



THE AGROFORESTRY PROJECT IN NIAH FOREST RESERVE



SLUSE Programme 2000

– Interdisciplinary Joint Basic Course on Natural Resource Management



The Agroforestry Project

In

Niah Forest Reserve

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Abstract

Agroforestry projects are seen as a method to prevent people from encroaching on Permanent Forest Estate.

The livelihood of the local Iban community is characterised by dependency on subsistence production – in particular upland rice and they have no land tenure.

The agroforestry project in Niah Forest Reserve has influenced the livelihood the participating Iban community, but they have only to a limited extent been given an incitement to participate in the long run, since only a few have direct benefit from the project until now.

In the interaction between the AFP and the participants there are many aspects that constrain the further development of the project, in terms of conflicts, lack of information and training and a quite ad-hoc management. All the different constraints make the future plans of letting the participating communities take over the project unsecure.

“All we want to do is live our lives as everybody else. We don’t mean to take the states land, but that is our only possibility. We are just waiting to get the permit so we can grow our land and live our lives...”

Informant A

Abbreviations

AFP	Agroforestry Project
FR	Forest Reserve
FRS	Forest Research Station
MTC	Malaysian Timber Council
NCL	Native Customary Land
NCR	Native Customary Rights
NFP	National Forestry Policy
NRM	Natural Resource Management
PFE	Permanent Forest Estates
PRA	Participatory Rural Appraisal
Rh.	Rumah (: village/longhouse)
SFD	State Forest Department
SFM	Sustainable Forest management
TPA	Totally Protected Area

Preface

This field course report is the written result of the authors' participation in the SLUSE¹ Interdisciplinary Joint Basic Course on Natural Resource Management (year 2000). The purpose of the report, as related to obtaining the SLUSE Certificate, is to document our research done on the fieldwork, 13th of October to 5th of November in Rh. Luat, Sarawak, Malaysia.

The target groups of the paper are all people with an interest in environmental and development issues and problems in developing or less developed countries.

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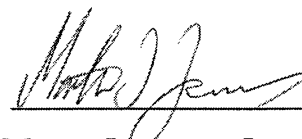
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¹ The Danish University Consortium on Sustainable Land Use and Natural Resource Management (SLUSE) comprises three Danish universities and facilitates education and research on a wide range of topics pertaining to sustainable land use and natural resource management. SLUSE has developed a programme for the integration and improvement of education, field training and research in Denmark as well as in countries targeted for Danish environment and development assistance (DEDA countries). The overriding ambition of the consortium is *"to develop interdisciplinarity with the view to formulate a univocal perception of the problems and solutions with regard to land use and land stewardship"*.

The program was initiated as a pilot phase in March 1998 and will proceed for two years, sponsored by the Danish Co-operation for Environment and Development (DANCED). The consortium is planning to continue the program for another six-year period with funding from various sources, including the consortium universities.

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1 Introduction

Sarawak's forests are one of the state's most important resources, generating 27,6% of the state export-earnings (Wong 2000). The forestry sector is in the future expected to remain one of the backbones of the state's economy in terms of deriving revenue from export earnings.

The pressure on the forest is increasing because of large-scale logging and conversion of forest into plantations. The forests are also used by indigenous people for practise of shifting cultivation (definition in appendix 1A) (Cramb 1993, Eden 1987). The needs and demands for the use of forested land has put the focus on the need for a more sufficient land use for both agricultural and forestry practices.

Internationally, agroforestry (definition in appendix 1A & 1B) has been put forward as one possible solution (D'Silva & Appanah 1993, p. 17; Lahjie 1996, p. 159; Colfer & Soedjito 1996, p. 162). Schemes of agroforestry include aspects of agriculture, community or social forestry and silviculture. Nevertheless, agroforestry has not been promoted in Sarawak even though it has been added to the National Forestry Policy of 1992 as a way to intensify forest resource utilisation (Malaysia Timber Council 2000). One agroforestry project (AFP) has been initiated, the Sabal Pilot Agroforestry Project but another AFP was initiated in 1989 in Niah Forest Reserve (FR), Miri District. This AFP is the focus of this paper.

The FR was once a mixed dipterocarp forest but due to logging since 1969 the land use of the reserve has tremendously changed. Before the area was logged, the subsistence farming communities existed along the edges of the reserve already carried out traditional farming and gathered forest products as a livelihood. Encroachment in FR was recorded as early as 1968 (figure 1), when one Iban family came there from Sarikei; three

decades later the number families had increased to 51 (322 people), mainly Iban. (Jiwan & Jame 1999).

Time (period), year	Number of families moving into the area	Number of families living illegally in the area
1968	1	1
1973/74	11	12
1975-79	5	17
1980-89	32	49
1990-96	2	51
Total (1996)	51	

Figure 1: Immigrants encroaching on the FR, 1968-96, Jiwan & Jame 1999

Most of the Iban longhouses in the Niah area were established there before 1958, the year of when indigenous people could claim and be given Native Customary Land (NCL) of the areas, which was traditionally theirs (Cleary & Eaton 1995, p. 175). The participants of the AFP however have no legal right over the land, which they have settled upon, they were resettled in the area during the 1970s and subsequently settled too late to possess Native Customary Right (NCR) of an area.

The conflicting land use consists of mostly Iban shifting cultivators doing encroachment on the FR, set aside by the state of Sarawak to be Permanent Forest Estate (PFE, see appendix 1A). The encroachment results in lower output of commercial timber. To manage the FR there was put forward 3 different strategies to obtain a continuous timber production:

- Reforestation,
- Natural regeneration, or
- Agroforestry

The two first solutions do not take into account the needs of the communities in the area. Focus is kept on maximising the economic output of the FR regardless of the affects this maybe have had on the communities, which at that point (1989) had been living there for about 20 years. Without changing the living conditions and farming practices for the people living in the forest neither reforestation nor natural regeneration could succeed, so agroforestry was set forward as a mean to try to solve the conflicting land use.

1.1 Objectives²

Our focus in this report is:

What are the constraints in regard to developing the Agroforestry project in Niah Forest Reserve?

We presume that the main constraints in the development process are to be found at management level and in the present livelihood in Rumah (Rh.) Luat and in the

² In connection to our objectives we would like to mention that our objective from the beginning was different from that of our Malaysian counter part (for further description of co-operation with our Malaysian counter part see appendix 2H). Their focus was on how to manage the whole FR.

connection between the AFP and Rh. Luat. Therefore we put forward the following working questions:

- How is the interaction between the AFP and the participating community of Rh. Luat?
- How is the AFP managed?
- What are the livelihood strategies of the local Iban community?

1.2 Area of study

The main focus of this study, the Iban community of Rh. Luat, is located on the Miri-Bintulu highway, 3-km. Southwest of the Niah Forest Research Station; it self situated 9 km south of the Batu Niah Road junction, Niah River Catchment, Niah Sub-District, Miri Division, Sarawak. The area chosen for the AFP (see appendix 1C), comprising of 400ha is likewise located here within the FR, which in total comprises of 10.855ha.

The two Iban communities Rh. Luat and Rh. Inggom, which are participating in the AFP, has respectively 19 and 13 households. Rh. Luat consists of 89 inhabitants, while we do not have the exact number for Rh. Inggom (autumn 2000). Rh. Luat has settled within the FR in an untypical concrete longhouse, while Rh. Inggom is living scattered on state land (see appendix 1A). Their main crop is upland rice, along with some pepper production.

1.3 Structure of the paper

In addition to this chapter, the second chapter will focus on methods used during fieldwork; the third chapter will provide an overview of the AFP. Chapter 4 will explain the livelihood of Rh. Luat, and finally the fifth chapter will elaborate and discuss our findings, which lead to our conclusion in chapter six.

We have chosen to keep the identity of our informants confidential. In order to protect the anonymity of the interviewed informants, we have chosen to refer to our source by letters, e.g. "Informant K". The authors of this paper know the names of all informants.

2 Methodology

The research, which we have conducted, took its starting point in our interest in uncovering the socio-cultural and economic influence from the AFP on the livelihood of the people of Rh. Luat, and the problems in the interaction between project and participants. For this purpose we found the social science research methods the most useful. Methods related to the natural science field were carried out in terms of field visits and insight into forest inventory with our Malaysian counterpart³. We have been using both qualitative and quantitative methods, with an emphasis on qualitative methods, due to our assumption that matters concerning conflict over scarce natural resources can be very difficult to quantify and the answers may be very difficult to categorise. The qualitative methods can “*give in-depth insight of people’s perceptions, attitudes and livelihoods*” (Oksen 29/08/2000, lecture). The aim of the qualitative methods and especially our in-depth interviews, was to gain information about different aspects livelihood, the way that the Iban of Rh. Luat perceived the AFP, and how things was managed and practically done at the AFP. This way we tried to locate existing and possible conflicts within the participating Iban communities and in the interaction with the AFP.

2.1 The different methods

The duration of our stay in Sarawak was 16 days, so we had some heavy time limits on our use and choice of methods. From home we had set up a framework for our use of methods. We had planned to try out as many relevant methods as possible, since we considered this to be one of our personal objectives of the field course. The framework was subject to constant change as we went along. On the basis of the experience and knowledge we gained we selected the methods that we found relevant. The timetable for our fieldwork can be seen in appendix 2A, and appendix 2B briefly describes our informants used for in-depth interviews.

By the end of our fieldwork we had used a number of methods, which can be divided into the following categories:

PRA methods (Participatory Rural Appraisal)

- Participatory mapping
- Matrix ranking
- Institutional diagram
- Seasonal calendar (including division of work between gender)

³ For further elaboration on our co-operation with our Malaysian counterpart, see appendix 2H.

