

Livelihood and Land Use Changes in Kampung Skibang



Final Report

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by

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Abstract

This report conducts a livelihood analysis of the village Skibang, in Sarawak, Malaysia. This is done by evaluating the current and future impacts of labour migration on the livelihood of the village and investigating investment strategies related to remittance and its impact on the economic activities of the village. Furthermore the management of local resources is evaluated.

Villagers of the productive ages leave Skibang in large amounts leaving back a village consisting mainly of children and old people. Production in the village is low and the village becomes highly dependent on remittance from outside. In general households seem to be in a position where they have a good and stable income.

Land in Skibang generally does not appear to be used intensively for agricultural production purposes. If Skibang were to go into an intensification of a single crop production the village might be able to make use of the resources available in land and labour more efficient. Success with a one crop production might be what is needed to change the negative tendency that Skibang is in at the moment. It could potentially bring back some of the young and productive people if it became more attractive to make a living in Skibang.

But infrastructure must be developed if Skibang is to become attractive for young people. This is also important if possibilities for production and market access are to be improved.

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1.0 Introduction

1.1 Local context

Malaysia is a so called newly industrialized country which over the last decades has experienced a fast economic growth. The location has among other factors been a part of the explanation to why Malaysia has achieved this high economic expansion and shift from a primary agricultural society to a industrial society. The country is located in South East Asia that generally has experienced a strong economic growth. Large investments from Japan, relocation of labour intensive productions from Singapore and cheap labour from Indonesia are some of the favourable circumstances in the region that Malaysia has been able to benefit from to obtain its impressive growth (Barlow, 2001).

From being an economy based primarily on agricultural production Malaysia was in year 2000 the sixth largest exporter of manufactured goods in the world (Barlow, 2001). Agriculture has dropped significantly in importance with respect to GDP from 38% till 9,3% in 2000, and at the same time manufacturing has risen from 9% to 30% in 2000 (Barlow 2001:19). This has brought a strong economic expansion in the urban areas, but has in many ways excluded the rural areas and therefore assumingly created incentives for migration from the rural to the urban areas.

Agriculture in rural areas is though still something which is highly prioritised with respect to production as well as development. A big part of the manufacturing sector is still relying on primary products from the agricultural sector, and there is a focus on trying to make people stay in the rural areas to secure a continuing high production. Besides the production reasons, land and rural development is highly prioritised in the country's development strategy due to fear of ethnic unrest and just mainly to make it more attractive to stay in the villages. Back in 1971 the country introduced the New Economic Policy (NEP) which focused on growth through expansion of the export oriented manufacturing sector, but besides that it placed focus on ethnic problems and rural development. The NEP introduced a shift toward trying to help the indigenous populations, such as the Bidayuh and Iban in Sarawak, to get more political power and a higher share of the economic growth to obtain a better ethnical balance in the country. This is a focus which is still kept today (Airriess, 2000).

Our field site is the village of Skibang located in the Kanan River catchment which is characterized by rapid land development and infrastructure development. The village is in the Bau district, Kuching Division in the Malaysian state of Sarawak. Being the largest of Malaysia's 13 states Sarawak is covering 12.3 million ha. and lies in the northern part of the island of Borneo, with borders to the South Chinese Sea, Indonesia (Kalimantan), Brunei and the Malaysian state Sabah.

The study will investigate the village of Skibang, which officially consists of 129 houses. The village was established in its present position in 1947 after people from another village called Skibang broke out to establish the village after an epidemic. The inhabitants in Skibang are almost all Catholics and of the ethnic Bidayuh or Land-Dayak group. The ethnic Bidayuh has until recently only been living in the rural areas where they have been subsistence hill rice farmers. In Skibang the agricultural production mainly consists of the traditional hill rice and more recently wet rice and cash crops such as pepper, rubber and fruit trees. The land belonging to the village is NCR (native customary right) land which means that the locals have the right to use the land but that they do not have legal ownership of the land.

With respect to development projects to improve production and employment in Skibang there have been some attempts from the state to include the village more in the national and global economy. First of all the entire road to the big town of Bau just over 20 km away has been improved over a few steps so it today is paved all the way from the village junction of the main road. Another attempt has been to establish a plantation of oil palm trees within the village area. The villagers can engage in the plantation by both putting land into the plantation and receiving a share of the profit or take a job in the plantation. The villagers have furthermore dammed the river 25 years ago with economic help from the government, in order to establish a fishpond.

1.2 Problem identification

These developments that have happened in Skibang have affected the local livelihood in many ways. First the improved infrastructure that connects the village closer to other areas making it easier to get access to the market and give better opportunities for migration. Secondly the local development project with the oil palm plantation

affects the land-use, and the allocation of labour. Together these changes affect the labour and land opportunity cost and thereby their allocation and use. We would therefore like to take a closer look at the changes in livelihood caused by these recent changes to see what effect it has on both allocation of labour and land-use.

2.0 Research question

Evaluate the current and future impacts of labour migration on the livelihoods of Kpg. Skibang. Investigate the investment strategies related to remittance and its impact on the economic activities of the village. Evaluate past, present and future management of local resources.

2.1 Objectives

- To appraise the socio-economic and physical environment of Kpg. Skibang.
 - Emphasis should be given to changes in production and livelihood strategies and to the past, present and future management of natural resources such as farming and aquaculture.
- To evaluate changes in land practices in relation to availability of land and labour.
 - Asses the impacts of recent trends of off-farm work within and outside the village.
- To evaluate the impact of non-farming income/activities on land management.
 - Asses how many and what kind of households are engaged in work in or have put land into the oil palm plantation.
 - Asses the changes in production and livelihood strategies implied by the oil palm plantation

3.0 Methodology

In this chapter the methods used in the field is described. It will contain a discussion about their strengths and their weaknesses, and through this discussion, an assessment of the validity of the collected data and the results. This examination of the conducted methods together with, the discussion and assessment of them will lead up to a critical discussion of the choice and conduction of the methodology.

3.1 Introduction

The fieldwork is as described in the previous chapter conducted in a local context in the village of Kpg. Skibang situated to the south of the state of Sarawak, Borneo. Skibang is a society under heavy influence from a still increasing migration and influence from the bigger cities in the area; the village also experience degradation in the traditional agriculture scheme. The focus in the fieldwork was to assess the livelihood that were under influence from these changes, and see what options the village have in the future regarding enhancing or stabilising the overall livelihood. The group conducting the fieldwork consists of 12 students from 4 different countries¹ with a range of different disciplines. The report should therefore be seen on as a multidisciplinary work trying to capture the forces from disciplines as different as social science, geography, biology, forestry and development. The joint work of these different disciplines combined with the different cultures in the group has of course led to a range of problems and have maybe in the end resulted in a biased data collection and interpretation of the data.

The chapter should not be seen as an attempt to evaluate every single method conducted in the field, it is more an attempt to show the general approach to the main investigation problem. The fieldwork was conducted over a period of 2 weeks, and therefore some methods have not been possible to conduct in a proper way. This could be the case with the soil sampling and the water sampling. Under perfect conditions one should collect data over a longer time span in order to get valid results. The results from these collections are therefore questionable and should only be seen as an instant picture of the moment. In order to give these results a valid character they need to be combined with information gathered from other sources.

¹ Malaysia, Australia, Somalia and Denmark

All in all the results presented in this report are heavily based on information gathered from resource persons and key informants. This information was collected during interviews and informal talks using an interpreter which in many cases lead to misunderstandings and relatively simple formulated questions and answers.

The overall methodology used by both the Malay and Danish students is the livelihood approach. It is the core of the analysis and therefore all methods are conducted with the livelihood framework in mind. All though the two country groups are using two different livelihood frameworks this was not a source to any kind of problems during the preparation and conduction of the methods.

3.2 Livelihood

The term livelihood covers a broad range of elements its purpose is to enhance the understanding of poor people, their situation and their actions. The term livelihood is deeper than just poverty in a normal economic sense, because it contains many related elements which all have an influence on the individuals.

Because the term livelihood is so wide, there are many different ways of creating a model or framework. The framework we have chosen to use is described and used by “Department for International Development” (DFID)².

The livelihood framework (see fig. 8.0) is the basic core of our methodology. We will use the framework as a basic analysis frame – and through that come with our basic results for the village of Skibang and its inhabitants. All our results will be put into the framework and in that way we will insure as good as possible that our findings and results will be presented in a way where they are related to ones and another. Of course there will be some elements in the framework, that we are able to do more about than others, but as a whole the livelihood framework is a good way to present and analyse the overall livelihood in a village like Skibang. The framework will also give us an idea about what the present level of livelihood is and what livelihood strategies the villagers should follow in the future to either maintain or increase their overall livelihood. More details about the livelihood framework and livelihood strategies will be presented in the livelihood chapter. (For further reading see appendix 21)

² Department under the British Government

3.3 Organization of data collection

Before starting collecting the data, it was important that the two groups had a common understanding and agreement upon the task. It was a rather difficult task to make the two groups act like one. The biggest problem was the expected outcome of the fieldwork. The Malay group was very keen on the fact that they had to be able to use the data in the making of general guidelines and recommendations to the village. The Danish student on the other hand were more keen on the opportunity to try different methods in the field and did not put much attention to the questions whether the sampling sizes was representative or not. Also the amount of different scientific disciplines represented in the group was the basic for some long discussions related to the overall focus and problem. After 2 days of discussion there was a final agreement on everything, going from structure, methods to be used and sampling sizes etc. The final approach was not in significant ways different from the ones presented beforehand by both the Malay and Danish students. The focus was still on the overall livelihood and its relationship to among others migration, agriculture, and health. With this common agreement in mind a general household questionnaire was produced. The idea was that this questionnaire should provide the information needed to obtain an overview of Skibang. The group was afterwards split into 2 different groups each working with a specific theme. In each group there was a least one Danish and one Malay student represented. The overall themes for the groups were land use and socio-economic related subjects such as migration and labour. Everyday there was a meeting at lunch time where information and progress was shared among the 2 groups and subgroups. This was done first of all in order to ensure that the common strategy was followed, and that the 2 groups did not evolve into independent groups going their own way. This meeting was also used to schedule the time available that day and to schedule meetings with people from the village. In many ways this way of doing it worked out fine, though it could not totally prevent failures in information sharing, which in the long run lead to some misunderstandings and disagreements in the group.

3.4 Household survey

The household survey, was as mentioned above the starting point for our work in the village. The purpose for the survey was to provide enough information to establish a general overview of the village. Basically we gathered information on demographic, socio-economy, migration, land-use, water and community work. To get an idea about the eventually changes in the livelihood conditions, the household was asked whether it was more satisfied with the present situation compared to the past, this gave some idea about changes in livelihood conditions, although it is not an ideal way to gather information about the past.

Questionnaires are a good way to get general information about a household, it will provide the interviewer with a lot of information, but in general the questionnaire would not be able to give a deeper explanation on the conditions experienced. After the conduction of the questionnaires they were used to pick out the households that would be interesting to perform a more in depth interview with, on subject such as land use and migration.

In the actually performing of the household questionnaire, we chose to use the respondents available in the household, there was no strategy according to who in the household we interviewed, the only common rules was that the respondent should be a part of the household and at least 18 years old. This meant that the majority of the respondents are females.

The creation of the questionnaire was not a big issue hence both the Malay and Danish students agreed quite easily on the questions that should be asked – the discussion was as mentioned earlier rather on the sampling size. On this question the two groups finally meet on a compromise of 30 (app. 25%) interviews. The final questionnaire (appendix 7) was adjusted several times during one of the first days, as we experienced that some of the questions was unclear or irrelevant.

A general outline for the conduction of the questionnaire was laid out, to ensure that everybody was doing things in the same way. Unfortunately this idea did not work in reality, mainly due to some translation problems and therefore there have been some problems with the processing of data afterwards.

3.5 PRA

The Participatory Rural Appraisal methods used in the field was problem/strength ranking, focus groups, village history mapping and transect walk. The main problem in using these methods was the organisation of the sessions. There was often too many students participating and the role of each student was not clear. This led to some rather confusing sessions, where the participants from the village sometimes became intimidated by the students, because there was too many asking questions at the same time. Another problem was the challenge to translate and follow the discussion in a proper manner. The Malay students and the respondents were all talking Malay, and therefore the discussion and the questions asked was often not translated in to English and made it quite difficult for non-Malay speakers to follow and contribute to the session. The transect walk in the jungle and to the fields was in many ways valuable in order to gather information about the area, but the local farmer/worker tend to only show his own fields and points of interest, which can mean that we are missing valuable information on other relevant areas and issues. Some PRA did not provided the expected information e.g. the seasonal calendar for forest activities, which actually only provided the information that what obvious. Overall the PRA methods applied provided the group with some valuable data, despite the problems encountered in the performance of the methods.

3.6 Key informant interviews

As mentioned earlier, the household surveys were used as the base for selecting key informants on specific themes. The methods chosen for these interviews were semi structured in depth interviews, which in practice meant that we had some overall questions relating to a specific theme, and through the answers tried to make a more informal conversation, following the leads that the respondent gave us. Usually this methods worked fine, but in some cases the respondent was shy or intimidated by our presence and therefore did not gave more than short yes/no answers which made it difficult to evolve a deeper conversation. Another problem faced was the fact that the information gathered from these key informants not always corresponded with the data collected from the household surveys – in these cases we tend to rely on our key informant rather than the faster performed questionnaire.

3.7 Information gathered outside the village

Besides the interviews conducted inside the village, we also performed a number of interviews with key informants from outside the village. Among these were interviews with local authorities such as the Agricultural Department (AD), Health Department (HD) and the Bratak estate manager. Besides these interviews with the local authorities we also conducted some interviews at the local Bau market, in order to find out whether or not there was a link between the productions in Skibang and the local market. When talking to the local authorities there was a tendency that we was interviewing the leader or a person high in the hierarchy, and not the person actually knowing the most about the subject. Also we have to assume that these informants were highly biased by their position in the answers they gave.

3.8 Informal conversations

Much of the information and background history collected for the report was produced through informal conversations and social interaction with the villagers. Often we had curious visitors during the evenings, mainly because the rumour of free beers had spread through the village. Also at the local shops and bars there was a good chance to pick up some relevant information by talking to the other customers. Beside these meeting places we also found our self at different barbecue parties, fishing trips and a local wedding. Normally all members of the group had small notebooks or tape recorders with them when they walked around in the village to ensure that all information encountered was noted and kept for later use.

The rather big amount of data collected in this way, was difficult to handle and sometimes it was difficult to clarify the importance of the gathered information and not to follow a lead that seemed interesting but had no relevance for the report.

4.0 Infrastructure & Migration

This chapter will investigate the degree of migration, and why migration takes place. The fact that infrastructure and migration is related means that this chapter will start by introducing the infrastructural situation in Skibang and then relate it to the migration patterns investigated in the village. Besides the fact that infrastructure and migration is related it is also of significant importance in describing the overall livelihood picture.

4.1 Infrastructure in Skibang³

The infrastructure is in it self not that interesting, but seen as an overall picture related to migration it can provide some explanations for the changes in migration.

Infrastructure is also an important part in estimating the overall livelihood. If there has been a change in the infrastructure for the better, the households would have a new opportunity to change their overall livelihood strategy e.g. by conducting commuting to the cities around the village. The infrastructure thereby becomes an important element in the overall assessment of the changes in non-farming activities and socio-economy.

Roads:

When the main road from Bau to Stass was established as an actual road in 1980 it was a significant improvement for the villagers of Skibang although it was a stone road in a very poor condition. The construction of the road meant that the average transportation time from Skibang to Bau in car was reduced from a 4 hour drive to a 1 ½ hour drive. In 2004 the state government decided to allocate money for the improvement and pavement of the main road from Bau to Stass, which meant that the average transportation time again was reduced significantly down to ½ hour.

In 1997 the village of Skibang received 100.000 RM from the state government for improvement of the infrastructure inside Skibang, this money was used for the paving of the main street of Skibang, but did not included all the smaller roads around and inside the village which all are paved today.

The road from the main Bau-Stass road leading down to Skibang village is the only road that is missing pavement. It is a 3,2 km long stone or gravel road in a fairly good

³ Based on interview with Headman and 1 other JKKK member in charge of infrastructure

condition, but with the heavy rain in the rain season it is going from good to poor. The JKKK council has on regular basis repeated its request for pavement of the last part of the road, but the estimated cost for this project is set to be around 4,5 million RM. This amount of money is not expected to come in one, but the villagers are expecting to get a bit of the road paved each year.

Discussion:

The significance of the improved infrastructure for the village has been a highly increased migration pattern over the last few years. Also the pavement of the streets inside Skibang has according to our respondents had a significant influence on the people's willingness to migrate. Why the internal infrastructure is important is unclear, and we actually do not have a straight answer to this, but one explanation could be that the pavement of the streets actually does not have anything to do with the increased migration – the migration could take place for a number of other reasons.

There is no doubt that the improved infrastructure in Skibang and its surroundings has meant that people fairly easy get more in touch with cities like Bau and Kuching and the variety of options that they could provide. When the average travelling time to and from Bau was reduced from 4 hours to ½ hour it is easier to take the step to become a part of the city and take advantage of new job options and services etc, with out totally loosing the connection to Skibang. This new trend has meant that Skibang now a day is a village based on mostly elderly and children (See fig 4.1).

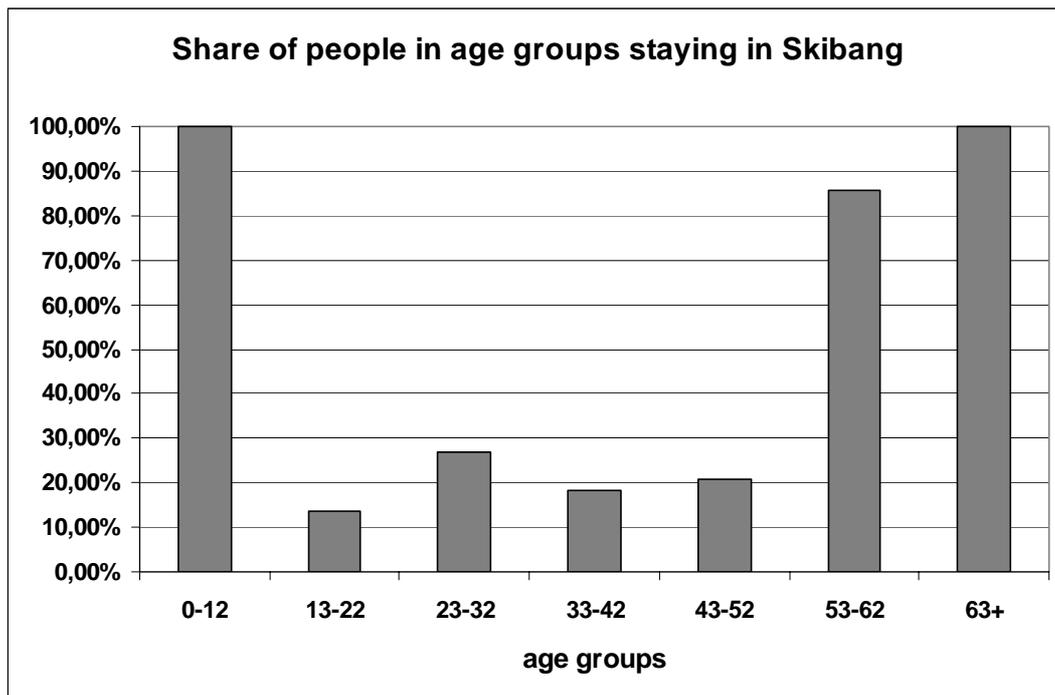


Fig. 4.1 Share of people divided into age groups, staying in Skibang, based on a sampling size of 30 household surveys

Between 73% and 86% of the people in the age from 13 to 52 years old that are considered as a part of a household in Skibang is either not living or working in Skibang.

The possibility for getting a work and live in a bigger city has meant that the traditional agriculture society is now being taken care of by old villagers and villagers with less or no education. This lack of a qualified and competent labour force has meant that agriculture no longer plays the same important role for the society as it used to do. The agriculture to day is mainly for own consumption or just for maintaining the right for the land.

On the other hand the improved infrastructure has meant that access to the fields is much easier and so is the access to the market in Bau. So with the right planning (see the SALCRA/agriculture chapter) the possibility of a sustainable livelihood based on agriculture should be present.

The new infrastructure and improved possibilities for getting a better and maybe less physical demanding job has meant together with the declining prices on agricultural products that non farming activities play an increasing important role for the individual households' livelihood strategy.

One conclusion could be, that the improvement of infrastructure in and around Skibang has led to a decrease in the agricultural production and has changed the way the villagers manage their agricultural land due to the option and availability of better paid jobs in the city. The new infrastructure therefore has the consequence that a high number of villagers chose to get employed and live outside the village (see fig 4.2) and therefore no longer contribute directly to village economy.

Electricity:

Skibang village has not yet a fixed power line connecting the village to the national electricity net; instead they have a common generator providing the majority of the village with electricity every day between 6.30 pm and 10.30 pm with the possibility to extend on request and the payment of 30 RM for an extra hour.

The decision if and when Skibang should be connected to the national electricity net is a federal decision. The villagers can not do anything to speed up the process; they can only through the JKKK make an application to the decision makers. The JKKK has applied for fixed electricity since 1996, with no visible results. At the moment all the practical preparations is more or less ready, so it would take a small amount of money and time to connect Skibang to the fixed net, but the JKKK estimates that it will take at least 1-2 years more before the village will have permanent connection to the national net due to the results of an upcoming national election at the end of 2005.

The first common generator was installed in Skibang in 1979 and was active until it broke down in 1996. It was not replaced due to a disagreement in the village regarding the post as headman. In the year 2002 the new headman managed to get a new generator from the Bau government.

Discussion:

The fact that there is a shortage of electricity and there is no reason to believe that this situation will change in the near future can have an important impact on the household's member's willingness to migrate. This is also lined out in the problem ranking (Appendix 10) where electricity is listed as the overall 2nd biggest problem in the village right after water supply. When there are job opportunities in cities like Bau and Kuching and a better infrastructure and electrical supply, there is no reason for staying in Skibang. If you on a regular basis are influenced by the city, and through

that are experiencing the rather more modern and easy life there, it is easy to understand why most young people choose to migrate to Bau and Kuching etc.

If there in the near future shall come a change in the working related opportunities in Skibang, it will be crucial to have electricity. It is hard to imagine that an outside company or entrepreneur will choose to locate e.g. a factory in Skibang and through that create new job opportunities and a new future for the villagers without the fixed power. The single company that is present to day in Skibang is SALCRA and they do not need power to run their oil palm plantation.

4.2 Migration from Skibang

As part of our investigation of the livelihood in Skibang it is of big importance to look at the labour situation in the village. In relation to this it is necessary to define the degree of migration from Skibang to understand who is leaving the village, for what reason and with what effect.

4.2.1 Methodology:

The questionnaire given to the 30 randomly selected households in Skibang provided the quantitative data needed for the statistics in this section. This basic data provided the information needed for the later selection of 10 households to underlay a semi structured in depth interview. These in depth interviews went more in detail with the migration question in order to get a better understanding of the relationship between the migrants and the rest of the household, and also to get an idea of why the migrants have chosen to leave.

To get a weak idea about the future of Skibang in relation to migration it was necessary to perform 3 focus groups with young people in the age where they typically were attending secondary school. This was done in order to get an idea of their future plans about whether or not they want to live in Skibang.

Two of the randomly chosen households for the questionnaire were not able to answer our questions because they were not home at the times we tried to talk to them. Time did not allow us to wait for the families to come back and we had to choose some new

households instead. Thereby we did not have a chance to speak to those households living away most of the time, to try and estimate their relationship with the village.

In one particularly case we had to use data collected from our semi structured interviews for a figure. We found it was important to compare the educational level of the villagers with that of the migrants. Since we did not ask about the migrant's education in the questionnaire we had to find the answers in the interviews. We are aware that because we have used information from only 10 interviews the reliability of this data is questionable.

It would have been use full to have had an opportunity to talk with some of the long term migrants in order to get an understanding of their reasons for migrating. It could have provided the information whether or not they plan to move back when they get old, as the remaining household members in most cases have expressed.

We have divided the migration into 5 categories. 3 categories are covering the migrants that are working (employed), studying or merely staying outside the village and not returning on a daily basis. 2 categories shows people commuting - which have been divided into two groups depending on either their engagement in work or school. People who do not fit into either of these categories are in the group "staying in Skibang".

4.2.2 Migration

Figure 4.2 shows how big a share of the members in the households⁴ that are involved in different kinds of migration according to the groups defined above.

⁴ Household is here defined as people living under the same roof or sharing the same kitchen

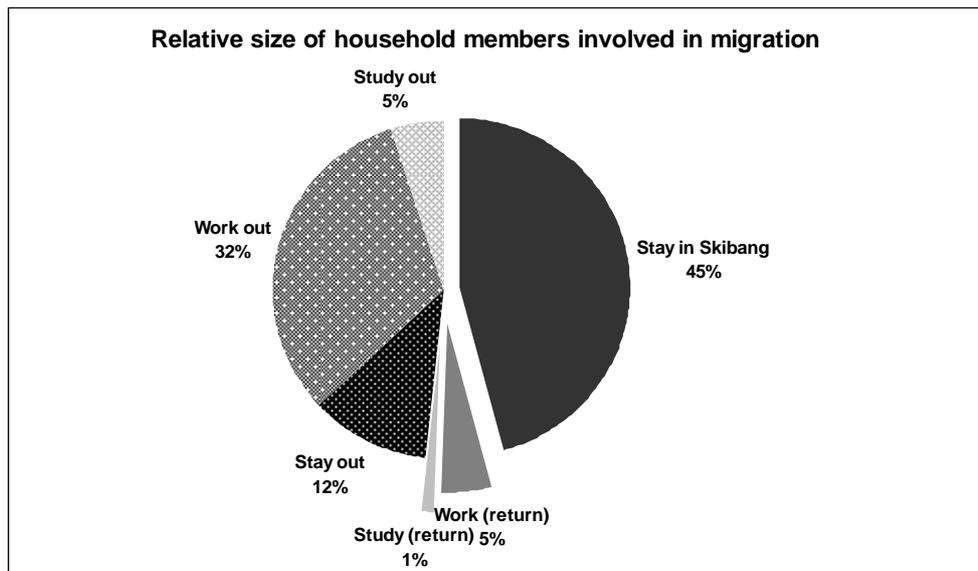


Fig. 4.2 Scale of migration in which the household members are involved, based on 30 household surveys

The largest share of the members in the 30 households stay in Skibang (45%), but it is important to notice that 49% have migrated (All the dotted groups). The biggest group is the working group (32%) while 12% are staying with a new family typically after marriage. 5% of the migrants are studying at either universities or boarding schools. A small part of the people daily staying in Skibang (all the clean coloured groups) are either working or studying outside Skibang during the day, but returns at night. Migration is in other words very common for Skibang, just as in the rest of the region in South –East Asia with people leaving the rural areas, to look for job in the urban areas. According to our interviews most of the households also explained that their household members had migrated because of a lack in job opportunities.

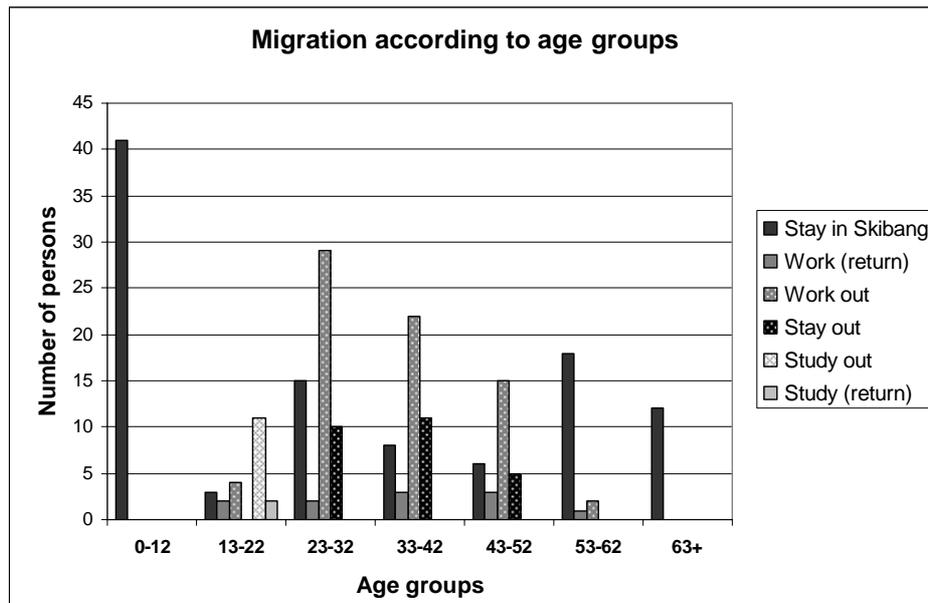


Fig. 4.3 age groups involvement in migration, based on 30 household surveys.

