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Interdisciplinary Land Use and Natural Resource Management

A gender perspective on livelihoods

A case study of livelihood strategies and their outcomes
in Munggu Sawa, Sarawak



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Chapter	Responsible author
Introduction	All
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Abstract

Departing from the case of the Iban village of Munggu Sawa (MS), this paper seeks to uncover the outcomes of agriculture and migration as livelihood strategies and how these are influenced by gender. The results show that migration is adopted as a livelihood strategy by both men and women in MS, although the reasons for adopting this strategy are different; men predominantly migrate for work and women for relationships. Although villagers leave MS they maintain their ties with the village, with some of them returning to take care of elderly parents' farmland. The recent migration trends have furthermore left elderly female villagers behind in MS. These women are coping with their vulnerable position through using their family networks in order to receive remittances. As out-migration and the subsequent decrease of young workforce is often resulting in the eroding of agricultural practices, the role of agriculture is assessed. In the case of MS, agriculture is still essential for the livelihood security, particularly in the provision of food security. Crops are managed by both men and women, although the recently introduced oil palm may influence this, being its cultivation is male dominated. Lastly, female weaving practices represent an unrealised potential, due to limited market access.

Keywords:

Livelihoods, Rural-urban migration, agriculture and food security, *adat*, Iban, Sarawak, coping-strategies.

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The fieldwork group

Introduction

This chapter begins by introducing the theoretical focus of our project. This is taken from the Scoones livelihood framework and we begin by unpacking the relevant parts for our project. This is followed by a review of research into the two main livelihood strategies in Munggu Sawa (MS); migration and agriculture. Each livelihood strategy is concluded with our research questions.

Research Framework

Livelihoods can be defined as the “activities that are used to generate the means of household survival” (Ellis, 2000 p.40). Livelihoods are dynamic and complex processes that are entangled with exclusion. Thus their complexity can be difficult to capture and frameworks have been developed as a useful guide for organising fieldwork whilst capturing the messiness of the social world.

We decided to use Scoones (2015) sustainable livelihoods framework as a reference for our research, as this has institutions at its centre (See Figure 1). Even though institutions are essential for the framework, little literature address this aspect (Scoones, 2015).

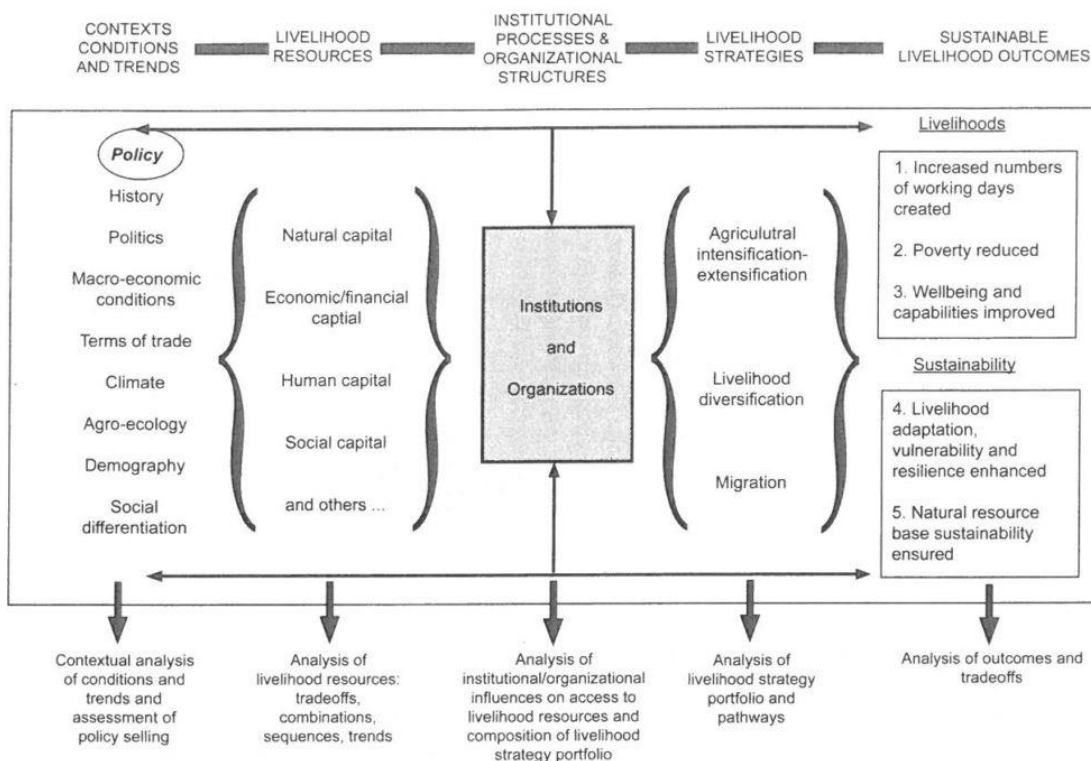


Figure 1: The Sustainable Livelihoods Framework (Scoones, 1998)

Our study is guided by the understanding that gender, and its intersection with other social variables such as age, can be defined as an informal institution that mediates livelihood strategies and outcomes differently for men and women (Jakimow, 2013) (White and White, 2012). Informal institutions are socially embedded power structures that regulate behaviour, constraining and creating opportunities for different groups of people (Jakimow, 2013) (Ribot and Peluso, 2003). This

gendered perspective is the point of departure for investigating the changing livelihood strategies in Munggu Sawa, at the interface of local struggles and more global trends (White and White, 2012).

Thus, we have formulated the overall objective:

What are the outcomes of the different livelihood strategies adopted in Munggu Sawa and how are these influenced by gender as an informal institution?

Rural-Urban Migration

Migration: trend and livelihood strategy

According to Hew Cheng Sim (2007), the most important driver of social transformation in Sarawak is the rapid rate of urbanisation. Indeed, between 1970 and 2015 the population living in urban areas increased from 27 per cent to 74 percent in Malaysia (UNdata, 2018). This is driven in part by the higher instance of poverty in rural areas in Sarawak, and partly by the promotion of education by the government as rural school children are educated in boarding schools. Migration can therefore be understood in part as a trend¹ (Scoones, 2015), and also as a livelihood strategy (Ellis, 2000), as people move from poorer rural areas in Sarawak to cities as a strategy to improve income (Cheng Sim, 2007).

Migration and gender

Half of the Sarawak population now live in cities, and of those migrants around 45% of them are female (Cheng Sim, 2007). Traditionally migration was in the male domain within the Iban community, termed *bejalai*², (Jensen, 1974)(Soda, 2001)(Sather, 2006) however the economic boom in the 1980s saw increased opportunities for female employment in the service sector (Cheng Sim, 2011). Furthermore, during this boom, women and families began to join their husbands, thus migration became more permanent (Soda, 2007). Young women also have also started to receive an education, and moved to the cities for personal 'transformative projects'(Cheng Sim, 2003). This is considered a break with the traditional *Nguai*³ rule of women leaving their homes only to get married (Jensen, 1974).

¹ Angelsen et al. (2011) stresses the importance of trends and shocks in mediating livelihood strategies and therefore outcomes. Belonging to the "context" component of the framework, these factors are beyond the control of people and often constrain or expand their livelihood opportunities.

² *Bejalai* was historically associated with male "headhunting" expeditions or journeys to search for new frontiers, success raised the social status of these men (Sather, 2006). It is now a term ascribed to working away from home for cash income (Soda, 2001)

³ *Nguai* occurs when the spouse leaves her *bilek* and family in order to join her husband and create a new household (Jensen, 1974)

Permanent migration vs in-betweenness

Literature describes two interrelated migration patterns for Iban communities. Soda (2001) argues that the increasingly permanent out-migration of younger generations results in a tendency of the extinction of family line and the bonds between families, with a consequent degradation of the traditional Iban community (Soda, 2001). However, other studies have placed emphasis on the importance of migrants continuing to sustain their linkages with their places of origin and with the non-migrant people they have left behind. This is termed “In-betweenness”, meaning that migrants “navigate their lives based on events and relationships that are nurtured from miles away” (Resurrección, 2005, p.34). Indeed, individuals are able to embrace multiple spatial and occupational identities simultaneously (Rigg, 2005). In the case of Iban, Ichikawa (2004) highlights how the rules of inheritance⁴ dictated by *adat* customary law play a role in maintaining linkages to the longhouses of origin.

Elderly women and coping strategies

In many cases, recent migration trends necessitate elderly females to cope with being left behind in rural areas, exacerbating their vulnerability (Kee, 2007). Indeed, the highest incidence of poverty in Malaysia is amongst elderly women living in rural areas, as they earn less over their lifetimes and have life expectancies that exceed their husbands and their savings (Mohd et al, 2016). Furthermore, there is no universal pension payment in Malaysia (Mohd et al, 2016). Consequently, these women cope by relying on family networks by moving in with children in the city or having children providing remittances in the rural areas they reside in (Kee, 2007). Remittances however represent an unequal distribution system (Durand et al. 1996), that relies upon the generosity and wealth of their children, and helps only with immediate poverty concerns and not long term social mobility (Ngidang, 2017). These coping strategies are exacerbated by shocks of acute health issues experienced by the elderly.