- Family relations chart

Interviews

- Household survey (structured interview using a questionnaire as check-list)
- In-depth interviews
- Focus group discussion: Women's group

Site observation

- Visits to fields and the AFP with informant

The information we gained through our methods all relied on the use of an interpreter. Our interpreter was an undergraduate student at the University of Malaysia, Sarawak (UNIMAS). His origin is Iban, which he speaks fluently, even though some of the local dialect was sometimes a problem.

Working with three different languages involves a lot of translation from Danish into English, from the interpreter to the informant in Iban and back again. In this process information can get lost, meanings change and misunderstandings evolve. The result might be that the "simplified" information we as researchers received through our interpreter had been changed into something different than it was meant to be by the respondent. This, in worst case, could lead to the researcher making false conclusions. We had very little chance of checking the translation, which meant that we were reliant on our interpreter's abilities of translating accurately. This made the need of continuously crosschecking information even more important in order to be sure that our data was reliable. We tried to minimise some of the disadvantages of using an interpreter by informing and discussing our methods, questions and objectives with the interpreter on a daily basis.

2.1.1 Participatory Rural Appraisal

The PRA methods are used in development planning to identify community problems and to plan solutions with the active participation of the community members (Selener et al. 1999, p.3). Our reason for using PRA methods was that they gave us information about the community and different aspects of the Iban's livelihood. It was a good way to get an overview (e.g. participatory mapping for area overview and institutional diagram for institutional environment) and to get more specific information that was a result of discussion between the participants (e.g. matrix ranking). This meant that the PRA methods gave us a different kind of information than the one-person interviews

could give, and therefore we found that the two types of methods supported each other in a constructive manner.

One of the key factors stressed in PRA is that the researcher should only act, as facilitator of the method; problems and solutions has to come from the community themselves. It has been our experience that it was difficult to stay in the role of facilitator: Sometimes we had to give direct examples to get the exercise going. This often made the participants pick up our example and use it to build on. This means that the objectivity of some exercises can be questioned.

The **Participatory Mapping** (appendixes 2C & 2D) exercise we conducted the very first evening. The purpose was to allow us to gain knowledge about the physical nature of our study area, and to find out what things the people of Rh. Luat would identify as important in their local area. After asking the headman for a group of participants that knew the area well, we found that only males were present. To involve as many people of the community as possible and see if the differences in men's and women's opinions, we then decided to get a group of women to make their own map.

In the beginning they were reluctant to participate but once they got started they were quite eager about it. Others were curious to see what we were doing and in the end we had everybody sitting around participating on different maps, and a small group of women even started drawing a third map. In total we had a core of 7-8 men and respectively 3-4 and 5-6 women actively participating. The maps exposed different kinds of information to us, e.g. the men had a very detailed drawing of the AFP site, while the women were more focussed on the nearby area. The women were not able to draw the project site at all, even when encouraged: They had not been there.

The use of an interpreter was a problem in regard to this method because the discussion had to be interrupted for translation, and in general it was difficult for us to follow the discussion, which we regard as an important part of the participatory methods. This was also one of the reasons for the method being carried out together with our fellow Malaysian students, some of them fluent in Iban.

The **Matrix Ranking** (appendix 2E) was made to gain information on community preferences regarding use of farmland and forest, input/output of different crops produced and forest products collected. This made it easier for us to specify our questions in our interviews regarding land use and crops. The matrix ranking was conducted by a group of four males, chosen by the headman. The males were chosen because we had an idea that they knew most about the growing of crops, market value etc. It was not until our discussion with the women we found out that the women were in fact the ones doing most of the everyday work in the fields with the men helping

during peak seasons. With this in mind it could have been a good idea to do a matrix ranking with the women as well.

We wanted to make two rankings: One with crops and one with forest products. The participants made a list of the crops they considered the most important, first a long list, which they then narrowed down to seven. In general the four participants agreed on the points (score) given, but sometimes they found it difficult to compare the different crops and know how many “points” to give them. With the ranking of forest products this became even more evident: forest products covers plants, animals and timber; three categories difficult to compare, since they represent different input to people’s livelihood. Therefore we made two separate rankings on forest products: One with food and another one including the timber, the last one showing clearly that food is more important than money. The categories to rank both crops and forest products from were in the first place selected by us, but we asked if the participants had any supplementary categories that they found important, but they did not. We found it difficult to use the overall “score” as a result, since the score is dependent on our own choice of criteria. We consider the criteria “importance” the most important finding from the matrix ranking.

The **Institutional (Venn) Diagram** (appendix 2F) session was conducted over two evenings, because it took longer than expected to carry it out. Four people (the headman of Rh. Luat, the vice-headman and their wives) participated originally, but more people gathered around, which proved absolutely essential for the outcome of this method. We had asked our four participants to write down all the important institutions, but none of them knew how to write. So two of their children sitting around came to help us to translate and participate actively.

The information we attained through this exercise was not quite what we had expected. Naturally we got information on the different institutions (including both individuals and organisations), which the villagers felt had influence on their livelihood. But the participants also managed to list quite a few institutions, which were not present in the community surroundings, but which were institutions that they would like to have.

Our **Seasonal calendar** was done as a starting point for the women’s discussion and in this context it gave us knowledge of local farming practices, connections between rice production and religious festivals and division of work between men and women and the longhouse in general.

During our household survey we got aware of the fact that most of the longhouse is related to each other. Therefore we started making a **Family relations chart** to get a more detailed description of the family relations with the help of each informant in the household survey, which was then reconfirmed with the wife of the headman and the vice-headman.

2.1.2 Interviews

The **Household survey** was conducted with all 19 households in the longhouse of Rh. Luat, of which 11 respondents were men and 8 were women, but most times both husband and wife were present (Our final checklist for the household survey can be viewed in appendix 2G). The aim was to gain information regarding the socio-economic situation of the longhouse and the livelihood strategies in general. At the end of each structured interview, using our questionnaire, we asked a few open-ended questions in relation to the AFP. This was done to get some general viewpoints on the AFP and to find informants for our in-depth interviews. The household survey was adjusted after the first couple of interviews. We discovered that some of the questions did not serve our overall purpose after all or they were too open-ended for a structured interview: E.g. when asking how the relationship was to other communities in the area we consequently got the short answer: "Good". But through in-depth interviews we found out that this was most certainly not the case!

The **In-depth interviews** were used to "dig" for this kind of sensitive and personal information about local conflicts and perceptions of e.g. expectations and practical experiences in relation to the AFP and its management. By letting the informant speak with out interruption they had time to explain things to us and we had time to get answers to the "why" questions that the questionnaire had left unanswered. Our in-depth interviews were semi-structured and topic-focused (Casley and Kumar1988, p.12).

The **Focus group discussion** was carried out with a group of four women to get a perspective of gender on the livelihood and the AFP, and to see if this would generate other kinds of information than gained through our other methods. The women were chosen by one of our respondents from the household survey, which was one of the few women that did not hesitate to utter her opinions. She brought along two sisters and a friend.

2.1.3 Site observation

Simply living in our "study object", Rh. Luat, gave us a first hand impression of their livelihood strategies. It also gave us the opportunity to gain knowledge through informal conversation and made the information flow less constrained during our interviews,

because of the development of more personal relationships. The field visits with informants were conducted with the aim of gaining visual knowledge about the object studied. Breaking out of the formal interview setting made the informant talk more openly because of the informal set-up and the fact that no other people were present.

3 The Agroforestry Project

The specific area of the project site was chosen because it was the one most affected by encroachment in Niah FR. The encroachers came from an Iban longhouse, Rh. Dato. It was one of the land-less members of the longhouse, Mr. Inggom, who had requested the State Forest Department (SFD) to start an agroforestry project in the area. Mr. Inggom knew about the Sabal AFP, and hoped that involvement in an agroforestry scheme would bring progress.

Niah FR, which is classified PFE, is assigned to be production forest. The surrounding land is State Land (see appendix 1A for definition). Oil palm companies, e.g. the state owned Sarawak Oil Palm (SOP), usually own the State Land. The villagers, which have no genuine land ownership, have therefore no where to turn: all land is taken, so encroachment is their only option if they are to remain farmers or even to stay in the area.

The broad objectives of the AFP included reforestation and rehabilitation of shifting cultivation areas within the PFE. The aim is to group the forest encroachers in one location where work and living conditions are provided. This alternative should convert their traditional farming practices (shifting cultivation) into more efficient (permanent) agriculture and make them join the work force in the reforestation (Jiwan & Jame 1999; Morningstar & Knight 1990, p. 9-10).

3.1 Local involvement and disagreements

The AFP was offered to most of the villages⁴ in the area, but most of them were against it. The main point of conflict was still about the land tenure. Those not wishing to participate wanted permanent ownership of the land while those interested were willing to go along with the permit system (Morningstar 1989).

Therefore the AFP was aimed at only one community, namely Mr. Inggom's longhouse: Rh. Dato, consisting of 27 families (Morningstar 1989). However, the headman at that time, Mr. Dato, was opposed to it. He did not trust the state authorities, because the land his longhouse was using would be taken away from them. Mr. Dato felt that they would lose control of their own lives: "*We do not want to become slaves!*" (Rendered by Informant C).

⁴ E.g. Rh. Dato, Rh. Sempom and Rh. Juan.

There maybe also^{has} been other issues of disagreement, but the final result was that the longhouse split up. The group in favour of the AFP needed to decide where to establish a new longhouse, but again disagreement divided them. One group lead by Mr. Inggom settled on State Land and requested Land Survey (see appendix 1A for definition) for the land. The other group, lead by Mr. Luat, settled inside the FR, because they believed that the FR management would give them the land, because they would participate in the AFP. Rh. Dato, still consisting of separate house structures, have settled at the junction and begun a lawsuit against the FR claiming NCR on a piece of land (just across the road from Rh. Luat).