From looking at figure 4.3 it is clear that the people staying inside Skibang are mainly the children (0-12 years) and also the old people from 53 years and above. The age group from 13-22 years is not surprisingly mainly engaged in studying and besides that a small group is working outside Skibang. Only a relatively very small amount of the young people is staying in Skibang. The people in the age groups from 23 up to 52 are mainly working outside the village. It is also here in these age groups that we find a large proportion staying outside Skibang, and therefore there is only few from these groups staying in Skibang on a daily basis.

The focus groups which all consisted of young people in the secondary school age (12-18 years old) gave the impression that most of them did not want to live in Skibang in the future. In general they would like to move elsewhere with better job options, but they would also like to be able to help the household financially. All future migrants plan to return some day when they get old to stay in the village.

Also from our interviews we understood that in most of the households the migrants left the village when they were 12 years old and did not plan to return to Skibang until they get old and retire. Many have or are already planning to build a house in Skibang for them to live when they return. These explanations can help us understand why

there proportionately are so many old and young people. Skibang is more or less turning out to be a village of children and old people.

The fact that the young people from the village do not want to live in their village and is ready to migrate is a general trend in the area (appendix 4). The young people typically move from the village to continue school when they have passed elementary school. Here they gain a lot of knowledge which is preparing the students for a new life in the city with a higher living standard than they are used to from the village. The students also learn to associate life in the village with a primitive lifestyle.

Despite this the young people still want to come back some day

Lack of job opportunity and a need for diversification of income are the main factors which makes many people look for job outside the village. There is not much wage labour to get in the village and therefore household members have to look for job outside if they either do not want to work in the fields or if the income from the fields is not enough to provide a sufficient income. Today it is not enough for the households in the villages just to live of subsistence farming; in more and more cases it is becoming necessary for them to have a monetary income, as they have been drawn into a increasingly more monetary orientated lifestyle. In the villages there are not many options to get an economic income; the only options in a village like Skibang are through a production of cash crops or through wage labour in a plantation. But these activities are typically very low paid compared to wage labour in the bigger towns and cities. Another reason for seeking wage labour outside the village is if the household need to spread out their income to be less vulnerable in times with bad harvests or low prices on their agricultural products.

One of the reasons why the villagers typically return after they retire is that they need to secure the family the right to the family inherited land for themselves and future generations. If a household leaves the village and do not return they will loose the right to the land they previously have had access to. There is no ownership to the land because it is NCR-land, which means that the right to use it is inherited through the family, and lost if the family moves from the area.

Gender:

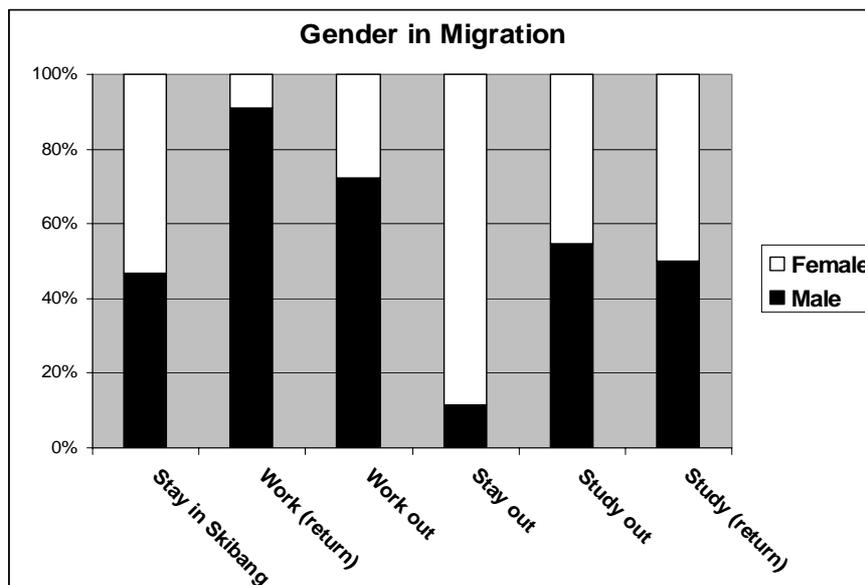


Fig. 4.4 gender distribution in relation to migration, based on 30 household surveys.

The main observations from looking at figure 4.4 in relation to gender is that it is clear that in the migration groups men are dominating in the categories relating to work outside Skibang where as the women are dominating in the group of people staying outside Skibang (not engaged in work). Women are less likely to migrate to work outside than men and when they do migrate to find work out side they generally have higher education than men, according to our interviews. It is not surprising as women generally need a higher incentive than men before they move. Instead women are more likely to migrate by moving to stay with their spouse (usually) or family outside Skibang after marriage. Women are also dominating the group of people staying back in the village and not being engaged in work or study outside. The genders are fairly equal when it comes to the categories related to study outside Skibang.

One outcome of this could be that in most cases the females in the households are taking care of the farming and the general household, which again can lead to the conclusion that farming, is not that important as it used to be. When a household choose to rely on an outside income instead of the farming income it says something about the importance of this activity. If the farming was an important income source, the man of the household would be engaged in this on the same terms as the female.

Destination:

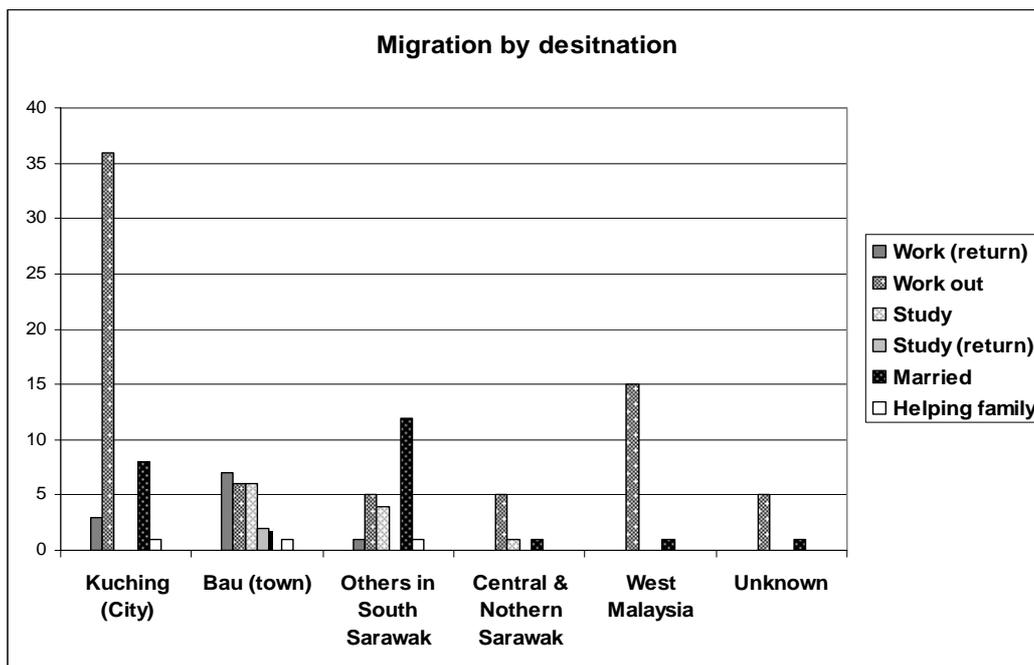


Fig. 4.5 The destination of the different kinds of migration from Skibang

Trying to group the migrants into destinations (fig. 4.5) to see where they are going and for what reason we have divided the destinations into 6 categories; 1 category for Bau which is the main town in the district and one for Kuching which is the main town in the division and also the state capital.

We have had to make a group called unknown destinations for migrants staying in places that we have not been able to identify. Either due to miss spelling of those filling in the questionnaire or the destination is a very small village not possible to locate the position of. A few migrants that could have ended up in this category has been placed under “Others from South Sarawak” because they have identified that they return to Skibang weekly, so it is unlikely that they stay very fare away.

As it can be seen from figure 4.5 the largest share of migrants, which includes all groups in this case except “work and return”, are going to Kuching which is the biggest city in the area. The fare biggest share of people going to Kuching is therefore a working purpose. This stems with expectations that people are heading for the big urban areas to look for work. Bau is characteristic because many people come there to work and proportionately many of them return at night to the village as it is merely a

30 minutes drive away. Besides that there are many students in Bau because the secondary school is located there. Of those migrants going to other places in Southern Sarawak which usually is to smaller towns and villages most of them have migrated because they got married to someone from that area and chose to move there. The trends for the further migration to Central and North Sarawak as well as to West Malaysia show that most go that far away to work.

Education vs. migration:

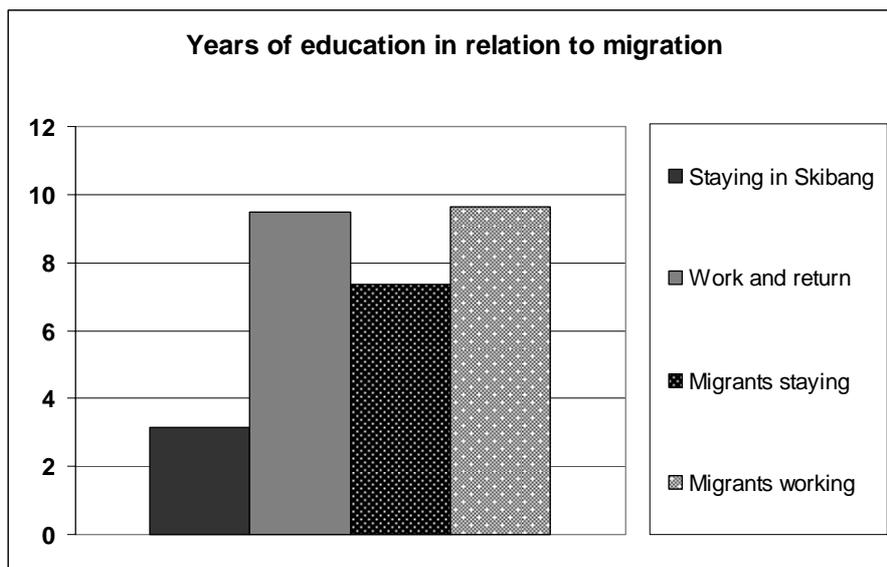


Fig. 4.6 The avg. number of school years of the people from each of the migration related activity groups.

Identifying what kind of people that are migrating and working outside Skibang is done partly by looking at the level of education. As described before the statistics on the educational level of the migrants (the two last groups) are based on information from our interviews and are therefore related to a high statistical uncertainty. It should be noted that the groups of people studying out as well as studying out and returning has been left out of this category of education. The group categorised “staying in Skibang” includes everyone staying in the village - children as well as old people. From figure 4.6 it is easy to identify the biggest differences in education which clearly is between those staying in Skibang and the migrants. The different migrant groups have more than twice as many years of education as the ones staying in Skibang. It is also clear that those with the highest education are those from the groups of people working outside Skibang.

It could of course only be expected that those staying in Skibang would have the shortest education when we know which ages the group mainly consists of. The old people are generally those with very little or typically no education and the children do not have much education yet. Besides that it is also expected that those with the highest education will try and find work outside, because they must be expected to have the highest opportunity cost by choosing to work in Skibang with the poor possibilities when it comes to job and income.

Income vs. migration:

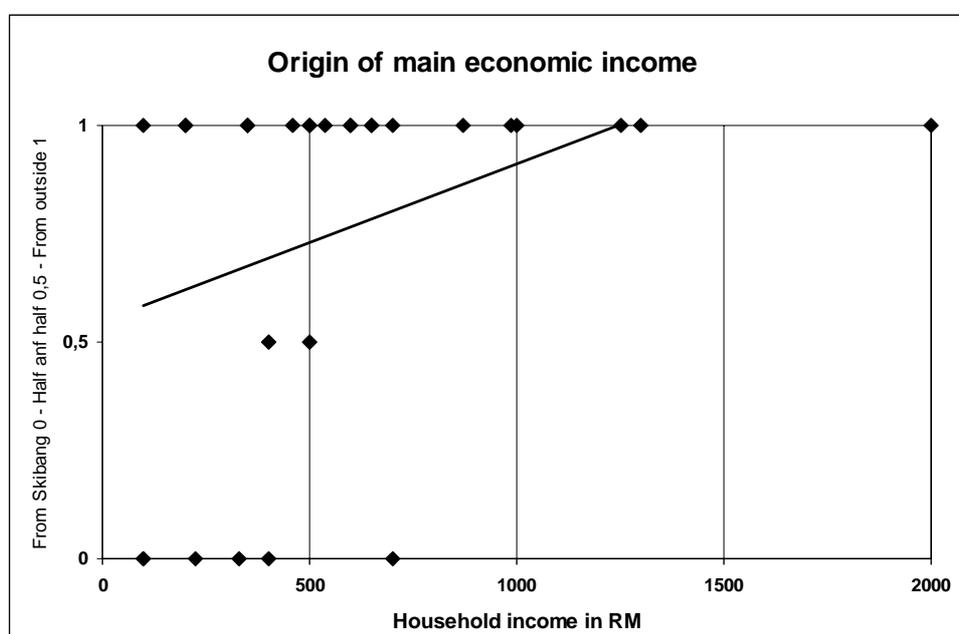


Fig. 4.7 shows if households get their income from in- or outside Skibang and the size of the income including a tendency in the relationship between the two.

With respect to income from migration it is identified according to figure 4.7 that most of the households (22 out of 30) do get the majority of their income from outside Skibang. The figure is also showing the correlation between the size of the household's income and whether the income mainly comes from inside or outside the village. The tendency line shows that households with higher income are more likely to get the majority of their income from outside the village. This shows that income from migration is generally very important for the economies of the households in Skibang. We also asked the households in our migration interviews about how

dependent they are on the income from the people involved in migration. The answer we got from them also showed that more than half of the households were of the opinion that the household was very dependent of income from persons involved in migration. Especially from the households where the migrants are children/ brothers or sisters living out, the household is typically not receiving much remittance if any, but even though the households often seems to be highly dependent on money from outside, even in cases where they receive only very little. This only illustrates how difficult it is for the households to satisfy their economic needs inside the village.

4.2.3 Conclusion

The types of migration encountered in the village are primarily short term (including commuting) and long term migration. The people who choose to migrate is the ones in the productive age with a high degree of education – leaving the village with a majority population of young and old people with less or no education. This “brain drain” leaves the village with few options to improve the general situation. The farming is taken care of by unskilled labour and is in many cases no longer of same importance as earlier due to lack of labour and declining prices. This leaves a high number of the households in dependency to remittance or income from outside. This shift in income strategy can be seen on as a change in livelihood strategy – a diversification of the income, but in those cases where the household is highly dependent on remittance from relatives living outside the village there is no indication of an active strategy shift, is merely a clear mark of a new vulnerability. The increased migration should not be look on as a negative tendency, in many cases it is the result of new opportunities and a general step into a new lifestyle. Only in the few cases where the households left behind is put in a worse situation due to migration, one could talk about a negative consequence.

The migration can provide a new and higher income for those staying in the village, and through that allow them to improve their general livelihood conditions e.g. by repairing the house, buying a motorbike or eat more varied.

The question is why people are migrating. One reason could be as outlined earlier, that the improved infrastructure and lack of possibilities in Skibang had led to a higher degree of motivation to move out of the village. People with a high education level tend to want to use it, and are not satisfied with the life as a farmer and the income that it generates.

5.0 Land use

In general this chapter presents our assessment of the past, present and future land use practices in Skibang and evaluate how land use changes has impacted on the livelihood of the village.

We want to assess the labour allocation to different land use practices and the reason behind this allocation.

5.1 Methodology

The survey supplied general information about the village and its households and how they use the different natural resources available in the village. The survey was also used to get general information on what systems households follow for using the natural resources available, and how dependent they are on these different natural resources.

It was experienced that cropping systems was hard to get consistent data on, as villagers did not really know the difference between the systems. Therefore cropping systems have to be defined very stringent, before going to the field and asking people about this subject. Furthermore a stringent description of the systems should be used when interviewing the respondents. As an example we have the pepper and multi cropping. When analyzing our data we see that 40% of the households say they practice multi cropping, whereas 60% of the households say they grow pepper. We would expect all pepper to be grown as multi cropping, therefore multi cropping should be at least 60%, but it is not. We think that some of the households see the pepper as permanent cultivation and not as multi cropping. This is of course a misunderstanding.

In-depth land use interviews with selected households gave very specific information on agricultural activities in the village and the farmers' view on the agricultural situation in the village.

Households for the in-depth land use interview were chosen according to three criteria; household income, land availability and agricultural and other-natural resource importance. Seven households were selected divided on three categories;

- “Poor” household, with “little” land available, and agriculture (and other NR) is very important for the household
- “Poor” household, with “a lot of” land available, and agriculture is “very important to the household
- “Rich” household, with “a lot of “ land available, and agriculture is “less important” to the household

Semi-structured interview with the head of the Agricultural Department (AD) in Bau was used for getting information about agriculture in the Bau area. To gain information on the conditions for getting subsidies, what kind of seed varieties and crops are subsidized by the AD and information on the governmental strategies for the agricultural sector in the Bau area.

Using soil sampling the different land use’s impact on the soil fertility was assessed. These results are not presented in this chapter, but in the Soil analysis chapter, chapter 7.

5.2 Results

From our survey we found that agricultural activities are important or very important for 60% of the households in Skibang, see figure 5.1, and other natural resource (NR)-activities above agricultural activities, like utilizing the forest by collecting wild fruits, fire wood, medicinal plants etc., are important or very important for 50% of the households, see figure 5.2. This implies that the majority of households in Skibang are dependent on agriculture and other NR-activities.

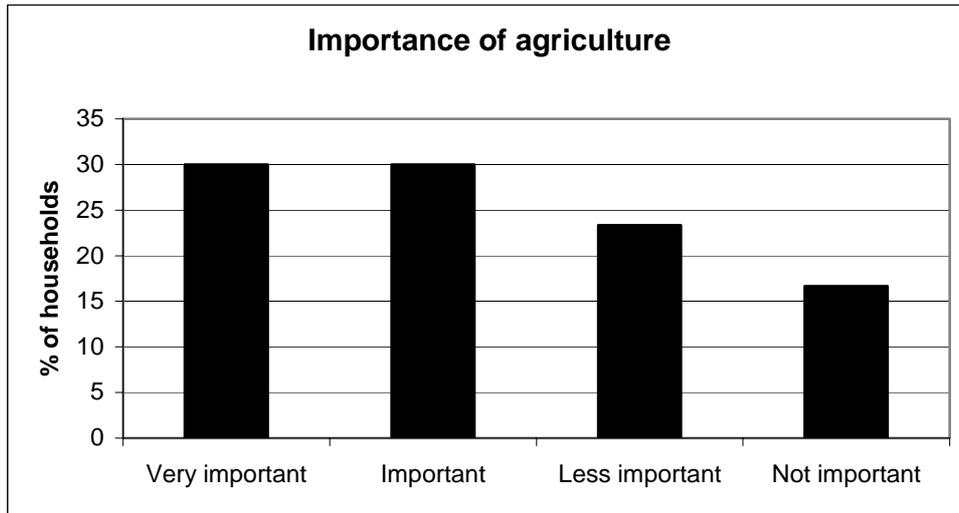


Figure 5.1, importance of agriculture for the Skibang community expressed as the relative distribution of households in four categories of importance, based on a 30 household survey.

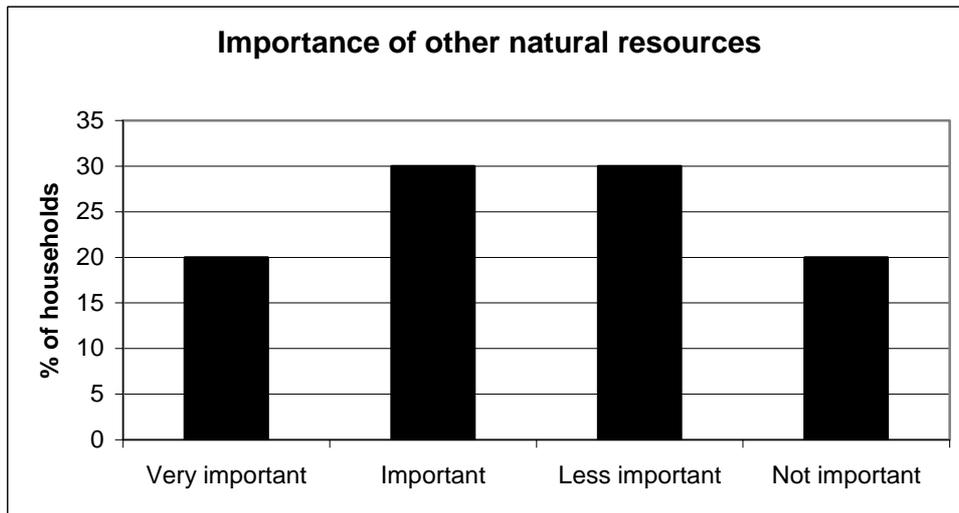


Figure 5.2, importance of other natural resources for the Skibang community expressed as the relative distribution of households in four categories of importance, based on a 30 household survey.

Data from the survey showed a negative correlation between the importance of agriculture and household income, which implies that the households most dependent on agricultural activities are the poorest ones, see figure 5.3.

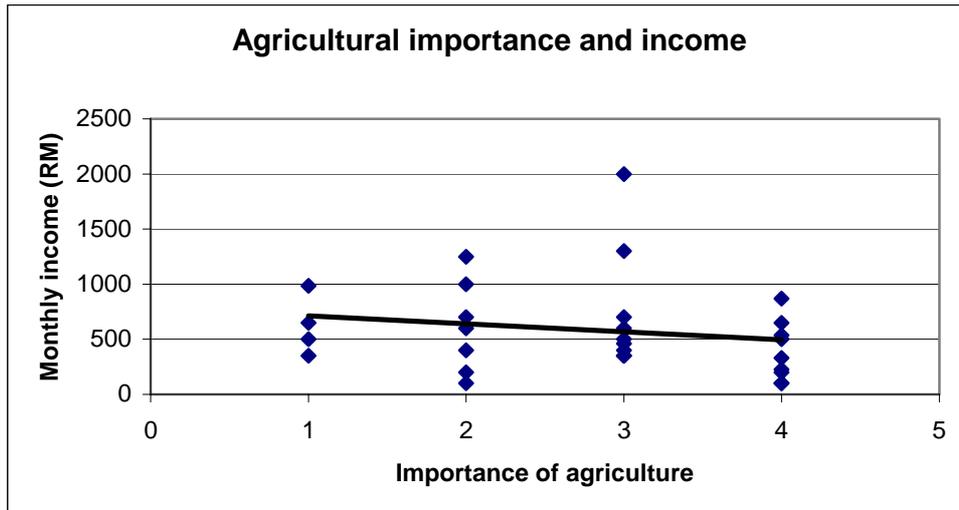


Figure 5.3, monthly household income plotted against importance of agriculture for the household. 1 means that agriculture is not important for the household, 2 means less important, 3 means important and 4 means very important. Based on a 30 household survey.

Practices and crops

From the survey it was experienced that households in Skibang do practice more than one cropping system at a time for crop cultivation. The traditional cropping system of farmers, shifting cultivation, is practiced by 47% of the households in Skibang, 53 % practice permanent cultivation, 40 % practice multi cropping and only one household (3%) practice rotational cropping, see figure 5.4.

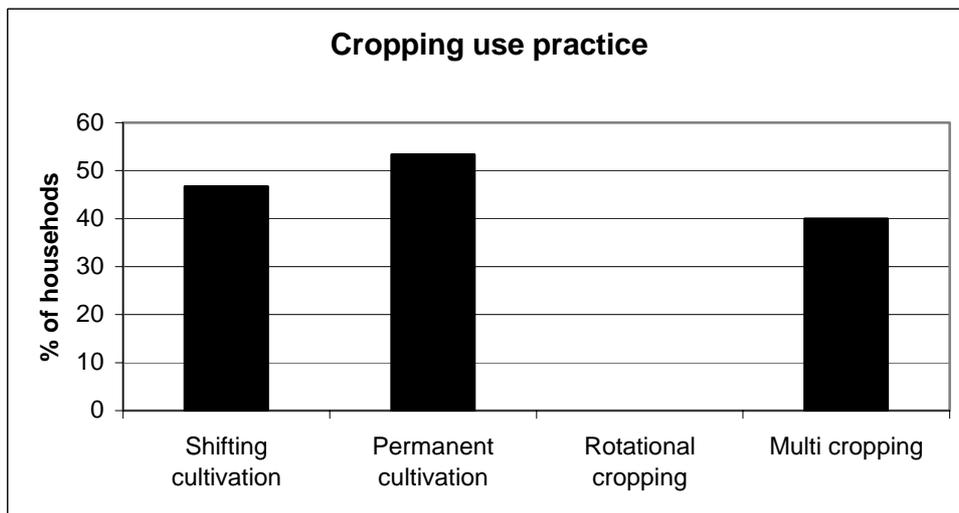


Figure 5.4, household distribution of cropping systems, based on a 30 household survey. Households do practice more than one cropping system at a time.

Only one household seem to be doing rotational cropping. We asked about rotational cropping on basis of the information on cropping systems we had prior to the field trip.

The farmers in Skibang cultivate different crops, the most important crop is rice, cultivated by 73% of the households, 60% of the households grow pepper, 40% grow rubber and 40% fruit trees. 23% of the households have answered that oil palms are grown on their land, meaning that they have put land into the oil palm scheme, see figure 5.5.

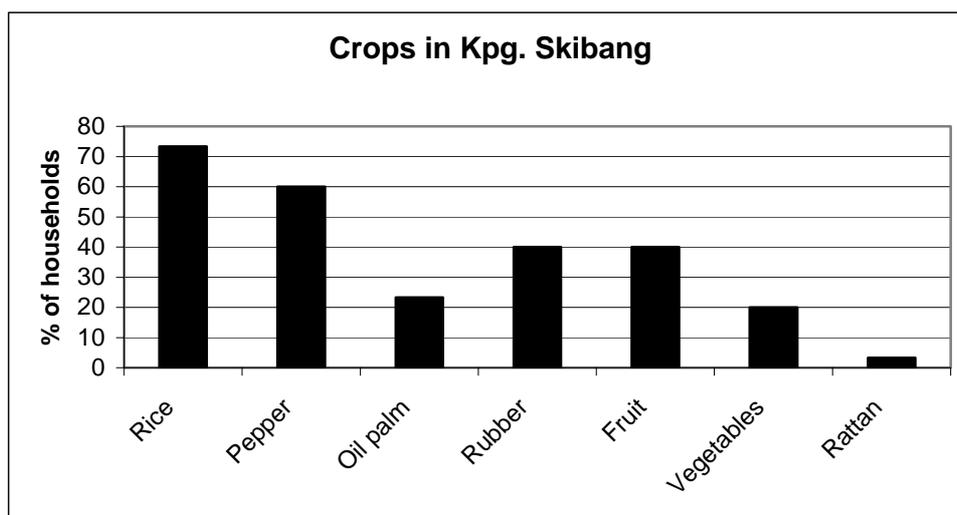


Figure 5.5, household distribution of crops grown, based on a 30 household survey. Households do grow more than one crop at a time.

