METHOD	ACTIVITY	RESPONDENTS	COMMENTS
Mon. 5.10 Kuching	-	Arrival Kuching	-	-
Tues. 6.10 Kuching	-	UNIMAS	-	-
Wed. 7.10 SESCO	-	<u>Mor:</u> going to SESCO-house <u>Aft:</u> Meeting with SALCRA	Meeting: Assistant manager	The SESCO-house was our "headquarter" during our stay in the Lemanak area. The meeting provided general information about SALCRA and the whole Lemanak team participated.
Thur. 8.10 Nanga Telaus.	-	<u>Morning:</u> Intro-meeting with Telaus longhouse. <u>Afternoon:</u> Arrival at Telaus <u>Evening:</u> Meeting with comitee, presenting project.	<u>Eve:</u> Comitee	<u>Eve:</u> Arranging the payment of stay in the longhouse and the activities for the next day. We realized that our initial program (including questionnaire) didn't work.
Fri. 9.10 Nanga Telaus	Participatory field observation	Going to farmer's padi, pepper, rubber and oil palm-fields.	Lunchong, (farmer and member of comitee) and a female farmer who voluntarily joined us.	Collecting specific data about each crop.
Sat. 10.10 Nanga Telaus	<u>Aft:</u> Matrix scoring and ranking of crops grown. Semi-structured interview	<u>Mor:</u> preparation of interview. <u>Aft:</u> Non-prepared ranking of crops. Later interview with farmer. <u>Eve:</u> meeting with comitee	Ranking: Headman, one male- and 3 female farmers Interview: Lunchong and (unintendedly) Beti (longhousemember and working at the SALCRA office)	The ranking we arranged spontaneous, with the farmers present. The interview were conducted using the questionnaire prepared in Denmark. A supervisor from UNIMAS helped translating.
Sun. 11.10 Ulu Telaus	<u>Aft:</u> Participatory field observation.	<u>Mor:</u> Going to Ulu Telaus (stopping on the way at a fishpond owned by the Nanga Telaus longhouse.) <u>Aft:</u> Going to farmers padi-field.	Minggu (farmer from Nanga Telaus)	There lived only 2 men at Ulu Telaus. The field observation was supported by an interview.
Mon.12.10 Ulu Telaus	<u>Mor:</u> Mapping	<u>Mor:</u> Mapping of the cultivated area at Ulu Telaus <u>Aft:</u> Boattrip to see all the cultivated fields at Ulu Telaus.	Mapping: Minggu and Kanah (farmers from Nanga Telaus)	The mapping was supported by an interview concerning the general use of Ulu Telaus.
Tues.13.10 SESCO	-	<u>Mor:</u> Going to SESCO-houses <u>Aft:</u> Evaluation with the rest of	-	At the SESCO-house stayed only the research team. It was a break

		the research team.		from the staying at the longhouse.
Wed. 14.10 Nanga Telaus	-	<u>Mor:</u> Preparing methods for next 2 days in Nanga Telaus. <u>Aft:</u> Going to Nanga Telaus	-	We looked at the data allready collected, assessing what was missing.
Thur. 15.10 Nanga Telaus	<u>Mor:</u> Mapping	<u>Mor:</u> Mapping of the cultivated area at Nanga Telaus. Interview on the Bedurok workrotation-system. <u>Aft & eve:</u> preparing short questionnaire and conducting it.	Mapping: Headman and 4 other farmers. Interview: Same group as mapping. Questionnaire: Whole longhouse	We had 2 translators (Dundang and Thion). We split up in 2 groups conducting the questionnaire. Of the 34 households we talked to 24.
Fri. 16.10 SESCO	<u>Aft & eve:</u> questionnaire <u>Aft:</u> Interview.	<u>Mor:</u> Going to SESCO-house. <u>Aft:</u> Interview with SALCRA. <u>Eve:</u> Farewell party at Nanga Telaus.	Interview: State manager of the SALCRA Lemanak and Batang Ai Oil Palm Estate.	The interview we conducted together with the SALCRA-research-group. Present were also 2 supervisors from UNIMAS and the 2 danish supervisors.
Sat. 17.10 SESCO	-	<u>Mor:</u> Visit at the Lemanak Oil Palm Mill	-	-
Sun. 18.10 Kuching	-	<u>Mor:</u> Going to Kuching.	-	-

RANKING

	Padi	Lada (Pepper)	Getah (Rubber)	Kelapasawit (Oil palm)	Jagung	Kuca	Timun	Cabik (Chili)
Pemakai (Food)	### II	—	—	—	IIII	III	IIII	IIII
Pendapatan (Income)	—	### I	###	###	III	III	III	III
Perkerja (workload)	IIII	IIII	—	—	—	I	I	I
Kos (Cost)	### I	### I	II	II	II	II	II	I
Jualan (Sales)	—	###	###	###	IIII	IIII	IIII	IIII
Penanggal (Problems)	IIII	###	###	###	IIII	—	IIII	IIII
Adat (Custum/culture)	### II	—	—	—	###	###	###	—

APP. 2

RANKING

	Sabi	Keladi	Terung	Pisang	Tebu	Nenas	Ubikayu
Pemakai (Food)		###					###
Pendapatan (Income)		-			-		
Pekerja (Workload)							
Kos (Cost)							
Jualan (Sales)		-	-		###		
Penanggot (Problems)		-	-	-			
Adat (Custom/culture)	###	-	###	###	###	-	###

APP. 3

Tabel 1 Questionnaire conducted with 24 families at the Nanga Telaus longhouse (example).

NAME: TINJOM	YES	NO	COMMENTS
Adults (number)	2		
Children (number)	5		
Oil palm	*		
Rubber	*		
Paddy	*		
Pepper		*	Are clearing land to start cultivating pepper.
Go upriver to Ulu		*	Did last year, but now, with the new oil palms, all manpower is used in Nanga Telaus.
Door at Ulu	*		
Hunt at Ulu		*	
Fishing at Ulu		*	
Cultivate at Ulu		*	
Longboat		*	
Engine to longboat		*	