As it appears from this, the first result of the AFP, even though unintentionally, was splitting the target group into three parties: Rh. Dato, Rh. Inggom and Rh. Luat. As a direct consequence the old longhouse of Rh. Dato was abandoned, and the individual groups prepared three new settlements. After the split all three groups grew in numbers, as several of the scattered one-family groups already living in the nearby area were invited to join the newly formed groups. Even though Rh. Luat and Rh. Inggom had split up, the two communities agreed to participate together in the same AFP.

3.2 Early stages of the AFP

The first meetings between the FR management and the local community of Rh. Dato were held in 1989. On these meetings it was explained that living inside the FR was illegal and that the Iban had no ownership rights. It was furthermore stressed that no permanent land title would be given, because the land should remain PFE/FR. The Iban were told that they, however, could get a temporary permit for 10 years, if all worked out successfully. If the project was going well after 10 years, the permit could be renewed (Morningstar 1989).

It was the idea that the project should be a result of mutual agreement between villagers and the SFD. To ensure local participation in the decision making process an Agroforestry Committee was appointed to represent the Iban communities. Whether the locals actually had influence on the decision making process, can however be questioned. The following quote made by the Agroforestry Officer at that point (1989) indicate quite a strong top-down approach (Morningstar 1989):

“Future criticisms of the SFD by people who insist that we are being harsh can be informed that the people were given the opportunity to conform with the law through the AFP (...). Those that refuse our efforts will remain illegal and should be prosecuted”.

Regarding the reason for joining the AFP there is no doubt that the most attractive and promising point of interest for the communities was the prospect of achieving land rights, even though only a temporary permit. Headman Luat explains why the permit is important:

“With a permit we can stay on this land and it will be our own land. If the permit is not given, our longhouse can be declared illegal. We would not know where to move, because all land belongs to the government”

3.3 Objectives of the AFP

Mr. Jiwan, the Officer-in-Charge, states three main objectives of AFP:

Objectives of the AFP	
i.	To raise the income level and reduce shifting cultivation in the FR by providing land, materials and initial incentives for a more sedentary form of agriculture to the local people encroaching onto the FR.
ii.	To provide agricultural land and initial supplies to shifting cultivators in the FR such that both agricultural returns and forest production is maximised. This may mean interplanting crops with trees, growing crops in areas adjacent to plantation forest, raising livestock in plantation forest or raising livestock adjacent to plantation forest.
iii.	To resettle the illegal scatters who participated in the project by providing temporary land permit.

These criteria are very broad defined which makes it difficult to “measure” the success of the AFP. Besides the above mentioned official objectives Mr. Jiwan broaden his personal hopes for the project and the participating Iban (see “success criteria“ textbox) (Jiwan 30/10/2000).

3.4 Past, present & future activities

Even though the AFP was started in 1989 it was not until 1994 real activities involving the target group was carried out. From 1995 to 2000 the following

Success criteria of the AFP
• There should be growth of timber trees
• Conservation of forest
• Tension of forest cover
• Income should be high enough for the locals
• Living conditions should be raised
• AFP should be accepted locally
• Continuance secure in the project
• Possibility for the locals to take over the project in the future

(Jiwan 31/10/2000)

activities have been undertaken: Sheep and cattle rearing, growing of fruit and rubber trees, establishment of fish ponds.

So far only 30-50 ha (out of 400 ha) has been used of the project area. The rest will be taken into used gradually in the coming years. (Jiwan 31/10/2000).

According to the overall management strategy of the AFP the development has been divided into three phases (Jiwan & Jame 1999, p.12-13)⁵. Phase 1 (1989-1999) aims at *“creating an understanding between villagers and FR staff”*. Mr. Jiwan stress in that the first 10 years of the project, the focus has been *“to try to win the people; to make them understand that what we are doing is good for them (...). To give them a good income, because only then they can forget about other things”* (Jiwan 30/10/2000).

The next 5-year period (2000-2004) the goal is e.g. *“improvement of people’s livelihood”* and *“issuing temporary land permits to participants”*. Furthermore the FR-management’s strategies outlines plans of providing different public services in the involved area and develop a broad range of income generating activities. In the final phase (2005-2010) *“all activities should become self-sufficient; management and administration ready to be handed over to the locals”*.

3.5 Participants and separate projects

In autumn 2000 the number of households participating was: 8 households from Rh. Luat and 11 from Rh. Inggom. Because the majority of the participants come from Rh. Inggom, they have the chairman seat in the Agroforestry Committee (Informant C and Jiwan 30/10/2000).

The Agroforestry Committee has decided that the old AFP is reserved the participants, who were there from the start. This means that no newcomers can participate. Moreover the AFP trustfund⁶ with the profit of the AFP is only for “old” participants, both when it comes to ownership and possibility of loans (Informant C). The reason for excluding other people and thereby stop the old AFP in growing in number, is stated by the

⁵ For detailed description of the AFP development phases, see appendix 3A.

⁶ The trust fund serves as an investment and loan-giving fund, with a net capital of about RM 12,000 (autumn 2000). This capital will be used to initiate new project activities. In general the profit from the AFP is divided into three (Jiwan 30/10/2000): 70% to the trust fund, 15% to Rh. Luat’s and 15% to Rh. Inggom’s new AFPs. So far it has been the FR, which have paid or loaned money to start up the different initiatives.

chairman of the Agroforestry Committee, Mr. Inggom: *"They had their chance! Now they should not benefit from other peoples work"*. Because of this and co-operation problems between the participating longhouses the future activities have to be individual for each longhouse.

The result of the above events was a division of the AFP into three:

- An old AFP for 8 Rh. Luat inhabitants and 11 Rh. Inggom inhabitants,
- a new AFP for Rh. Luat (all 19 households participates),
- a new AFP for Rh. Inggom (all 13 households participates).

3.6 Human resources

There are two permanent workers employed from each participating longhouse and in general nine dayworkers worked on the project on 2-month rotation between the two longhouses because of the co-operation problems. The wage, for both permanent and temporary workers, is RM 22 per day, which is approximately RM 530RM per month. The rotation arrangement means that only the two permanent workers from each longhouse that has a stable income from the AFP. A number of our informants have stated that working temporary at the AFP is simply a too unreliable source of income. Furthermore 9 persons in Rh. Luat cannot gain access to this income source because they are without an ID Card, which is demanded (Jiwan 19/10/2000). They have not been able to acquire an ID card, because they do not have a birthcertificate, and since it is a very time and money consuming process.

A foreman, Mr. Hamdani, does the daily supervision at the project site. Unfortunately, he has no professional knowledge regarding agriculture or agroforestry. He cannot answer questions from the workers related to the techniques they are using. Only Mr. Jiwan has the technical skills and knowledge of agroforestry. Since he is both Agroforestry-Officer of the SFD and Officer-in-Charge of the whole FR, he is unable to spend more than 5 days per month on the AFP.

Mr. Jiwan explained, what could be done under these circumstances (Jiwan 31/10/2000): *"When I'm not there, the locals should be able to find out things themselves, and thereby learn from their successes and failures. It is true we have not sent anybody off for training this year"*. It was later confirmed that of the four permanent workers only one has had training – for four days, three years ago! The permanent workers have asked for training but nothing has happened.

4 Livelihood in the Iban community of Rumah Luat

The background knowledge of the local livelihood is essential for the understanding of the implementation and further development of the AFP.

The economic situation of Rh. Luat can be described in terms of money income generating activities, subsistence production and collection of forest products.

4.1 Farming practices

All 19 households in Rh. Luat can be considered as farmers, because all practice traditional shifting cultivation or plan to do so.

4.1.1 Rice

In our matrix ranking (figure 2, page 18) the informants picked rice as being the overall most important crop. According to our household-survey 15 households (79%) cultivate hill rice, which also is the main subsistence crop for the Ibans elsewhere (Mertz & Christensen 1997; Cramb 1993). The four households, without any rice field presently, stated they had just recently moved to the longhouse.

Growing rice is a way of securing food supplies, thereby keep dependence on others low, and staying independent from the change in market prices. This complies with the findings of Mertz & Christensen (1997) and Cramb (1993).

The growing of rice is for the Iban closely connected to their religion. Mertz & Christensen (1997) states that some rice varieties are considered sacred with protective power. In Rh. Luat the rice had a great cultural importance as well. Religious ceremonies were tied to the rice production. The production of rice however was not included in the AFP, which then cannot be said to recognise the cultural aspect of the rice. The Iban in Rh. Luat could not imagine a life without rice production (Informant B, supported by others).

The division of work between gender is also most clearly visible to us in relation to the production of rice. Most of the year the women maintain the fields, while the men are off doing other kinds of cash income jobs. The men return to prepare the fields, plant and to harvest.

	CUCUMBER	RICE	DURIAN	PAMBUTAN	LONG-BEAN	CHANGKUK MANIS (VEGETABLE)	PEPPER	CROPS	
								CASH CROP	OWN CONSUMPTION
	X	X	X	X	X	X	X		
	X	X	X	X	X	X			
	•	•••	••	••	•	•	•••		PRODUCTION PR. HECTARE
	••	•	••	••	••	••	•		WORKLOAD
	••	••	••	••	••	••	•		NEED FOR WATER
	••	••	••	••	••	••	•		NEED FOR PESTICIDES
	••	••	••	••	••	••	•		NEED FOR FERTILIZER
	••	•	••	••	••	••	•		VULNABILITY TO DISEASES & INSECTS
	••	••	••	••	••	••	•		PRODUCTION COST
	•	••	••	••	•	•	••		INCOME FROM SALE ON THE MARKET
	••	••	••	••	••	••	••		MARKET VALUE
	••	••	•	•	••	••	••		IMPORTANCE
	27	33	36	35	26	31	23		SCORE

Figure 2: Matrix Ranking 21/10/2000, copy of original.