Migration and agriculture

Soda (2001) argues that out-migration flows are eroding the agricultural practices of Iban villages. Indeed, as women were traditionally responsible for farming and less young workforce was available overall, agricultural activities are now conducted by elderly people. The implications of this change include a shift from hill to wetland rice, a shrinkage of farmed land, continuous cropping and decreased importance of cash crops (Soda, 2001). This suggests that the significance of agriculture has been diminished by patterns of outward migration.

Thus, we have formulated the following research questions:

How is migration as a livelihood strategy adopted differently according to gender, what are the outcomes of adopting migration as a livelihood strategy on the community of Munggu Sawa?

⁴ The *adat* rules of inheritance are important in securing the *bilek* continuity from one generation to the next. *Adat* requires the parents to choose one child to stay, or in these cases come back, to his/her natal *bilek* (Ichikawa, 2004). If there is no one to inherit the *bilek* it may be extinguished (*punas*) (Ichikawa, 2004). The rule of inheritance is therefore meant to be preserving the successive generations right to the farmland and the *bilek*.

Agriculture, livelihood outcomes and gender

Livelihood security and environment sustainability

In the context of eroding the agricultural practises of the Iban (Soda 2001) we seek to assess the role of agriculture for the livelihoods in Munggu Sawa through the analysis of its outcomes. Similarly to the outcomes identified by Scoones (1998) in the framework, Ellis (2000) summarize them under the categories of livelihood security and environmental sustainability.

Within livelihood security, food security⁵ is listed as an essential livelihood outcome (Ellis, 2000). This can be achieved both by the production of food for self-consumption and by the generation of cash for purchasing food. Thus, the cultivation of both food and cash crops will be included in the section about the agriculture livelihood outcomes.

Furthermore, environmental sustainability - as to say the maintenance of the natural resource base - is identified as a major outcome of livelihoods (Ellis, 2000) (Scoones, 1998). Thus, the results of water and soil samplings realized during the fieldwork will be presented.

Gendered division of labour in agriculture

For the Iban there is a traditional gendered division of labor in cultivation (Soda, 2001) (Jensen, 1974), which we investigate in the context of the current subsistence and cash crops grown in MS. In this context literature state that Iban societies consider married couples as equal partners, compiled in relationship of complementarity and reciprocity (Sather, 2006), we will discuss the implications of newly introduced male dominated crops like small scale oil palm, which is a possible source of income not jointly owned in the household. As a contrary to the cultivation of oil palm, we consider the effect on livelihood achieved by traditionally female weaving of mats (Sather, 2006).

Thus, we have formulated the following research questions:

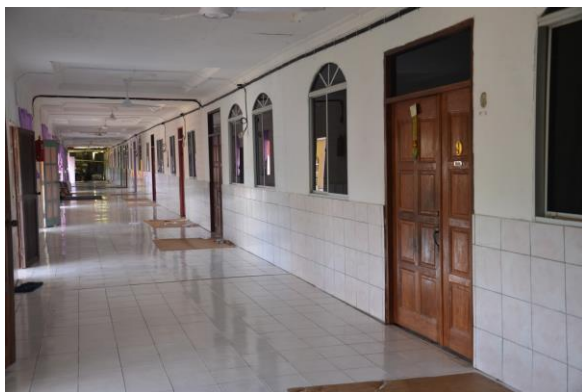
What are the outcomes of farming as a livelihood strategy and how are these outcomes affected by the gendered division of labour in Munggu Sawa?

⁵ "People are considered food secure when they have availability and adequate access at all times to sufficient, safe, nutritious food to maintain a healthy and active life." (WFP, 2018)

Introduction to the Fieldsite: Munggu Sawa

Munggu Sawa is a village in the Lingga district - Sri Aman Division - located in the South of Sarawak (Eastern Malaysia). Sarawak lies between latitude 0° 50' and 5° north and longitude 109° 30' and 115° 40' east. The largest state in Malaysia - covering 124 451 km² - is characterized by heavy rainfall, uniform temperature and high relative humidity. Munggu Sawa is situated 175 km away from the capital - Kuching - and approximately 50 km from the Indonesian border. In order to access the village, 25 km of dirty road must be crossed.

More than twenty years ago Munggu Sawa was divided in two different longhouses⁶, apparently because of political differences. MS Ili is composed of 25 *bilek*⁷, while Ulu of 45. Whilst both were converted to Christianity by missionaries, the former belong to Borneo Evangelical Church (SIB), while the latter to Anglican church.



The "ruai", MS Ili longhouse



Outside MS Ili Longhouse

Farming represents the main livelihood in Munggu Sawa, as business and waged jobs are limited. Fieldwork was conducted during the rice harvest season, serving as the central focus of village activities throughout our time in Munggu Sawa. Other important crops are pepper, rubber and oil palm. In Map 1, land uses mapped during the fieldwork are represented.

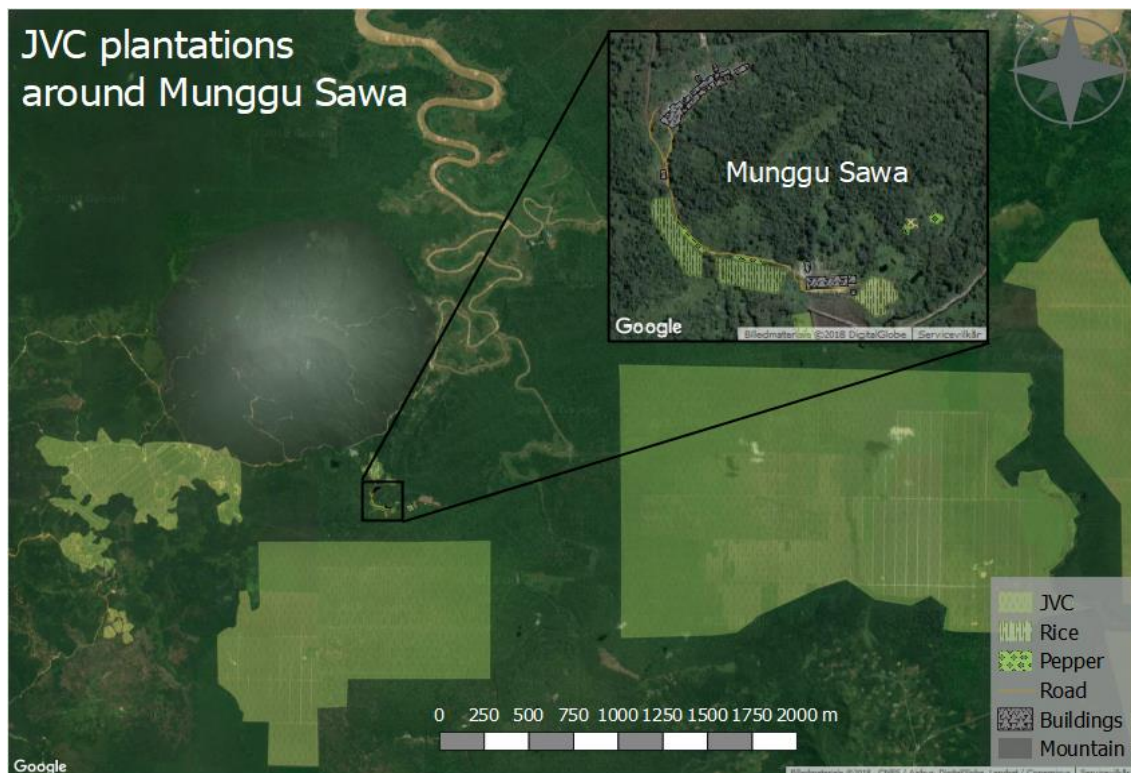
⁶ See "The longhouse structure" in Annex 1.

⁷ Household, family unit.



Map 1 : MS land uses mapped during the fieldwork⁸ © Google Maps 2018

Migration flows affect significantly the community of Munggu Sawa; indeed, 33% or 23/70 *bilek* were empty during our fieldwork. Furthermore, 60% of the members of the households represented in the questionnaire were not living in the village.



Map 2: The land around Munggu Sawa showing the JVC oil palm plantations⁹ © Google Maps 2018

⁸Map 1 is based on estimates of where the exact boundaries of the fields are because we do not have any GPS coordinates for their boundaries)

⁹ Map 2 is based on estimates of where the exact boundaries of palm oil plantations are because exact GPS coordinates for these boundaries were not available

As it is possible to note in Map 2, oil palm plantations dominate the land uses South and West of the village. Indeed, both longhouses are involved with the leasing of Native Customary Rights (NCR) communal land in a Joint Venture Scheme (JVC) with Winsome Pelita Sdn Bhd. According to the headmen, main reasons to sign the contract were to gain access to the road - maintained by the company - and secure the land for future generations. The land will be segmented into smaller plots per *bilek* (1ha) and a property title will be obtained at the time of the leasing expiration (sixty years). The JVC also allowed Munggu Sawa to settle an historical conflict over land a neighbouring village (Keranggas), as the territory was divided formally and equally. Moreover, small revenues and few jobs are provided to the villagers through JVC. In our questionnaire, little awareness about the agreement was showed by the head of the households, as less than 20% of them answered that they were leasing out land.



JVC oil palm plantation



Newly planted oil palms

Methodology

The preceding chapter presents our methodology as follows. Firstly, it provides an overview of our methodological approach. It then outlines and reflects upon contextual factors in the field that were important in enabling us to conduct our fieldwork. This is followed by a reflection of the specific

methods that we used. The chapter concludes with a reflection on how we ‘gave back’ to the village for hosting us and participating in our study.