Most of the households are subsistence farmers, cultivating rice (wet and hill), vegetables and spices. Besides crops for subsistence some households also grow cash-crops, mostly pepper and rubber, but recently also fruit trees like rambutan, durian and jack-fruit. The AD consider that the Bau area is potentially good for growing fruit trees, but apparently farmers will not go into the project because there is no immediate return. Skibang in contrary has joined the fruit tree project, but interviews revealed that the villagers are not satisfied with the economic return from the fruit trees. As fruits are seasonal, fruit prices are low in the season as a lot of people try to sell the fruits and because fruits are perishable they can not be stored for later sale.

Permanent cultivation mainly involves wet rice cultivation, shifting cultivation mainly hill rice cultivation and multi cropping mainly pepper cultivation with vegetables, fruit trees and/or hill rice depending on the age of the pepper plants.

Table 5.1, summary of seasonal calendars from the in-depth land use interview, based on seven households.

Month	Activity	Techniques
January	Apply pesticides on wet rice, Non-rice/Off-season land use activities (planting trees and pepper, working in pepper fields, collection of fruits)	By hand and hand back-pump
February	Work in pepper fields, Harvesting of hill rice and wet rice starts	By hand
March	Most harvesting of wet rice and hill rice is done, Harvesting pepper starts	By hand
April	Harvesting wet and hill rice, Harvesting pepper, Rubber tapping	By hand
May	Last harvesting of wet and hill rice, Start clearing area for hill rice, Harvest pepper, Planting rubber or fruit trees, Rubber tapping	By hand, panang and chainsaw
June	Most clearing for hill rice is done, Start working in wet rice fields, Harvest pepper, Rubber tapping	By hand, panang, chainsaw and hand back-pump
July	Clearing area for hill rice, Most preparation of wet rice area is done, Work in pepper fields, Most rubber tapping is done	By hand, panang, chainsaw and hand back-pump
August	Clearing area for hill rice, Start planting hill rice, Preparation of wet rice area, Rubber tapping, Work in pepper fields, Late August, start planting wet rice	By hand, panang, chainsaw and hand back-pump
September	Start planting hill rice, Weeding in hill rice fields, Most planting of wet rice, Weeding in wet rice fields, Work in pepper fields	By hand and hand back-pump
October	Most planting of hill rice, Weeding and application of pesticides in hill rice fields, Planting wet rice, Apply fertilizers on wet rice, Work in pepper fields	By hand and hand back-pump
November	Most application of fertilizers on wet rice and hill rice is done, Weeding in hill rice fields, Non-rice/Off-season land use activities (planting trees and pepper, working in SALCRA, working in pepper and rubber fields)	By hand and hand back-pump
December	Non-rice/Off-season land use activities (planting trees and pepper, working in SALCRA, working in pepper and rubber fields)	By hand

Table 5.1 is a summary of the seasonal calendars done during the in-depth interviews on natural resources and land use. Table 5.1 reveals that rice cultivation has seasonal activities where the most work is concentrated in March, when the rice is harvested, and from June to October when areas for rice are cleared and the rice is planted. On

contrary pepper cultivation is “spread out” all over the year. This is due to the fact that rice is an annual crop whereas pepper is a perennial crop.

Traditionally weeding is done by hand, but farmers use herbicides for weeding, because the herbicides are subsidized by the government. As the amount of subsidized herbicides is not sufficient the farmers still practice weeding by hand.

The in-depth interview also revealed that all the households used fertilizers and almost all households did get some form of subsidized fertilizers from the AD. Some of the households were confused about when and how they received fertilizers, either not aware of that they had to apply for fertilizers or that the subsidy often follow a time limited scheme. The AD informed that the farmers who grow wet rice can get ten 20 kg bags of NPK (17%:20%:10%) fertilizer for free per year, no matter the size of the fields. For hill rice they can get 12 kg NPK fertilizer per year at a reduced price from the AD. Farmers who grow pepper, fruit and rubber trees can also get fertilizers for free. In order to achieve subsidies, farmers have to register at the AD. The AD then delivers the free fertilizers at the household when they have obtained the subsidy.

Land tenure

Both the survey and the in-depth interview revealed that most of the households in Skibang use their “own” land for cultivating their crops. The land is categorized as NCR⁵-land. Only one household does not have any land for cultivation, but “borrows” land for shifting cultivation from other villagers.

Market access

As mentioned above most of the households in Skibang does farming for subsistence and they practice farming in a more traditionally way than professionally. But some of the households who grow pepper, rubber and/or vegetables sell their products either to traders (often Chinese) who come to Skibang or transport their products to Bau where they can be sold. One of the households from the in-depth interview pointed to transportation as one of the constraints on the agricultural production, as they had to hire a van in order to get the products to Bau or Kuching.

When doing interview at the Bau fruit and vegetable market, we did not find any products from Skibang, although it is only a 30 minutes drive.

⁵ NCR (*Native Customary Rights*) land, is land in which native customary right, whether communal or otherwise, have lawfully been created prior to 1st January 1958

5.3 Discussion

Data from the survey reveals that 18% of the households are farmers as their first occupation and 37% of the house holds do farming as a secondary occupation. This data combined with data on agricultural dependence shows that although changes has happened, Skibang is still very dependent on agriculture, if not as a main income source, then as a source of income diversification and security.

Practice and crops

A change from traditional shifting cultivation to permanent cultivation is an intensification of the agricultural practice, because of the input of fertilizers and pesticides to the system. This change in practice will change the farmer's seasonal activities for preparing their land. This can be considered as an intensification strategy to improve the livelihood. Furthermore the adoption of cash-crops is also a diversification of the livelihood income.

Labour

A change from rice cultivation to cash-crop cultivation can be seen as an intensification of the labour allocation to agricultural practices, as cash-crops and pepper demands year round work with the crop, compared to the seasonal activities in rice cultivation.

Land use strategies

A part from the general changes pointed out above, other land use changes and labour allocations were identified in Skibang.

One group of households changed their allocation of labour from wage labour to agriculture, because they had retired or was approaching retirement In order to prepare for their pension, they increased their agricultural activities in order to diversify their sources of income. This way the households changed from almost 100% dependence on outside income, to a more diversified livelihood income.

Another group was households where women changed from agricultural activities to wage labour in the oil palm plantation, but this group is analyzed in the SALCRA chapter.

Future Strategies

In the future it is up to the community it self to find a crop they want to produce on commercial level/large-scale, what the AD calls *one village, one crop*, and small-holders face a hard time because AD will cut down on subsidies for small-holders and no longer go into projects under RM 30,000.

People do not have access to the big markets like e.g. Kuching, because infrastructure for transporting fruits from Skibang to these markets is not developed. The AD tries to increase and diversify the production of cash-crops, but we find that if economic income from cash-crops is to be increased, either Skibang should focus on 'non-perishable' cash-crops as rubber and pepper, or market access for fruits and other perishable crops as vegetables should be improved.

5.4 Conclusion

When we look closely the general survey interview and the in-depth NR interview, we found that the people in Skibang depend on agriculture more than on other natural resource activities. In every household agricultural activity is a big part of their daily life. Not necessarily in economic terms as they have other incomes like remittances from relatives, or the government, and work outside the village.

Hill rice yields tend to be lower than wet rice, but farmers often consider the hill rice varieties as better quality for consumption. However there are some farmers who grow cash crops like pepper and rubber besides growing the traditional crop (rice). Diversification of the livelihood has been obtained through adoption of cash-crops as pepper. But this change has demanded a labour intensification to agricultural activities.

Some households have changed from wage labour to agriculture, because of retirement from wage labour and have migrated back to Skibang.

Agricultural production is low because of different constraints. These constraints have mainly been factors of production, like labour, capital and technology, as well as support and extension service. Labour presents another challenge and constraint. The concern is in the shift in labour employment away from agriculture, this phenomenon

has greatly reduced the availability of labour resources needed for intensifying production on available land, including idle land, and capital resources in agriculture⁶. This along with the lack of infrastructure access has been an obstacle for reaching a commercial production of cash-crops.

⁶ Malaysia Agricultural policy (issues directions) by Fatimah Moh. Arshad , Abdulaziz Abdulrahman, Wan leon fee, Wong chee young.

6.0 SALCRA

The over all objective for this chapter is to assess the SALCRA plantations impact on the livelihood of villagers in Skibang. This is done by assessing how many and what kind of households (people) are engaged in work in or have put land into the SALCRA plantation. Furthermore an assessment is made of the changes in production and livelihood strategies implied by the SALCRA plantation. How has SALCRA contributed to local job possibilities? How does the plantation impact on the local environment?

Sarawak Land Consolidation and Rehabilitation Authority (SALCRA) have since 1976 developed and consolidated NCR land in Sarawak for agricultural purposes by establishing plantations. SALCRA started as a 100% state agency, but has changed in to a joint venture company (JVC) where a private company is the main (economic) driver but where the government still has (great) influence on the management of the plantations. In each district in Sarawak there are several oil palm estates and each estate consists of several part-plantations, or phases [SALCRA, 2005]. Owners of NCR-land engage in the SALCRA projects by putting land into the plantations for a 25 year period and in return they will receive a land title and a yearly dividend from the plantation [SALCRA, 2005]. Further more the idea of the plantation is to create job possibilities for rural-people.

6.1 Methodology

From the survey data correlations between households either engaging land in SALCRA or engaging in work in SALCRA has been done, in order to find out what kind of people engage in the SALCRA project.

The PRA with the JKKK gave insight to the local political attitude towards the SALCRA project. Although biased by some of the members having land in the SALCRA scheme, the JKKK's attitude towards the SALCRA can be of great importance for Skibang's future inclusion in the SALCRA scheme.

The in-depth land use interviews gave information on why villagers choose to work in SALCRA, what they think of working in SALCRA and what they had been doing before the SALCRA project came to Skibang.

Interview with the SALCRA estate manager gave information on the history of the estate, specific information on the management of the estate and the future management of the plantation.

Using soil sampling and analysis the plantations impact on the soil fertility is assessed. These results are not presented in this chapter, but in the Soil analysis chapter, chapter 7.

6.2 Results

Some households from Skibang (referred to as SALCRA-participants) have put NCR-land into phase 6 in the Bratak SALCRA oil palm estate. Phase 6 was planted with oil palms in 1999, and is one of the last planted phases of the estate, see SALCRA interview appendix 17. A map of the Bratak estate can be seen on figure 6.1.

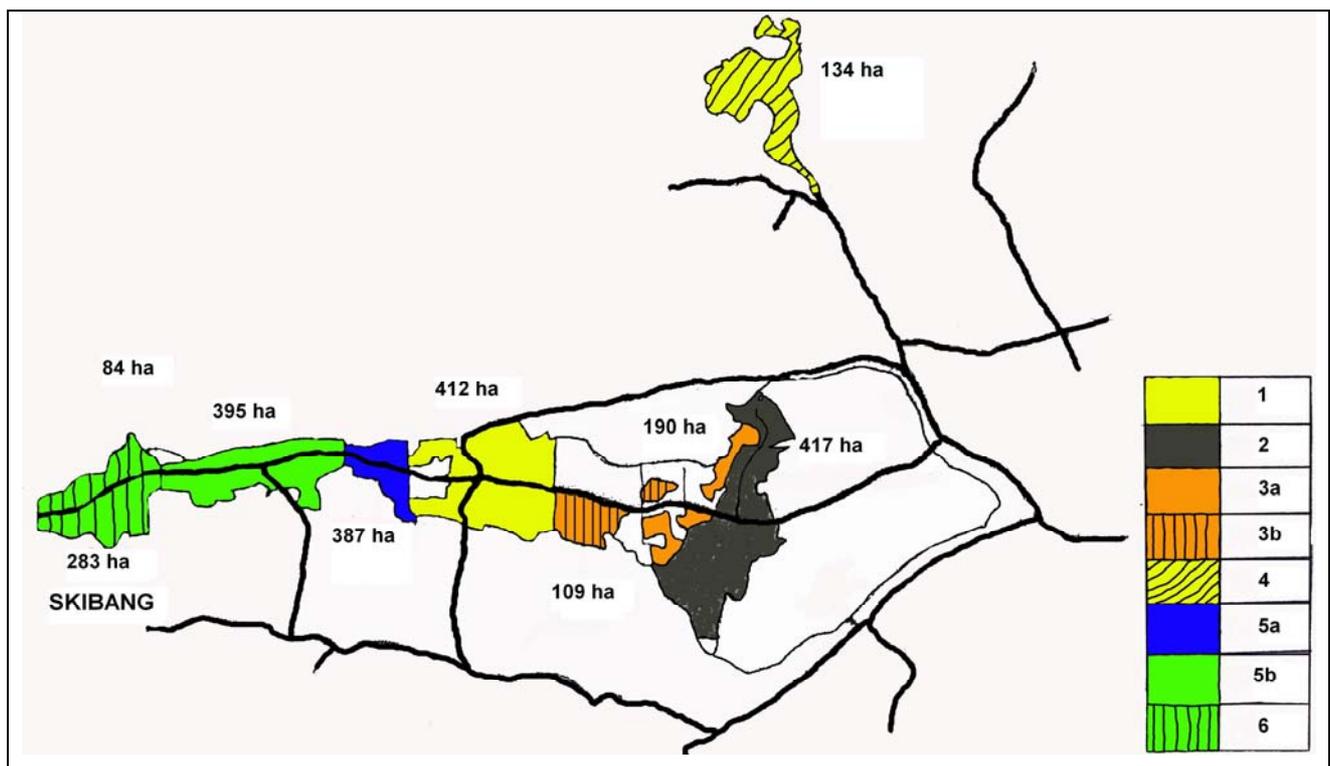


Figure 6.1, map over the Bratak oil palm estate showing the different phases, their area and the main road infrastructure in the estate. Skibang's land is in phase 6. Source: the Bratak estate, 2005.

During the PRA with JKJK, the SALCRA plantation was mentioned as one of the village problems, see appendix 10. From this PRA, interviews with villagers (households) and informal conversation, these issues were identified:

- SALCRA-participants have not received any dividend

- The plantation is badly managed
- Illegal immigrants are working in the plantation
- Villagers will not take job in the plantation as it is hard work with low salary
- The plantation influences on the river ecosystems

All these issues can have an impact on the livelihood of households in Skibang.

Production

Households who have put land into the SALCRA plantation have not received a dividend from the plantation. The production figures from the Bratak estate, figure 6.2, show how bad the yield from phase 6 is compared to another phase with low yield, phase 5b, an average yielding phase, phase 4, and a very productive phase, phase 5a.

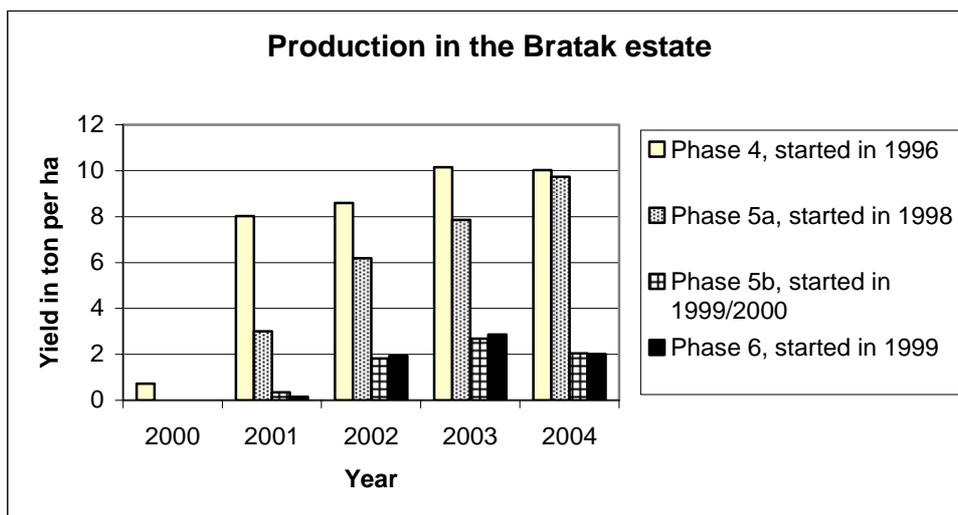


Figure 6.2, production data and year of planting from four different phases in the Bratak estate. Source: The Bratak estate manager.

Local workforce

In 20 % of the households (6 households) from the survey one or more persons are working in the SALCRA plantation. Only in 7 % of the households (2 households) more than one person works in the SALCRA plantation. Data from the survey suggest that these persons tend to be poor people as there is a trend between the number of people from the household working in the plantation and the household's income, as can be seen in figure 6.3. The mean income from households with no persons working in the plantation is higher than from households where there are one or two persons

working in the plantation RM 614, RM 514 and RM 365, but the difference is not significant.



Figure 6.3, mean monthly income divided on three groups from the survey. A group where no persons from the household works in SALCRA (“none working in SALCRA”), a group where one person from the household works in SALCRA (“one person working in SALCRA”) and a group where two persons work in SALCRA (“two persons working in SALCRA”). Mean incomes are RM 614 for the group “none working in SALCRA”, RM 514 for “one person working in SALCRA” and RM 365 for “two persons working in SALCRA”. One standard deviation (SD) is marked with an error bar on each of the main incomes, SD for “none working in SALCRA” is 453.5, for “one person working in SALCRA” 266.7 and for “two persons working in SALCRA” 49.5. Since SD’s are overlapping, the differences between the means are not significant. The survey is based on 30 households.

Data from the survey shows that the majority, 62.5% (5 persons), of the villagers working in SALCRA are women. This finding fits with observations of workers coming back from the plantation.

The original objective of SALCRA was that the landowners should work in the plantation they had put land into, so they would work on “their own” land. The idea worked to start with but later faced problems with labour shortage, see SALCRA interview appendix 17. The Bratak estate faces the same problems with local labour shortage. Some phases in the plantation used to employ a lot of illegal Indonesian workers. Illegal workers have a bad reputation (stealing) and therefore the villagers are more on guard than they were before the Bratak estate. Now there should be no more illegal workers employed in the plantation, but the mistrust is still aimed towards the Indonesian workers.

Today the Bratak estate, as other estates, is still very dependent on foreign workers, Indonesians, who at the Bratak estate altogether represent more than 50% of the working force, see SALCRA interview appendix 17.

SALCRA-participants

23 % of the households (7 households) from the survey have put land into the SALCRA-scheme. Data from the survey show that SALCRA-participants on average have a higher monthly income than households not participating in the SALCRA-scheme (referred to as other Households) see figure 6.4. The mean monthly income from SALCRA-participants is RM 667, whereas the mean income from other Households is RM 561, but the difference is not significant.

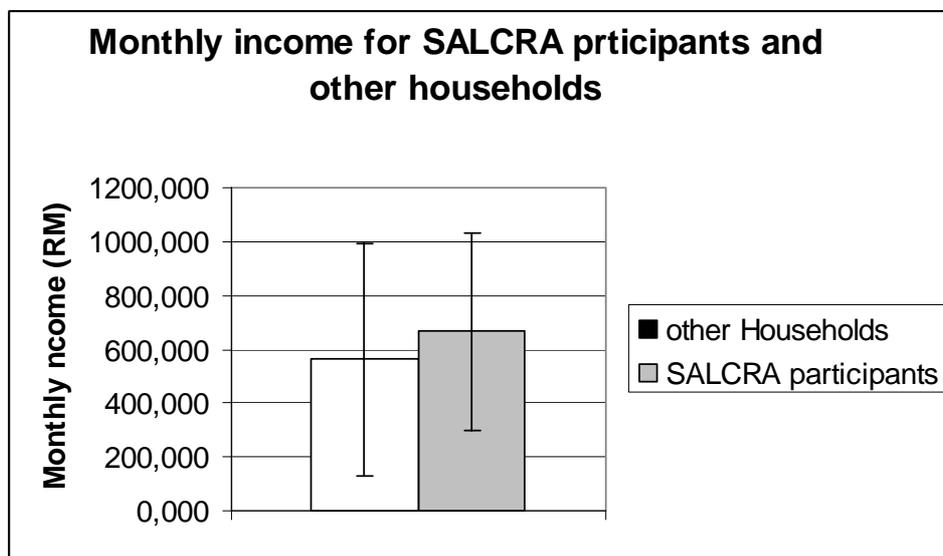


Figure 6.4, mean monthly income divided on two groups of households from the survey, a group where the households have put land into the SALCRA-scheme (SALCRA-participants) and a group where the households have not put land into the SALCRA-scheme (other Households). Mean incomes are RM 667 for the SALCRA-participants and RM 561 for the other Households. One standard deviation (SD) is marked with an error bar on each of the main incomes, SD for SALCRA-participants is 367 and for other Households it is 561. Since SD's are overlapping, the differences between the means are not significant. The survey is based on 30 households.

SALCRA-participants have a higher mean education, 7 years, and are less dependent on agriculture, 1.3 out of 3, than other Households, 4 years and 1.9 out of 3. But the SALCRA-participants are less satisfied with the present natural resource situation, 17% vs. 52%, and are less satisfied with their land availability, 57% vs. 76%). Lastly SALCRA-participants are slightly more dependent on income from outside the village, 79% vs. 76%.

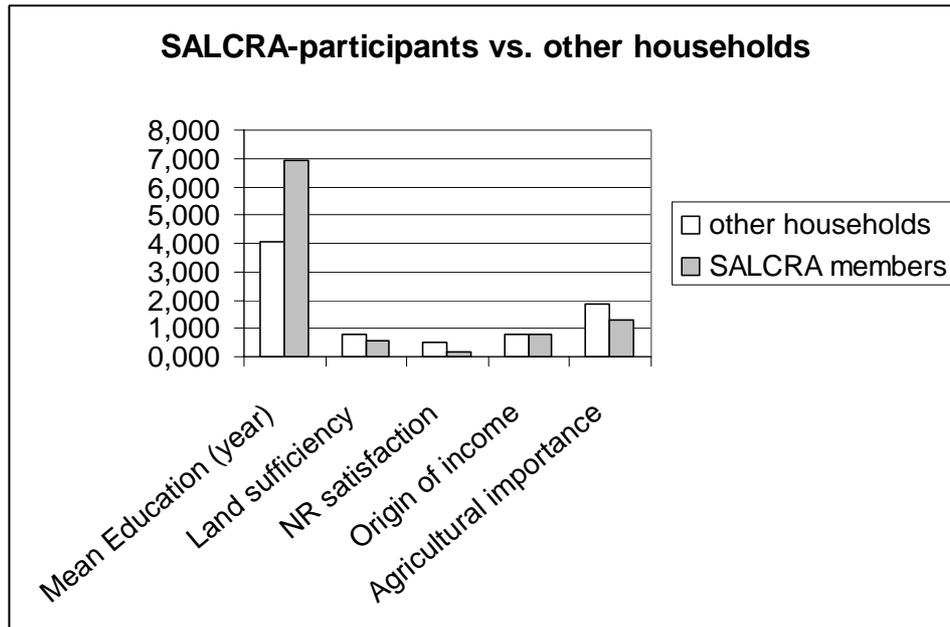


Figure 6.5, comparison of mean-data on two groups of households from the survey, a group where the households have put land into the SALCRA-scheme (SALCRA-participants) and a group where the households have not put land into the SALCRA-scheme (other Households). Factors being compared is “mean education” (7 years for SALCRA-participants and 4 years for other Households), “land sufficiency” (57% for SALCRA-participants and 76% for other Households), “natural resource (NR) satisfaction” (17% for SALCRA-participants and 52% for other Households), “origin of income” (79% of SALCRA-participants get the majority of their income from outside the village and 76% of the other Households get the majority of their income from outside) and “agricultural importance” (1.3 for SALCRA-participants and 1.9 for other Households, on a scale from 0-3). The survey is based on 30 households.

Infrastructure

More (better) roads have been established giving better access to “the mountains” and some of the fields, as they are now accessible by car, see figure 1. Unfortunately the SALCRA-roads are not only used by the local people but also (Indonesian) car thieves have found good use of the roads to go around the police check-point created on the road to the Indonesian border. This situation has created a feeling of insecurity in some households and has made the villagers guard their village better by joining a local guard force.

Environment

The establishment of the Bratak oil palm plantation has had a huge impact on the environment. From primary forest, fallow and agricultural fields the area has been converted into a big mono cultural area. This has had great impact on the biodiversity of the area, and according to the natural resource PRA loss of bird- and wildlife. This

loss has impacted on the hunting possibilities for the men in the village, and the landscape has lost aesthetic value.

6.3 Discussion

The problems related to SALCRA have implied that members of JKKK advise villagers not to put land into future SALCRA projects. These advices can have impact on large-scale land development in the Skibang area, as the Bratak estate wants to expand in the future, see SALCRA interview appendix 17, but without villagers willing to put land into the SALCRA project this can not happen. Therefore it is important to address these problems if a positive dialogue (and cooperation) between villagers and the Bratak estate is to be re-established and future land development in the area is to continue under the SALCRA-scheme.

Productivity of the plantation and dividend to the SALCRA-participants

The reason why villagers have not received money from the oil palm scheme yet is apparently that phase 6 has not yet made a profit because of bad management. A new method was used when phase 6 was started, where a contractor both started and managed the new plantation, see SALCRA interview appendix 17. Establishing an oil palm plantation is a long-term investment as oil palms only start producing fruit three years after planting and approaches maturity after 6-10 years [Jacquemard, 1998]. Therefore in general there is no profit for the first couple of years, see SALCRA interview appendix 17, but the contractor still has to manage the plantation properly if good yields are to be obtained. At the Bratak estate the phases has to reach a yield of 4 t per ha in order to cover the baseline costs and make a profit, see SALCRA interview appendix 17. The contractor was taken off phase 6 in March 2003, because of very low yield, bad management and too many illegal workers. The original SALCRA JVC has taken over and has started to “tidy up” after the contractor, but the results are still to be seen.

Whether the villagers were informed about these problems is hard to say, but apparently management changes have been made and when the “cleaning up” is finished in phase 6, it should hopefully be more productive and be a source of income for the SALCRA-participants and not a source of complaint.

SALCRA-participants in general utilize more crops, have a higher income, a higher education and are slightly more dependent on income from outside the village. Theoretically these households should have a better livelihood than households who have not put land into the SALCRA-scheme, but SALCRA-participants are more unsatisfied with the present natural resource situation and with their land availability. This dissatisfaction could be related to the “bad economic” investment of land into the SALCRA plantation.

To put land into the SALCRA plantation has the potential to be a good way of “investing additional” land, as it does not cost anything, no labour and no money, and it is secure tenure. In addition the land can give profit without working on it and after a (long) period, the land “owner” will receive a land title on his/her land. For households engaged in work outside the village, this could be a good way of keeping the households land productive and under secure tenure.

Labour and local job possibilities

This leads us to the issues on the villagers’ unwillingness to work in the plantation and the illegal immigrants working in the plantation. The two problems are somewhat related. One of the original objectives behind the SALCRA land development scheme was to create local job possibilities for the rural population [SALCRA, 2005]. But the locals do not want to work in the plantation and therefore the Bratak estate, as other estates, is very dependent on foreign workers, Indonesians, who at the Bratak estate represent more than 50% of the workers. This most indicate that the SALCRA-scheme in its present state does not work as planned.

Bratak estates’ dependence on foreign labour can be a problem if the government decides to put a limit on the number of foreign workers allowed to work in each estate, or if the estate is dependent on illegal immigrant workers, as the Malaysian government wants to expel immigrant workers who have not legalized their stay in Malaysia.

Each worker is paid around RM 10 per day, unless they are harvesting then they are paid by the tonnage. Only few locals take job as SALCRA workers and according to our observations the reason is the hard work combined with low wages. The Bratak manager hopes to increase both labour efficiency and the local’s willingness to work in the plantation by introducing piecework salary instead of traditional salary paid per

hour. Potentially this should raise the workers monthly wages and increase the productivity of the estate.

If SALCRA workers receive higher monthly wages with out increasing the productivity, yield has to be higher than the present 4 t per ha before SALCRA-participants receive any dividend.