It is also in relation to the rice production that the most co-operations among the people in the longhouse takes place. The clearing and harvesting of rice was conducted jointly by the 19 families (Women's discussion, 29/10/2000).

4.1.2 Other crops

The respondents listed 19 different crops in our household-survey and matrix ranking as the most important. Other studies reveal higher number of crops in total (Mertz & Christensen 1997). The diversity of crops can be viewed as a risk-reducing factor, limiting the possibility of low food supply. All crops are used mainly for own consumption except for pepper, which most commonly is the household's only cash crop.

Before involvement in the AFP the majority of fields were located within the FR, but now they have been moved out of the FR, into state land, which is mostly owned by oil palm companies. The shift in field site was conducted to meet one of the requirements for participating in the AFP (Informant A & B): Stop shifting cultivation within the FR. Since the fields have been moved the problem is no longer a concern of the FR management. The oil palm company, possessing the land, have not yet complained either; most likely because the field-clearing done by the people of Rh. Luat will make it cheaper to clear the secondary forest for oil palm plantation later on.

4.1.3 Collection of non-timber forest products

The people of Rh. Luat collect forest products. But it seemed to have less importance today as compared to earlier. According to our household-survey hunting was seldom practised apparently because the wildlife had, over a longer period, been greatly reduced. Fishing was quite common while collection of plants varied greatly. Wild plants are still the major source used in the everyday cooking. Wild ferns are e.g. considered more important than catching fish (see appendix 2E).

4.2 Cash income generating activities

Cash crops are a relatively new concept for Rh. Luat. The first cash crop produced is the pepper, which they have high hopes for, due to the high marked price of pepper⁷. 16 households (84%) grow pepper. According to our matrix ranking (figure 4.1) the pepper is by far the crop, which needs the most input, in terms of work, water, fertiliser and pesticide. It is least resilient to diseases and pests. If they succeed in growing it and eventually selling it, it will generate the most income in the future, but in overall importance the pepper is not perceived as very important at this point it is surpassed by subsistence crops.

⁷ Other studies (Cramb 1993; Mertz & Christensen 1997) have also found pepper to be an important cash crop for the Iban.

4.2.1 Collection of timber

According to our household survey 15 households (79%) base their money income mainly on timber collection, which makes it the main source of money income. This activity generated in the span of 200-1.000RM a month. The collected timber is used as building material or sold to a middleman. The collection mainly takes place on state land, which in most cases is owned by SOP. As soon as the SOP decides it is time to plant the area with oil palms, the areas where timber is being collected will decrease. This activity is therefore in danger of being limited in the future.

4.3 The people of Rumah Luat

The division of the inhabitants in relation to economic status ranks them from having “no income”, besides the cultivation of rice, to earning up to RM 1500 a month. The richest family has a son who is a permanent worker at the AFP. The headman’s household is situated in the middle of the longhouse along with the richest of the households. The poorest households are the outermost in the longhouse. In general people do not have much to live from during hard times. Still “modern items” such as refrigerator and television are found, and 13 people have a motorbike.

The composition of age groups reveals a large concentration of younger people. There was only one person over the age of 60, and there were 46% children below the age of 15, while 39% was between 16 and 40 years old, leaving 15% being over the age of 40.

The longhouse consists of four families. Everybody was related to someone else in the longhouse, either on husbands or wife’s side, and almost all the adults were married. As mentioned, the only co-operation that takes place between families is in the rice production and also when communal work has to be conducted. Communal work is voluntary unpaid work around the longhouse or at the AFP. Co-operation and support is mostly done within families. Co-operation between longhouses is not a common thing and in general our impression, from talking to older people, was that it is better to work alone because then you can decide everything yourself and do not have to worry about other people.

4.4 Public services and institutions

The local primary school was situated one-hour walk from the longhouse and 15 minutes on motorbike. A secondary school was found in Niah town.

The 38 men and women we consider the heads of the 19 households had gone to school 2,7 years in average. 21 out of the 38 did not have any schooling at all, leaving 6

households without any schooling. This finding comply with the work of Berma (in Leigh 2000, p. 484 ff) which indicates that the years of school is generally low for Ibans. These households did, however, not have a lower income than the average family. The women had on average spent slightly more time in school than the men.

Compared to the adult's 2,7 years in school, the children had 3,7 years in school on average. This number also includes the children that, because of their age, have only had a few years schooling so far. Still the number is a lot higher than for the adult: A focus has been put on the importance of schooling for the younger generation and the community considers the school a very important service in the area.

No electricity is provided so far, so the only source of electricity in Rh. Luat is generator, which is turned on from 6-10pm. The water supply comes from the collection of rainwater, which is usually sufficient. A water pump, for groundwater, has been given by the AFP, but the water is too acid to use for drinking water. Besides, the pump only makes the water reach the first couple of households.

4.4.1 Future services

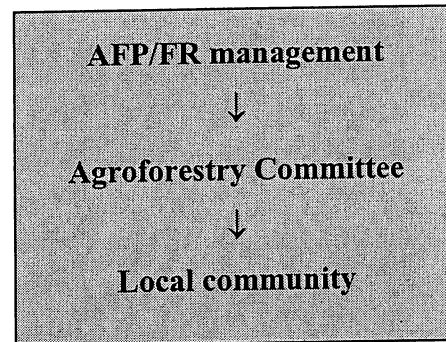
An interesting observation from our institutional mapping was the information it revealed regarding institutions and services, which the informants would like to have in the area, but which were lacking at present times. These were: Electricity agencies, telephone agency, childcare centre, school for adults, women's association, community hall, tourists and a hostel/guesthouse (Institutional mapping 26-27/10/2000)⁸.

⁸ The accuracy of this information can however be questioned, e.g. did we (the students group) as "tourists" gain a more central place on the mapping than some of the above mentioned institutions. Also the Agroforestry Committee was not added before we went through the finished chart with the participants. Either indicating that the Agroforestry Committee is not of major importance or indication that we as researchers had not been capable of explaining the method thoroughly. Further elaboration see chapter two.

5 The interaction between AFP and Rumah Luat

Previously we have described the AFP and the livelihood in the local community. Now we will go into depth with the interaction between the project and the local participants. We will discuss the problems and constraints in relation to the different levels of decision-making and management of the project, which will lead to our conclusion.

The implementation of the AFP goes through three levels in the local area (see textbox). The further development of the project is dependent on the acceptance, involvement and co-operation in and between all three levels.



When interviewing we found that both people at the management level and local level had a lot of good ideas and hopes for the future and the AFP. But when asking more in-depth we also found that a lot of these ideas were never realised, due to outside constraints on people's possibilities of acting.

At the state level, the SFD in Kuching is a very important level, because this is where all decisions are made (concerning funding), which forms the frame for the actors in the local area. Unfortunately we have not had any contact to the SFD or the management at state level during our fieldwork, because of time constraints, which could have given us firsthand information about the management policy for the FR.

5.1 Perceptions of - and expectations for the AFP

The point of departure for the discussion in this chapter will be the different perceptions of and expectations for the AFP, because these are what influence people's opinions and actions towards the project. This is also a point of conflict between the management and the local communities.

The expectations of the FR management in regard to the AFP are, as outlined in chapter 3, that it should "improve the livelihood of the communities participating in the project" and "reduce traditional farming by getting locals involved in a permanent cropping system". The expectations that we found in Rh. Luat were somewhat different. In general the people of Rh. Luat were not aware of the overall purpose of the AFP. Their expectations were generated from their practical experiences with the project and the management there. This also influenced their perceptions of the project in general.

The general opinion on why the project was given to Rh. Luat and Rh. Inggom was that: *“Our land was taken away from us by the AFP and through the project we will get some land in return”*, (Informant A, supported by others). The communities in short participated in the AFP because they reckon it as a mean to legally gain access to land, at least for a 10-year period. In this way the project has generated hopes for the future in the communities participating.

This perception also gives some constraints on the possibility of involving other communities in the project. When asked about the possibility of letting other communities participate, most informants from Rh. Luat stated: *“It would be unfair! We are the ones that are supposed to work there. Their land was not taken away from them”* (Informant G) and furthermore: *“The other communities would have to have their own project”* (Informant A).

According to our household survey 11 out of the 19 household views the AFP as a way to get work and income. Only one informant mentioned that he gained knowledge of new farming systems and methods and that this new knowledge was applicable on his own fields. The personal contact the Iban community had with the AFP was when they came there to work. In this regard a lot of informants mentioned that the project could *“make their lives better”* and *“raise the living standards”* in the longhouse. This was in spite of the fact that only a small fraction of the people in the longhouse had actually worked at the AFP. But the project had given an expectation for more economic income in the future. When asked what they could give the project in return, everybody referred to the *“practical”* relationship to the project: They could work there.

Most of our informants from Rh. Luat expect the project to develop in the future, so they can be given land, and most people would like to work on the project again. One conclusion is that the people of Rh. Luat have to know that they can stay permanently in order to give incitement for them to put a real effort into the AFP; until then it is only an alternative source of income for a few.

5.2 The management of the project

5.2.1 Lack of approval from state level

All decisions regarding the AFP are made at local level at the FR management with no official approval from the SFD in Kuching. Mr. Jiwan argues that the SFD would be more interested in the project if it is already well implemented before they get too

involved (Jiwan 31/10/2000). Mr. Jiwan has for instance allowed Rh. Luat to use FR-land on both sides of their longhouse for homegardening and their new AFP, without approval from higher authority. But, as he says, *“as long as the project is agroforestry, which is regarded as sustainable by the SFD and cheap”*, he has good arguments to please the government so they let the participants stay. Though, the lack of official approval from the FD creates an insecure situation, which makes the management from the FR management look quite ad-hoc. Even though a management plan has been outlined, as displayed in chapter 3, decisions are often taken on the spot (ad-hoc) to solve specific problems (Jiwan 30/10/2000).