Overview and chronology of methods

When doing our fieldwork, we used two different approaches in methods. This is summarised in Figure 2¹⁰. During the first half of our fieldwork, we worked to understand Munggu Sawa on a broad community level. The methods that were employed were quantitative social and natural science methods (questionnaire, water- and soil sampling, GPS-mapping), data gathering on a group level (focus group, participatory rural appraisal (PRA) matrix ranking) and transect walks.

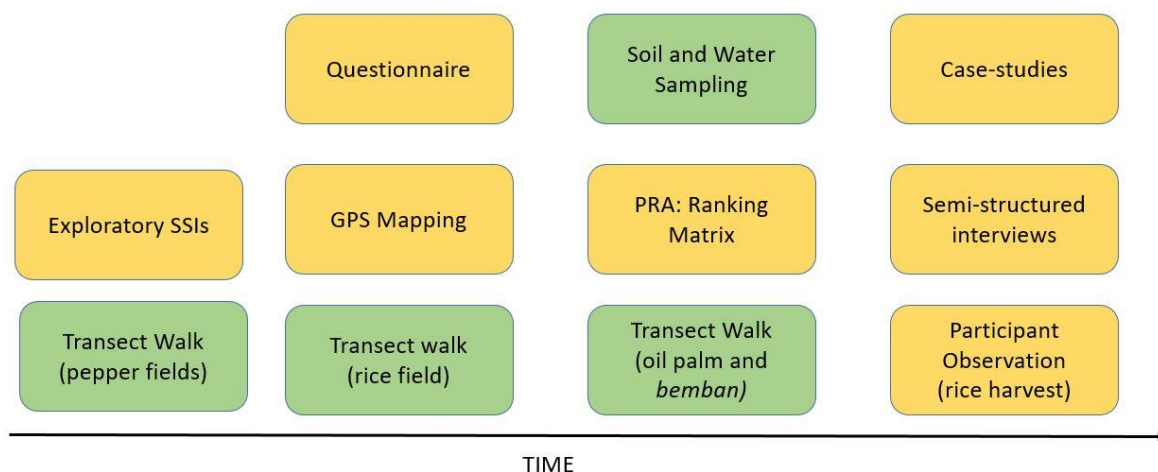


Figure 2: Chronology of applied methods

The last three days of the fieldwork focused on understanding specific cases more deeply to add nuance. The approach was thus more qualitative, selecting case-studies to research through participant observation and semi structured interviews (SSI). Our ability to use these methods was enhanced through the rapport, that we had built with our participants, and the village more broadly.

Interdisciplinarity

Interdisciplinarity is defined by Aagaard-Hansen (2007) as being when “researchers work jointly but still from disciplinary-specific basis to address common problem” (Aagaard-Hansen, 2007:145), this was not always achieved in our group. Indeed, there was a divide in approaches as UNIMAS had a natural scientist background and the UCPH students a social science one. Consequently there were occasions when we worked in parallel with one another as we focussed on our respective specialisms, Aagaard-Hansen (2007) defines this as multidisciplinary. This represents a missed potential in our

¹⁰ For a more extensive list of methods applied, see Annex 5: “Research methods matrix”

case of applying natural science methods to the research area. Had we discussed our different approaches earlier in the formulation of the synopsis, it would have been easier to combine them.

Methodological context of the field

The following sections explain the context of our research with 'gatekeepers', positionality, gaining 'rapport' and the use of interpreters.

The gatekeeper

In order to introduce ourselves in the community, the headman of the longhouse was not only hosting us in his *bilek*, but also presenting us in front of all the villagers as well as offering himself to guide us in the understanding of the surrounding territory. The headman represented a "gatekeeper" as he helped to ease access to the village and thus our informants (O'Reilly, 2012).

Having the approval and the support of the headman assisted us throughout the fieldwork, attaching more legitimacy to our research in front of the rest of villagers. Moreover, the gatekeeper served also as an initial key informant inasmuch as he was the first one exploratory questions were asked, and suggesting the most appropriate people to address for specific matters.



The headman of MS Ili performing traditional Iban dance

Positionality and rapport

Whilst conducting our research the position of the researcher should be acknowledged as this position influences the result of the research (Srivastave, 2006). Indeed, in our case we had to be mindful of the power imbalance that was manifested between us as researcher and the villagers as the researched. This was observed throughout our research process.

Indeed, after the PRA session the women participating asked us “if they had done well”. Furthermore, during a SSI with an older man, he commented that he only needed 50 RM (75 DKK) a month to get by, thinking that we were working for an aid organisation. Also on several occasions participants asked us what we could do to help improve the road for them. This mirrors the experiences of Jakobsen (2012) who stressed that her research in Tanzania was polluted by the tendency for participants to respond in a way that they believed would impress outsiders, or participants associating outsiders with aid organisations.

Building trust by ‘hanging out’ with the villagers was an essential way to minimise the influence of our positionality. In literature this is called ‘rapport’ (D. & Dewalt. 1998). Joining the villagers informally and engaging with them through social interactions, i.e. dancing to Iban karaoke or drinking *langkau*¹¹, was important for building rapport. We were able to observe a notable difference in the relative ease of semi-structured interviews conducted with members of the longhouse with whom we had socialised with compared to those who we didn’t share a lot of time with.

Furthermore, the last night was spent by conducting a farewell party, where some of the women put on their fancy dress and danced with peanuts up their noses. When compared with the first night, which was a relatively formal affair, it was possible to see that a relaxed atmosphere and rapport had been built.



Two group members preparing food with women from Munggu Sawa

The several roles of the interpreters

“Besides being an interpreter, they are also expected to act as guides for the researcher [...] and to act as an ambassador on behalf of the researcher. The interpreter too would have to understand the nature and objectives of the research [...]”

¹¹ Homemade liquor made out of fermented wine (*tuak*)

“Experience as an interpreter” Jona Anak Kerani.

Jona Anak Kerani account of the roles of being an interpreter is relevant to our experience in the field, indeed the majority of the informants that we talked to were not able to speak English.

One role that our interpreters fulfilled was as ‘cultural’ interpreters, helping us to navigate a context that we had not experienced before. For instance we learned that in the jungle you should not yell the name of others, as this would have the jungle spirits to know their whereabouts; but also in describing different Iban customs, for example the importance of sharing small treats.

Our interpreters also acted as ambassadors in different ways; one helped out in the kitchen thereby gaining the trust of the women working there, one was frequently drinking local moonshine thereby gaining the trust on the younger male population and one was an ambassador in its ‘original’ sense by respectfully addressing the entire community on several occasions. The justification of our presence in the field was therefore negotiated on these different levels; with the women, with the men and with the longhouse community overall.

Lastly the interpreters became a central part of group meetings in discussing findings and altering assumptions when it was inaccurate. A similar notion is called for by Kerani, who explains how the “[...] richness of additional information that the interpreter collects during the fieldwork [...]” should be appreciated (Kerani, “Experience as an interpreter”). Furthermore, this ensured that interpreters were working in a way that was appropriate to the method, and that they were able to provide adequate introductions to participants.



One interpreter performing Iban traditional dance

Methods used

In the following we will discuss central methods used: questionnaire, participatory rural appraisal (PRA) and participant observation (PO).

Questionnaire

“Most old and illiterate local respondents have no recollection of time, their age, size of their land, and some might not remember where their children are at [...]”

Jona Anak Kerani, “Experience as an interpreter”.

A questionnaire was used to establish an overview agricultural practices, their rural-urban linkages and their perception of the Mount Lesung National Park in Munggu Sawa¹². In order to ensure that the questionnaire was culturally appropriate we worked with both our Malaysian counterparts, interpreters and lecturers in order to apply local knowledge of Iban terms and customs. For instance when asking about community meetings, we learned that these are called *randau* and that there are specific words for wetland and hill rice.

We achieved a response rate of 26/47 households¹³ or 55% of the households whose members were present in Munggu Sawa while we were there. Responses were collected from MS Ili and Ulu. Our results are influenced by the larger number of emptied *bilek* in the time we were in the field (32,9%). As we conducted fieldwork for eleven day our sample size is skewed by households members not being present in MS at this time, handing out the questionnaire once might have a similar effect. Similar issues are reported in the literature as fluid household composition because of migrating household-members (Chibnik, 2011).

Our questionnaire was limited by our failure to include questions about the household composition currently staying in MS. This means that overall knowledge fx. the average age of the villagers staying in Munggu Sawa is not known. Another central reflection was our choice of cluster sample as sample method, which narrows the sampling size and type from large heterogeneous parts into smaller homogenous parts (Bernard, 2011). We cluster sampled the longhouse communities by sorting the respondents into their respective *bilek*. After this we chose to have the the head of household from each *bilek* to answer the questionnaire and if this person was not present another representative from the *bilek*. We sought using the head of household as we anticipated that this person would know the most about the overall use of the *bilek*’s farmland, family-migration etc., but as we discovered the head of household are usually male, which might have biased the answering of the questionnaire.

In the questionnaire we asked about the HH’s participation in the Joint Venture Scheme (JVC), which respondents failed to mention their participation, even though we knew from an SSI that every *bilek* is a part of the JVC. Thus, showing how triangulation between the questionnaire and the SSI can reveal how household members not are aware of their involvement with the JVC. Their answer could also be due to the phrasing of the question.