So if the local SALCRA workers get higher wages, the cut will probably be taken from the share meant for the SALCRA-participants.

The plantation has created new job opportunities for the “poor” people in the village who prior to the plantation used “all” their time in their pepper fields, often women. Now they are working 15-20 days per month at RM 10 per day, which equals RM 150-200. When we did a quick calculation on the wages ‘per hour’ from pepper farming and working in the oil palm plantation together with one of our respondents who did both, we found that the wages from pepper farming was lower than from working in the plantation. The respondent did say that both kind of work is hard, but the respondent would rather work in the pepper field.

Almost all respondents said that they would have to start working more in their own fields if SALCRA closed tomorrow. It might be hard work but apparently it has some advantages over working in their own fields. This could either be a monthly/weekly wage from SALCRA instead of seasonal payment from agricultural activities as pepper production or rubber tapping. A reason for women engaging in work in SALCRA could also be the proximity of the SALCRA plantation compared to a job in Bau or another town.

Only one respondent said that “she” would rather work in SALCRA than in the pepper fields, but could not explain why.

6.4 Summary

Management changes have been made in the Bratak estate which hopefully results in a more productive phase 6, so this will be a source of income for the SALCRA-participants and not a source of complaint.

SALCRA-participants in general utilize more crops, have a higher income, a higher education and are slightly more dependent on income from outside the village, but they are more unsatisfied with the present natural resource situation and with their land availability, compared to the general trend of the village. This dissatisfaction

could be related to the “bad economic” investment of land into the SALCRA plantation.

Putting land into SALCRA has the potential to be a good way of “investing additional” land e.g. for migrants, this way the land can give an economic profit without any cost.

The plantation has created new job opportunities for the “poor” people in the village who prior to the plantation used a lot of time in their pepper fields, often women. Apparently the hard plantation work has some advantages over working in their own fields. This could either be a monthly/weekly wage from SALCRA instead of seasonal payment from agricultural activities as pepper production or rubber tapping. A reason for women engaging in work in SALCRA could also be the proximity of the SALCRA plantation compared to a job in Bau or another town.

7.0 SOIL ANALYSIS

This chapter will present the results of the soil analysis, and discussions on these results, trying to make a general evaluation of the soil fertility under different land practices.

7.1 Methodology

In order to investigate soil properties under different land uses five land use practices and two replicates from each practice were taken, see table 1. Soil samples were then taken from ten different fields and from each field three samples were taken from different sites in the field. From each site soil samples were taken from three different depths using an auger, as shown in table 1.

Table 1 types of land use practice, number of replicates and soil sampling depths.

Land use practice	Replicates	Soil sampling depth
Shifting cultivation (SHI)	2 fields	0-15 cm, 15-30 cm, 30-45 cm
Permanent cultivation (PER)	2 fields	0-15 cm, 15-30 cm, 30-45 cm
Pepper cultivation (PEP)	2 fields	0-15 cm, 15-30 cm, 30-45 cm
Fallow (FAL)	2 fields	0-15 cm, 15-30 cm, 30-45 cm
SALCRA oil palm (SAL)	2 fields	0-15 cm, 15-30 cm, 30-45 cm

More details on the single fields can be found in the Soil appendix, (appendix 12).

Soil pH, soil texture, carbon and nitrogen content were measured for details on the method see, appendix 12.

According to the seasonal calendar in the Land use chapter, chapter 5, fertilizers were applied on the rice fields, both permanent cultivation and shifting cultivation, about two months prior to the soil sampling. Hopefully this is enough time for the fertilizer to be taken up by the soil, so there is no direct impact of fertilizer-“particles” on the soil analysis of nitrogen.

This time limited soil evaluation is based on very little information on a complex land use systems. In order to do a better evaluation of the soil fertility more information on cropping and fertilizer history of the single fields and plant analysis would have increased the validity of the evaluation.

7.2 Results

PH

Soil pH is a very important property of the soil because the level of acidity has influence on innumerable number of chemicals, biological, microbiological and biochemical processes occurring in the soil.

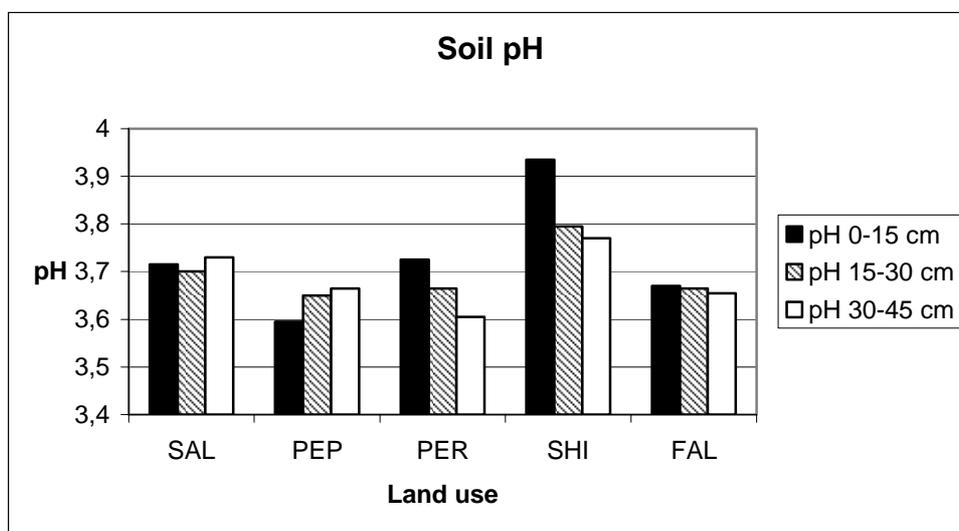


Figure 7.0 total pH from five different land uses at soil depths 0-15 cm, 15-30cm, 30-45cm. Abbreviations means: SAL (oil palm plantation), PEP (pepper cultivation), PER (permanent cultivation), SHI (shifting cultivation) and FAL (fallow).

From figure 7.0, it can be seen that the soil pH of the samples are almost similar. The reason for this similarity may be due to the soil type in the area, peat soil, which has a low pH ranging from pH 3 to pH 4. The effect of this low pH is that many nutrients become unavailable to the plants.

Texture

Soil texture is one of the most important properties of a soil. It influences many other soil properties of great significance to land use and management. Results from the texture analysis can be seen in figure 2

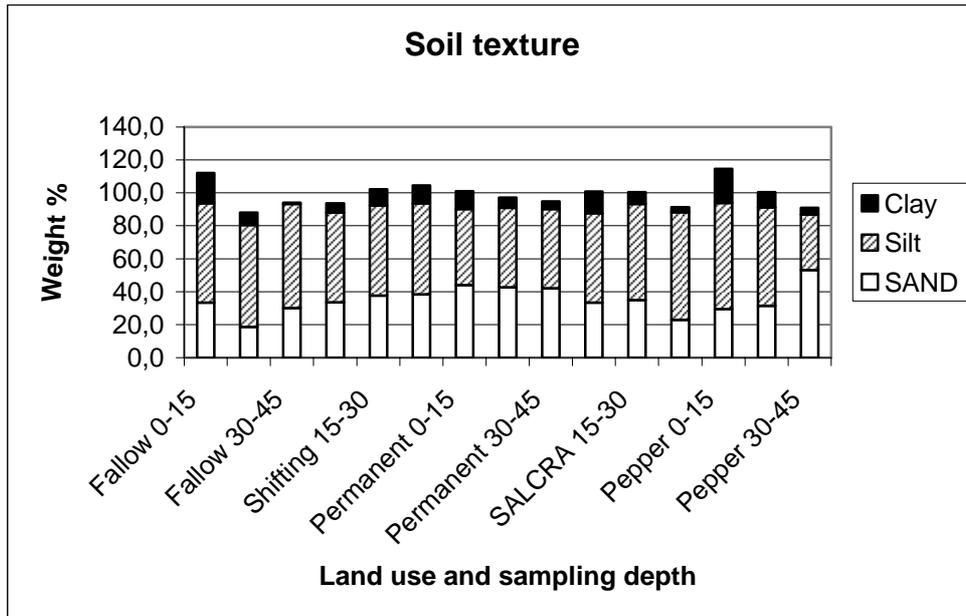


Figure 7.2 soil texture from five different land use practices in the depth 0-15 cm, 15-30 cm and 30-45 cm.

From figure 7.2 it can be seen that the weight percentage of silt and sandy particles are higher than clay particles at all depths. Results from the soil analysis, categorizes the soil as medium-textured.

Carbon

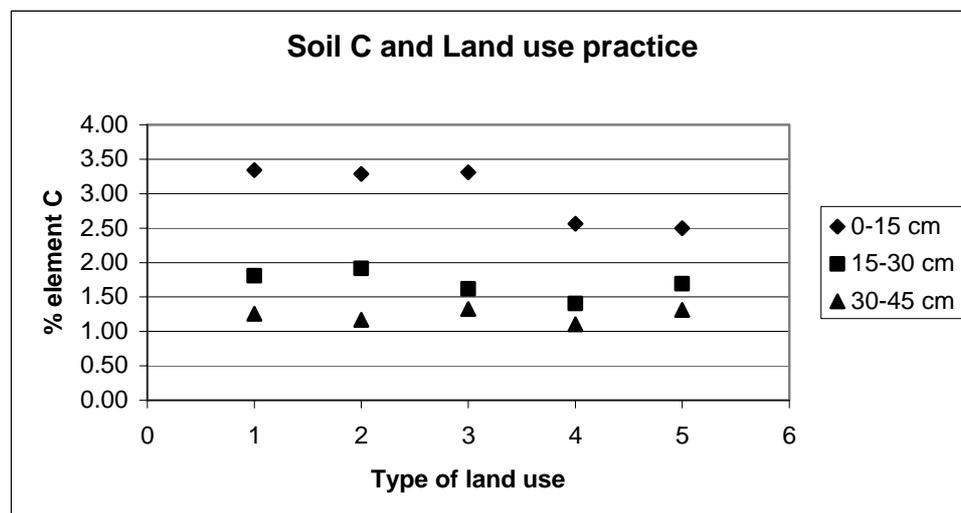


Figure 7.3 soil carbon content in % element C, for five different land uses at three different depths. 1 is fallow, 2 is shifting cultivation, 3 is permanent cultivation, 4 is oil palm cultivation and 5 is pepper.

Figure 7.3 reveals that the carbon content is higher in the top layer, 0-15cm, than in the lower layers. This is because organic matter comes from e.g. plants and animals living on top of the soil, and the organic matter accumulates in the top layer. The

carbon content is higher in the top layer under fallow, shifting cultivation and permanent cultivation than under pepper and oil palm cultivation. This could be because oil palm and pepper cultivation is continually practiced through the year, and the practice tries to reduce or remove the plant residue and weeds between the crops. Therefore less organic matter accumulates on the soil surface which affects the carbon content of the soil.

Nitrogen

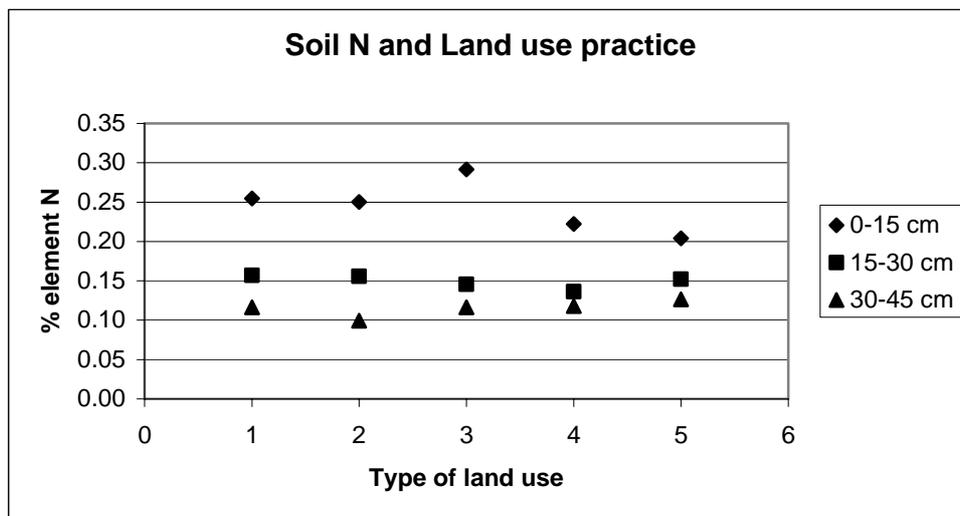


Figure 7.4 soil nitrogen content in % element N for five different land uses at three different depths. 1 is fallow, 2 is shifting cultivation, 3 is permanent cultivation, 4 is oil palm cultivation and 5 is pepper.

From figure 7.4 it can be revealed that the nitrogen content is higher in the top layer compared to lower layers.

The nitrogen concentration is higher under permanent cultivation than under other land use practices in the top layer. This is most likely a consequence of the “high” input of nitrogen fertilizers used under permanent cultivation, compared to other land use practices.

7.3 Conclusion

Most plants grow best within a pH range of 6.5 to 7.2. The analysis revealed a low soil pH, pH 3.6-3.9, which means that many nutrients present in the soil become unavailable for the plants. In strongly acid soils potassium, calcium and magnesium are depleted due to leaching. If present in the soil aluminum becomes available once pH is less than 5. As aluminum is toxic to plants this impacts the plant growth. These results point to soil pH as a constraint on agricultural practice in the Skibang area.

The carbon content in the fields under shifting and permanent cultivation is higher than fields under pepper and oil palm fields, and the same picture is seen when analyzing nitrogen content. Therefore it looks as the soil fertility under shifting and permanent cultivation is better than under pepper and oil palm cultivation. This could be because fertilizer input to rice cultivation is higher than to the other practices. At the present stage data from the soil analysis does not show sign of soil degradation due to intense farming and use of agro-chemicals.

8.0 Livelihood

In this chapter we will conduct a livelihood analyse, according to the framework shown in fig.8.0 We will try to divide our findings and results in to different capitals in the same way as they are shown in the framework. We will also look into key elements such as vulnerability, infrastructure, sustainability⁷ and livelihood strategies. The different capitals are divided in to 5 different categories (further readings see appendix 21):

- Nature capital
- Human capital
- Social capital
- Financial capital
- Material capital:

(Rakodi 2002: 10-11)

Besides these capitals there is another important element to take into consideration – vulnerability. To understand the connection between livelihood and the sources to vulnerability is it necessary to analyse the different trends in the society such as population development, conflicts, seasonal movements, debt, working possibilities and production.

⁷ “A livelihood comprises capabilities, assets (including both material and social resources) and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks, maintain or enhance its capabilities and assets, while not undermining the natural resource base” [Scoones, 1998:5].

At last the individuals or the household will choose a livelihood strategy, either to consolidate or improve their current livelihood situation. When doing that they will take factors as capitals and vulnerability into account, and from that they will have to choose between (simplified) 3 different livelihood strategies:

- Migration
- Diversification of source of income
- Intensification of source of income

Normally the individuals will not stick to only one of these strategies, but try to combine them in order to reduce their overall vulnerability (further readings see appendix 21).

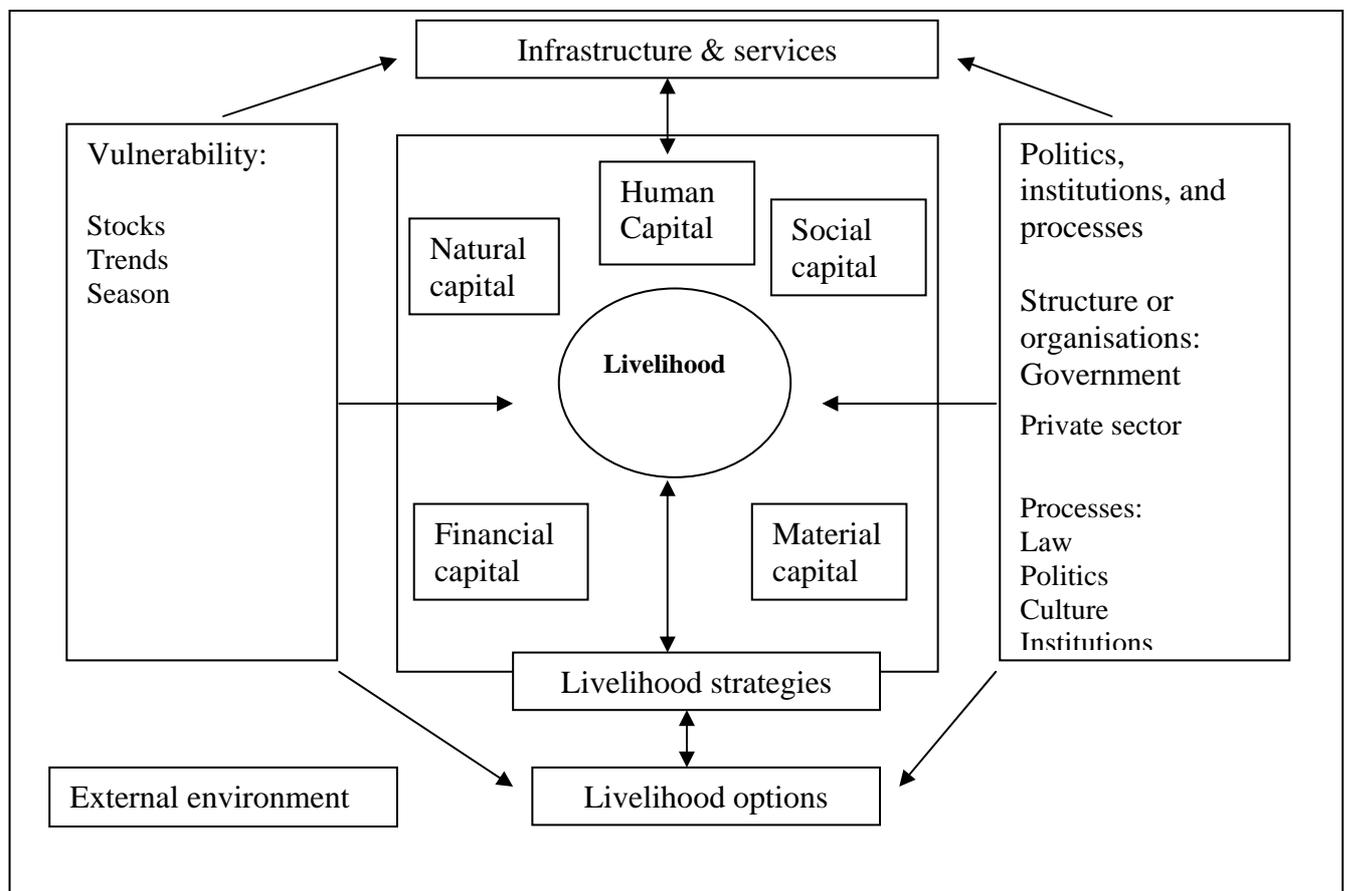


Fig. 8.0 Livelihood framework (Rakodi, 2002)

In assessing the overall livelihood we will as outlined in chapter 3 only focus on some parts of the framework. First of all we will look at the different capitals and sources of vulnerability and through that come with some conclusions regarding the strategies

chosen by the households. We will not look at the external factors such as politics and institutions.

8.1 Analyse

Capitals:

The SALCRA plantation has given the households in Skibang a possibility for using their natural capital in a new way. They can by putting land into the SALCRA scheme get an economic benefit without directly being in charge of the management. Instead they can get a share of the profit and at the same time they can be wage employed in the plantation.

Most of the households in Skibang are gathering fruit from the forest for their own consumption, but are not selling it due to the low prices on these kinds of fruits.

A lot of the land is being cultivated by old people returning to their homes after a period with wage work in the cities. As a retired worker you will get a pension, which is often used in the agriculture. This means that old people are more likely to rely on the natural resources as they in some aspects are forced into agricultural production for their own use.

Through the increased migration, there has been a general lack of working resources available for the households, which means that much of the land in the village is not cultivated. This has led to a fall in subsidies gained from farming although it is still very important to some households in order to get sufficient food. The decline in the number of people in the household and a decline in time allocated for agriculture is made even more significant when looking at the type of people leaving the village. The general tendency is that the people moving out of Skibang are the ones with the highest degree of education, leaving the village with a less educated labour force. In the end this has the consequence that there is a decline in the social resources available for the households and the access to e.g. public institutions is made harder, when there is no one with the proper resources to address these institutions.

The basic infrastructure in and around the village have during the last years been improved significantly, meaning that people is more in touch with the cities, through that the villagers in general obtain a higher degree of education and are also more likely to seek work in the cities or even migrate. Also the lack of electricity and pure water is an issue when talking about the reasons to migrate. The villagers have in the

problem ranking (Appendix 10) stated that clean and sufficient water is the biggest problem faced. In the cities the migrant will not face these problems in the same degree.

The general standard of the houses in Skibang is good, although some households still live in wooden houses. This change in type of residence from wood to brick can be seen as a result of the new wage labour in the cities, which a big share of the villagers are involved in either through migration or commuting. The households in general do not possess a high degree of material capital such as tools and machinery for the farming in the field. One reason for this can be the relatively high prices on this kind of tools and machinery, but it could also be seen as a result of the orientation away from the traditional farming lifestyle towards a more monetary oriented lifestyle. A car or motorbike is of more use today for a household than a tractor would be for the working in the field.

The villagers have in general experienced a lift in their real money income through the last years. This can be explained by the increasing degree of wage labour in the city. Many of the households stated in the questionnaire that they were highly depended on remittance from relatives working outside Skibang. The remittance is used mainly to buy fertilizer and other essential goods for the subsistence farming, but also for improving the houses. The remittance from outside is not used for long term investments in the agriculture such as cash crops and fruit trees etc. The villagers tend to use the remittance only for the absolute needed investments in the land in order to obtain the needed subsidies. The main part of the money is allocated into improvement of the houses and/or other goods that improves the overall livelihood, such as cars, TV sets and education etc.

When asked what the household would do if they in the future could improve their income level, the main answer was that they would spend the extra money on either education or house improvements – a few of the household stated that they would use the extra money for food and medicine, but this group must be considered as very small and consisting mainly of very old people (for details see appendix 6)

Vulnerability & livelihood strategies:

The degree of vulnerability is a very important factor in the overall assessing of livelihood. The vulnerability is in many ways defining the future livelihood strategies, and is also a part in defining whether or not a livelihood is sustainable.

The villagers in Skibang, have over the last years changed their main source of income from totally being dependent on agriculture, towards the present situation where many household are basing the majority of their monetary income on wage labour and remittance. This have in many ways meant that the overall vulnerability has declined. When a household no longer totally rely on farming as the number one source of income, they have diversified their livelihood. This diversification is in many cases a result of another livelihood strategy – migration. Migration in this case is a way of getting out of the traditionally agricultural scheme and into a steadier monetary oriented lifestyle. When the households no longer is totally dependent on the agricultural outcome, they find them self in a position where seasonal irregularities and trends do not have the same negative impact as it used to have. The negative effect of this new orientation is that many households now are dependent on remittance from relatives living away from Skibang. This means that they in many ways find them self situated in a new type of vulnerability, where they no longer are in direct control of their income. The remittance received may not be a continuing source of income, and are highly dependent on the surplus that the migrants can spare for their relatives. All though there are these constrains to the dependency of remittance, the conclusion may be that it is considered as a safer methods to sustain the surviving of the household. If the remittance and surplus from wage labour was considered as a high risk operation, the households would be more likely to use another livelihood strategy – intensification. When they do not use this strategy, it has to be a clear signal about the vulnerability there lies within the agriculture. The agriculture as it looks today can not, even if they want to, provide the households with enough money and food to obtain an overall sustainable livelihood.

Future:

There is nothing indicating that the ongoing trend with migration will come to an end in the future, rather there is a high possibility that the migration will continue or maybe even increase. There is nothing that tells us that the agriculture in the future will regain its position as the number one source of income. Instead there is a high possibility that agriculture will be less and less important over time, while the migration will increase. With the SALCRA plantation present in the village, there is the possibility that agriculture in the future will be important, but in a new form, as a possibility to take waged labour inside the agriculture. As it is now SALCRA do not

pay enough compared to the wage labour available in the city and therefore the majority of workers employed are from Indonesia. If the SALCRA in the future will be able to offer a realistic alternative to wage labour in the city, it is very likely that people from Skibang will choose this work instead, and not have the same tendency to migrate.

As the present situation is, it would be wise for the villagers to perform the same livelihood strategy in the future as they are doing now. A diversification combined with migration is the best option for them to maintain or enhance their present livelihood – also in regards to subjects such as vulnerability. Of course the waged labour is subject to vulnerability as well – one could get fired, or the job options can be under influence from international trends and prices. But all in all the vulnerability here is less than in the agriculture, and can even become smaller if the workers get organised in unions.

9.0 Conclusion

Villagers in the productive age leave Skibang in large amounts leaving back a village consisting mainly of children and old people. Production in the village is low and the village becomes highly dependent on remittance from outside. Despite the low production and income from within the village, households generally seem to be in a position where they have a good and stable income.

Land in Skibang generally does not appear to be used intensively for agricultural production purposes. Much of the land around the village is not being used for farming and productions of certain crops are sometimes not being harvested. If Skibang were to go into an intensification of a single crop production the village might be able to make use of the resources available in land and labour more efficient. But until now they have not identified the one crop that would be able to change the agricultural production of the village. Success with a one crop production might be what is needed to change the negative tendency that Skibang is in at the moment. It could potentially bring back some of the young and productive people if it became more attractive to make a living in Skibang.

Infrastructure development is another important issue if a life in Skibang is to become attractive for young people, both a good road connection and a fixed power line. This could potentially improve possibilities for production and market access for e.g. agricultural products.