The fact that the AFP at this level is almost exclusively managed by one person, who can only spare about 5 days/month to the project, also makes it vulnerable. If this one person were to leave, there would be nobody with the knowledge or drive to take over. A new Forest Officer may not be interested in this type of project at all, leaving the participating communities stranded in their struggle to create a livelihood which can fulfil their needs.

Furthermore we have experienced, that the FR management is only capable of giving technical solutions, while they seem to have limited expertise in handling conflict situations (see e.g. Skutsch 2000). Focus is therefore kept at implementing and supervising activities on the AFP, while handling of the conflicts among the different stakeholders is neglected.

5.2.2 The Agroforestry Committee

This level of the management has been created to ease the work of the FR management and to give the locals a voice in regard to the AFP. The committee consists of 6 persons from the participating longhouses. The members are the only ones that are directly involved in the decision making process. The chairman is Mr. Inggom and he has the last. The people of Rh. Luat accept the situation to a sustain extent (Informant B): *“Everybody agrees to what he says –to avoid disagreement”*. The power put in the hands of one person, limits the free discussion at the committee meetings. It also tends to hide the internal conflict of interest between the two longhouses, and it makes the participants influence questionable. Once (or if) the project is handed over in 2005, the last say in any matter will be the chairman's.

There are no women appointed to the committee; a fact which the women of Rh. Luat oppose. In their view women should at least be included for the balance of power (Women's discussion 29/10/2000). This we see as an important step. It would open up for the women in the villages to gain knowledge about the AFP. The women showed the

greatest lack of knowledge about the AFP as discovered during the Participatory Mapping.

Meetings between the committee and the rest of the local community are held once a year. The information given by Mr. Jiwan to the committee is supposed to be passed on at this annual meeting. At this meeting the members of the longhouse are given a chance to put forward suggestions. These suggestions are presented to the FR management, which has the final say. This we consider as quite a limited access to the decision-making process for the participants.

The lack of knowledge about the project that we encountered during our interviews shows that a meeting once a year is insufficient to inform people about what is going on at the project. One of the members of the Agroforestry Committee (Informant B) explained that a major problem regarding giving of information is the lack of education in the longhouses. People are not able to read about the project themselves and have no trust in what other people tell them. It is also difficult to know whether everybody has been told the same and have the correct information, when you have to rely on verbal information.

5.2.3 The participants

Some of the frustration regarding the lack of control and influence on the decision-making process became visible to us when a drunken man from the longhouse stated: *“Our lives depend on the AFP. We have nothing; the AFP manages everything. We have to do everything the project decides”* (Informant B). But mostly it just seemed like the reaction was a lack of interest in the project as such. The lack of interest can also stem from the fact that the AFP so far only has been an economic alternative for a few of the participants. The majority has not gained what they look forward to the most, their own land. The project is simply too insecure. As long as the people of Rh. Luat have other possibilities of generating income they will most likely use these instead. Unless the AFP start generating more income for the participants, it is likely that the subsistence farming and timber collection will be maintained and the encroachment in the FR continues.

The lack of interest can also be related to the existing conflicts. As other investigations have shown (Skutsch 2000, p. 192) different fractions (longhouses) end up competing over the resource (the AFP area) instead of developing it for a common use. The longhouses could not agree on working together even though they separately agreed that co-operating would make their chances of success higher in the future. Both had their versions on how it was “the others” that did not want to co-operate. This mistrust and

confusion could stem from their limited experience on co-operation between longhouses⁹ or lack of adequate information. The general opinion seemed to be: *“It better to work separately (...). Then we don’t have to worry about one another”* (Informant A, supported by others).

The AFP management states that the living standard in Rh. Luat has increased (Jiwan 31/10/2000), but it is difficult to say whether this increase is because of the participation in the project or other sources of income, e.g. timber collection.

5.3 The new Agroforestry Projects

Two new AFPs have been initiated, because the two longhouses could not agree on especially:

- The amount of work put into the old project,
- what the salary was when working on building the new chicken house,
- and if new participants should be able to join the old AFP.

These disputes, among others, led to the previously mentioned separation of future agroforestry project, which gives everybody from each longhouse the possibility to participate in his/hers own longhouse’s new AFP. The future will show if the interest of the new project will rise, when the participants control the activities and the decision-making.

The new AFP for Rh. Inggom is placed within the boundaries of the old AFP. They have already begun, and a chicken-house has been built. The new AFP for Rh. Luat has 20 participants (: one more family is to join the longhouse). The project site is just across the road from their longhouse, within the FR. This area has been logged and should originally have been reforested, but the FR management (: Mr. Jiwan) have decided that the purpose could be altered. This “strategy” could, however, be dangerous in the future because everybody will want to have their own project. In the outset, the strategy of providing an AFP for people encroaching on the FR could be an incitement for more people to encroach on the FR to be able to get *their* AFP. This is part of the reason why it is difficult for the SFD to give approval to the project (Jiwan 31/10/2000).

⁹ The lack of co-operation between longhouses was also one of the problems in the Sabal AFP (Morningstar & Knight 1990). An experience that the FR management, as it appears to us, has not learned from. They still stick to the technical solutions.

Another problem, which complicates the new project of Rh. Luat, is the existing dispute over the land at the new project site. A court case is running to rule whether the land belongs to the FR or Mr. Dato, the former headman of the Dato/Inggom/Luat longhouse, who did not want to participate in the AFP.

This new area however seems to satisfy the people of Rh. Luat, they expect this 280ha area to be enough for their needs, even for those families who are newcomers in the longhouse. These families were followers of Mr. Dato, but they saw the good economic progress made by the Rh. Luat longhouse, so they moved there instead (Informant B). Mr. Jiwan estimates the area put aside for this new AFP will only be somewhere between 130 to 200ha. The discrepancy in the area size has the potential of developing into another dispute in the future.

The people of Rh. Luat have not yet decided what to produce on their new project site, but one of our informants suggested banana, fruit trees, chickens and fishponds. He would, however, still grow rice elsewhere, on State Land or in the FR. The same was stated regarding the collection of timber (Informant B). This indicates that the goal set forward by the FR management of reducing the encroachment by shifting cultivators is not likely to be fulfilled by starting another project.

5.4 The local take over in 2005

To add further pressure to the development of the project, it has been suggested from the FR management, that the participants should be handed over the project in 2005, to manage themselves. This idea has not been discussed with the FD in Kuching. According to Mr. Jiwan the only guideline for the area is that it has to be maintained.

Within the participants, permanent workers and members of the Agroforestry Committee there was uncertainty whether the participants will be able to manage the AFP themselves. The problems they pointed out were the lack of training in agriculture, management and business skills. There is no one to get this kind of training from since there is no supervisor to ask in the present daily work at the AFP. No training is given and this leaves the participants without any skilled candidates for the position of manager and foreman in 2005. When asked, there was a strong tendency to select one from the informant's immediate family. This indicates that it will not be easy to reach an agreement on this matter either. So far everybody agree that it should be a person with at least 9 years education, limiting the number of possible candidates to only a few. Two informants stated that if only the new manager was chosen from the local area, he or she would under any circumstance be unqualified (Informant E & M).

When it comes to leadership training for a possible future foreman of the old AFP, the FR management has decided, that the permanent workers – turns of two months – are to be responsible for all daily work of the three other, and thereby be able to show his/hers leadership capabilities. This way they would all gain knowledge both in managing and in the other activities taking place at the AFP.

The problem regarding lack of training is further complicated by the fact that only one of the permanent workers was sure that he/she would still like to work at the AFP in 5 years. There is a risk that the few-trained personnel will leave in the future if the project is not attractive enough.

A major problem with the take-over in 2005 is the financial situation of the AFP. A cost-benefit analysis conducted by our Malaysian counterpart showed that the project is far from economically sustainable (Yea Yuan & Jalaludin 2000).

5.5 Discussion of reliability

The experience of doing fieldwork was new to us and the great amount of information that was given to us was sometimes overwhelming! It was difficult on the spot to select the relevant information and to ask the “right” questions, which leaves us with a lack of information or “unclarified” information. We did not get much information on the SFD’s management of the FR, since the only person we got to talk to from state level was Mr. Jiwan. Our use of interviews and PRA-methods proved productive and gave us a lot of information on the interaction between the AFP and participants. The conduction of our household-survey with all 19 households, we believe gave us a reliable picture of the livelihood in the longhouse. A lot of information we were able to confirm through interviews, but still contradicting statements and confusion arose in our information on the local conflicts and the future plans. More interviews might have made our understanding of these issues more clear.

It has not been possible for us to interview everybody and to include the whole longhouse in the PRA-methods, and therefore we should be careful of generalising our qualitative data. It can not be considered as “the true voice of the locals”; different and contrasting point of views can exist even within a small group of people. We rely heavily on our “general impression” that the qualitative data has given us, and we cannot state how many exactly thinks what, because opinions are difficult to quantify. That is one of the constraints when using the qualitative methods (Oksen 2000).

In general we did find that the methods we used were sufficient to cover our objectives taken the timeframe into consideration. Even though more time was needed to go into

depth with the different aspect of the conflict between the participants and the promoters of the AFP.

6 Conclusion

A lot of different aspects influence the interaction between the AFP and the participating community of Rh. Luat, and many constraints can be found in the development of the AFP, especially in the livelihood of the participating community of Rh. Luat and in the management. The official strategy of the project may fulfil the demands of documentation of the SFD, but it does, however, not seem to have much relevance when it comes to the development and initiated activities of the AFP. In reality planning and daily management is carried out “ad hoc”. The reason for this can to a large extent be found in the lack of interest and support given the project from the SFD’s top level officials. Even though the SFD initiated the AFP, which makes it an official state project, the department gives only little priority to making the project a success, indicated by the level and insecurity of funding and staff given to the project. The scarce resources and slow development and limited progress of the project result in increasing insecurity and lack of motivation among the local participants, who 11 years ago started hoping for land permits.