Another reflection is that the formulation of our questions limited our ability to understand fully the characteristics of migration for some households in MS. Indeed, when asking the headman how many household members currently did not live in MS his response indicates that his children

¹² See questionnaire example in Annex 3

¹³ 10/17 households in Ili (59%) and 16/30 in Ulu (53%)

and step children had left, but did not leave space for him to explain that he and his wife had both returned, and that he was now living in between Kuching and MS. In this way, the closed formulation of our question concealed reality.

Overall, the questionnaire was useful in providing a broad overview of Munggu Sawa and also for selecting relevant participants for more qualitative methods used in the field. Data generated from SSI's was furthermore triangulated the data from the questionnaire.

Participatory Rural Appraisal (PRA)

"The popular image of PRA as people playing with beans and drawing pictures is one often used by critics to disparage its use." (Cornwall & Garrett, 2011)

Participatory Rural Appraisal (PRA) intends to enable participants to "share, enhance and analyse their knowledge of life and conditions, to plan and to act" (Chambers, 1994, p. 1437). This is done through visualisation methods such as ranking matrixes. It was selected and applied during our fieldwork in understanding the relative importance of topics to different community groups (Selener et al, 1999). In our matrix ranking we tried to understand the agricultural practises in Munggu Sawa from a female and male perspective, and so we divided the five couples who were participants in two according their gender. Dividing couples, thereby the female and male participants had the same context for completing the exercise. Participants were selected primarily we were confident that they would partake in the exercise (Bernard, 2011). The selection of participants was biased by not including village members from the other longhouse, and not deliberately sampling a diversified group. We could have improved how we selected our participants on the basis of their overall farmland shown in the questionnaire.



The two PRA groups

Participant selection was interfered with as the female group was spontaneously joined by several other women. The interruption can be explained in part by the nature of *ruai*; and is a challenge that we also experienced whilst conducting focus groups. Whilst conducting a focus group session, the spontaneous addition of other participants made the session difficult to moderate, whilst the PRA was less challenging because of visual aids used.

Prior to PRA-session we decided to make a list of criteria for ranking crops, thus diminishing the potential of the method to allow participants to take ownership of their narrative (Mikkelsen, 2005). Had we allowed participants to select ranking criterias it might have been possible to collect data that reflected the gendered difference in what criterias was considered the most important. The PRA was also influenced by the way in which we organised the ranking criteria. In the field we read literature that suggested that we should only use positive criteria in ranking exercises. The outcome being that we were asking questions that were simultaneously confusing for the participants and generated data difficult to interpret, for instance what is the least difficult workload.

Participant Observation

Conducting participant observation, harvesting rice in the field:

“This is fun, [laugh] we never get white people out here!” (Farmer)

Participant observation (PO) is when observers partake in the daily lives of people being studied in order to gain both tacit and explicit insights into their lived experiences” (D. & Dewalt, 1998). We used PO in two ways, informally and more systematically. Indeed, we were conducting informal PO through experiencing the life of MS, while living very close to the people we were studying, as we shared a *bilek* with one household. Thus there was ample opportunity to make observations of and participate in daily life in MS. It also presented an opportunity to build rapport. More data could have been collected in these collective moments if notes were taken in a more systematic way.



A ngirup (break) during the PO in the paddy field

We also used PO more systematically by following the joint activities of a specific household. The selection of household was based on the responses from the questionnaire and informal interviews that indicated that their livelihood encompassed the main strategies we were interested in (farming/handicraft, migration). During the activity, notes were taken systematically and conversation was lead towards the research topics.

Bernard (2011) proposes participant observation as a strategic method that can reduce the problem of reactivity - people changing their behaviour when they know they are being studied. For us it meant that our presence inevitably intervened in their daily routine and had an influence on the observed behaviours. For instance, during lunch time wild-boar meat was offered for the “special occasion”, and in the field researchers and interpreters outnumbered the farmers while the farmers continually were asking if we were okay harvesting. They also commented that they were indebted to us for working for free. Despite an introduction of our intentions, this was emblematic of the misunderstanding of our attendance to the harvest. These factors demonstrate how the setting of the harvest was interrupted by our presence.

‘Giving back’ to the field

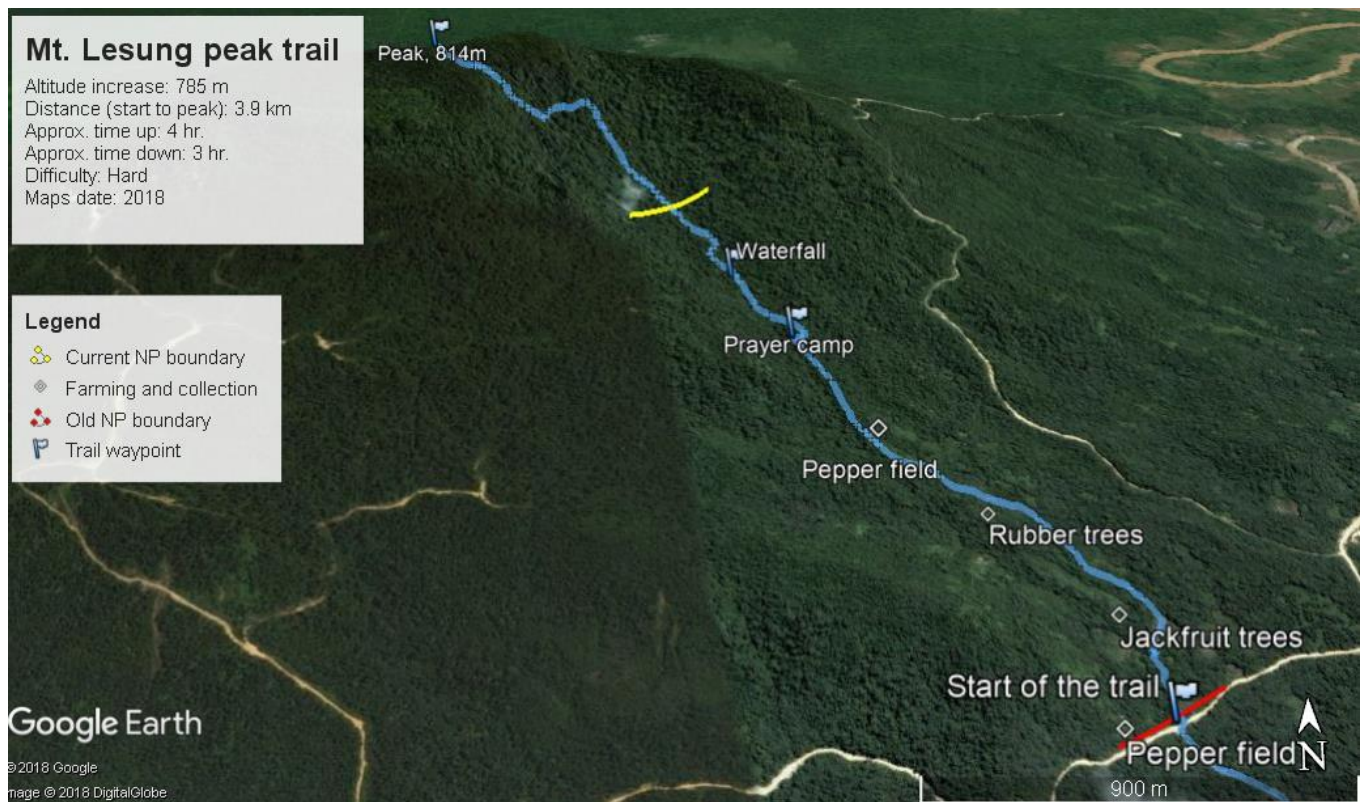
We found it very important upon leaving the fieldsite to ‘give back’ to the communities that we had engaged with, as they had been nothing but kind to host us and help us with the immense load of questions and activities that we had had them do. Our intention was to give back by offering practical help for challenges that we understood that the longhouse communities was experiencing, without actively telling the community how they could improve (Huschke, 2014).



The headmen receiving the maps of the trail

A main challenge articulated by the longhouse communities is how to attract tourists to the newly established national park on a mountain nearby. We offered to do our contribution in presenting the headman of each longhouse with a hiking map showing the hike to the peak of the mountain, a hike description and a general description on the wildlife/nature within the national park¹⁴. This information was gathered by GPS-mapping the hike to the mountain and interviewing villagers about wildlife. The intention with the maps and description was that it should be presented to tourists when they stay in Munggu Sawa.

As both headmen were interested in having this information made available online, we are in the process of sharing it on Hikeforlife, TrekkingSarawak, TripAdvisor and SarawakTourism. Thus, making a small contribution in giving back to the communities that hosted us.



Map 3: Mt Lesung peak trail and agricultural uses

¹⁴ See Annex 4: "Mount Lesung peak trail description"

Results and Discussion

Migration trends and gender

In the following section we are discussing migrations trends in MS, focusing in particular on the reasons for migrating for males and females. This data is collected to address the question of how migration is adopted differently according to gender.