Appendix 1: Migration Data

Household	Sleeping in	Stay	Work (return)	Study (return)	Work (out)	Stay (out)	Study (out)
1	6	3	1	2	0	0	0
3	3	3	0	0	2	0	0
5	4	4	0	0	3	1	0
10	1	0	1	0	2	3	1
12	8	8	0	0	2	0	0
15	4	4	0	0	6	0	0
23	2	2	0	0	1	0	0
25	3	3	0	0	4	1	0
34	2	2	0	0	8	0	0
37	6	5	1	0	2	2	0
49	2	2	0	0	3	4	0
53	6	6	0	0	2	2	0
56	1	1	0	0	2	0	0
59	4	4	0	0	2	0	0
60	3	2	1	0	0	0	3
72	4	4	0	0	1	0	1
74	5	4	1	0	0	0	2
82	4	4	0	0	4	0	1
85	11	7	4	0	1	0	0
93	3	3	0	0	4	2	0
95	3	3	0	0	1	0	2
96	3	2	1	0	6	5	1
99	4	4	0	0	1	0	0
102	2	2	0	0	7	1	0
104	2	2	0	0	0	2	0
112	3	3	0	0	5	3	0
116	7	7	0	0	1	0	0
117	4	4	0	0	1	0	0
123	3	2	1	0	0	0	0
129	3	3	0	0	1	0	0
		Stay	Return night		Migrants		
Total	116	103	11	2	72	26	11

Total divided into groups	Stay	Total return	Total migrants	Total
	103	13	109	225

According to age	Sleeping in	Stay in Skibang	Work (return)	Work out	Stay out	Study out	Study (return)
0-12	41	41	0	0	0	0	0
13-22	7	3	2	4	0	11	2
23-32	17	15	2	29	10	0	0
33-42	11	8	3	22	11	0	0
43-52	9	6	3	15	5	0	0
53-62	19	18	1	2	0	0	0
63+	12	12	0	0	0	0	0
Total	116	103	11	72	26	11	2
In %		45,78%	4,89%	32,00%	11,56%	4,89%	0,89%
According to gender							
Male	59	48	10	52	3	6	1
Female	57	55	1	20	23	5	1

Destination	Kuching (City)	Bau (town)	Others in South Sarawak	Central & Nothern Sarawak	West Malaysia	Unknown
Work out	36	6	5	5	15	5
Work (return)	3	7	1	0	0	0
Study	0	6	4	1	0	0
Study (return)	0	2	0	0	0	0
Married	8	0	12	1	1	1
Helping family	1	1	1	0	0	0

Appendix 2: Migrant destination statistics

SOUTH SARAWAK	GENDER	AGE	TOTAL	DESTINATION	RETURN
	Men in %	Avg. Age	Work 1	Kuching	Daily (only work)
	57	34	51%	52%	12%
TOTAL					
93			Work 0	Bau	At least Weekly
In % of total			12%	24%	38%
76			Study	Serian	At least monthly
			11%	3%	29%
			Study (return)	Lundu	At least once in 6 mth
			2%	2%	11%
			Married	Serikin	At least once a year
			22%	2%	8%
			Helping family	Jagoi	Less often than yearly
			3%	2%	2%
				Bigis	
					2%
				OTHERS	
					13%

CENTRAL SARAWAK	GENDER	AGE	TOTAL	DESTINATION	RETURN
	Men in %	Avg. Age	Work 1	Mukha	Monthly
	75	30	75%	50%	25%
TOTAL					
4			Study	Balingian	At least once in 6 months
In % of total			25%	25%	50%
3				Bintulu	At least yearly
					25%
					25%

NORTH SARAWAK

GENDER	AGE	TOTAL	DESTINATION	RETURN
Men in %	Avg. Age	Work 1	Miri	At least once in 6 months
67%	40	67%	33%	33%

TOTAL

3
In % of total
2

Married	Lawas	At least once in 6 months
33%	33%	33%
	Laburan	Less often than yearly
	33%	33%

WEST MALAYSIA

GENDER	AGE	TOTAL	DESTINATION	RETURN
Men in %	Avg. Age	Work 1	Johor(WM)	At least once in 6 months
81	29	94%	50%	6%

TOTAL

16
In % of total
13

Married	KL (WM)	At least once a year
6%	25%	75%
	Perak(WM)	Less often than yearly
	19%	19%
	Selangor(WM)	
	6%	

UNKNOWN

GENDER	AGE	TOTAL	DESTINATION	RETURN
Men in %	Avg. Age	Work 1	Kalantan	At least once a year
67%	36	83%	Krokure	100%

TOTAL

6
In % of total
5

Married	Semenanjung	
17%	Mukha / Dalath	
	Undefined (changeing)	

Appendix 3: Summary of migration interviews

Household 5

Father (64) – respondent

Mother (64) – followed and added to the interview

Grandson (5)

Granddaughter (8)

Migrants:

One daughter (42) followed her children to live in Kuching after her husband passed away, because her children work there. (Form 3) She is not working, just taking care of the youngest children. Coming home once in two weeks.

Son (40) working in Kuching as sales assistant in supermarket (Primary 6). Once in a month he comes home to visit. He decided to go to Kuching because there is no work in the village.

Daughter (38) (Form 3) Work in Hotel in Kuching. Once a week she comes home. She also decided to work in Kuching because there is no work to get in Skibang.

Son (36) (Form 5) Working in KL in food factory. One time in two years he comes home. He also moved to find work.

They don't want to and don't know much about working as a farmer.

He is expecting that the children will move back to live in Skibang when they get old.

With the gravel road before it took 1 hour to Bau with van, and today the same trip takes 20+ min. So the children are coming home more often now than before.

None of their children who live out send home money or help them buy rice or anything. Before if the children did not have money they would give money to the children, but not anymore. Today they are considering the children to be independent and not so much part of the household.

They don't need the help of their children in the fields.

Household 37

Father (62)

Mother (57)

Daughter (32) - respondent

Son in law (34)

Grand daughter (12)

Grand daughter (2)

Migrants:

Male1 age 37. Level of education: UTM – university. Working in Dalath as an engineer and has been gone for 25 years.

Female1 age 36. Level of education: Form 3 followed her husband to Kuching and is not working but is a housewife. She has been away for 24 years.

Female2 age 35 Level of education: Form 3 is working in Kuching and has been gone for 23 years

Female3 age 29 Level of education: Form 5 Has followed her husband to Sarrike and is now a housewife. She has been gone for 18 years.

Besides the above there is the main supporter of the household. Male age 35 and works in Bau as a painter and comes home every night (married to respondent)

(Income from migrants: very important) (Labour only needed in the peak seasons but better for household that they have migrated)

Who made the decision about the migration?

For all the migrants is it a common household decision – The Children goes and ask the parents for permission, but it is more of a formal character.

Is the new infrastructure important for the decision?

Yes, before the new road – they had to walk for an hour to get to the main road, now they can drive the whole way.

Are the migrants contributing to the household economy?

Yes all the migrants give money to the household, and female2 also buys pesticides etc. It is very important for the household that they contribute regularly.

Will the migrants return in the future?

The household expects that all the migrants will return and live in Skibang when they gets old – maybe they will then do some farming on the households common land. They will soon start to build their own houses in the village.

Has the migration any importance according to lack of labour in the household?

The household experiences a lack of labour in the major peek periods. But it is still better overall for the household that the migrants are working away from Skibang.

What about the future?

The household expects that there will be more migration from the household in the future (Children have to go to boarding school in Bau and is not expected to return home again).

Note: The respondent used to work in Kuching and the Sarike as a supermarket clerk but became a housewife after giving birth to her first child.

Household: 49

Son (39) – respondent

Mother (75)

Migrants

Brother (55) live in Pedawan and work as a contractor building houses (primary 1 education) return once in a month.

Brother (49) lives in Serikin as a farmer (no formal education) return often to ask for money.

Sister (47) moved to Serikin to live with her husband (farmer) (primary 6 education) return twice a year.

Sister (46) moved to Laburan to live with her husband (primary 6) return once in 2 or 3 years but help the family to buy medicine for their mother, when the husband retires they will move to Miri where they have their own house. She is the only one helping the household, and they are very dependent on her help.

Brother (41) work in Kuching as an office boy (form 3 education) return twice a month and will return to live in Skibang some day.

Brother (26) work in the army in Perah (form 3 education) return once a year but some day he will come back to live in Skibang.

The household needed the help of the people who moved and it was hard to let them go but because it was their own decision it was hard say anything to stop them.

Household: 53

Father 58

Mother 53

Daughter 26 – respondent (want to find work outside)

Son 24 (want to find work outside)

Son 23

Grandson 9

Migrants:

Daughter 33 (live away – married) (form 3) come home once a year

Daughter 29 (live away – married) (form 3) once a month

Daughter 28 (work away) (form 5) once a year

Son 21 (work away) (form 6) once a week

Those working out chose them selves to go out to find work, there is work in Skibang for them but only with low salary.

Those living out are all helping the family back home economically

All will come back again except the oldest daughter who has her own house in her new village.

They don't need the labour of those who migrated in the household

It is important for the household to receive money from the migrants

How much does it cost to have children go to school in Bau (secondary school)?

- she did not know the school costs, but the students receive around 15RM a week in pocket money where off 6 RM is spend for transportation forth and back to the village in the weekend.
- Food, accommodation and textbooks are free

Household 72

Wife from Skibang (33 years) – was following the interview

Husband from Lundu (44 years) – respondent (return migrant)

Child 1: boy (13 years)

Child 2: girl (12 years)

Child 3: girl (10 years)

Child 4: boy (15 months)

The husband is working as a security guard at Bau hospital and returning every 2.night.

Why did he decide to work outside Skibang?

- Needed more money for his child's education
- Intension for him to help his family

Who's decision was it to find work outside Skibang:

- It was the family's decision

Education level (of husband):

- Form 3 (high school)

Roads:

- He did not decide to work in Bau because of the roads, but it easier not that the roads are better

What is the cost of him being away?

- It is better for him to work in Bau but he come back often because his children need him

Will he consider finding work further away?

- Maybe if the salary is much higher

When he grow old he will stay in Skibang

Children:

Oldest boy stay at the boarding school near Bau

He wishes his children will stay in school and find a work outside Skibang

Household 82:

Living in house:

Mother (51) – respondent (just speak bidayuh)

Son (26)

Son (12)

Daughter (10)

Migrants:

No information was given about the father who is also working out according to the questionnaire

First daughter (29) work in Kuching as a policewoman (form 5). Coming home once in two months.

Second daughter (24) work in Bau hospital as nurse (form 5 + 2 years at nurse collage). Coming home two times in a month.

Brother (22) working in Kuching as a mechanic (form 2). Once a month he comes home.

The household wanted them to work out (she just answered yes and maybe she did not understand the question)

They all contribute with 50RM each for the household, but it is not very necessary

They will come back to live in Skibang when they get old.

It is not important for the household to have the sons and daughters at home to help in the pepper fields, it is more important that they contribute with money and so.

She expects the youngest children to work and study and have fun.

We asked for school costs for the local school
- she said it is 100RM /month

Household

2 Parents (60+)

Wife (32) (from close to Kuching) - respondent

Husband (son) (39) (form 5) (return migrant)

Son (10)

Son (5)

Son (3)

Brother (26) (form 5) (return migrant)

Brother (25) (form 5) (return migrant)

Sister in-law (19) (Indonesian: school ?) (return migrant)

Daughter (9mts.)

Migrant:

Brother in-law (37) live and work in Lawas as a teacher (form 5+ 2 years in teachers collage). He did not choose to live in Lawas but was appointed a job there by the education department; he would have preferred to teach in Kuching. Return twice a year. Send money home every month to their mother. He will maybe return when he gets old, otherwise he might follow his wife to her village close to Bau.

4 persons go to Bau every day and return every night by motorcycle (or with car if rain). (3 brothers + sister in-law)

- 3 brothers work as physical labour

- Sister in-law work as cleaner

They like working in Bau so they can return to Skibang at night, they do not want to work in Kuching or so.

They do not want to work in the Skibang area.

They work in Bau because they want/ like to, because they want to help the family and because the household want them to work there.

The youngest brother who is not married is not contributing to the household, he spend his money on him selves. The others are all contributing to the household. They will all stay in Skibang when they get old.

The household is very dependent on the contributions from the people working out. They don't need the labour of the people working out, there is no more work in the pepper fields or at home than the "rest" can take care of.

The wife said she would prefer if her children would stay in Skibang to help in the pepper fields.

Household: 116

Husband (43)

Wife (36) – respondent

Son (18)

Son (14)

Son (13)

Son (10)

Daughter (7)

Migrant:

Her eldest son (19) with form 2 education, work close to Kuching in a wood factory and come 3 times in two weeks by bus and van.

He wanted to work himself but asked his mother first and then they agreed he could work in Kuching.

What would we be doing if he had chosen to stay in Skibang?

There is nothing to do here besides hang around with his friends.

He never did any farming, he could only do a little help around the house fixing the house and painting. So he is not needed in the house very often.

He is buying things for the household such as rice instead of giving money. They are not dependent upon his help they can do without.

Two of her children at least she is expecting to be studying outside Skibang in the future. She hope they will find work somewhere outside Skibang after school. That will be best for the household, if they just contribute a little and help out once in a while.

She is not sure if they will all come back to live in Skibang someday but she hope they will.

Household: 117

Wife from Skibang (26 years) - respondent

Child 1 (girl 7 years)

Child 2 (boy 6 years)

Child 3 (girl 2 years)

Migrant:

The husband (36) is working in Kuching as a contractor and return once every week usually on Sundays. He has been working there since before they got married. They have just moved to Skibang from Kuching because the children were going to school and they wanted to start school in Skibang with their friends.

Education level (of husband)?

- Form 3 education

Why is he only coming home once a week?

- He is using the employer's car when going forth and back, so it is difficult for him to go forth and back. He also has difficulties to get up in the morning so even though he had his own car or motorbike he would still stay in Kuching.

Has he ever considered working in Skibang?

- He doesn't like to work as a farmer, because of the low prices on the commodities sold.

The wife is not working outside the house so the income is very important for the household.

If he was not working anymore she would have to go out to find a job to provide for the family.

Will he live here live in Skibang when he grows old?

- Yes, he will live here when he gets old, then he might take up some farming

Is his presence important for the household in everyday life?

- No, it is only necessary if there is hard work that the wife can not handle herself in the fields.

Who made the decision of him to work outside?

His decision and she follow, she would just prefer if he would come home at least twice a week.

The children will probably move to go to school in Bau. After school she would like her girl to return to Skibang to help her at home.

Household: 129

Husband (Iban)(39 years) – respondent (migrant)

Wife from Skibang (30 years) (want to find work outside)

Boy (11 years) (staying at boarding school)

Girl (8 years)

Husband is staying out of the village around half of the year working as a contractor; he is between jobs at the moment and therefore he stay in Skibang. He has finished a collage education.

Wage:

Earn around 650RM a month

Roads:

Easier now to see the family

Affect of him migrating:

The household is not affected by his decision to work out due to need of his labour.

Because one person can work in the small garden they have that is enough.

Their farm land (belonged to a great-great grandfather) besides their garden, they have borrowed to family that use it for farming.

The wife wants to find work in Bau or Kuching if possible.

Sometimes he brings the family when he is working out, but they always want to return to Skibang.

The household is also contributing to the wife's family

Main reason for looking for work outside Skibang was so that he can support his family.

Who decided that he was going to work outside?

- Friends and family are informing him upon job opportunities
- He decided to provide for the family

Expecting to use some of the income to secure an education for their children

Appendix 4: Migration focus groups

Focus group 1

3 boys (around 13 years old)

2 boys want to stay in Skibang

1 boy want to find work and live outside Skibang and return when he get old.

Best things about staying in Skibang

Boys:

- No pollution
- Want to help parents (high priority)
- Work as subsistence farmer
- stay with family

Worst things about staying in Skibang

Boys:

- Electricity
- Water too little and dirty
- Not so convenient
- Fare from work

Focus group 2

2 sisters (18+19)

1 girl (19)

All the girls want to find work and stay outside the village and return when they get old. The one sister dream was to go to Australia and the other sister had a dream of going to New Zealand.

Best things about staying in Skibang

3 last girls:

- Quiet and slow life
- No pollution

Worst things about staying in Skibang

3 last girls:

- Not enough water
- Electricity

Focus group 3

6 Boys between 16 and 18
+ 1 Retardet boy

Only the retardet boy is not in the secondary school, and only he did not have any plan to work outside Skibang. He had no working experience as well.

The rest all want to work and live away and send money home to their parents. They further all want to return to Skibang (their home) when they get old.

Appendix 5: Education Data

People staying in Skibang

Household	1	3	5	12	15	23	25	34	37	49	53	56	59	60	72	74	82	85	93	95	96	99	102
	5	0	0	2	1	0	3	5	0	0	0	4	0	0	4	0	0	0	0	0	0	0	0
Education	6	2	0					6							4	2	6	0		3		5	
in years of children				0											6	5		0				6	
0-12 Years				0 (dis-abled)														3					

Household	1	3	5	12	15	23	25	34	37	49	53	56	59	60	72	74	82	85	93	95	96	99	102
Education																							
in years of young people 13-22 Years																							

Household	1	3	5	12	15	23	25	34	37	49	53	56	59	60	72	74	82	85	93	95	96	99
		0 (dis-abled)		6	Special school (retarded)					11		8				9	9	9	9			9
Education											11											
in years of people 23- 32 years											11											

Household	1	3	5	12	15	23	25	34	37	49	53	56	59	60	72	74	82	85	93	95	96	99	102
	6				0				6		9	9		9						6			
Education																							
in years of people 33- 42 years																							

Household	1	3	5	12	15	23	25	34	37	49	53	56	59	60	72	74	82	85	93	95	96	99	102
				8		0							9				0						
Education				5																			
in years of people																							
43- 52 years																							

Household	1	3	5	12	15	23	25	34	37	49	53	56	59	60	72	74	82	85	93	95	96	99	102
		1		6	0		0		0		0							0	1		0		0
Education		4			0				0		5								3		4		3
in years of people																							
53- 62 years																							

Household	1	3	5	12	15	23	25	34	37	49	53	56	59	60	72	74	82	85	93	95	96	99	102
			0				0	0		0			0					0					
Education			0					0					3										
in years of people																							
63+ years																							

Household nr. 10 is left out from this category because there are no one from the “stay in Skibang” group in the household

Migrants:

Education																							
Migrants (work and return)	8	12	9	6	10	11	11	11	11	6	11												
Migrants non employed	9	9	11	0	6	6	9	9															
Migrants employed	15	9	11	15	9	1	9	9	11	12	9	11	13	7	6	13	8						

NB: Numbers written in bold refer to a woman and the normal numbers are men

Appendix 6: Economic statistics

Household	Income in (RM)/month	Source of main economic income		For what would they use possible extra income	Able to save or invest (1=yes, 0=no)	Ability to borrow (see note)	Considered borrowing for what	Agricultural importance (s)
1	870	Salary	Outside		0	1	Education	
3	460	Salary	Outside	House + Family	0	2	Have not considered	
5	400	Shop	Inside	Save	1	1	Have not considered	
10	1250	Salary	Outside	House	0	x	House + Farm	
12	500	Salary	Outside	House	0	0	Improve Land	
15	200	Remittance	Outside	House + Furniture	0	1	Have not considered	
23	100	Farm	Inside	Personal use	0	0	Food + Medication	
25	350	Remittance	Outside	Save	0	1	Food	
34	100	Remittance	Outside	Personal use	0	0	Have not considered	
37	986	Salary	Outside	Save	1	x	Motorbike	
49	700	Salary + Shop	Inside	Save	1	2	Have not considered	
53	100	Farm + fishing	Inside	House	0	0	Have not considered	
56	(?)	Saving + Remittance	Outside	House	0	2	Open shop	
59	500	Remit.+ Salary	In / Out	Education	0	0	Have not considered	
60	700	Salary	Outside	Children	0	1	Have not considered	
72	500	Salary	Outside	Education	0	1	Education	
74	1300	Salary	Outside	Furniture	1	2	Have not considered	
82	2000	Salary + Remittance	Outside	House	1	x	Have not considered	
85	1000	Salary	Outside	House	0	0	Have not considered	
93	330	Salcra+pepper	Inside	Fertilizer	0	1	Have not considered	
95	600	Remittance + salary	Outside	Save	0	2	Have not considered	
96	400	Salary + Remittance	In / Out	House	0	0	Have not considered	
99	350	Remittance	Outside	Education	0	1	Have not considered	
102	350	Remittance + Vegetables	Outside	House	1	0	Have not considered	
104	225	Salary	Inside	Food + Medicine	0	0	Have not considered	
112	600	Remittance	Outside	Land	0	2	Have not considered	
116	200	Salary	Outside	Education	0	0	Have not considered	
117	536	Salary	Outside	House	0	1	Food	
123	650	Salary	Outside	Save	0	0	Have not considered	
129	650	Salary	Outside	Edu.+House	1	2	Have not considered	

Notes:

- Ability to borrow: 2=form bank or institution, 1=from friends or family, 0=not able to
- X= they did not want to borrow so they did not try and answer the question.
- Agricultural Importance: 3= very important, 2= Important, 1=Less important and 0=Not important

Appendix 7: Socio-Economic Survey

Before beginning the interview, check that the person is a resident of Kampong Skibang, that they are a member of the household that resides in (or normally resides in) the selected house (as defined by living under the same roof and eating meals together), and that they are aged 18 years or over.

If they consider it inappropriate to answer on behalf of the household, make an appointment to return at a time that there will be someone available for interview.

If there is no-one in the house, go on to the next house on your list and return later to try again. Neighbours may be able to tell you whether the people are likely to be in later, or on the weekend.

In introducing yourself, explain to the respondent that the purpose of the survey is to gather information about the village, the number of people, their level of education, etc. This information will be used to identify trends and characteristics. It will not be possible for individuals to be identified from our report, and their names will be kept confidential.

Try to stick as closely as possible to the form of the questions, as we want the interviews to be of a standard format. If additional explanation is needed it can be given, but please note this at the end of the form. Also make a note if you think any of the information given in response to the questions is unreliable.

There is a question at the end of the schedule that deals with standard of housing as an indication of physical assets – this can be filled in by the interviewer based on the assessment of the interview team.

House number in village.....

2.0 Socio economic questions

2.1. What is the combined household income (RM/month)

2.2. What are the household's main sources of income? *(Prompt for remittances if it is not mentioned)*

Source of income	Monthly Yearly income

2.3. Does the household have, and how many? *(read out the possibilities)*

Car

Motorbike

TV.....

Telephone.....

Refrigerator.....

Genset.....

2.4. Does the current level of household expenses leave enough money for people to save or invest?

2.5. If your income increased how would you spend the extra money?

2.6. If needed, is it possible for the household to obtain a loan? *(read out the possibilities)*

From a bank or institution?.....

From a friend or family?

Other (please state).....

2.7. Have the household ever thought of borrowing money?

Yes/no

If yes, for what?.....

2.8. Do any of the household members work outside the kampong but return at night?

How many?

2.9. Where do they work?

.....

.....

.....

How far is it?.....

.....

.....

.....

Means of transport?.....

.....

.....

.....

2.10. Are any members of the household not living at home?

Please list reasons for living away (work, study, etc), age, sex, and how often they return home.

Reason for absence	Age	Sex	Where do they live now	How often do they come home?				
				At least weekly	At last monthly	At least every 6 months	At least each year	Less often than yearly

3.0. Land-Use Questions.

3.1 How important are agricultural activities for your household? (*read out the possibilities*)

- a. Very important
- b. Important
- c. less important
- d. It is not important

3.2 How much land does your household use for agriculture?

3.3 How much other land does your household have?

3.4 Does your household practice shifting cultivation?

3.5 Does your household practice rotation?

3.6 Does your household practice permanent cultivation

- 3.7. Do your household practice multicropping?
- 3.8. What kind of crops does your household grow? *(read out the possibilities)*
- a. Rice
 - b. Pepper
 - c. Oil palm
 - d. Rubber
 - e. Others, please state.
- 3.9. How important are other natural resource activities for your household? *(read out the possibilities)*
- e. Very important
 - f. Important
 - g. less important
 - h. It is not important
- 3.10 Is your household involved in any other natural resource activities? *(read out the possibilities)*
- a. Firewood collection
 - b. Fruit collection
 - c. Fish farming
 - d. Fishing in the river
 - e. Hunting
 - f. Other non-timber-forest-products
 - g. Others
- 3.11. Have people in your household always practiced these kinds of activities? *(both agriculture activities and other natural resource activities)*
- a. What has changed?
 -
 - b. Do you feel it is better now than it was before?
- 3.12 Do you feel your household has access to sufficient land?
- 3.13 Are you more satisfied with present natural resource activities compared with the past?
- 3.14 How often does your household eat vegetables and fruits gathered from the forest? *(read out the possibilities)*
- Daily.....Weekly.....Rarely.....Never
- 3.15 How often does your household eat wild animals? *(read out the possibilities)*
- Daily.....Weekly.....Rarely.....Never
- 3.16 Does anyone in your household sell any of these jungle foods?.....
- 3.17 Do your use local medicinal plants? *((read out the possibilities)*
- Often.....Rarely.....Never.....

4.0 Miscellaneous Questions

4.1 Water Supply

a. Is the water enough for everyday use?.(Record yes or no, and any comments)

.....

b. Do you need to boil or treat your drinking water?

c. Are you satisfied with the water quality? (Wait for answer and then prompt – very satisfied or very dissatisfied? Scale answer from 1 to 4, 1 – very satisfied, 2 – satisfied, 3 – not satisfied, 4 – very dissatisfied)

.....

.....

.....

.....

4.2 Participation in organisations in the kampong.

a. Do any members of this household belong to organizations or groups in the village? Please list organizations.

.....

.....

...

b. Do household members join in community works activities?.....

.....

.....

c. Are members involved in group farming works or exchange of labour?....

.....

.....

Thank people for the interview.

After finishing, please make a rating of the standard of the house based on size and quality in terms of what is in this kampong..

High

Low

Medium

Appendix 8: Land statistics

Household	Avg. years of education (of people sleeping in Skibang)	Practicing shifting cultivation (see note)	Practicing rotational-cropping (see note)	Practice permanent cultivation (See note)	Practice Multi-cropping (See note)	No. Crops grown	No. of other NR collected	Sufficient land (See note)	Satisfied present of NR (See note)
1	7,0	0	0	1	1	3	4	1	
3	1,7	1	0	1	1	4	5	1	
5	0,0	0	0	1	1	4	2	1	
10	12,0	0	0	1	1	5	3	1	
12	6,3	1	0	1	0	2	0	1	
15	0,0	0	0	1	0	2	1	1	
23	0,0	1	0	0	0	3	5	1	
25	0,0	1	0	1	0	4	1	0	
34	0,0	0	0	1	1	1	4	1	
37	5,0	1	0	0	0	6	5	1	
49	3,0	0	0	0	0	0	4	1	
53	7,0	1	0	0	0	4	4	0	
56	9,0	0	0	0	0	1	4	1	
59	4,0	0	0	0	0	1	4	1	
60	7,5	1	0	1	0	2	1	1	
72	9,0	0	0	0	0	0	4	0	
74	9,5	0	0	1	1	3	1		
82	4,5	1	0	0	0	4	4	0	
85	7,0	0	0	0	0	1	4	1	
93	4,3	0	1	1	1	6	5	0	
95	6,0	1	0	1	1	4	5	1	
96	3,3	1	0	1	0	6	1	0	
99	9,0	1	0	0	0	1	3	1	
102	1,5	0	0	1	1	3	1	0	
104	0,0	1	0	0	1	4	3	1	
112	0,0	1	0	0	0	2	1	1	
116	2,5	0	0	1	1	2	1	1	
117	6,0	1	0	1	1	4	4	1	
123	8,5	0	0	0	0	0	5	x	
129	8,0	0	0	1	0	1	6	0	

Note: - Yes and no answers have been given values where 0=no and 1=yes

- In main source of income; 1= mainly from outside the village, 0= mainly from inside the village and 0,5=half from inside and half form outside the village
- Agricultural dependency: 3= very important, 2=important, 1= less important and 0= agriculture is not important

Appendix 9: PRA with JKK

History Time Line

Bung Bratak

Gunung Jagoi

Kampung Sidunuk

Kampung Skibung

Kampung Skibung
(7 families, 19470)

1. School – 1963 – school opens
1963
First government school in the area
2. Belian bridge across Skibang River
1958
(4’*60’) – community project built by the community
3. Road access to Bau Town – was jungle track, 8 hours on foot
Built by community – digging (motorcycle and bicycle)
1974-5
Road gravelled (dry weather road)
1976
tar sealed
2004
4. Water (gravity) Iron pipe for crossing river, otherwise PVC.
served 60 families
1976
5. Problems of supply arose after 5-6 years.
6. Timber felling related problems arose about
1997
7. Generator – started
1982
1 genset, upgraded twice.
8. Community hall, built in 1990
9. Aquaculture (community fish pond)
1984
fries subsidised by agriculture department (23.5 acres)
yearly harvest
1st 3 years good harvest, after that declined – due to management
problem new members initial deposit RM300
10. Agriculture government subsidised pepper, rubber,
cocoa, fertilisers, seedlings
1997

11. Salcra – started

1994

not profitable nor beneficial to the kampong

no surveyed land

no bonus / land equity value / actual equity unknown

lack of NR

no actions taken by management/board

business opportunities – marginal changes

employment (new job opportunities) not significant

employment rate – previously RM8/day, now RM12 but

after deducting EPF left RM10/day

max 10 workers from this kampong – most workers are Indonesian directly

employed by SALCRA

Social problems arose after opening of the border post

12. Population – community are very co-operative towards community works

Appendix 10: Problem and strength ranking PRA with JKKK

Problem ranking -

Participants:

Anthony, working in the District Council

Rambli, retired sailor

Midi, working with landscapes in Kuching city council, division south

Nuipen, working as medical assistant

Gihoi, Public department

Problem	Gihoi	Anthony	Rambli	Midi	Nuipen	Total
Water supply	5	5	5	5	5	25
Electricity supply	3	3	4	3	4	17
Health centre	4	1	2	1	1	9
Road connection	1	2	1	2	3	9
Illegal immigrants	2	4	3	4	2	15

Problem:

Effect

1. Water supply season Unclear water effects the health, not enough water in dry season
2. Electric supply Kids can not study very well, computers can only be used from 6.30 – 10.30 when the generator is on. No electrical instruments
3. Health centre They can not contact 112 for emergency and emergency causes problems to patients
4. Road Travel is difficult and it is hard to communicate with other houses (families) in Kpg. Skibang
5. Illegal immigrants Because of stealing, villagers in Kpg. Skibang do not feel safe enough

Strength ranking –

Participants:

Doros, contract worker and member of JKKK

Michael, contractor and member of JKKK

Nuipen, working as medical assistant

Ginnea, secondary school teacher, acting Head of School

Dom, lumberjack/ carpenter

Strength	Doros	Michael	Nuipen	Ginnea	Dom	Total
Village cooperation	4	4	4	5	4	21
Political (support government)	3	3	2	2	3	13
Leadership	5	5	5	4	5	24
Natural resources	1	1	1	1	1	5
Human resources	2	2	3	3	2	12

Strength:

1. Village cooperation

Effect

It is easy for villagers to cooperate

2. Political (support government) It is easy for the villagers to raise problems and solve them with the government
3. Leadership JKKK – have fully support and cooperation
4. Natural resources They have significant availability of natural resources (fish, wood etc.)
5. Human resources It is easy to get technical advisors inside the village

Note – Michael and Doros was the two most dominant in defining/identifying strengths of the community. It was much harder for the respondents to come up with and rank strengths compared to the problem ranking.