The AFP was introduced by state authorities as the only possibility for the Iban to gain legal access to land. The AFP was established on the exact land, which the latter participants used to cultivate; they therefore got the perception that the project was only for them. Their general conclusion was “other AFP should only be made on the land other communities occupy (: encroach on; Ed.)”, which in fact leads to “Encroach on the FR and be given an AFP!”

The first contact between the local communities and the AFP led to a split of the existing longhouse into three, because of disagreements on whether to participate or not. This led to new disputes and mistrust between the local communities and these conflicts have not been solved in the AFPs 10 years of existence. The two participating longhouses are not able to co-operate on the AFP and this is still one of the biggest constraints on the further development of the AFP. The lack of co-operation has, so far, led to the establishment of two new AFPs, extending the project site further into the FR.

We found that there was little tradition or experience of co-operation between longhouses – and also to some extent within one longhouse. This means that working together on the AFP is a somewhat new experience for the participants. Production of rice is the only one involving co-operation in Rh. Luat, while cash cropping is done individually (Informant A&B). The agricultural production on the AFP is also new for

them, as the AFP aims at production of cash crops, while subsistence farming traditionally is more important for the Iban participants.

The Agroforestry Committee does management and decision-making at the local level, but since the chairman has the final word, many participants have no influence on the overall development of the AFP. Furthermore women are generally left out of the decision-making. There is a lack of communication and information sharing from the Agroforestry Committee and the FR management to the participants. The result is a general lack of knowledge and understanding of what is going on at the AFP.

There is not enough economic incitement for Rh. Luat to maintain an interest in the project, since it only presents a stable source of income for two persons in the longhouse. Timber collection and subsistence farming is still a more reliable source of income for the community. When the time comes that the State Land has no more supply of timber worth collecting or is converted into oil palm plantation, then the interest will more likely increase.

So far the FR management have used 11 years "to win the people", which has not been a real success. Only about 5 years remains to get all the project activities working before the participants are expected to take over and manage everything themselves. With reference to the degree of input provided by the FR/SFD in terms of training participants and realises project activities, this time limit is unrealistic. There are simply too many constraints and unfulfilled requirements to reach that target.

Whether the AFP will be a viable alternative to the present livelihood of the local Iban community, only time will show. The present lack of: Human resources, state approval, local training, economic viability, consistency of planning and daily management are all constraints to the further development and success of the AFP of Niah FR.

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Appendix 1A

Definitions

Agroforestry: The definition of agroforestry is according to ICRAF: “Agroforestry refers to those landuse practices in which woody perennials (trees, shrubs, woody vines, bamboo and palms) are grown in association with agricultural crops or pastures - sometimes with livestock or other animals (e.g. fish or insects such as bees) - and *in which there are both ecological and economical interactions between the woody plants and the other components.*” (Huxley 1999).

Forest Type: A naturally occurring community of trees and associated plant species of definite botanical composition with uniform physiognomy (structure) and growing in uniform ecological conditions whose species composition remains relatively stable over time. These are most often scientifically described at the 'association' level.

Land Survey: State authority responsible for legislation/administration of State Land matters.

Permanent Forest Estate (PFE): Land, whether public or private, secured by law and kept under permanent forest cover. This includes land for the production of timber and other forest products, for the protection of soil and water, and for the conservation of biological diversity, as well as land intended to fulfil a combination of these functions. In other words PFE is established to regulate the harvesting of forest produce and to ensure sustainable timber production. Entry to this area is for license holders only and accessible to the local communities to hunt, fish, and collect non-timber forest produce.

Plantation Forest: Forest stands established by planting or/and seeding in the process of afforestation or reforestation which are either of introduced species (all planted stands) or intensively managed stands of indigenous species, which meet all the following criteria: one or two species, even aged, regular spacing.

State Land: State Land refers to land not reserved permanently as forests under the Forest Ordinance.

Sustainable Forest Management (SFM): Sustainable forest management is the process of managing forest to achieve one or more clearly specified objectives of management with regard to the production of a continuous flow of desired forest products and services without undue reduction of its inherent values and future productivity and without undue undesirable effects on the physical and social environment.

Totally Protected Area (TPA): TPA includes national parks, nature reserves and wild life sanctuaries. Collecting forest produce, fishing and hunting is prohibited in these areas.

Shifting cultivation: Impermanent clearing which is cropped for shorter periods than it is fallowed. (Eden 1987).

Appendix 1B

The Agroforestry Programme in Sarawak

The Agroforestry Programme in Sarawak is administrated within the Reforestation Unit of the Research Branch, State Forest Department (SFD). The programme was developed as an approach to reduce shifting cultivation within permanent forest estate (PFE) and to help raise the standard of living of the rural poor living adjacent to the PFE.

Encroachment onto PFE for settlement or farming purposes is illegal. The state government authorities had not been able to control the problem in the past, and therefore new initiatives were introduced. The objectives of Agroforestry Programme is closely connected to the objectives of the Reforestation Programme, which are:

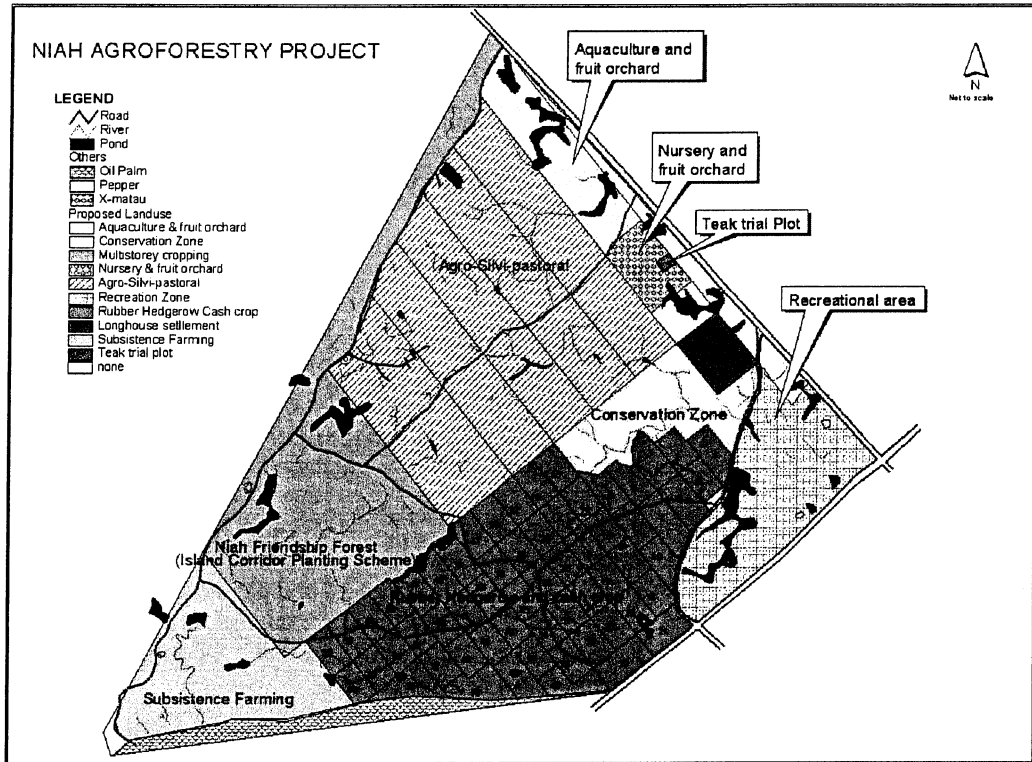
- i. To restore deforested areas to productive forest;
- ii. To restore the fertility and environmental protection functions of the deforested areas;
- iii. To provide employment to therefore raise income levels of the basically poor population of shifting cultivators by encouraging them in various activities relating to plantation establishment in accordance with the objectives of the New economic Policy;
- iv. To ensure a future sustainable supply of timber from areas so reforested both for domestic and industrial use;

In addition to the above objectives of the Reforestation Programme the objectives of the Agroforestry Programme in Sarawak are:

- i. To raise the income level and reduce shifting cultivation in the PFE by providing land, materials and incentives for a more sedentary form of agriculture to local people encroaching on the PFE.
- ii. To provide agricultural land and supplies to shifting cultivators in the PFE such that both agricultural returns and forest production can be maximised. This may mean interplanting crops with trees, growing crops in areas adjacent to plantations or raising livestock adjacent to plantations.