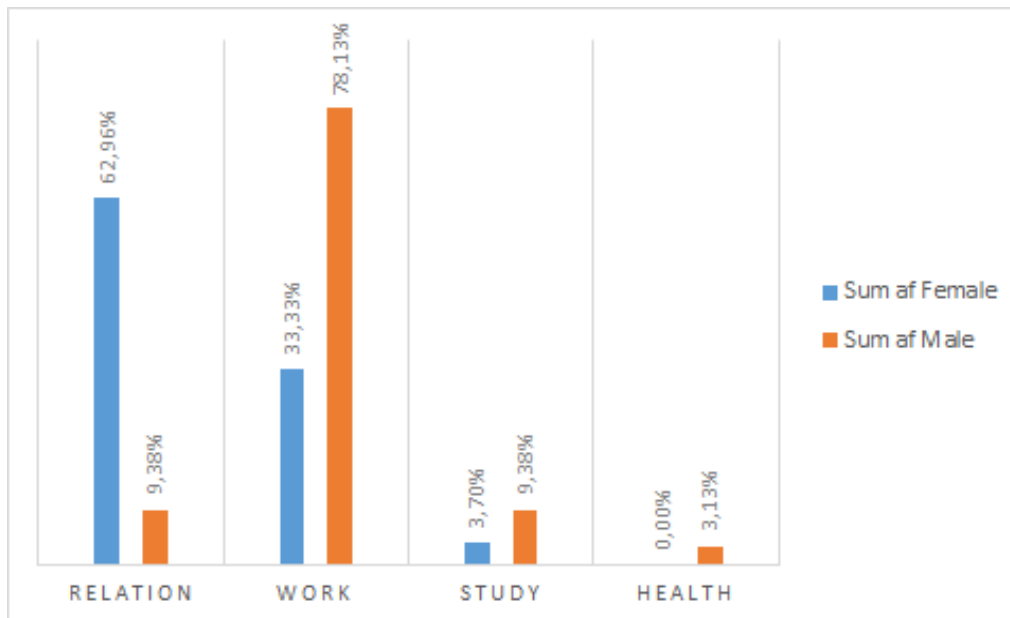
Marie and Robert's three children first left Munggu Sawa to get an education in boarding school. The first daughter decided to move to Kuching and work there, after meeting her husband she moved again to Lingga. The second daughter followed her older sister in Kuching. She still resides and work there. According to Marie, she does not want to get married and, in contrast to her mother, "She knows how to drink". We asked for their opinion and their response was that "for men is ok to leave the village to find a job, for women it is ok to leave only for education and marriage", but pointed out that now more young women are leaving to work in the cities. At the same time, they said that they want the best for their children and that there is not a lot they can do to change the situation of their daughters leaving.

Also, Marie highlighted that their children are better educated than them and this kind of education is not useful in the village, but only in the city (the daughters do not know how to farm or weave). The youngest son has just finished his boarding school and is waiting for the results. They hope he will remain in the village and take care of the bilek, but if his school results will be positive he could get a technical education in mechanics, which is his passion.

(Field notes, participant observation)

Marie and Robert's story provides qualitative insights about the gender differences in migration. During the informal interview in the rice field, Marie suggested that young women are leaving the village to work in the cities. This reflects broader trends observed in Sarawak, whereby women are moving increasingly to work in the service sector of the cities (Cheng Sim, 2007). Further to this, Cheng Sim (2003) highlights the importance of women's understanding of mobility as an opportunity for personal development, independent of the needs of their household and the will of their parents. This may be reflected in Marie's daughter who works in the service industry, despite her mother's disapproval of her living in Kuching, with no intention of getting married and 'who knows how to drink'. This signals a clear departure from the expectations of women in the village, who unlike the men do not drink.

Nonetheless, these conclusions are contradicted when triangulated with some of the results of the questionnaire. Indeed, as the results for the questionnaire represented in Graph 1 show, the answers about the reasons for people to move out from Munggu Sawa present some clear trends. On one side, 63% of the females left when getting engaged in a relationship, while only 33% moved out to look for a job. On the other side, 78% of men left for working reasons. The identified trend of women leaving to join their spouse and men leaving for work reflect to an extent the traditional patterns of *Ngaui* and *bejalai* described in the introduction.

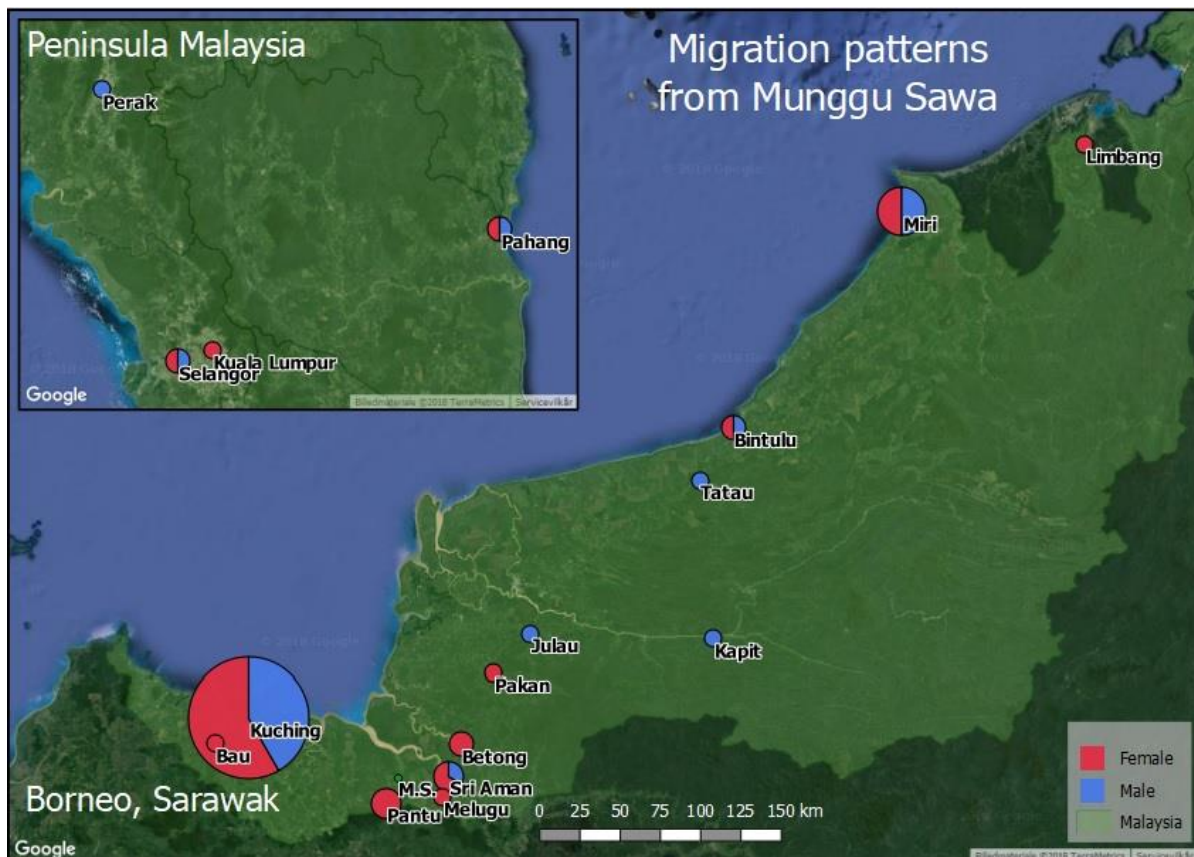


Graph 1: Reasons for migration according to gender, data from questionnaire

On one side, this cultural aspects of the traditional gender difference in mobility drivers could explain Robert and Marie's perception of acceptable reasons for men and women to leave the village. Indeed, they consider appropriate for men to leave for work, but not for women: *"for men is ok to leave the village to find a job, for girls is ok to leave only for education"*. On the other side, the case of their daughters provides an interesting contradiction to the traditional trends reflected in the questionnaire. They both moved to Kuching in order to find a job, thus contradicting the *Nguai* rule of women leaving the *bilek* only when getting married.

Due to these cultural expectations of women, a reflection of the results from the questionnaire is needed. Indeed, when asked the reason for their daughters to have left Munggu Sawa, the respondents could have answered "relationship" just because this is considered as culturally appropriate, although the actual reason could have been working, while marriage could have happened afterwards.

From the questionnaires we know which cities people from Munggu Sawa have migrated to, and from that we can see that Kuching and Miri is the two cities who receives most migrants from Munggu Sawa, as represented in Map 4. This is consistent with what Hew Cheng Sim (2007) writes about the migration trend where Kuching and Miri is among the biggest receiving centres of rural migrants. Cheng Sim (2007) also states that Kuching is the city who attracts most female migrants because of the large service sector, which we also can see from our own results (see Map 4) (Cheng Sim, 2007). However, we cannot see a connection between Cheng Sim's statement about the tendency of men going to Miri and Bintulu, in our results there are the same amounts of women and men going to both of the cities. Nonetheless, we have a small sample size and this could explain the discrepancy between our data and the results from Cheng Sim (2007).



Map 4: Destinations of out-migration from MS, from questionnaire results

Migration outcomes

In the preceding sections we describe the outcomes of adopting migration as a livelihood strategy on the community and individuals in Munggu Sawa.

Education and migration

Richard's son is 17 years old, he had just finished boarding school in the nearby city of Enkeranji. Since he recently finished school his future was uncertain between the possibility of pursuing educational goals in the city, or staying in Munggu Sawa working with his father as security in the nearby oil palm plantation. When we asked Richard about what he wanted for his son, he stated how he wants his son to do what is best for him. It doesn't necessarily have to be staying in Munggu Sawa. Instead he wants his son to have "the new generation things" like education, and therefore hopes that he will get a good result from his final exams, even though it means leaving his father in Munggu Sawa. Richard also has a younger daughter (12 yrs) who attends the same boarding school as his older brother, and older daughter (21 yrs) who moved to Sri Aman to work. (SSI summary)

Hew Cheng Sim (2007) describes how education represents, for those still residing in rural communities, a possibility of social mobility and a way to gain independence from farming. The

children of Richard, Robert and Marie exemplify this, as they pursue educational goals in the city instead of staying in the village to learn the skills of farming. Furthermore, the skills of working in the field are generally not taught as the children return from boarding school only during the weekends (Cheng Sim, 2007). This is evident in the case of Marie and Robert's daughters who haven't learned how to farm or weave in their youth.