Appendix 11: Bau vegetable market interview

Respondent – woman from Sebuluh in the Lundu district. She drives with her son to and from the market every day it takes less than 45 minutes. She is at the market from 4 am – 7 pm.

- the same sales people every day
- lots at the market cost RM 2.5/day
- there is no sales people from Kpg. Skibang at the market
- Sunday is the big market day
- Some of the vegetables she sells are from her village, but most of the vegetables she buys from a Chinese before the Bau market “opens”. A lot of the sales persons from the Bau market buy from the same Chinese guy.
- Other sales persons buy their vegetables in Gambir road, Kuching, and transport it to the Bau market. Some of the Chinese farms are in the Serian area.
- There is a great Chinese influence on the Bau market. They are distributors/wholesalers for the Bau market.
- The Chinese are more professional because they do big scale
- The Bidayuh’s are not professional as they are not big enough and do not have sufficient knowledge.

Appendix 12: Soil

Soil sampling – methodology, site types and site description

Methodology

In order to investigate soil properties under different land use we chose five land use practices, shown in table 1, and tried to find two replicates of each practice. Soils samples were then taken from ten different fields and from each field three samples were taken from different sites in the field. From each site soil samples were taken from three different depths using an auger, as shown in table 1.

Table 1, types of land use practice, number of replicates and soil sampling depths

Land use practice	Replicates	Soil sampling depth
Shifting cultivation	2 fields	0-15 cm, 15-30 cm, 30-45 cm
Permanent cultivation	2 fields	0-15 cm, 15-30 cm, 30-45 cm
Pepper cultivation	2 fields	0-15 cm, 15-30 cm, 30-45 cm
Fallow	2 fields	0-15 cm, 15-30 cm, 30-45 cm
SALCRA oil palm	2 fields	0-15 cm, 15-30 cm, 30-45 cm

Site descriptions can be found in table 2, and pictures from the sites can be seen further down the page.

Table 2, description of the ten sample sites

Sampling site	Description
Shifting cultivation A	Newly cleared and planted wet rice field, 1 st / 2 nd year of cultivation. The field is surrounded by forest on one site and pepper/hill paddy on the other sites. Close to this site is the oil palm plantation.
Shifting cultivation B	Newly cleared and planted hill rice field, 1 st / 2 nd year of cultivation. The field is surrounded by forest.
Fallow A	Fallow for the last 10 years. Rubber trees grow on the site, but they are not tapped. The soil is wetter than the fallow B site, probably because of the vicinity of a pond.
Fallow B	Fallow for the last 10 years. Rubber trees grow on the site, but they are not tapped. The soil is dryer than on the fallow

	A site and the topography is hilly.
Permanent cultivation A	Hill rice for the last 8 years. The field is surrounded by forest.
Permanent cultivation B	Wet rice for at least the last 8 years. The field is surrounded by forest, oil palm plantation, hill paddy field and a gravel road.
Pepper field A	Pepper for the last 8 years. Pepper production is on the return on this site and the first pepper plants have been cut down. Fruit trees are intercropped between the pepper plants.
Pepper field B	Pepper for the last 4 years. Pepper is just starting to be productive. Parts of the field are still intercropped with hill paddy. Where hill paddy and pepper is intercropped, pepper plants seem smaller than where there is no hill paddy. Smaller plants like chilli are intercropped between pepper plants where there is no hill paddy.
SALCRA A	Oil palms for the last 4-5 years. Site where only little clearing/weeding has been done.
SALCRA B	Oil palms for the last 4-5 years. Site where “proper” clearing/weeding has been done.

Soil pH analysis method and results

Method

Soil pH was determined by measuring directly in one molar KCL solution (pH KCl and in Malaysia, the usual soil to solution ratio is 1:2:5, and pH KCl represents the total acidity (active + potential). The procedure is below,

1. Weigh 10g air dried soil into a plastic bottle
2. Add 25 ml KCl solution and shake thoroughly for about 1 min.
3. For pH KCl the reading can be taken immediately after shaking 10g soil sample with 25 ml KCl solution for 10 min., without having to leave the suspension to equilibrate overnight.

Results

Table 3 data from the soil pH analysis from all ten sites and three different depths. All numbers are in pH. Mean values for each of the different land uses are marked with bold.

	0-15	mean	15-30	mean	30-45	mean
SAL A	3.72	3.715	3.66	3.7	3.68	3.73
SAL B	3.71		3.74		3.78	
PEB A	3.57	3.595	3.64	3.65	3.62	3.665
PEP B	3.62		3.66		3.71	
PER B	3.71	3.725	3.58	3.665	3.48	3.605
PER A	3.74		3.75		3.73	
SHIF A	4.09	3.935	3.86	3.795	3.79	3.77
SHIF B	3.78		3.73		3.75	
FALL A	3.65	3.67	3.65	3.665	3.64	3.655
FALL B	3.69		3.68		3.67	

Soil texture analysis method and results

Methodology

Procedure for texture analysis

1. Mix 10 g of soil into a 250 ml conical flask and add 150 ml of water. Seal the flask and place the flask overnight on a biospin shaker. Add 20 ml of H₂O₂ and leave to stand over night.
2. Transfer the dispersed soil suspension through a 0.05 mm sieve into a 1 litre measuring cylinder. Do this by placing a large funnel below the sieve to channel all the suspension and subsequent washings into the cylinder.
3. Wash particles on the sieve carefully until all fine particles are washed through the cylinder. The fraction remaining on the sieve is the sand fraction >0,05 mm.
4. Transfer all the sand fractions on the sieve into an evaporating dish by rinsing with water. Place the evaporating dish in an oven set at 105C and leave leave it to dry until constant weight. → Weight of fraction (>0,05mm) after cooling = A
5. Make up the suspension and washings in the 1-litre measuring cylinder to 1000ml with distilled water and place it in a water bath maintaining 28C.
6. Fraction <0,05mm: Stir the suspension thoroughly with a special hand plunger using an up- and-down movement. Remove the plunger and wait for the swirling motion to stop, then pipette immediately 20ml from 6 cm depth. Transfer into an evaporating dish and heat in the oven at until constant temperature. → Weight of 0-0,05mm fraction = B
7. Fraction 0-0,02mm: Repeat stirring as above, then pipette 20ml from 10 cm depth 4 minutes after stirring. Transfer into evaporating dish, dry as in 3 and 5, and weigh. → Weight of 0-0,02mm fraction = C
8. Fraction <0,002mm: Repeat stirring as above and pipette 20ml from 10 cm depth after 6 hours and 39 minutes. Dry in the oven and weight after cooling. → Weight of 0,002mm fraction = D

Results

Data from the soil texture analysis can be seen in table 4.

Table 4 data from the soil texture analysis from all ten sites and three different depths. All numbers are in mg. Bold numbers are mean values for each of the land use practices. Suspicious samples are marked with bold italic and a grey background.

Depth	SAND			SILT			CLAY		
	0-15 cm	15-30 cm	30-45 cm	0-15 cm	15-30 cm	30-45 cm	0-15 cm	15-30 cm	30-45 cm
FAL A	3550	2616.7	2858.1	246.3	253.7	265.1	37.6	16.6	
FAL B	3130	1087.8	3143.3	236.5	242.1	241.5	35.7	13.4	
FAL mean	3340	1852.25	3000.7	241.4	247.9	253.3	36.65	15	
SHI A	3390.1	2789	2351.2	205.2	255	275.2	11.4	31.5	
SHI B	3338	4729.8	5323.7	229.8	182.1	167	11.4	8.3	
SHI mean	3364.05	3759.4	3837.45	217.5	218.55	221.1	11.4	19.9	2
PER A	2308.6	6093.2	2311.7	278.7	125.6	267.9	38	10.3	
PER B	6486.3	2426.2	6113.2	91	261	116.5	5.4	14.6	
PER mean	4397.45	4259.7	4212.45	184.85	193.3	192.2	21.7	12.45	
SAL A	3321	4389.1	2547.8	207	197.3	260.5	25.4	12	
SAL B	3345.8	2604.8	2016.4	227.7	269.8	263	27.3	16.1	
SAL mean	3333.4	3496.95	2282.1	217.35	233.55	261.75	26.35	14.05	
PEP A	2613.1	3088.6	5669.6	273.9	247.3	119.9	54.6	6.9	
PEP B	3288.1	3174.9	4950.7	241.2	231.5	150.8	28.2	30.3	
PEP mean	2950.6	3131.75	5310.15	257.55	239.4	135.35	41.4	18.6	

Soil carbon and nitrogen analysis method and results

Methodology

We need to write in analysis method and get the name/type of machine we used

Results

Results from the carbon and nitrogen analysis are shown in table 5.

Table 5 data from the carbon and nitrogen analysis of the ten different sites and the three different depths. Mean values of the two replicates of each land use practice is shown in bold numbers. Marked with bold and italic are the two samples we suspect being mixed round.

Sample	% element N	mean	% element C	mean
	FAL A 0-15	0.2694	0.25	3.589

FAL A 15-30	0.1647	0.16	1.941	1.81
FAL A 30-45	0.1158	0.12	1.261	1.26
FAL B 0-15	0.2398		3.095	
FAL B 15-30	0.1489		1.672	
FAL B 30-45	0.1171		1.25	
SHI A 0-15	0.3304	0.25	4.387	3.29
SHI A 15-30	0.1717	0.16	2.133	1.91
SHI A 30-45	0.0993	0.10	1.29	1.17
SHI B 0-15	0.1703		2.189	
SHI B 15-30	0.1398		1.692	
SHI B 30-45	0.09919		1.043	
PER A 0-15	0.2844	0.29	3.315	3.31
PER A 15-30	0.1553	0.15	1.63	1.62
PER A 30-45	0.1147	0.12	1.17	1.32
PER B 0-15	0.2987		3.308	
PER B 15-30	0.136		1.606	
PER B 30-45	0.118		1.478	
SAL A 0-15	0.2066	0.22	2.333	2.56
SAL A 15-30	0.1336	0.14	1.414	1.41
SAL A 30-45	0.1227	0.12	1.215	1.10
SAL B 0-15	0.2376		2.795	
SAL B 15-30	0.1392		1.396	
SAL B 30-45	0.1137		0.9913	
PEP A 0-15	0.2048	0.20	2.419	2.50
PEP A 15-30	0.1539	0.15	1.764	1.69
PEP A 30-45	0.1297	0.13	1.334	1.31
PEP B 0-15	0.2033		2.58	
PEP B 15-30	0.1506		1.618	
PEP B 30-45	0.1232		1.294	

Appendix 13: Interview with Agricultural Department – Mr. Chulif Douglas, head of Bau district

Different *organizations and projects* under AD –

WEDA is a basic education for household cooking and growing vegetables, aimed at women.

Rural Youth Service helps with agricultural input to young people.

Training projects

Projects – Kpg. Skibang has joined a fruit tree project. **Kpg. Skibang was offered a rubber plantation project, but refused** the offer because the trees has to be within one unified area, and are not allowed to be scattered around the village.

Subsidies

- Farmers no longer get their subsidies automatically today farmers have to apply themselves, before they get any subsidies.
- Now it is up to the community it self to find a crop they want to produce on commercial level/large-scale
- Small holders face a hard time because AD will cut down on subsidies for small holders and no longer go into projects under RM 30,000
- Pepper – subsidies from year 1 to year 3, because they flower in year 4
- Wet rice – subsidize some kind of package with rice technology to make areas good for wet rice – but rice is hard to make a profit from, has to be cultivated on large-scale. Always 10 bags of fertilizers per year, no matter the size of the fields.
- Hill rice – is not encouraged by the AD as hill rice does not give a profit, but still the AD sells subsidized fertilizers at RM 5/ 12 kg
- Fruit trees – the Bau area should be good for fruit trees but farmers will not go into the project because there is no immediate return
- In order to achieve subsidies, farmers have to register at the AD.
- Farmers only get subsidies the year after applying for a scheme (Farmers has to apply one year in advance....)
- Subsidy schemes are not a new thing in Sarawak. It started in the 1950's with subsidies for cocoa and rubber.

- Today farmers have to ask for training, but in the 1980's "all" farmers received training.
- Fishpond: AD gives fry for free to pond every year

Appendix 14: Land code in Sarawak

Land in Sarawak is categorized into 5 groups. These are:

1. **Mixed Zone Land** - can either be state land or alienated land. A document of title may be held and occupied by all races of Malaysian citizens or permanent residents. The Minister has the power to declare any area of land to be Mixed Zone Land and thereupon any Native Area Land or Interior Area Land within such area shall become Mixed Zone Land.
2. **Native Area Land** - held by native under a document of title. The Minister also has the power to declare any area of land to be Native Area Land or Interior Area Land and thereupon such part of such area as consists of unalienated Mixed Zone Land shall become Native Area Land or Interior Land, as the case may be.
3. **Interior Area Land** - any land not falling within any of the 4 categories of Mixed Zone, Native area land, Native customary Land Reserved land.
4. **Native Customary Rights Land** - land in which native customary right, whether communal or otherwise, have lawfully been created prior to 1st January 1958 (Section 5(1)).
5. **Reserved Land** - reserved to Government, eg. River banks, sea bed, coast, etc. - comprised within a National Park, Forest Reserve, Protected Forest or communal Forest.

The methods by which native customary rights may be acquired as provided by Section 5(2):

- a) The felling of virgin jungle and the occupation of the land thereby cleared;
- b) The planting of land with fruit trees;
- c) The occupation and cultivation of land;
- d) The use of land for burial ground or shrine;
- e) The use of land of any class for right of way;
- f) Any other lawful methods (deleted in the 2001 amendment)

Provided that a) until a document of title has been issued by the government, the land shall continue to be state land; any native lawfully in occupation thereof shall be deemed to hold by license from the government and shall not pay any rent unless and until a document of title is issued.

The question whether any such right has been acquired or has been lost or extinguished shall be determined by the law in force immediately prior to 1.1.1958.

The minister has power to declare any area of state land to be **NATIVE COMMUNAL RESERVE** for the use of any community having a native system of personal law (Section 6(1)).

Where the Superintendent of Land is satisfied that a native has occupied and used any area of unalienated State land in accordance with rights acquired by

customary tenure amounting to ownership of the land for agriculture purposes, he may issue a lease of that area of land free of premium rent and other charges. This lease shall be issued for a term of not exceeding ninety-nine (99) years and such land shall be for agriculture purposes only.

Section 8 of the Land Code states that a person **who is not a native of Sarawak may not acquire any rights or privileges** whatever over any Native Area Land, Native Customary Land or Interior Area Land.

Section 46 stated that land may be resumed by the government whenever the land is required for development (eg. Roads, government building, etc). Section 47(2) spells that as soon as conveniently possible, the superintendent shall assess the compensation for damages resulting therefrom.

Shifting cultivation in Sarawak

Shifting cultivation of hill rice and intercropped vegetables is the traditional farming practice of a majority of the indigenous Bornean population, such as the Iban, Bidayuh, Berawan, Kayan, Kenyah, etc. Today, mainly secondary forest areas with fallow periods of 5-10 years are cleared for cultivation in June-July, burned and planted with crops in August-September and the rice is harvested in February. The fields are usually only cultivated for one season and regrowth of pioneer species is vigorous. Yields tend to be lower than wet rice, but farmers often consider the hill rice varieties as better quality for consumption. Herbicides and fertilizers are increasingly used in areas with market access.

Land development in Sarawak

Sarawak Land Consolidation and Rehabilitation Authority (SALCRA) was established in 1975 and aimed at increasing production and welfare in rural communities through land development. Landowners commit their land (NCR land) to development for 25 years and in turn receive annual dividends.

The Federal Land Development Authority (FELDA) and the Federal Land Consolidation and Rehabilitation Authority (FELCRA) have been active in land allocation and resettlement in Peninsular Malaysia. In Sarawak they have mainly developed state land for oil palm and run their operations on a private estate basis.

The Land Custody and Development Authority (LCDA) is custodian of land resources for local communities, which enter joint venture companies (JVC) with private investors. The shares are divided as follows in the JVC: Investor 60%, Local community 30% and LCDA 10%.

Appendix 15: Crop Diversity

The idea of this appendix is to show the diversity of plants, fruit and vegetables villagers from Kpg. Skibang either grow or collect. Data is from interviews, informal conversation, tours through the village and surroundings and other observations.

Crops grown	Crops collected
Pepper	Asambaya
Hill rice	“Ferns”
Wet rice	
Ginger	
Chili	
Vegetables	
Eggplant	
Local cucumber	
Rattan	Rattan
Cocoa	
Rubber	
Pomelo	
Lemon	
	Tree bark
Langsat	
Durian	Durian
Rambutan	Jack fruit

Appendix 16: Villagers perception of SALCRA

Kpg. Skibang's perception of SALCRA plantation

Prior to the field trip we were informed that the oil palm plantations might be an issue to the villagers in Kpg. Skibang, but we did not expect it to be a big problem. When we got to Kpg. Skibang we already from start heard about SALCRA, and it was not good stories. From our meeting with JKKK Kpg. Skibang and other respondents from our survey we located these problems –

- Villagers who put land into SALCRA were promised money, but have not received any
- The SALCRA plantation is badly managed
- Illegal immigrants working in SALCRA
- Working in SALCRA is hard work with low salary
- The SALCRA plantation influences on river ecosystems (pesticides)

Because of these problems, members of JKKK advice villagers not to put new land into the oil palm scheme.

Appendix 17: Interview with SALCRA estate manager from the Bratak estate

In order to get site specific information on the establishment and management of the oil palm plantations and the local manager's perception of Kpg. Skibang's problem with the oil palm plantation, we made an interview with the manager of the Bratak estate.

We had prepared a few open ended questions on the history of SALCRA, history of Bratak estate, management practice of the oil palms (plantation), the area Kpg. Skibang has put into the Bratak estate and the problems related to this (phase 6), labour and last the future of SALCRA and the Bratak estate

1. For how long have you been planting oil palm?
2. How much land do you use for planting oil palm?
3. How do you cultivate oil palm?
4. What are the most important activities for planting oil palm?
5. Do you use any agrochemicals fertilizers?
6. When is it supposed to apply these agrochemicals?
7. What is the period from planting to harvesting?

...we have to put in more questions.....

History -

SALCRA started in 1976. The objective of SALCRA was originally to consolidate NCR land and improve (develop) the land for production. In the beginning SALCRA used cocoa in the plantations, but changed to oil palms, as oil palms have several advantages over cocoa.

Cocoa – prices dropped, cocoa was harvested (stolen) and sold on the black market (by workers) as cocoa is easy to treat (harvested both day and night),

Oil palm – price is better than cocoa (for now), very tolerant species – easy to find suitable land, (mature) plants are very resistant to pests, fruit from oil palms are not “stolen” and sold on the black market as treatment of fruits from oil palms demand high technology equipment,

SALCRA in general -

Before embodying a new area in an existing plantation a survey is conducted, including location and extent of the area and soil quality in the area. A dialogue is started with the owners of the land SALCRA is interested in including in the plantation, whether they are interested in joining the project or not. New areas for existing plantations or new plantations are placed in rural areas, between land and city, so they can give new economic possibilities for the rural people/population. The original idea was that the landowners should work in the plantation they had put land into, so they would work on “their own” land. The idea worked to start with but later faced problems with labour shortage.

Plantation committee and SALCRA supervisor –

For each phase or each village included in the plantation there is a plantation committee. They have a meeting every three months. There is always one or two representatives from the village, normally the village headman and one more. In Kpg. Skibang this second man is the SALCRA supervisor, a man from Kpg. Skibang

selected by the JKKK/or the villagers to work as a supervisor in the oil palm plantation, keep an eye on the management of “their” phase (6) and represent Kpg. Skibang’s interests.

Bratak estate –

The estate was started in 1992, and planting of phase 1’s 412 ha was started in 1993. Today the estate covers 2411 ha. The ideal planting density is 136 trees per ha. Payment – workers are normally paid RM 10 per day, but workers harvesting are paid by the tonnage. Harvesting is the toughest job, but this is also where workers can achieve the best wage. The plantation has an employee fund for the Malay employees. Malay workers can receive support for medical treatment from this fund and “wage”-compensation when they are sick.

Yield –

In general SALCRA oil palm plantations are more extensive than commercial plantations. This is partly due to the fact that SALCRA is a land consolidation project and plantations consist of several small lots where not all lots have joined the oil palm scheme, and therefore has to be excluded from the plantation. This implies that the layout and infrastructure of SALCRA oil palm plantations is highly irregular compared to commercial plantations.

Yield from SALCRA oil palm plantations reach 6-12 t/ha in their prime period from 8-15 years of age (I think this is wrong). After 25 years oil palms are no longer economically viable and are therefore felled and sites are replanted.

Oil palm cultivation practice –

When oil palms are young they are sensitive to certain chemicals/pesticides. Therefore a lot of manual labour (and manual spraying) has to be put into maintaining/caring for the young oil palms. Mechanization of spraying means that it is five times more effective on area basis. Old trees are more resistant to both pests and pesticides. They use mini tractors to spread fertilizers where it is possible. Where the tractors can not enter they have to spread fertilizers by hand. They follow a pesticide spraying scheme.

Alternative methods to spraying are being tested. One of the methods is cattle grazing. This method implies use of less pesticide and man labour, the cattle provide “fertilizer” for the palms, after grazing only the “soft-weeds” will grow, who can be eaten by the cattle. The estate manager hopes to introduce cattle grazing at the Bratak estate in 2006. Cattle grazing will be concentrated in areas with young trees where grass and weeds can grow between the trees. The cattle will not be introduced on steep sites as they are not suitable for cattle.

Battery driven sprayers is already being introduced in Bratak estate and will increase labour efficiency

Economy –

Normally it takes 4-5 years before an oil palm plantation makes a profit. At the Bratak estate the baseline expenses are around RM 2000 per ha. This means that the phases has to yield 4 t per ha before it makes a profit and before the villagers can expect to get a dividend from the plantation.

Labour –

On average the Bratak estate needs 10 workers per ha, dependent on the season. Each worker is paid RM 10 per day, unless they are harvesting then they are paid by the tonnage. Right now the managers are trying to get a deal on changing the payment to piecework. This way they hope to increase the productivity on the plantations, and raise the workers monthly wages.

The Bratak estate (as other estates) is very dependent on foreign labour, Indonesians. The manager told us that if he did not have the Indonesian workers he would not have enough workers to manage the estate. Apparently the Indonesian workers present more than 50% of the workers in the Bratak estate. The manager thinks that this is a problem as if the government decides to cut down the number of foreign workers or put a limit to the number of foreign workers by introducing a quota, the Bratak estate will be doomed.

Kpg. Skibang –

The land Kpg. Skibang has put into the Bratak estate is called phase 6. It started in 1999 and consists of 283 ha. The yield from phase 6 has not been very good (*red*, actually is has been very bad). Normally the estate establishes the different phases, but as a test phase 6 was established and run by a contractor. The plantation was not properly taken care of in the start and yields were low, se table 1.

Table 1 production figures from the Bratak oil palm estate.

Year	Year plantet	Ha	Yield (t per ha per year)									
			1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Phase 1	1993	412	0.49	5.08	11.29	11.3	16.32	16.5	15.29	15.99	15.21	19.0
Phase 2	1994	417		0.26	2.5	4.624	8.51	9.51	10.6	12.13	12.78	13.8
Phase 3	1995/1997	299			0.13	1.475	4.79	5.77	8.13	8.64	10.25	11.1
Phase 4	1996	134						0.73	8.03	8.6	10.15	10.0
Phase 5a	1998	387							3	6.19	7.86	9.7
Phase 5b	1999/2000	479							0.35	1.82	2.69	2.0
Phase 6	1999	283							0.15	1.93	2.87	2.0

The estate manager told us that the physical and natural factors on phase 6 are good. He describes it as a “...*good flat area, but susceptible to flooding.*” The forest, padi and pepper patches lying inside the plantation, land of people who are not interested in joining the SALCRA scheme, does not have a significant influence on phase 6 compared to the other phases. These patches can be both good and bad in relation to pests. Some times the patches attract pests and the plantation is spared, and some times pests come from the patches into the plantation.

In May 2003 the SALCRA took the contractor of phase 6 of different reasons. The yield from the phase was very low, phase 6 was badly managed and maintained, the number of illegal workers was so high that the SALCRA (government) had to act and could no longer turn away.

Future –

We asked the manager about the future of the Bratak estate. He hopes to convert to piecework, to introduce cattle grazing, to get the local people back into working in the oil palm plantation so the plantation is not that dependent on foreign labour and to introduce more mechanization.

In the future contractors will only be allowed to manage a phase after it has reached a certain production level, and this production level can be used as benchmark/baseline for the contractor to keep the production above a certain level. And if the production gets below this level the contractor can be taken of the phase for default.

Last but not least the manager hopes that maybe in the future when people understand the purpose of SALCRA and the oil palm plantations, they will put “better” land into the plantations so the SALCRA plantation can be more productive and give better yield.