Appendix 1C

Map of the Agroforestry Project in Niah Forest Reserve



Appendix 2A

Timetable for SLUSE 2000 Fieldcourse

Date	Morning	Afternoon	Evening
13/10			Leave Denmark
14/10	Transfer	Transfer	Arrive Kuching, Sarawak
15/10	Meet with Malaysian Students	Meet with Malaysian Students	Evening off.
16/10	Working at UNIMAS	Presentation at UNIMAS	Evening off
17/10	Leave Kuching, Sarawak	Arrive in Rh. Luat, Niah Interview with Mr. Ismawai	Participatory Mapping Evening discussion
18/10	Redrawing of maps	Informal interview	Informal interview Evening discussions
19/10	Field observation with Mr. Jiwan.	Meeting with Mr. Jiwan	Visit to: Kampung Madina, Rh. Juan and Rh. Sepom Evening Discussions
20/10	Field observation with Mrs. Chayang	Test interview and makeover of questionnaire	Prepare matrix ranking and organise for further events Evening Discussions
21/10	Matrix ranking with 4 males	Household survey and interview Rh. Luat	Visit to Kampung Madina and Rh. Inggom. Matrix ranking makeover and planing. Evening Discussions
22/10	Catchment tour with Mr. Jiwan.	Household survey Rh. Luat. 1 person on forest inventory with natural scientist.	2 on Cost Benefit Analysis. 1 sick.
23/10	Field visit and interview with Kampung Madina headman. Mr. Yunus	Household survey Rh. Luat	Preparation of midterm presentation.
24/10	Midterm at Niah NPHQ	Midterm at Niah NPHQ	Midterm at Niah NPHQ
25/10	Midterm at Niah NPHQ	Interview with Mr. Luat	Interview and householdsurvey at Rh. Inggom with Mr. Nyanau Evening Discussions
26/10	Households survey Rh. Luat. 1 for field observation with Uffe.	Household surveys Rh. Luat	Institutional Diagram Evening Discussions
27/10	Interview with Mr. Inggom, AFP.	Interview with Mr. Chayang, Rh. Luat	Institutional Diagram Evening Discussions
28/10	Interview with Hamida and Rinta PRAs, AFP	Copying papers in Batu Niah	Rh. Muiyang Farwell Party
29/10	Seasonal calendar and women group discussion.	Interview with Jalin and Lamit, PRAs at the AFP.	SWOT analysis, family tree Evening Discussion
30/10	Fishpond harvest	Field observation on our own.	Evening discussion and interview with Mr. Jiwan
31/10	Interview with Mr. Jiwan. Organisation of data.	Agroforestry project site visit. Getting ready for return	Farewell party
01/11	Departure for Kuching	Transfer	Evening off
02/11	Morning off	Afternoon off	Preparation for presentation at UNIMAS
03/11	Presentation at UNIMAS	Afternoon off	Farewell dinner
04/11	Morning off	Afternoon off	Leave Kuching, Sarawak
05/11	Arrival in Denmark		

Appendix 2B

List of informants used for in-depth interviews.

From the Niah Forest Research Station:

Mr. Dawend Jiwan 19/10, 30/10, 31/10: Forest officer in charge of Niah FR. State Forest Department's Agroforestry Officer and manager of the AFP in Niah FR.

Mr. Ismawei Suleiman 17/10: Forest guard, works at the reforestation.

From Rh. Luat:

Mr. Luat 25/10: Headman of Rh. Luat

Mr. Chayang 20/10, 27/10: "Vice headman" of Rh. Luat and treasurer in the local committee of the AFP.

Mr. Francis 21/10: Worked on the project 3 years, former treasurer

Maria 18/10: Daughter of the headman.

Lamid and Jalin 29/10: Permanent workers (PRAs) on the AFP.

From Rh. Inggom:

Mr. Inggom 27/10: Headman of Rh. Inggom, chairman of the local committee.

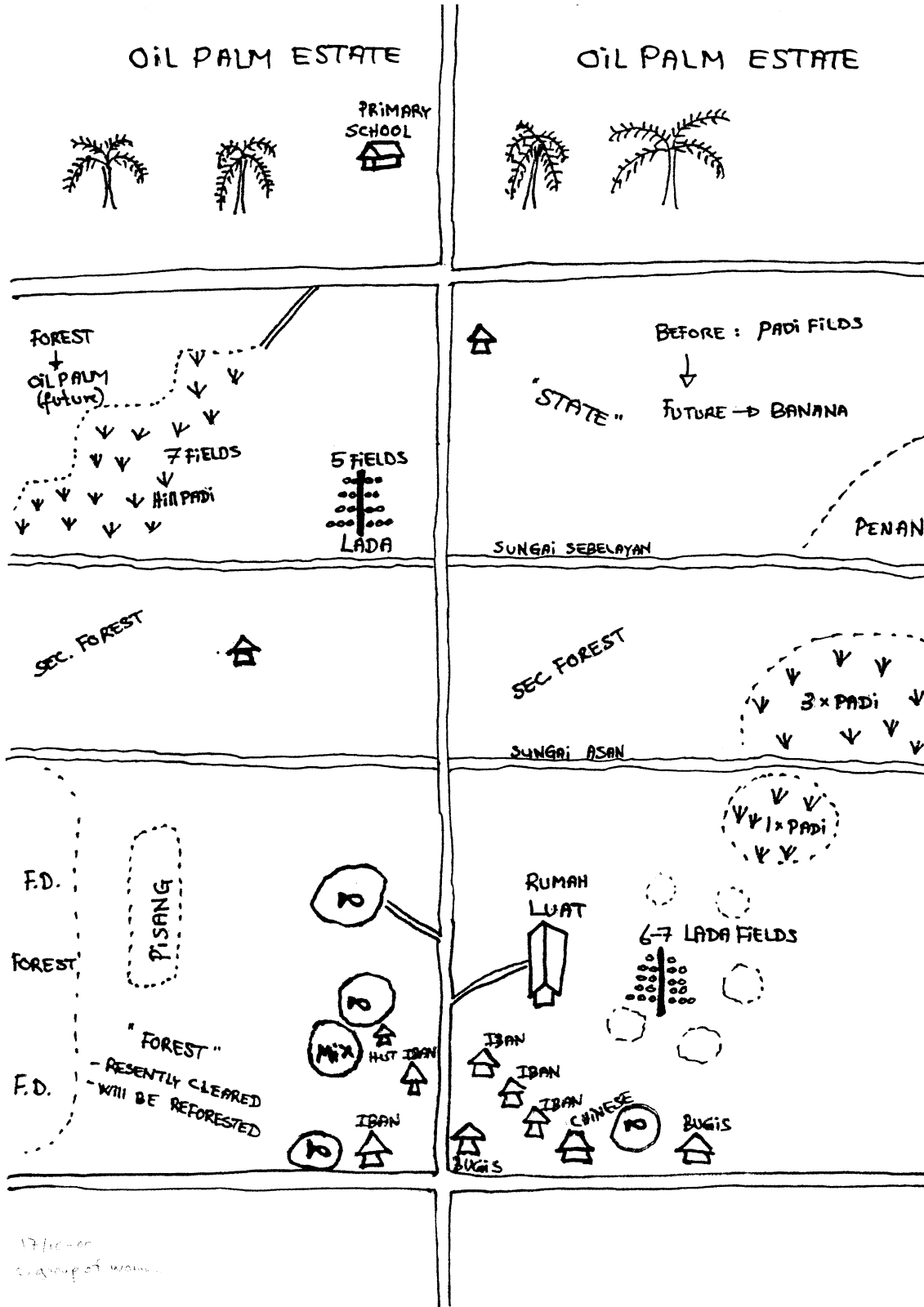
Mr. Nyanau 25/10: Member of the local committee.

Rinta and Hamidah 28/10: Permanent workers (PRAs) on the AFP.

Appendix 2C

Participatory Mapping (Women)

17/10/2000, Copy of original

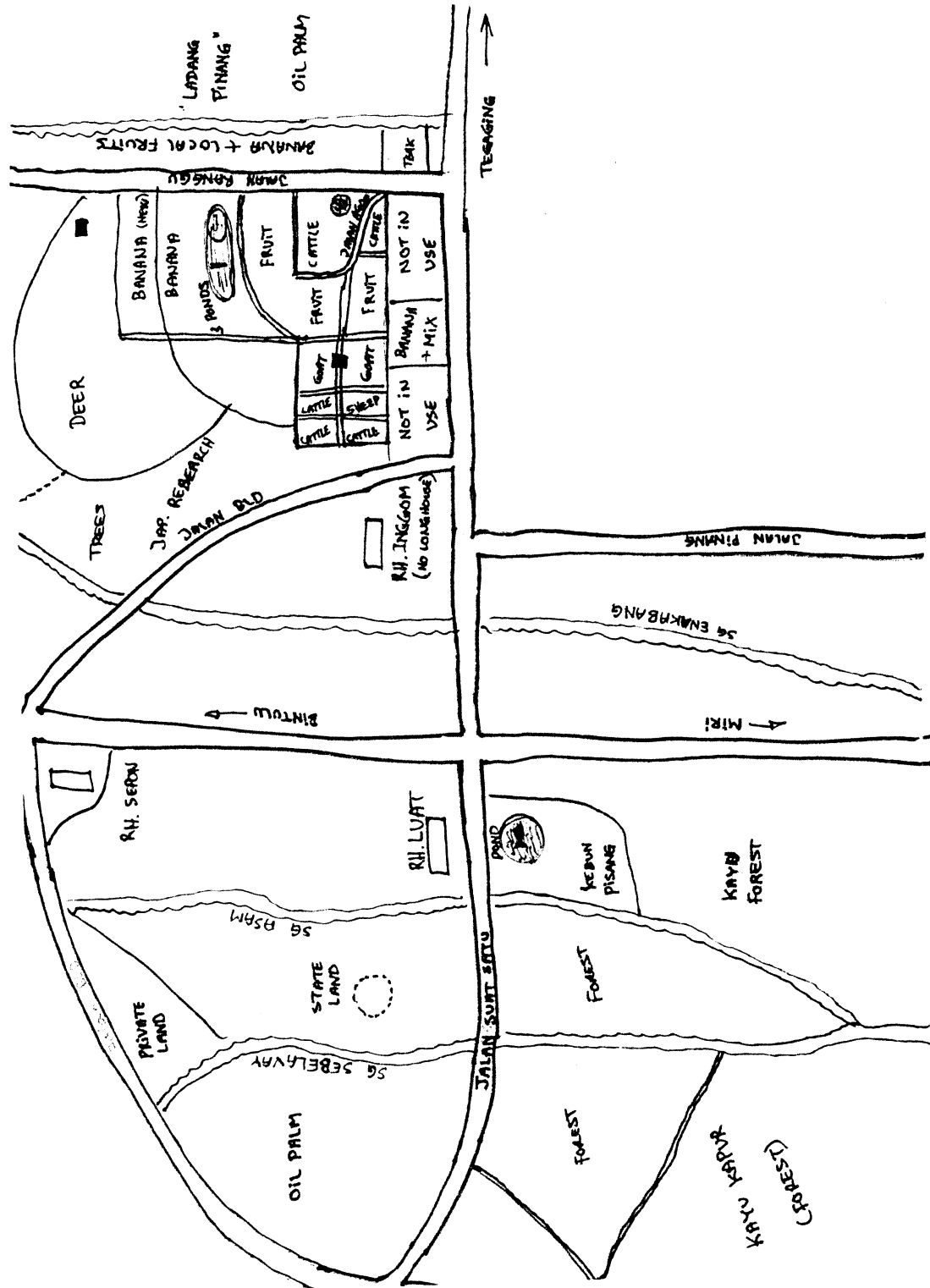


17/10/00
a group of women

Appendix 2D

Participatory Mapping (Men)