Mobility related to education includes males and females equally, as schooling is perceived as necessary for everyone: "for girls is ok to leave only for education" (Marie)¹⁵. This signals a break from the elderly generation of women in the village who had less formal education; according to the results from our questionnaire 92% female respondents had no formal education, and 25% men had no formal education. The average age of respondents was 61. This is reflected more broadly in Sarawak, of those over 55, 72% of elderly women did not receive any formal education compared to 32.1% of elderly men (Kee, 2007).

"People coming back"

In this section we present cases of villagers who were living outside of Munggu Sawa, but whose lives were influenced by their linkages to MS as their place of origin. This can be characterised simultaneously as a characteristic of migration and also as an outcome as people have returned to their households to fulfil duties of care in the context of outward migration.

'In-betweenness'

Muri and her husband left Munggu Sawa to live in Kuching over thirty years ago. In Kuching they bought a piece of land where they built their house, where they live with some of their children and grandchildren. Since the election of Asoi as headman of Munggu Sawa Ili, which they were unhappy about, they now have to come back to the village more often. Last year they started to build a new bilek for them, and they are now living two weeks in the village and two in the city alternatively. Asked about her opinion, Muri stated that life in the city is better, you can have greater access to healthcare, and "good food".
(SSI summary)

The term "in-betweenness" (Resurrección, 2005) can be related to the case of Muri and Asoi, as their story shows how people that migrated a long time ago and spent most of their lives in the city can maintain symbolic connections with their original village. The fact that they were 'forced' to move back to Munggu Sawa Ili after the nomination of Asoi as headman is emblematic of how events happening in the place of origin can still have great influence on migrants' life.

¹⁵ "Education is a route to an occupation outside of farming and it is the aspiration of many parents that their children be spared the hardship of living off the land." (Cheng Sim, 2003)

Richard is in his late 40's and is currently living with his elderly mother, working as a security guard at the oil palm plantation. When he was young he went to Kuching to work in a factory. Richard returned to Munggu Sawa Ulu when his mother got sick to care for her. Richard describes the difference in living in Kuching compared to Munggu Sawa: "In Kuching one step from the house everything is money. Here I can eat everything I plant. I can pluck it, cook it and eat it"

(summary SSI)

Richard is an example of how a villager's life in another place can be influenced greatly if anything happens to their family. This similarly to the case of Muri shows how relationships and events in the place of origin keep migrants in-between the rural and urban worlds.

Richard describes the differences between the village and the city as a matter of money, in the city he needs to rent a house, buy his food and take care of his general expenses. In Munggu Sawa on the other hand there are no expenses as he can farm the land as he pleases, not pay rent for his *bilek*, and at the same time still have a monthly income for working with the oil palm plantation firm.

Vincent had his childhood in Munggu Sawa but has been living in Kuching, Selangor and Johor for 19 years working in the primary sector mainly. After his long absence for Munggu Sawa he decided to return to take care of his elderly parents who were still living in the bilek. He is divorced and has two grown up children living in the city. While he was working outside of the village he only was allowed by his employer to come back once a year, this was perceived as a problem from him. Vincent describes how he likes to work for himself and be his "own boss" when farming the land.

(Summary SSI)

Similarly to Richard, Vincent came back to Munggu Sawa to take care of his parents. Both Richard and Vincent's experiences of returning are described as positive; Vincent is now able to work independently from any employer, and Richard does not need to have an income to pay everyday expenses. In contrast, Muri is unhappy to be back as her children, grandchildren and friends live in Kuching. She comments that life is easier in the city as healthcare and good food are easily accessible. Thus, their ties to Munggu Sawa overrule their willingness to return.

Further, there could be a gendered layer to this trend. Indeed, in both Richard and Muri's case the women moved with their husband due to their husbands' responsibilities in the village. This could be understood to reflect the migration trend uncovered by the questionnaire, where women move due to their husbands' activities.

Upholding of *adat* in a context of rural-urban migration trends

“In the absence of formal property ownership, the present informal arrangements of custodianship entrusted to relatives or longhouse chiefs cannot stand the test of time.” (Ngidang, 2017: 388)

Our study revealed that there are cases in Munggu Sawa that may serve to corroborate this statement. Indeed, In the 11 days that we were in Munggu Sawa, 33% *bilek* were empty. Two families returned during our field course and stayed for a couple of days. In an interview, we found out that the *bilek* were not considered abandoned, but still owned by the people not currently living in them. One case showed how a couple was living in Kuching but had to attend the *bilek* and the inherited farmland received upon the death of the parents. Instead of leaving the city, they hired people from the longhouse community to take care of the husband’s inherited land.

This form of stewardship of property is described by Ngidang who explains how recent rural-urban migration trends has necessitated landowners to make deals with the local community leaders to take care of their property, thereby upholding *adat* (Ngidang, 2017). Whether taking care of the *bilek* and farmland by local stewards, is the case in all of the 23 cases of emptied *bilek* is unknown. Furthermore, as we were in the field for a short period, we don’t know if the same pattern of vacant *bilek* is consistent throughout the year. The use of stewardship is a larger trend and it might threaten the future of Iban longhouse structure due to the neglect of *adat* (Ngidang, 2017). In MS this trend is evident by the vacancy of *bilek*. In contrast, the cases of Richard and Vincent demonstrate how neglect of *adat* is not always prevalent in Munggu Sawa, but instead represent a driving factor for villagers to return to their places of origin.

Elderly women coping with migration

In the following we will discuss how elderly women are coping with recent migration trends leaving them behind in rural areas.

Remittances

A couple of years ago Marie was diagnosed with ovarian cancer and had to commute back and forth from Kuching to receive several chemotherapy treatments. When Marie was out of Kuching she continued working on the farm during her sickness, telling us that “keeping on working made me recover faster”. In order to sustain the medication costs, she asked for public support and eventually obtained a reduction. The rest of the expenditure was covered by her daughters, who live in Kuching and Miri. When not hospitalized, Marie was hosted by her daughter in Kuching. Her daughters often bring to the bilek clothes and other gifts, so that Marie and Robert rarely have to buy goods that are not strictly related with the household consumption. Marie receives regular amounts of money from her daughters, which she keeps for herself.

(Marie’s story, Field notes)

Marie’s case shows how she coped with the shock of serious sickness. In order to face a cancer, Marie relied on her daughter to have a place to stay in Kuching and have a closer access to healthcare. This reflecting the importance of family migration networks for people left behind, as identified by Kee (2007). In the city she could apply for and obtain support from public social security institutions,

probably helped again by her daughter for the formal procedure. Finally, direct financial support by both her daughters allowed her to overcome the treatment expenses.

During an SSI we learned about Kiah who lives alone in Munggu Sawa Ulu, she is 90-100 and relies entirely on remittances from her seven children and grandchildren in Kuching, as she does not receive support from the government, corroborating the claim by Mohd (2016) that there is no pension scheme in Malaysia. Consequently, she describes her existence as being like “living like a chicken”; whereby her *bilek* is similar to the cage that is found within a chicken house and that she relies on her children and grandchildren to come and feed her. She takes whatever she is given and if she is given nothing then she just waits. She had farmland but she had no physical ability to farm

it. Parallels can be drawn with literature (Ngidang, 2017) as the effect for Kiah was coping with immediate poverty problems and not consistent social support.

Beyond these cases, the relevance of remittances in MS was reflected in the questionnaire, where 68% of the households declared they were receiving assistance - either direct financial support, delivering of goods, labour or gifts - from the migrated members of their household. In particular, 56% were receiving financial support. Although many are receiving remittances, a core challenge associated with them is that unequal contributions can heighten inequality in the receiving communities (Durand et al. 1996). The case of Kiah shows how remittances can be inadequate for helping households achieve livelihood security, while for Marie’s case the impact of remittance can provide livelihood security even while facing serious shocks of health issues.



Old women in the ruai

Exchange of labour - *bedurok*

Last year Lisa and her husband were clearing trees for planting paddy. One of the trees was cut down and landed on her husband's head. He threw up blood nine times and his eardrum burst. His hearing is now impaired and he suffers from brain damage. She tells us that he thought that we were here to fix electricity and that if you give him five ringgit note that he would mistake it for fifty. Consequently he is no longer acting as the headman and the income from this role has been lost. She is now head of the household and responsible for all agricultural work as her eight children have all moved out of Munggu Sawa. She is working on Robert and Marie's paddy field in return for support with heavy lifting in her own paddy field.

(Lisa's story, PO Field notes)

Besides the importance of remittances, the traditional exchange of labour - *bedurok*¹⁶ - (Sather 2006) between Marie, Robert and Lisa demonstrates how community and social capital can support elderly women left behind. Indeed, despite the fact that Lisa was left alone taking care of the *bilek* - because of her husband's recent accident and consequent disability, as well as the migration of all their children - the reciprocity relations with Marie and Robert allow her to continue farming and sustaining her household. Nonetheless this raises questions about the extent to which this form of social capital is available to other vulnerable older people, as they might not be a part of the same exchange of labour. Although we found this connection between *bedurok* and vulnerable elderly women, this is not reflected in broader literature.