Problems -

Appendix 18: Seasonal Calendar

Household no 1

House nr.	What activities?	What technique?
January	Apply pesticides on hill rice if needed	
February		
March	Start harvesting hill rice	
April		
May		
June		
July	Clear area for hill rice	Panang
August	Clear area for hill rice	Panang
	Late august – Plant hill rice	By hand
September	Plant hill rice	By hand
October		
	Apply fertilizers on hill rice	By hand
November	Apply fertilizers on hill rice	By hand
December		

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Household no 3

House nr.	What activities?	What technique?
January		
February		
March	Start harvesting hill rice and wet rice	
April		
May	Apply UREA on pepper 2 weeks before harvest Harvest pepper	
June		
July	Clear area for hill rice Rubber tapping	Chainsaw and Panang
August	Spray area for hill rice with herbicides	Back-hand pump
September	Plant hill rice and wet rice	By hand
October		
	Apply herbicides on rice if needed	Back-hand pump
November	Apply herbicides on rice if needed	Back-hand pump
	Work in pepper and rubber fields	
December	Work in pepper and rubber fields	

Household no 5

House nr.	What activities?	What technique?
January	Planting small fruit trees e.g. lime Work in pepper fields, applying ripening fertilizer	By hand By hand
February	Work in pepper fields, applying ripening fertilizer	By hand
March	Start harvesting wet rice Work in pepper fields, harvest pepper	By hand By hand
April	Harvesting wet rice Work in pepper fields, harvest pepper	By hand By hand
May		
June	Start work in wet rice fields, apply herbicides to clear field Late June start harvesting rattan Late June start tapping rubber	By hand pump By hand By hand
July	Work in wet rice fields, apply herbicides to clear field Harvesting rattan Tapping rubber	By hand pump By hand By hand
August	Latest time for applying herbicides on wet rice fields Latest time for tapping rubber	By hand pump By hand
September	Planting wet rice	By hand
October	Wet rice – apply herbicides only if necessary	By hand pump
November	Planting small fruit trees e.g. lime Work in pepper fields, plant pepper	By hand By hand
December	Planting small fruit trees e.g. lime Work in pepper fields, plant pepper	By hand By hand

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Household no 12

House nr.	What activities?	What technique?
January	Collecting fruits (e.g. rambutan, jack fruit) Work in pepper fields	
February	Harvesting paddy Work in pepper fields	By hand
March	Work in pepper fields	
April	Tapping rubber Work in pepper fields	By hand
May	Planting rubber or fruit Tapping rubber Harvesting pepper	By hand By hand
June	Tapping rubber Harvesting pepper Clearing paddy fields	By hand Panang
July	Clearing paddy fields Applying fertilizers on pepper	Panang By hand
August	Work in pepper fields	
September	Work in pepper fields Applying herbicides and weeding in paddy fields	By Hand-Back pump
October	Planting hill and wet paddy Work in pepper fields	By hand
November	Applying fertilizers at paddy fields	By hand
December	Work in pepper fields	

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Household no 23

House nr.	What activities?	What technique?
January		
February		
March	Start harvesting hill paddy	
April	Harvesting hill paddy	
May	Clear area for hill paddy	Panang
June	Continue to clear land and apply herbicides on cleared area	Hand-Back pump
July		
August	Start planting hill paddy	By hand
September		
October	Apply pesticides	Hand-Back pump
November		
December	Apply herbicides to hill paddy	Hand-Back pump

Household no 93

House nr.	What activities?	What technique?
January		
February		
March	Start harvesting hill rice and wet rice	By hand
April	Harvesting paddy	By hand
May	Harvesting paddy	By hand
June	Clear area for hill paddy and leave trees on soil Harvest pepper	Chainsaw and Panang (2 persons)
July	Cut grass on area for hill paddy Rubber tapping	Panang
August	Burn tree residues on area for hill paddy Rubber tapping Apply ripening fertilizers on pepper	By hand
September	Weeding in hill paddy fields Start planting hill paddy	By hand
October	Planting hill paddy Weeding and apply herbicides on hill paddy fields	By hand Hand-Back pump
November		
	Work in SALCRA	
December	Work in SALCRA Start to plant pepper	

Appendix 19: Summary of NR interview

Household no 1

The household was selected because it is a 'poor' household with little land and where agriculture is very important for the household.

Respondent – wife in the house

- Paddy

They grow rice for self consumption, 1 acre of wet rice and 1 acre of hill rice.

Yield: Some years yield is better than other. Wet rice normally gives about 9 sacs and hill rice about 5 sacs.

Fertilizers: They get 10 sacs of fertilizer per year for the wet rice and 12 kg fertilizer for the hill rice for free from the government as subsidies. They only get fertilizers from the government every 2nd year.

Practice: Grow hill rice at the same site four years in a row and have grown wet rice for more than years.

Seeds:

Pests: The worst pest is rats

Pesticides: They have to buy both herbicides and pesticides. They only use pesticides if necessary. They have never tried "organic" farming.

Labour:

Reason: For self consumption

- Pepper

They started cultivating pepper in 1994, but have just planted new pepper plants, 200 pieces.

Yield:

Labour:

Practice: After 3-4 years they start harvesting the pepper. After 7 years they stop the harvesting and replant. Durian and Rambutan is intercropped between the pepper to make shade for the pepper.

Fertilizers: Subsidized from the government. They use two types of fertilizers, one when the pepper is growing and one just before the pepper is supposed to ripe. They use about one spoonful fertilizer per plant per month.

Pesticides:

Seed: Local seeds, never heard of governmental.

Reason: For extra income

- Rubber

They have 200 trees.

Seed:

Labour:

Yield:

Practice:

Fertilizers: Subsidized fertilizers from 1993-1998.

Reason: Started in governmental scheme.

Fruit:

They grow Durian and Langsat.

General:

Some of their land is apparently community land.

They collect firewood to spare fuel (gas) expenses.

The wife works in SALCRA 10-15 days per month depending on the family.

Constraints – Flooding and too little fertilizer.

Household no 3

The household was selected because it is a 'rich' household with a lot of land and where agriculture is less important for the household.

- Paddy

They cultivate about 7 acres of rice, 3½ acres of hill rice and 3½ acres of wet rice.

Yield:

Fertilizers: Governmental subsidies - 5 kg/year for the hill rice and 7 bags/year for the wet rice.

Seeds: Hill rice – local seed. Wet rice – governmental seed.

Practice: Hill rice – shifting cultivation with 7 years of fallow and 1 year of cultivation. Spray with herbicides. Wet rice – permanent cultivation.

Pests:

Pesticides:

Labour:

Reason:

- Pepper

They cultivate 2 acres of pepper.

Yield: They sell about 200 kg/year. (present price is RM 4.8/kg)

Labour:

Practice: They grow pepper for 5 years and then cut them down.

Fertilizers: They started getting subsidized fertilizers from the government in 2004, 10 sacs per year, 8 bags of UREA and 2 bags of chemical fertilizer. They use two types of fertilizers, one to make the pepper grow (UREA), and another to make the pepper ripe (chemical).

Seed: Local seeds, from friends and relatives.

Pesticides:

Reason:

- Rubber

They grow 12 acres of rubber, and the rubber was planted in 1969. They have about 540 trees which all are from 1969.

Yield: About 400 kg/year (present price RM 2.3/kg). The yield has been decreasing because of pests. The rubber is transported to Bau by van.

Practice:

Pest: Ants and beetles.

Pesticides: They use pesticides, but the pesticides are not effective.

Fertilizers:

Reason: They started because of the governmental scheme. The governmental scheme was only for 5 years.

Vegetables:

None

Fruit trees:

Yes

General:

They estimate that they have more than 30 acre of land, where about 7 acres is farm land.

They practice several kinds of agriculture both, shifting cultivation, permanent cultivation and multi cropping.

The husband is 62 and works as supervisor in the SALCRA plantation on behalf of the participants from Kpg. Skibang. He was selected to this post, and together with the headman he presents the villagers interest in the SALCRA committee.

The husband reckoned they spend about RM 1200/year on pesticides. (but when we asked about the prices of the different pesticides and herbicides and the amount they used, it did not sum up/fit. We kept on trying to elucidate the equation, but had to give up as we did not want to offend the husband just to solve “our equation”)

In general they use 8 hours/day 6 days/week on farming activities, being 2-3 persons.

Main pests are rats, birds and beetles.

Household no 5

The household was selected because it is a 'rich' household with much land and where agriculture is less important for the household.

- Paddy

Wet paddy: The household cultivates 1.5 acres of wet paddy for **own consumption**. From the government they get **subsidized fertilizers**, last year they got **8 sacks**. They apply 1-2 sacs/month, depending on the colour of the leaves on the paddy.

Seeds are subsidized from the government, and they are happy with the type of seed they get from the government.

Pests: The worst pest is rats. Rats attacked the paddy last year.

Labour: The wife is active in the paddy fields. Some times she hires other villagers to take care of the farm, or use the son or husband.

Reason: When she was younger she used to grow hill paddy, but now she is too old to walk in the hills

- Cocoa

They only have few trees (0.5-1 acre), but they plant some trees every year

- Rattan

They grow rattan and have done for 20 years.

Fertilizers: They use fertilizers for the rattan; organic fertilizers, wood debris and leftover food.

Seeds: Are collected from the jungle and planted in the garden. But it is not easy to plant.

Reason: It is easier to collect than from the forest and when they grow it, it is their property.

Production: has increased

Harvest: The rattan is harvested in the dry period

- Pepper

They have about 100 trees which equal about 1.5 acres, and have harvested pepper for the last 8 years.

Yield: Last year 2 sacs of pepper, but the yield has been decreasing

Labour: They use about 1-2 hours/day in the morning.

Practice: Two years after planting they harvest the pepper. For the first two years they apply organic fertilizers (20-30%/year) to make the plants grow then they apply the inorganic fertilizer to make the pepper ripe.

Fertilizers: They use both organic (chicken) and inorganic fertilizers

Pesticides: They use both pesticides and herbicides, year round.

Reason: She likes the pepper better than paddy because she can work with it every day and other crops can be grown together with the pepper (e.g. chilli, fruit trees (rambutan, durian and langsat)),

- Rubber

They have about 1 acre of rubber trees, and have had for more than 10 years

Seed: From the government

Fertilizers:

Labour: had to give up 1 field because of age,

Yield: She harvested 100 kg last year, but she is also very experienced and if others did the job the yield would not be that great.

Practice: Rubber trees are planted with 6 feet space between each tree. On the field where they now have rubber trees they used to grow hill rice, they will continue to grow rubber for more than 30 years before they choose another crop

Fertilizers: They used fertilizers for the first 2-3 years fertilizers were subsidized from the government.

Reason: They grow rubber because they will not leave the land fallow.

Vegetables:

Local cucumber, long bean, ladies fingers, “Kang kung”

General:

- The vegetables have been spoiled because of the flooding (*there was a flooding while we were in Kpg. Skibang*).
- They will not sell their land.
- Rats is the worst pest because it attacks all fields around Kpg. Skibang, but they hit wet paddy more than hill paddy
- They no longer grow their fields on the hills/mountain because it is too far away (they are too old)
- They are not afraid that the government will take away their land, they believe that the government will contact them before they consider taking land away from them.
- They are no longer collecting firewood from the forest because of their age, instead they are using old rubber trees for firewood.
- They are satisfied with the farming.
- Constraints:
 - o Plant diseases – missing pesticides
 - o Labour shortage
 - Kids are grown up and working
 - They are old people
- The husband has started a small shop 4 years ago
 - o Reason: He did that because of his age, he is too old to go to the farm every day
 - o The population of Kpg. Skibang has increased and has made his shop more stable than farming.

Household no 10

The household was selected because it is a 'rich' household with a lot of land and where agriculture is less important for the household.

Respondent – we talked to the wife of the household. Normally she lives in Kuching and only comes to Kpg. Skibang once in a while. In the survey we talked to the husband who is more often in Kpg. Skibang and is the one who comes from Kpg. Skibang.

- Paddy

They have 2 acres for rice, 1 acre for wet rice and 1 acre for hill rice. They started growing rice because the other villagers had good yields. The wife had never cultivated rice before she came to Kpg. Skibang, her family did not cultivate rice.

Yield:

Fertilizers: They say that they get governmental subsidized fertilizers for both wet and hill rice. For wet rice 2 bags of UREA and for hill rice 2 bags of fertilizers (black).

Practice: They never use pesticides on the rice, because it is food and they are going to eat it. Both wet rice and hill rice is practiced as permanent cultivation because the members are too old (and not strong enough to clear new areas and go to the hills).

Seeds:

Pests:

Labour:

Reason:

- Pepper

They have 1.5 acres for pepper, about 300 plants. They have had the pepper for five years now and have harvested the pepper twice in that period.

Yield:

Labour:

Practice:

Fertilizers: They get fertilizers from the government, but it is not enough and they are not satisfied with the type of fertilizers. Therefore they buy organic fertilizers (chicken). They have only got subsidies for two years.

Pesticides: They use both herbicides and pesticides, and one of them is subsidized by the government, but "she" could not remember which one.

Reason: For selling.

- Rubber

They have 3 acres of young rubber trees, about 600. They have had the rubber trees for five years and three of the five was subsidized by a governmental scheme.

Seed:

Labour:

Yield: No yield yet.

Practice:

Fertilizers:

Reason: They started planting rubber because the governmental scheme encouraged. The rubber trees are now for tapping and selling rubber.

Fruit trees:

Yes, they have fruit trees.

General:

They have about 10 acres for other agricultural purposes and have together with other family members put 30 acres of family land into SALCRA.

They have their own fishpond in the backyard.

In general the household does farming “for fun”.

When they are not in Kpg. Skibang their relatives take care of the farming.

Household no 12

The household was selected because it is a 'poor' household with 'much' land, and agriculture is very important for the household.

Respondent – the housewife. She just got home from working in the plantation, was very tired and was hit on the head by a jackfruit on the way home. Therefore she was not really up to an interview and we had to finish up fast.

- Paddy

They cultivate 3 ha (acres?) paddy, only for self consumption.

Wet: 1 ha (acres?), permanent cultivation,

Seed: Subsidised from the government (Agricultural Department). They are not satisfied with the seeds as the paddy has a bad taste and is not good for cooking.

Hill: 2 ha (acres?), shifting cultivation,

Pesticides: The same type for paddy and pepper

Fertilizers: Subsidized from the government, 10 sacs every year

Practice: Hill paddy is practiced as shifting cultivation, 1 year with paddy and ~ 6 years fallow. In the fallow period fruit or rubber is cultivated for the first 4 years and the last 1-2 years nothing is cultivated on the land. Trees are felled and burned at the site, not at one single place.

- Pepper

Working in the pepper fields is hard work, harder than working in SALCRA (oil palm plantations)

- Rubber

They tap rubber 2-3 times per year

- Constraints

- Not enough fertilizers and they are not always good enough.
- Pesticides are expensive, RM 40/ gallon

Organic fertilizers are good for leaves

Chicken manure RM 7/sac and the field needs 30 sacs vs. other fertilizer at RM 50/sac and the field only needs 10 sacs

Household no 23

The household has been selected because they are poor people with little land and agriculture is very important for them.

- Paddy

They use 1.5 acres for hill paddy cultivation for own consumption, paddy is not grown on their own land, they ask permission to use others land for hill paddy

Fertilizers: Urea (2 month before planting), inorganic (6 month after planting) and organic fertilizers, no advice on how to use fertilizers from the Agricultural Department, has to find a system himself, AD gives fertilizers with out knowing how much land the different people cultivate.

Practice: Classic shifting cultivation, 1 year with paddy and then fallow, gathers all felled trees from the cleared area and burns them in one spot, all ashes are left in that one spot.

Pests: Paddy was attacked by rats last year

Yield: 10-20 sacs/year

Labour: Work from 8-17 in the farm each day, except Sunday

Seed: From family and relatives (round big and yellow).

- Constraints

- Needs pesticides and herbicides
- No problem with land
- Will help others and give paddy away as payment

- Classic shifting cultivation

Reason: It is tradition and he loves to try new pieces of land. He would practice permanent cultivation if he found a piece of very suitable land.

- Rubber, fruit trees and vegetables

Have rubber trees on the piece of land just behind the house. Is replacing old rubber trees with fruit trees and also grows vegetables.

- Rattan

Remittance from friend, does a bit of weaving, but does not sell the products

- Hunting and collecting

Sometimes he goes hunting and collects jungle products
He shoots 3-4 deer or mousedeer per year

- General

The household only own very little land just behind their house, as he is from Indonesia and she is from Kpg. Skibang.

Villagers are willing to lent land to them as they understand their situation.

Son sends remittance to them.

Household no 93

The household was selected because it is a 'poor' household, they have a lot of land and agriculture is very important for the household.

- Paddy

They grow hill rice for own consumption.

Yield: fluctuating between 25 kg and +100 kg.

Seeds: Round seeds

Labour:

Practice: Shifting cultivation with about 10 years of fallow

Fertilizers: subsidized fertilizers depends on the situation, sometimes they get subsidies and sometimes not

Pests: Rats and birds

Reason: for own consumption and they give rice to their family, and to friends when they are needy.

- Cocoa

They no longer cultivate cocoa because fertilizers became too expensive

- Pepper

They have about 200 pepper plants planted with 7 feet between each plants which comes to approximately ½ an acre

Yield:

Seeds: From friends and relatives

Labour: 5-8 hours per day doing weeding and spraying.

Practice: They grow pepper for 4 years then start cutting the plants down and planting new ones. They grow vegetables, cucumber, ginger, yams and sweet corn between the pepper plants.

Fertilizers: From planting the pepper and 1 month ahead they use organic fertilizers.

There after they use chemical fertilizer until just before the pepper is going to be harvested. Just before harvesting the pepper they apply another type of fertilizers to make the pepper ripe.

Does not get governmental subsidized fertilizers but buys fertilizers. Use organic fertilizers (chicken) at RM 6 per sac. 16-18 pieces of 30+ kg sacs.

Pesticides:

Reason: Selling pepper and buying fertilizers

- Rubber

9 acres and the trees are 30 years old

Yield: about 20 kg/3 acres/day when harvesting

Fertilizers: Sometimes they mix pepper and rubber fertilizers

Reason: For selling

SALCRA:

Both husband and wife work in SALCRA, because they want some extra income. They would rather work in their own fields. They spent much more time in their own fields before SALCRA came to Kpg. Skibang. If SALCRA closed tomorrow they would go back and work more in their own fields.

General:

The household does not exactly know how much land they have but they have a lot, estimated about 100 acres.

They grow vegetables, cucumber, ginger, yams and sweet corn between the pepper plants.

In relation to the 10 year fallow, the husband thinks the fields are far from Bau and therefore the state/government will not take their fields if they leave the fields without crops.

To transport agricultural products to the market (Bau or Kuching) they have to hire a car/van which costs RM 40, it is too expensive and they consider it as a constraint on their production.

Pests are a big constraint on the production.

Appendix 20: Field Trip Time schedules

Ahmed's Time schedule

Day	Date	Day-time	Evening-time
Mon	10	Field trip briefing in Kuching and meeting Malaysian students. Depart for Kpg. Skibang for preliminary study, guided tour through Kpg. Skibang.	Preliminary study and discussion of project proposal.
Tue	11	Preliminary study and discussion of project proposal.	Discussion of project proposal.
Wed	12	Presentation of project proposal, group discussion of project and survey questionnaire.	Group discussion of survey questionnaire and random selection of households.
Thu	13	Test of survey questionnaire.	Doing Survey questionnaire. Preparing natural resource interview and natural resource PRA.
Fri	14	Doing Survey questionnaire.	Doing Survey questionnaire. Preparing natural resource interview and natural resource PRA.
Sat	15	Doing Survey questionnaire.	Attending Wedding party with the whole group
Sun	16	Discussing soil sampling with prof. Wan and first soil samples.	Community history, Problem and Strength ranking,PRA approach
Mon	17	Soil sampling and drying soil samples. Preparing natural resource interview and natural resource PRA.	Meeting with Puak and Tringuss group in Bau, giving auger to Tringuss group.
Tue	18	Natural resource interview with Martin and Maybel (interpreter), drying soil samples.	Natural resource PRA (NR history, seasonal calendar, problem ranking), Informal conversation.
Wed	19	Natural resource interview with Martin and Maybel, Health Department interview, preparing/grinding soil samples.	Natural resource interview with Martin and Maybel. Preparing Agricultural Department and SALCRA manager interviews.
Thu	20	Agricultural Department meeting, SALCRA manager meeting.	Natural Resource interview, preparation of natural resource presentation.
Fri	21	Interview at the Bau vegetable market.	Preparation of Agricultural presentation.
Sat	22	Preparation of final presentation.	Preparation of final presentation.
Sun	23	Final presentation. Going to limestone caves.	Farewell dinner/party.
Mon	24	Tour to vegetable farm and starting soil texture and pH measuring at UNIMAS	Farewell dinner/party.
Tue	25	Measuring soil texture and pH at UNIMAS	Party/relaxing
Wed	26	Measuring soil texture at UNIMAS	Party/relaxing
Thu	27	Measuring soil texture at UNIMAS	Visiting Dr. Siti

Fri	28	Measuring soil texture at UNIMAS and going to the beach	Dinner with Malay students & karaoke
Sat	29	Looking for Orang Utan and discovering Kuching	Flying home

Martins Time schedule

Day	Date	Day-time	Evening-time
Mon	10	Field trip briefing in Kuching and meeting Malaysian students. Depart for Kpg. Skibang for preliminary study, guided tour through Kpg. Skibang.	Preliminary study and discussion of project proposal.
Tue	11	Preliminary study and discussion of project proposal.	Discussion of project proposal.
Wed	12	Presentation of project proposal, group discussion of project and survey questionnaire.	Group discussion of survey questionnaire and random selection of households.
Thu	13	Test of survey questionnaire.	Doing Survey questionnaire. Preparing natural resource interview and natural resource PRA.
Fri	14	Doing Survey questionnaire.	Doing Survey questionnaire. Preparing natural resource interview and natural resource PRA.
Sat	15	Doing Survey questionnaire.	Wedding, dancing, playing the gongs and informal talking.
Sun	16	Discussing soil sampling with prof. Wan and first soil samples.	Meeting with JKKK (PRA (Community history, Problem and Strength ranking)).
Mon	17	Soil sampling and drying soil samples. Preparing natural resource interview and natural resource PRA.	Meeting with Puak and Tringuss group in Bau, giving auger to Tringuss group.
Tue	18	Natural resource interview with Ahmed and Maybel (interpreter), drying soil samples.	Natural resource PRA (NR history, seasonal calendar, problem ranking), Informal conversation.
Wed	19	Natural resource interview with Ahmed and Maybel, Health Department interview, preparing/grinding soil samples.	Natural resource interview with Ahmed and Maybel. Preparing Agricultural Department and SALCRA manager interviews.
Thu	20	Agricultural Department meeting, SALCRA manager meeting.	Natural Resource interview, preparation of natural resource presentation.
Fri	21	Interview at the Bau vegetable market.	Preparation of SALCRA presentation. Cooking traditional Danish dinner (Frikadeller og kartofler med "brun" sovs) for Malaysian students.
Sat	22	Preparation of final presentation.	Preparation of final presentation.
Sun	23	Final presentation. Going to limestone caves.	Farewell dinner/party.
Mon	24	Tour to vegetable farm and starting soil texture and pH measuring at UNIMAS	Farewell dinner/party.
Tue	25	Measuring soil texture and pH at UNIMAS	Party/relaxing
Wed	26	Measuring soil texture at UNIMAS	Party/relaxing
Thu	27	Measuring soil texture at UNIMAS	Visiting Dr. Siti

Fri	28	Measuring soil texture at UNIMAS and going to the beach	Dinner with Malay students & karaoke
Sat	29	Looking for Orang Utan and Relaxing at Hiltons swimming pool	Flying home

Appendix 21: Synopsis

**Livelihood and Land Use Changes
in
Kampung Skibang**

Synopsis

Hand in 10th of December, 2004

by

**Lars West Andersen (KU), Rune Gustafsen (RUC),
Ahmed Mursal (KVL) and Martin Olsen (RUC)**

ILUNRM Course – Autumn 2004

1.0 Introduction

Sarawak is Malaysia's biggest state covering 12.3 million ha. The state lies in the northern part of the island Borneo, with borders to the South Chinese Sea, Indonesia, Brunei and the Malaysian state Sabah. The climate in Sarawak is humid tropical or wet equatorial and characterized by year round high temperatures and seasonal heavy rain coming with the North-East Monsoon from October/November to February/March. Annual precipitation in Kuching is approximately 4,000mm. The mean temperatures during day and night are respectively 32° C and 22° C, and almost the same all year around.

The field site of our study is located in the Kanan River catchment, Bau area, Kuching Division of the state Sarawak in Malaysia on East Borneo. Kanan River catchment is characterized by rapid land development and infrastructure development.

This study will investigate the village of Skibang, which is a village of 122 active households and a number of houses, which are owned by villagers who are absent, working in other areas in Sarawak. The village was formed in 1940 and the inhabitants are originally from nearby village of Serosot-jagoti, who decided to form their own village. The inhabitants in Skibang are all Catholics. The land belonging to Skibang is NCR (native customary right)-land which means that the locals have the right to use the land but that they do not have legal ownership of the land. Until recent time the agricultural production in the village has mainly been subsistence farming of hill rice. There has though been some cash-crop production such as pepper, rubber and cocoa.

As in many similar villages with high dependence on subsistence farming there have been some attempts from the state to include the villages more in the national and global economy, with respect to production and employment. First of all there has come a new improved road to the big city of Bau just over 20 km away. Another attempt has been to establish a plantation of oil palm trees within the village area. From the agricultural production of the plantation the villages has a possibility of earning an extra income from selling the harvest and further the plantation gives a possibility of labour employment to the village. The villagers have dammed the river 25 years ago with economic help from the government, in order to establish a fishpond. At present 77 households are member of the fish-project. The members

receive their share of the production in kind while a part is sold to cover running costs of the project.

2.0 Problem identification

These developments that have happened in Skibang have affected the local livelihood in many ways. First the improved infrastructure connects the village closer to other areas making it easier to get access to the market and give better opportunities for migration. Secondly the local development projects such as the oil palm plantation and the fish pond affects the land-use, and the allocation of labour. Together these changes affect the labour and land opportunity cost and thereby their allocation and use. We would therefore like to look closer at the changes in livelihood caused by these recent changes to see what effect it has on allocation of labour and land-use.

3.0 Research question

Evaluate the current and future impacts of labour migration on the livelihoods of Kpg. Skibang. Investigate the investment strategies related to remedy transfer and its impact on the economic activities of the village. Evaluate past, present and future management of local resources.

3.1 Objectives

- To appraise the socio-economic and physical environment of Kpg. Skibang.
 - o Emphasis should be given to changes in production and livelihood strategies and to the past, present and future management of natural resources such as farming and aquaculture.
- To evaluate changes in land practices in relation to availability of land and labour.
 - o Asses the impact of recent trends of off-farm work within and outside the village and evaluate changes in allocation of manpower to various economic activities according to sex and age.
- To evaluate the impact of non-farming income/activities on land management.
 - o Explore the constraints and opportunities related to the leasing of an area of 380 ha of land to SALCRA as part of joint venture scheme and asses the social distribution of member households.

And if we find it is of significant relevance:

- To investigate the economic, social and environmental viability of the aquaculture scheme i.e. the allocation of land for the damming, the social distribution of membership, the importance of infrastructure for marketing of the output and the institutional arrangements related to the management of the fishpond.

4.0 Local context

4.1 Malaysian Economy

In the last 40 (50) years there has been major changes in Malaysian economy. The economic development has primarily been based on Malaysia's rich natural resources and has caused changes in land use and labour activity.

Today Malaysia's economy is still dependent on production and export of primary commodities as crude oil, palm oil, tin, rubber and timber which still provide over 50% of export earnings.

4.2 Historical context of land use in Sarawak

Prior to the Colonial period (1946-1963) of Sarawak, forestry in Sarawak was limited to subsistence use of the forests. In the Colonial period the British brings the plantation concept to Sarawak mostly rubber plantations and other cash crops and logging of hill and lowland dipterocarp forests starts. In 1963 Sarawak becomes part of Malaysia and becomes increasingly incorporated into the international economic system. In the 1970's Malaysia's New Economic Policy (NEP) starts which e.g. leads to increased state intervention in economic affairs and development of export-orientated industrialization strategies. Natural resource management (NRM) decisions in Malaysia, and Sarawak, are strongly influenced by NEP. Sarawak has rich oil reserves, but oil is considered as a federal resource, contrary to land and forest resources that are state resources. Therefore timber extraction has been the back-bone of the economic growth in Sarawak.

5.0 Theory

5.1 Livelihood vs. mainstream paradigm

In the early 1980s there was a form of impasse in the developing debate (Booth 1994). Over the years several development projects all over the third world had been carried out based on the neo liberal development paradigm. In the 1980s the conclusion became that none of these projects had succeeded – the difference between rich and poor was not only the same, but in most cases the gap was bigger than ever before. On this background many people raised a general critic and questions about the development research and its capability to explain its own field.

This was the base for a new debate about the neo liberal paradigm and its value according to reduce poverty. The very one-sided focus on development as a result of economic growth was the centre of the debate. At first it was challenged by the Marxist dependency theories. Writers as Munck(1999) claim that the dependency theories do not have a theoretical framework big enough to explain or catch the diversity which is dominant in the third world. On the other hand he sees them as a useful tool in the renewal of the development theories in general.

The main problem is according to Munck, Sen and Booth that in the mainstream paradigm there is little or no focus on participation and a narrow single focus on the economy. The only way to move on from this perception of development is to combine those two directions – which mean that you have a close look at the economy, but at the same time involves the locals and their needs. With other words you could talk about micro and macro level and the tension between them.