17/10/2000, Copy of original



Appendix 2E

Matrix Rankings, Forest Products

21/10/2000, copy of original

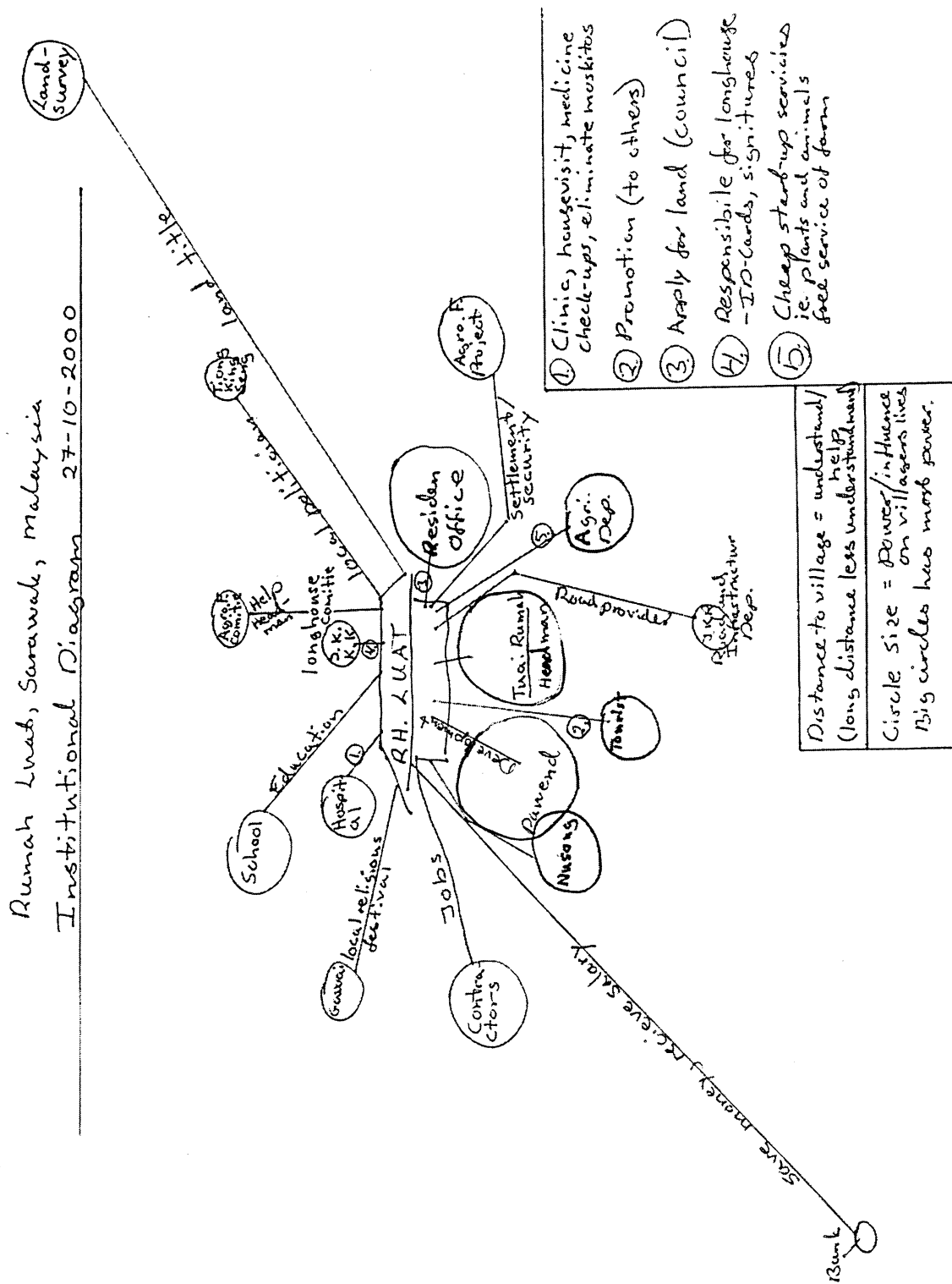
FOR OWN CONSUMPTION

	TIME SPENT ON COLLECTION	THE MOST COLLECTED	EASY TO COLLECT	IMPORTANCE	SCORE	REMARKS
MUSHROOM	•	••	••••	••	10	ONLY AFTER RAIN
DAUN SABONG (SCRUB)	••	••	••••	•	9	
FERN	••	••	••••	••••	12	COLLECTED EVERY DAY
FISH	••	••••	••	••	11	

	FOR SELLING	TIME SPENT ON COLLECTION	IMPORTANCE
WILD PLANTS		••	••
ANIMALS		••••	••••
TIMBER	X	•	•

Appendix 2F

Institutional (Venn) Diagram
 26-27/10/2000, copy of original



Appendix 2G

Questions for household survey in Rh. Luat

1. Name:
2. Age:
3. Gender:
4. Marital Status:
5. Religion:
6. Years of education:
7. Occupation:
8. Communal positions:

9. Family members: Gender Age Years of education Work

10. How long have you lived in this area?
11. Where did you move from?
12. What was the reason for moving here?

Food sources

14. Do you have any fields? If – yes - What kind of crops do you have on your fields?
16. Do you have any animals
17. Are the crops for own consumption or for sale?
18. Do you buy any food? If – yes – What do you buy?
19. Does your family collect any of these forest products?

Wood	Vegetables	Fish	Fruit	others
------	------------	------	-------	--------

20. How often do you eat:

Meat	Fish	Vegetables	Fruit
------	------	------------	-------

Economy

21. How much money income does your household have in a month?
22. What is your main source of income?

Health

23. How is the general health of the family?
24. Have you had any serious illnesses. i.e.
Malaria Dengue Tuberculoses
25. How often do you and your family go to the clinic?

The Agro forestry project (open-ended questions):

1. Do you or have you worked at the Agroforestry Project?
2. Can you describe what the project is about?
3. What is the purpose of the project?
4. What is good about the project?
5. What would you like to change about the project?

The survey was conducted so that, it was up to the interviewer to “feel” if the informant had any issues they wanted to talk about or were there was interesting information to get, and then dig into these subjects.

The interviews took from 45 min to 1½ hours depending on the informant.

At the end of each interview we asked the informant if they had any questions for us, to satisfy any curiosity the informant might have in regard to us and our use of the information.

Appendix 2H

Co-operation with Malaysian counterpart

Our group consisted of three Danish and six Malaysian students. Our co-operation with the Malaysian students began before we arrived in Malaysia. Through the use of e-mail we exchanged proposals, but it was difficult to get a discussion going in cyber-space so the real "negotiation" of the fieldwork proposal did not start until we met at UNIMAS. But at this point it was difficult for both groups to change the scheme of the prepared fieldwork. Therefore we had two different perspectives on the study object, with the Malaysian part of the group focusing on the management of the whole FR and the encroachment done by different villages around the FR, while we were focusing on the AFP and the local community of primarily Rh. Luat. A clash of methodological thinking also made it difficult to agree on how to do the investigation and why. Another major difference was the Danish group's problem-, methodology-, and process oriented way of working, in contrast to a result and "fact" oriented focus. All of these clashes we saw as part of the whole experience, because they led to some interesting discussions, which all took place in a relaxed and humorous atmosphere, that made both groups aware of different ways of doing investigation. In spite of some disagreements we co-operated on our household survey, some of our interviews, and did all our field visits together. We did not get many chances to take part in the natural science methods, mostly due to time constraints: The first week all of us were very focused on getting started with our different methods, and the second week the natural science part of the group was focusing on analysing their collected data, by use of books, a part which was difficult for us to take part in.

Appendix 3A

The development phases of the AFP (Jiwan & Jame 1999, p.12-13)

✓ Phase 1 (1989-1999)

- ✎ Initial phase; creating an understanding between villagers and FR staff; baseline information collected; participatory approach; model project started in 1994; delay (1989-1994) in project implementation due to shortage of manpower, insufficient funding and unsettled action taken against squatters.

✓ Phase 2 (2000-2004)

- ✎ Improvement of people's livelihood: Resettlement site for village setting; issuing temporary land permits to participants. Raise the participating household's average monthly income from RM 500-600 (1999) to a minimum of RM 1,000 in year 2004.
- ✎ Providing health care, education and extensive infrastructure (roads, electricity and water supply) for the project area. Develop and promote agriculture, handicraft, cottage industry products and "eco-agro-tourism" in the area.

✓ Phase 3 (2005-2010)

- ✎ Final phase; all activities should become self-sufficient; management and administration ready to be handed over to the locals; the project shall become a private agroforestry company owned by the local participants, who can pay tax to the government.