Migration outcomes and agriculture

As the younger generation migrate, available agricultural workforce declines and elderly people are therefore increasingly performing all the farming activities (Soda, 2001). Furthermore, it has an impact on the characteristics of farming itself.

Similarly to Soda's (2001) findings in other Iban villages, the data from participant observation revealed that despite leading to a lower productivity, some of the rice fields were moved closer by due to a decrease in workforce. Although hill rice is particularly important for the Iban tradition (Jensen, 1974), Soda (2001) proposes that this is increasingly abandoned in favour of wetland rice, as this is less labour-intensive for the aging population. The results from the questionnaire suggest that in Munggu Sawa hill-rice is not cultivated at all. Furthermore, continuous cropping was preferred over the traditional fallow periods, which needed larger lands and consequently labour-intensive forest clearing. Therefore, an alleviation of agricultural work seemed to be sought in response to the decline of young workforce. This suggests, according to Soda (2001),

¹⁶ As presented by Sather (2006), the *adat* rule of Iban communities prescribes that household land is worked by household labour. Nevertheless, "most families also engage, at least two or three times during the annual rice-farming cycle in inter-family labour exchange. This is called *bedurok* and involves primarily close kin, friends and longhouse neighbours" (Sather, 2006:89,90). The essence of *bedurok* relations is that they rely on the principle of reciprocity and they are oriented towards a faster completion of farm-work in a more sociable atmosphere.

that the importance of agriculture is decreasing. In the following chapter we consider the significance of agriculture in Munggu Sawa in the context of migration.

Agriculture

Considering the impact of migration eroding agricultural practices outlined by Soda (2001), in the preceding section we assess the importance of farming through the analysis of its outcomes in terms of food security and environmental sustainability. These outcomes are assessed in relation to a gendered division of labour in agriculture.

Rice and food provision

Subsistence agriculture plays an essential role for achieving food security in Munggu Sawa and paddy rice is of particular significance. Indeed, the questionnaire results demonstrate that the main subsistence crop in Munggu Sawa is wetland rice, as 81% of the households cultivate it (see Graph 2). When villagers were asked to rank the most important crop overall they chose wetland rice together with pepper¹⁷.

The high ranking of wetland rice corroborates the importance of rice for the community, as it is the primary food source together with the cultivation of vegetables, the collection of fruits and NTFP. The observations made during several transect walks allowed us identifying a considerable number of fruit and vegetables plants, often intercropped with pepper. When asked directly, the villagers affirmed that they did not need to buy this kind of produce from outside. However, we observed the villagers buying supplementary meat and fish from a truck weekly bringing extra supplies from Pantu.

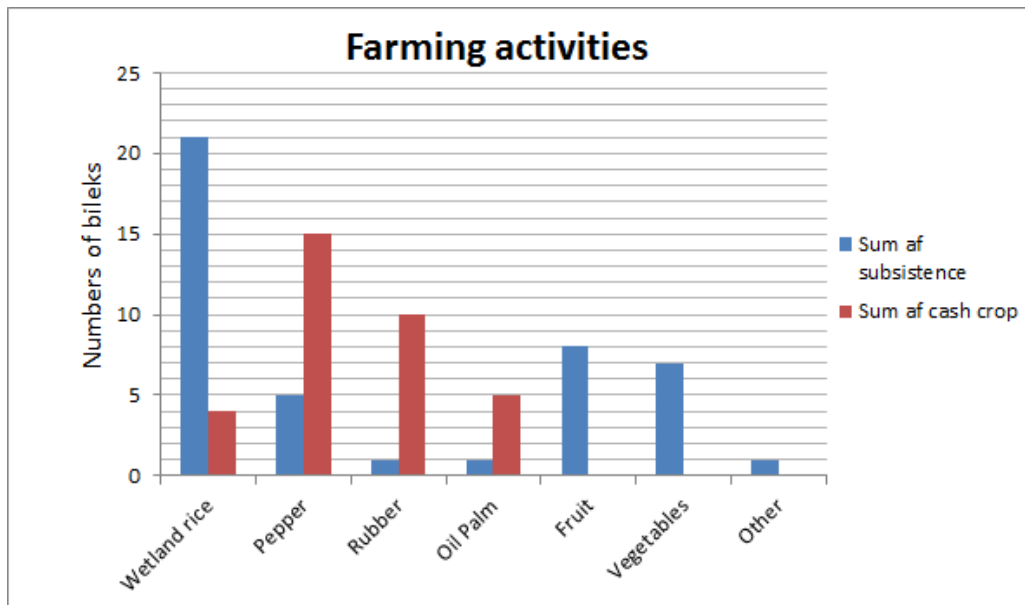


Truck with weekly supplies from Pantu

Woman with rice

Interviews with farmers revealed that surplus rice can also be sold to other bileks in the community. Graph 2 reflects this as 16% listed wetland rice as a cash crop.

¹⁷ See PRA ranking matrix in Annex 2



Graph 2: Crops cultivated in Munggu Sawa

Cash crops and income provision: pepper, rubber and oil palm

Graph 2 shows that the main cash crop in Munggu Sawa is pepper, with 60% of the *bilek* cultivating pepper as a cash crop and ranked as the most important one during the PRA¹⁸. This contrasts with Soda (2007) who suggests that Iban villages are now only growing very little pepper.

Four households list it as a subsistence crop, explaining that pepper is their main crop to acquire income to buy food. In Graph 2 we can also see rubber and oil palm listed as a subsistence crop, and the same explanation about food security might also apply here.



Pepper plants in front of a rice field

¹⁸ See PRA ranking matrix in Annex 2



Pepper drying in the sun

Historically, rubber is an important cash crop for the village, but because of the current low market value, based on PRA we learned that the farmers do not tap the same amount of rubber as they did when the price was higher. Instead they only tap when they have the time for it, or when they need cash. In this way rubber was described to function as their bank account. Even though the price of rubber is so low at the moment, it is still important for the villagers; we saw this in the discussion under the PRA ranking, where rubber often was mentioned. Furthermore, 40% of the *bilek*, who answered the questionnaire, still have rubber trees. Whilst this data supports Soda's (2007) finding that rubber is now of less importance, the assertion that this is linked to deagrarianization and migration is possibly overstated, as the low price of rubber is cited a more significant driver in Munggu Sawa.

Oil palm is another cash crop in MS, which is cultivated by 20% of the *bilek* included in the statistical data. The questionnaire also shows that most of the cultivation in MS started in 2013-2015. Prior land uses of the farmland now dedicated to oil palm were rice cultivation or fallow.

Table 1: PRA Ranking Matrix, ●=Male ●=Female

Crops	Money	Food security	Chemical input
Pepper	●●● ●●●	●●	●● ●●●
Oil Palm	●●		● ●
Rubber	●●		
Bemban	● ●		
Paddy		●●● ●●●	●●● ●●
Veggies		●●	
Fruit			
NTFP		● ●	

The cultivation of oil palm is described by those who farm it as a “trend”, possibly related with the promotion of its cultivation by the government and the consequent diffusion of large-scale plantations.



Transect walk through a small scale oil palm plantation

Environmental sustainability of farming

In order to assess the outcomes of farming activities on the environment, semi-structured interviews were conducted to understand the magnitude of chemical inputs used in the agricultural practices of the village. Furthermore, soil and water sampling was conducted to identify possible



Map 5: Location of the soil and water sampling sites

consequences of the application of these chemicals. Overall, agricultural activities do not seem to impact the water quality and have only partially enhanced the salinity of soil.

Soil Analysis

Through interviews with key informants we acknowledged the use of chemical inputs in the fields, and the PRA results showed that their application is concentrated on the crops considered as most important: rice and pepper.

The results from the soil sampling - summarized in Table 2 - showed that all of the sampled soils are acidic (pH level < 7). In the pepper field we found high salinity in the soil compared to paddy and oil palm, that could be due to the texture (clay loam) and retention properties of the soil. Indeed, this plot was characterised by a clay loam texture, which has higher retainance properties compared to the others. Limited drainage could have produced the accumulation of chemicals and salts in the soil. Accumulation due to past land uses is unlikely, as rubber was done prior to pepper and rubber cultivation is not normally associated with relevant chemical inputs. No irrigation - which in the long-term can result in salinization - was realized on the field. The plot may be also saline because of the presence of salts naturally occurring in the soil's parent material. Overuse of chemical inputs could also have led to salinization and acidification of soils, even though precise data about the magnitude and frequency of their application was not collected. The salinity level of the other fields does not seem to be relevant, being slightly over the control sample.

Table 2: Physical-chemical properties of soil from selected samples

Location	Paddy field		Pepper farm		Oil Palm plantation		Secondary forest (Control)	
Replicate	1	2	1	2	1	2	1	2
Salinity (mS/m)	23.0	20.5	157.6	157.2	25.5	22.5	12.04	12.33
pH	4.53	4.55	3.47	3.44	3.80	3.83	3.97	3.97
Colour	10YR 3/2 Very dark greyish brown		10YR 4/4 Dark yellowish brown		10YR 2/2 Very dark brown		10YR 3/3 Dark brown	
Soil texture	Silty clay loam		Clay loam		Sand		Sandy clay loam	

Water Analysis

The results from the water sampling - represented in Table 3 - showed that the water from the waterfall is clean and safe to be consumed after boiling. The low pH reading and high chemical oxygen demand (COD) - which serves to quantify the amount of organics or oxidizable pollutants (Wu et al, 2012)- as well as total dissolved solids (TDS) - which measures the combined content of all inorganic and organic substances (Gilmore et al, 2016) - in stations 1 and 2 can be explained by the attributes of peat land, which is characterizing the area. The results from these sampling sites - downstream and thus more likely to be affected by farming - did not show a significant presence of agricultural chemicals - phosphate (PO_4^{-3}), ammonia ($\text{NH}_3\text{-N}$) and nitrate nitrogen ($\text{NO}_3\text{-N}$) in the water.