5.1.1 Livelihood

The term livelihood covers a broad range of elements its purpose is to enhance the understanding of poor people, their situation and their actions. The term livelihood is deeper than just poverty in a normal economic sense, because it contains many related elements which all have an influence on the individuals.

Because the term livelihood is so wide, there are many different ways of creating a model or framework. The framework we have chosen to use is described and used by “Department for International Development” (DFID)⁸.

5.1.2 Sustainable livelihood

⁸ Department under the British Government

Sustainable livelihood concentrates on development, reducing poverty and controlling the environment.

It is an analysing frame, which makes it possible to understand the opportunities and assets available for “poor” people and at the same time it is exposing the sources to their vulnerability and the influence extern organisations and policies have related to them as being poor.

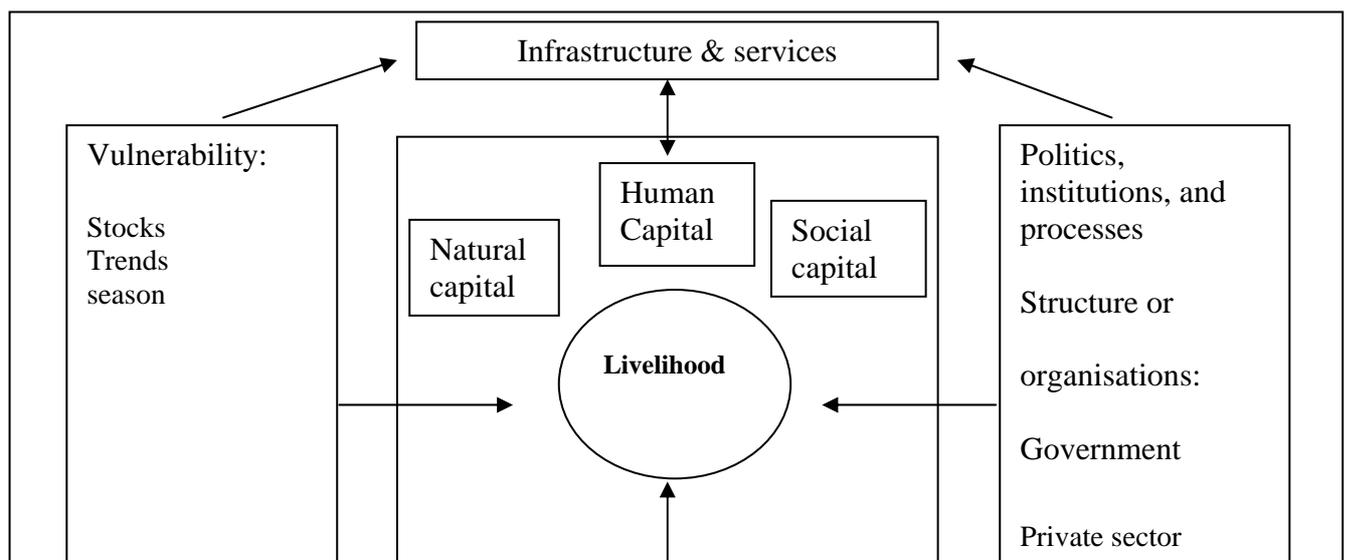
The definition of sustainable livelihood is according to Chambers and Conway:

“A livelihood comprises capabilities, assets (including both material and social ressource) and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and chocks, maintain or enhance its capabilities and assets, while not undermining the natural resource base” [Scoones, 1998:5].

It is possible to divide this definition in to some smaller components which either focus on livelihood or sustainability:

- Reducing poverty – relatively (Gini coefficient) or absolute (income/consumption)
- Well being and capabilities
- Livelihood adaptation – coping with stress etc.
- Basic nature resources – sustainability, not to overuse in difficult times

The following livelihood framework is an attempt to visualise livelihood:



Financial
capital

Material
capital

5.1.3 Livelihood in Skibang

The livelihood framework is in its nature a very complex model, therefore is it not possible for us due to the relatively limited time in the field to investigate all the elements in the framework. We hope that we after the trip are able to say or come with a qualified guess about the elements we could not find time to investigate.

We will choose those elements from the framework which directly or indirectly refer to our main investigation object. First of all we hope to be able to say something about the different capitals that all have a direct effect on the livelihood.

- Nature capital: Land, water and other environmental resources (also security related to ownership of land)
- Human capital: Working resources available to the household (both qualitative and quantitative).
 - Level of education, skills and general health situation.
 - Number of people in the household and the time available for income generating work.
- Social capital: The social resources (network, sense of belonging, trust, access to institutions) that the household use in pursue for a better livelihood. Also rules, norms, duties and security related to crime.
- Financial capital: Financial resources available (savings, credits and subsidies) which gives them the opportunity for a enhanced welfare.
- Material capital: The basic infrastructure (transportation, a place to live, water, energy, communication and household assets such as tools and other equipment that can generate capital).

(Rakodi 2002: 10-11)

In the livelihood framework vulnerability is a very important factor. To understand the connection between livelihood and the sources to vulnerability is it necessary to analyse the different trends in the society such as population development, conflicts, seasonal movements, dept, working possibilities and production. We can divided these into 3 categories:

- Long term tendencies - demography or changes in the available nature resources.
- Repeating tendencies conditioned by the season – prices and occupation possibilities.
- Short term tendencies – sickness, nature disasters and conflicts.

The main problem for poor people is the occurring degree of the vulnerability factors, and their lack of skills to recover from them – this means that poor people will experience different kinds of poverty, but never be able to recover to a normal stage and will therefore increase their vulnerability towards external factors.

When people have to choose a livelihood strategy or change an existing strategy the assessment of the vulnerability factors will be a very important element in the final decision. Therefore we will have to analyse the vulnerability of the inhabitants of Skibang according to their choice of livelihood strategies. We can look at the degree of migration, the diversity of the livelihood and if there have been any changes in the agricultural production – have they changed the crops or the methods. Have they intensified or increased their use of land.

5.2 Migration as a livelihood strategy

As our basic context is the livelihood framework, we will have to see the choice to migrate as a choice taken within the framework of the livelihood concept. Within the livelihood context, migration is a possibility for improving the general circumstances of life for both the household and the individuals. The kind and degree of migration can vary from permanent to non permanent migration over time. It could be seasonal work in a plantation far away from home or more steady and permanent work away from the local community.

Migration and changes in the existing livelihood strategies should normally be seen as a result of changes which are not under the control of the household or the individual, therefore it is necessary to look at different scales. It is not only conditions in the local context which are important it is also on a macro level such as policies etc. that can influence on micro level.

5.2.1 Types of migration

There are many kinds of migration, and many ways to classify the type of migration, but in short we will divide them into long- and short term migration. Short term migration could be defined by e.g. seasonal work, which often is defined by a short distance of travelling, but often repeated. [Polley, 1998:8]

A broad definition of migration is a permanent or semi-permanent change of residence. This reallocation can take place among individuals or groups, but there are no restrictions to the distance the movement has to involve or to the fact that if it is forced or volunteered, either are there any notions about a national or international character. But it is given that not all kinds of spatial movements are included in this definition. Excluded are the movements among nomads and migration workers – because for them there is no long term residence [Everett, 1965:49].

Whit in this definition it is possible to talk about at least 5 different kinds of migration:

- Short term migration
- Circular migration
- Permanent migration
- Step migration
- Counter stream migration

Short term migration is as mentioned before the migration e.g. of seasonal work, where the migrant takes off to another place to work for a shorter period of time, and repeat it on regular basis. Circular migration is when the migrant either temporary or permanent returns to his hometown – this kind of migration is normally used to define movements over a longer time span between the destination of origin and the new destination. Permanent migration is used when there is no intentions for the migrant about returning to the destination of origin (but it is hard to define when this type of migration is used, because as long the migrant is alive, there will be the possibility for him to return). The step migration is given by the fact that the migrant will visit and stay in a number of different locations before settling in the final destination – this type of migration is often an up going movement in the urban hierarchy from village to city to capital. The final type of migration is the counter stream migration and is different from the rest in that sense that it describes a movement from the bigger cities to the rural areas [Parnwell, 1993:13]

5.2.2 Migration in a Skibang context

We assume that there in the village of Skibang have been and still is a migration going on. What is interesting in this local context is to find out first of all, who is the

migrants (sex, age, education, income) and why are they migrating – is it because of the lack of possibilities in the village, are they migrating to get an education or are they migrating because of the bad opportunities to get a decent income etc. Another question is whether the migration pattern has changed over time and has this change something to do with a change in the infrastructure (paved roads, busses etc.) At last there remains one question – what impact has this migration on the village of Skibang and on the people left behind.

5.3 Land use and development in a livelihood context

5.3.1 Farming systems

Shifting cultivation is practiced in many parts of the tropics and subtropics. This type of farming system begins with the felling of primary or secondary forest and with burning of the organic matter accumulated by forests to speed up the mineral nutritive cycle of the ecosystem and to control weeds, diseases and pests. Then, grain crops including upland rice and maize are directly planted and the site is used for 1-3 growing seasons where after it is typically abandoned. The site is abandoned due to; the soil quality becoming degraded due to erosion; uncontrolled weeds and serious diseases; and declining productivity. After five to ten years fallow, the land may have recovered and will be reclaimed for cultivation. This means that shifting cultivation works best in areas with a sparse population and a good forest cover. Here the fallow gives time for the land to recover before it is reclaimed and the shifting cultivation only leaves a small gap in the immense forest. When part of the forest is left undisturbed it gives a chance for the diversity of natural ecosystems and wildlife to be sustained.

In Malaysia shifting cultivation is considered by the government as an obstacle to economic development because it is claimed to: destroy the forest, use too much land, produce low output and maintain rural people in a state of poverty [Forest Department Malaysia, 1997]. Considering the environmental effects of shifting cultivation Cleary & Eaton (1996) refers to the fact that it is important to recognize that within the general system of shifting cultivation there are both good and bad methods of practice. The fallow period must be long enough to allow time for recover of plant

nutrients such as nitrogen, potassium and phosphorus, it also needs time to allow the build up of humus and improve the soil structure.

In Skibang shifting cultivation has changed to rotational practice, mainly as a result of the Malaysian land development politics to abandon shifting cultivation for more efficient land use. Rotational practice is an agricultural practice of varying the crops on a piece of land in planned series. Different plants use different nutrients therefore growing the same crop year after year will deplete soil chemistry. In order to save or increase the mineral or organic content of the soil; to increase crop yield; to eradicate weeds, insects and plant diseases, it is often desirable to alternate a cultivated crop e.g. maize with a legume, which adds nitrogen to the soil. In rotational practice it is necessary to add nutrients to the soil, as crops are removed from the site and the site is not left to recover after a few years as with shifting cultivation. Therefore fertilizers have to be added, either chemical or natural. Another issue of rotational practice is plant diseases and pests. If a diseased plant leaves remnants of infection on the soil, the disease can infect the next crop and spread. Many crop diseases do not affect dissimilar crops. To counteract pests and diseases pesticides may be added, which also helps to increase the crop yield. Therefore we will take a closer look at the impact of these two different farming systems in the livelihood framework in Skibang through the different methods below.

5.3.2 SALCRA scheme

State planned projects for development of areas such as the NCR-land has influenced land-use and labour allocation of the local community. NCR-land was mainly dominated by subsistence farming before these projects and has been described as followed:

"much of such land is underutilized and most of its owners are socio-economically backward and suffer from malnutrition and high incidence of poverty"[Yaakub,1993, pp 98].

The state's intention was therefore to develop these areas by introducing them to projects that included the cultivation of cash-crops and labour opportunities. Many of these projects therefore included setting up plantations with cash crops on which local people had opportunity to get an income either directly through cultivation and selling their harvest or through labour employment. Therefore development schemes usually

have influenced as well land-use as allocation and availability of labour and cash in many rural communities. Skibang is one of these communities in which there has been established such a development scheme. In Skibang there has been established an oil palm plantation as part of a state sponsored development project by SALCRA. The project was started in the beginning of the 90's as a part of Malaysia's sixth development plan.

Besides the aspects in related to these schemes when it comes to their effect on land use and labour and cash availability and allocation there are many other problems which will be interesting to identify in relation to these schemes. One of these other problems are in relation to the long time span connected to these schemes in which the community is committed to keep the plantation and as prices fluctuate they are not allowed to change the crop. Besides that they also have to sell their harvest back to the SALCRA company which sometimes doesn't allow them to sell when they want or get the right marked price. Another problem relates to rights to the land, because it is interesting to find out if the people are actually getting legal ownership of the land after the projects and how it affects their decision to join the scheme. Finally there is the question in relation to the schemes as to rather or not the locals feel they have an option to choose to join the state sponsored development scheme or do they get forced into participation. All of these problems relates to the fact that it is in the interest of the state to set up these development schemes to increase local production especially of export related products as in the case of Skibang and the question then is how that leaves the locals.

6.0 Methodology

6.1 Methodology to understand Livelihood

To understand how the household acts according to the livelihood framework, we have chosen to first of all to look at the different capitals within the framework. The capitals say something about the general livelihood for the household, and they are relatively easy to compare between two or more households. To get the information about these capitals we are going to hand out a questionnaire containing questions as outlined in appendix 1.

The information obtained from these questionnaires should tell us whether we are dealing with a good livelihood or a bad livelihood which are about to perform a strategy shift in order to obtain a better livelihood.

What kind of livelihood strategy the household have followed or are going to follow should also be revealed from the questionnaires, as well as we should be able to say something about the development in infrastructure and migration patterns over time.

Besides questionnaires we also want to perform interviews with chosen villagers and of course we are going to do an in depth interview with the headman of Skibang to obtain the most relevant and general information about the village.

6.2 Methodology to study land use practice and productivity

To obtain a better understanding of the farming strategies and the internal dynamics in the systems, we have to take a closer look at land use related issues as e.g. soil fertility, labour input, agro chemical input, other management practices and yield. In order to get information on land use practice and change in land use practice in Skibang we want to do following:

- Include a few land use questions in the general household “survey”.
- In depth interview on more specific land use practice and change in Skibang
- Field transect walk
- Participatory mapping of fields/ the area villagers in Skibang are cultivating
- Extended Crop Value Ranking
- Soil sampling
- GPS mapping of fields

6.2.1 Questions for general household “survey”

These questions should give an idea about the general land use practice in Skibang, how labour is distributed to land use (number, age, gender) etc. Some of the questions could be:

- Is the household cultivating any crops?

- What kind of crops?
- What kind of crops are the most important? Or
- What kind of crops does the household produce most?
- How important is farming/cultivation for the household? (in relative or economic terms)
- How much labour (man hours) is used in farming activities?
 - Who works in the field? (age and gender)
- Does the household use/collect any other natural resources than “farm crops”?
 - What kind? (fish, NTFP, others)
 - How important are other natural resources? (in relative or economic terms)

6.2.2 Specific information on general land use practice and change in Skibang

We want to get more specific knowledge on land use practice in Skibang (what kind of cultivation, fertilizers, pesticides, manure, etc.), how much land is used for cultivation and other methods of production and if land use practice and extent has changed in the last XX years. In order to get this information we want to do one or more **in depth interviews** with key informants.

To get an assessment of the physical state of the land use practice and if/how land use changes has affected the physical environment we want to test soil fertility. More specifically we want to determine the organic matter content in the soil, to see how a change from shifting cultivation to rotational practice has affected the soil. Instead of collecting samples from all fields we want to **interview** and do **field transect walk(s)** with either a few farmers or a key informant. Here we want to collect information on general land use issues in Skibang, e.g.

- What is the main crop cultivated in Skibang?
- What is the general land use practice in Skibang?
- How long time since they “stopped” shifting cultivation (if they have stopped)? (may have to be “sneaked in” some how)
- What fields have been under rotational practice for the longest period of time? or just
- What fields have been cultivated for the longest period of time?

- For how long?
- What fields have just “recently” started on rotational practice?
 - or just
- What fields have been cultivated for the shortest period of time?
 - For how long?
- What fields give the best yield (per ha)/ is most productive?
- What fields are the least productive?

Some of this “informal” interview/information collection could probably be done as **participatory mapping of land use** in/around Skibang.

- What is the size of the “total farming area” connected to Skibang?
 - or
- Where are the boundaries of Skibang’s land for cultivation?
 - Place location on map/ draw location.
- What fields have been under rotational practice for the longest period of time?
 - Place location on map/ draw location.
- What fields give the best yield (per ha)/ is most productive?
 - Place location on map/ draw location.
- What fields have just “recently” started on rotational practice?
 - Place location on map/ draw location.

This information combined with soil capability maps will give us an idea on where to **select “representative” soil samples** to reduce the total number of samples and be more efficient in the field. For each of the fields/sites we want to collect samples from, we need to get specific information on:

- For how long have the field/site been cultivated?
 - What kind of cultivation practice? (Rotational, shifting, others)
- What crops have been cultivated on the field? (Legumes?)
- Have fertilizers been used on the field?
 - What kind of fertilizers? (Green manure/plant residues, animal manure, chemical fertilizers, other (water/mud from the fishpond?))
- Have pesticides been used?

6.2.3 In depth information on land use practice and crops

To assess what crops people in Skibang grow and the crops economic importance, we will do a crop value ranking. Here we will get information on what crops are cultivated, to what extent they are cultivated (spatial (both area and topography) and temporal (for how many years and what time of year)) and how crops are valued by villagers (economic value or villagers perception) we want to do a crop value ranking in an extended form. A draft for the **Extended Crop Value Ranking** scheme is attached in appendices 1. Valuing crops can turn out to be a difficult task, as it is the villagers' perception of crop value and not necessarily the actual economic/market value of the crop. If we in the end see this as a problem we can use the crop yield combined with market value to get the value in economic terms.

An **in depth interview** on land use practice and change in the past, present and future could be combined with the Extended Crop Value Ranking, to be more efficient. From this interview we would like to get more information on the perception of land use practice and change:

- Has the crop ranking sequence/order changed in the last 10, 20, 30 years?
- Are you happy with your cropping practice?

This information should give us knowledge on the crop-diversification and to assess how land use change has affected production.

6.2.4 GPS mapping of fields

GPS mapping of the fields is done to get a "formal" spatial position of the fields.

6.2.5 Asses land cover changes in the Skibang area

By using Landsat satellite images from the Skibang area (Landsat no.???) from different time periods, we should be able to see general land cover changes in the area, a measure of land use change. Most of the satellite images are from June-July (we believe) just before the planting of new crops. Therefore fields (at least some)

should be cleared and easy to recognize. This should give us an idea about how land cover, and – use, has changed in Skibang area in the last XX years. To increase the reliability of the satellite image interpretation we want to make GPS measuring of specific points and areas (e.g. fields, roads, the village etc.) and combine these with a site description of the points/areas. This should give us data to increase reliability and definition of the final satellite image interpretations and maps.

Therefore we need to get hold of following:

- Landsat satellite images from the Skibang area, from different time periods
- Maps and land cover/land use maps from the Skibang area

To get official information on the production and land use in the Skibang area, we want to contact/"interview" local authorities on following issues:

- What kind of crops is/has been produced?
- How much is/has been produced on an annual basis?
- How much fertilizer and/or pesticide is/has been used?
- What kind of land use methods is/has been practiced?
 - o When did shifting cultivation stop?
 - o Is there still shifting cultivation?
 - To what extent and where?
- Is there industrial logging in the Skibang area?
 - o Where?
 - o To what extent/on what scale?
- What other kinds of land use/ natural resource management is practiced in the Skibang area?

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8.0 Appendixes

Appendix 1

People to interview:

Headman of Skibang village

5 rich households, 5 middle income household, 5 poor household

Questions about number of females and males interviewed is open and so is the questions about age

but we should consider to do a interview with at least 7 women and 8 men and the age ranking should be some thing like 5 people between 20 and 30 and 5 people between 31 and 45 and 5 people between 46 and ?

In this way we will get a representative view over the village and we will not only have our focus on a single group in the village – of course it is not possible to do it strictly as written, but it should be a guideline for our work with the respondents

Headman:

We shall be aware that the headman may be biased from his personal context and situation, as well as he can have a hidden agenda in his guidelines to us – nevertheless it will be easy to have him to point out the different households that fit our categories.

Questionnaire

Back ground questions:

- How many people is a part of this household?
- How many people have moved out of this household?
- Where have they moved to?

- What is the age of the people living in the household?
- What is the gender of the people living in the household?

Activities:

- 1.From which activities are the household generating its income?
- 2.Is the household a member of the fish pond?
- 3.Is the household a member of SALCRA?
- 4.Is the household a member of an NCR land scheme?

Education:

- 1.What is the education of the highest educated person in the household incl. those who have left the household?
- 2.Is the household suffering from any diseases?

Farming:

1. Who owns the land you cultivate?
2. How big are your fields?
3. How do you cultivate the fields?
4. What crops are cultivated?
5. What is the yield?
6. Do the household own any farming machinery?
7. How many people and hours are used on a general weekly basis in the fields?
8. How many people and hours are used on a general weekly basis on other income generating work?

Finance:

1. How much money is the household generating on a monthly basis?
2. Are the household able to have a saving account?
3. Do the household have any debt?
4. Is it possible for the household to obtain a loan?

Infrastructure:

1. Where does the household get its water from?
2. What does the household use as energy sources?
3. If you should go to the big city – how would you do it?
4. Do you own a telephone?

Migration:

1. Who are the migrants (sex, age, education, income)?
2. Why are they migrating? – is it because of the lack of possibilities in the village, are they migrating to get an education or are they migrating because of the bad opportunities to get a decent income etc.
3. Another question is whether the migration patterns have changed over time and have this change something to do with a change in the infrastructure (paved roads, busses etc.)?
4. At last there remains one question – what impact has this migration on the village of Skibang and on the people left behind?

Terms we need to convert into questions – if possible:

Social capital:

- The social resources (network, sense of belonging, trust, access to institutions) that the household use in pursue for a better livelihood.
- rules, norms, duties
- security related to crime

Appendix 3

Equipment:

Laptop (Martin)

Statistical software

arcGIS or arcVIEW

Remote sensing program – CHIPS (Martin)

Digital camera (Martin)

GPS (Martin)

Compass (Martin)

Bags for soil samples

Small shovel to take soil samples

Measuring tape

Local maps (land cover, soil capability etc.)

Satellite images (Landsat)

Appendix 4

Time schedule for Kpg. Skibang fieldwork

08.01.05

- **Arrival at Kpg. Skibang**
- Introduction to the village

09.01.05

- **Preliminary study at Kpg. Skibang**
- Brief/Start interview with headman to get information on land use and who to contact
- Transect walk in village to get a “view” on Skibang

10.01.05

- **Kuching**
- Presentation of final proposal

11.01.05

- **Kpg. Skibang**
- Start interview on land use practice/change and field transect walk

12.01.05

- **Kpg. Skibang**
- Start interview on land use practice/change, field transect walk and participatory mapping of land use
- Choose soil sample sites

13.01.05

- **Kpg. Skibang**
- Soil sampling

14.01.05

- **Kpg. Skibang**
- Soil sampling

15.01.05

- **Kpg. Skibang**
- Soil sampling

16.01.05

- **Kpg. Skibang**
- Collect information on fishpond and tour on fishpond

17.01.05

- **Kpg. Skibang**
- Extended Crop Value Ranking and In depth interview on land use practice/change

18.01.05

- **Kpg. Skibang**
- Extended Crop Value Ranking and In depth interview on land use practice/change

19.01.05

- **Kpg. Skibang**
- Catch up on missing information

20.01.05

- **Return to Kuching**
- Preparation of fieldwork presentation

21.01.05

- **Kuching**
- Preparation of fieldwork presentation

22.01.05

- **Kuching**
- Debriefing and presentation
- Party - Dinner

Lars's Time schedule

Day	Date	Day-time	Evening-time
Mon	10	Field trip briefing in Kuching and meeting Malaysian students. Depart for Kpg. Skibang for preliminary study, guided tour through Kpg. Skibang.	Preliminary study and discussion of project proposal.
Tue	11	Preliminary study and discussion of project proposal.	Discussion of project proposal.
Wed	12	Presentation of project proposal, group discussion of project and survey questionnaire.	Group discussion of survey questionnaire and random selection of households.
Thu	13	Test of survey questionnaire.	Doing Survey questionnaire. Preparing Migration interview and focus group.
Fri	14	Doing Survey questionnaire.	Doing Survey questionnaire. Preparing Migration interview and focus group.
Sat	15	Doing Survey questionnaire.	Wedding, dancing, playing the gongs and informal talking.
Sun	16	Doing Survey questionnaire.	Meeting with JKKK (PRA (Community history, Problem and Strength ranking)).
Mon	17	Soil sampling and drying soil samples. Infrastructure mapping	Meeting with Puak and Tringuss group in Bau, giving auger to Tringuss group.
Tue	18	Infrastructure mapping, preparing infrastructure interview	Infrastructure interview with headman & JKKK members in charge of roads and electricity
Wed	19	Focus group interview with young people X 3.	Migration interviews
Thu	20	Migration interviews.	Migration interviews
Fri	21	Interview at the Bau vegetable market.	Preparation of Migration/infrastructure presentation. Cooking traditional Danish dinner (Frikadeller og kartofler med "brun" sovs) for Malaysian students.
Sat	22	Preparation of final presentation.	Preparation of final presentation.
Sun	23	Final presentation. Going to limestone caves.	Farewell dinner/party.
Mon	24	Tour to vegetable and fruit garden	Farewell dinner/party.
Tue	25	Preparing interview with "migration office"	Party/relaxing
Wed	26	Waist management lectures and visit to longhouses	Party/relaxing
Thu	27	Should have done interview with "migration office"	Visiting Dr. Siti
Fri	28	Rescheduled interview was cancelled – relaxing/shopping	Dinner with Malay students & karaoke
Sat	29	Looking for Orang Utan and Relaxing at Hiltons swimming pool	Flying home

Runes Time schedule

Day	Date	Day-time	Evening-time
Mon	10	Field trip briefing in Kuching and meeting Malaysian students. Depart for Kpg. Skibang for preliminary study, guided tour through Kpg. Skibang.	Preliminary study and discussion of project proposal.
Tue	11	Preliminary study and discussion of project proposal.	Discussion of project proposal.
Wed	12	Presentation of project proposal, group discussion of project and survey questionnaire.	Group discussion of survey questionnaire and random selection of households.
Thu	13	Test of survey questionnaire.	Doing Survey questionnaire. Preparing Migration interview and focus group.
Fri	14	Doing Survey questionnaire.	Doing Survey questionnaire. Preparing Migration interview and focus group.
Sat	15	Doing Survey questionnaire.	Wedding, dancing, playing the gongs and informal talking.
Sun	16	Doing Survey questionnaire.	Meeting with JKKK (PRA (Community history, Problem and Strength ranking)).
Mon	17	Infrastructure mapping	Meeting with Puak and Tringuss group in Bau, giving auger to Tringuss group.
Tue	18	Infrastructure mapping, preparing infrastructure interview	Infrastructure interview with headman & JKKK members in charge of roads and electricity
Wed	19	Focus group interview with young people X 3.	Migration interviews
Thu	20	Migration interviews.	Migration interviews
Fri	21	Interview at the Bau vegetable market.	Preparation of Migration/infrastructure presentation. Cooking traditional Danish dinner (Frikadeller og kartofler med "brun" sovs) for Malaysian students.
Sat	22	Preparation of final presentation.	Preparation of final presentation.
Sun	23	Final presentation. Going to limestone caves.	Farewell dinner/party.
Mon	24	Tour to vegetable farm	Farewell dinner/party.
Tue	25	Preparing interview with "migration office"	Party/relaxing
Wed	26	Measuring soil texture at UNIMAS	Party/relaxing
Thu	27	Should have done interview with "migration office"	Visiting Dr. Siti
Fri	28	Rescheduled interview was cancelled – relaxing/shopping	Dinner with Malay students & karaoke
Sat	29	Looking for Orant Utan and Relaxing at Hiltons swimming pool	Flying home