Considering the limitations given by the short time available the repetition of the sampling in different places and extended in time would provide a more precise assessment.

Table 3: Water quality analysis from selected samples

Parameters	ST1 (waterfall)	ST2 (farmland drainage)	ST3 (jetty)
PO_4^{-3}	0,17 0,15	0,00 0,00	0,00 0,02
$\text{NH}_3\text{-N}$	0,01 0,02	0,03 0,00	0,01 0,02
$\text{NO}_3\text{-N}$	0,01 0,02	0,03 0,02	0,03 0,03
COD	19 14	103 120	120 102
pH	7,3	4,6	4,5
TDS	6,5	24,70	24,70

Gender division of labour in agriculture

In this section, we discuss the gender division of labour in agriculture in MS. This is of interest as Soda (2007) states that farming activities are decreasing as a result of female migration, agriculture being a prerogative of women.

We joined Robert, Marie and Lisa in the field where they were harvesting and chatting together. They had been there since 6 am and they would work until they were tired, using a hand held blade called ketap to cut the mature rice and a woven basket tied around their waists to collect it. Robert arrived and began harvesting. When the rice sacks were filled he carried them to a building to store them, and his son carried the full sacks back to the longhouse on their motorbike.

During a welcome break in the paddy field, 'ngirup' we chatted and Lisa commented that "I like to do paddy, it is sociable and everyone can do it"

(Field notes, participant observation)

Both men and women are involved in the harvesting of paddy rice, although - as observed during the participant observation and reflected in literature (Jensen, 1974) - men generally deal with the heaviest tasks. This division of labour also applies to the other crops that are cultivated. The observed shared workload in agriculture shows that farming is not a female prerogative, in contrast with what Soda (2001) states.

During the PRA session both the women and the men groups had the same perceptions of the overall gender division of labour in relation to agriculture (See Table 4). Paddy rice, together with pepper and *bemban*¹⁹, are all crops where cultivation is conducted by men and women together, following common traditional patterns in Iban societies (Jensen, 1974).

Table 4: Division of labour according to crops (PRA)

red = female blue = male

Crops	Gender division of labour	
Pepper	F=M	M=F
Oil Palm	M	M
Rubber	F=M	M=F
Bemban	F=M	M=F
Paddy	F=M	M=F
Veggies	F	F
Fruit	F	F
NTFP	F	F

¹⁹ (*Donax canniformis*) Shrub whose stalks are used for mat-weaving

On the other side, the crops which are considered as easy to cultivate and harvest, such as vegetables and fruits, are women prerogative. Together with NTFP, these activities were positioned in the lowest rankings during the workshop²⁰, suggesting that the crops that women are solely responsible for are perceived to be the least important. None of them are associated with income provision. The NTFP category was understood differently by men and women, as the former associate it with hunting and fishing while women with ferns and shoots collection. Again, produce obtained by men also has the potential to be sold, while the women's one was for household consumption.

Overall our PRA reveals firstly that women are primarily responsible for food provision, and that men are farming for cash income. Indeed, during the discussion in the male group, the participants pointed out that women are “naturally responsible for collecting ferns because they do the cooking and therefore choose what goes into the pot” (fieldnotes). This is consistent with the traditional role of women in Iban societies (Jensen, 1974).

Gendered workload in oil palm harvesting

The PRA demonstrated that oil palm is the only crop that is cultivated solely by men, and this was explained because harvesting is very physically demanding. Indeed, during a transect walk with Robert we learned that he does the harvest alone, transporting the produce from the field to the road along a 799m long track that crosses a small stream of water (see Map 6) He carries 80kg at a time. transporting 1 ton of fruits in three days.



Map 6: Path from Munggu Sawa Ili to the small-scale oil palm field

Whilst it must be considered that oil palm is only cultivated by 20% of the households represented in the questionnaire, the introduction of a male dominated crop might raise questions about its outcomes from a gender perspective. Indeed, Marie commented that the income from oil

²⁰ See PRA ranking matrix in Annex 2

palm is Robert's, some is shared with the household, and surplus is kept by Robert or sometimes shared with her. In this way, Robert is earning an income that is not jointly owned by the bilek.

Mat weavings unrealised potential

Following Iban tradition (Sather, 2006), women weave in Munggu Sawa. The materials used are either *bemban* or plastic strips. The activity is normally realized in the leisure time after the farming activities have been completed. Mats are traditionally used to sit in the *ruai* or to dry crops like pepper and rice. They are also sold as a tourist souvenir, and the women usually need to have them

delivered to Kuching, as there are few tourists in MS.

We only encountered one case where mat weaving was significantly impacting the livelihood. One elderly woman who lived alone in a *bilek* in Munggu Sawa was using the money earned from her mat-weaving to commute to Miri to see her daughters who lived there. Marie is also a talented mat-weaver, but as she has limited access to market due to no tourists in MS, her ability to lucrate on this skill is unrealised.



Bemban mat in the process of being made

Considering the relatively high value of mats (minimum 50 per piece), the selling of handicraft could potentially represent a livelihood strategy for the female villagers. This is of particular significance given the villagers perceived potential for increased tourism after the establishment of Mount Lesung National Park in 2013. Being a prerogative of women the income produced could change the balance of financial contributions made by women to the household, thus enhancing their position within the household. However, the constrained access to markets and the current inconsistency of tourism in MS seem to limit handicraft to an irregular and minor source of income.



Weaving with plastic strips



Basket made from plastic strips



Bemban

Final reflections

In this section we will write about how our expectations about the results changed throughout the fieldwork and what topics could have been researched more in-depth.

Evolving from synopsis to report

In contrast with the research focus proposed in the final synopsis, we found out that the establishment of the Mount Lesung National Park is having a less relevant role for MS livelihoods than we were expecting.

Rather than tourism, the spiritual use (traditional beliefs and Christianity) of the mountain seemed to be central. Together with the National Park, selling of handicraft was expected to be a livelihood strategy associated with tourism. However - despite the relative high value of mats - low tourism inflow and limited access to market seemed to turn this in an unrealised income opportunity for female longhouse dwellers in MS. Thus, tourism did not contributed consistently to the livelihoods in MS, and therefore it was decided not to discuss it as central in our results.

Another reflection is the relative low impact that the establishing of the Mount Lesung National Park had on the livelihoods of the longhouse dwellers in MS. We found and GPS-mapped how villagers are cultivating farmland between the old boundary and the new boundary, but as they are not surpassing the new boundary, and there is little potential for doing so, it was not impacting the livelihoods of the villagers in MS significantly, and subsequently not discussed in the report.

Finally, the minor role of small scale oil palm cultivation in MS agriculture was also unexpected. Indeed, according to our statistical data only 20% of the *bilek* were cultivating oil palm, and had small income due to it. Therefore, we found that adopting oil palm cultivation as a main livelihood strategy was more a potential strategy than a realised one.

Missing data

During the writing of this report, we identified other research pathways that we could have pursued. This applies to the story of “the wild bunch”: a group of young men from MS Ulu who did not seem involved in farming and daily had extensive drinking sessions. As it was stated during an SSI they were “married to their bottles”. It could have been interesting to know more about their life in relation to migration and partaking in the community. It would also be good to know what thoughts they have about their future, if they have plans about staying in MS, or if they hope to get a job in the city.

The drinking habits of the young men also extended to many households in the village, who gather almost every night in the *ruai* for that purpose. It would have been interesting to pursue this topic further from a gender perspective, as men drink and women do not. This raises questions about both the exclusion of women from social activities and also about how the income to the household is being spent by the men drinking *langkau*.

Conclusion

In this assignment we have investigated the outcomes of migration and agriculture as main livelihood strategies adopted in Munggu Sawa and how these are intersected with gender.

In Munggu Sawa migration includes both men and women. Overall, our data indicates that women migrate for relationships, but we also encountered instances where they moved to find employment. This finding contradicts broader trends found in literature, whereby women are increasingly leaving for employment (Cheng Sim, 2011). Perhaps this trend will be observed in the future, as girls and boys are now both being educated in local boarding schools and their ability to farm is subsequently diminished in MS (Cheng Sim, 2007).

A concern raised in literature is that rural-urban migration may result in longhouse members not returning to their bilek and fulfilling their roles as caretakers of the farmland (Soda, 2001). We explored the stories of villagers who migrated but maintained symbolic connections with MS by adat customary law (Ngidang, 2017). Furthermore, we found how this leads to a situation of “in-betweenness” (Resurrección, 2005) in how the villagers returned to MS after several years of living in another place. Thus, it is possible to see that village members are maintaining their ties to MS.

Migration has had notable impacts on Munggu Sawa in relation to livelihood security of villagers. On the one hand, there are instances where outward migration has left older women in vulnerable positions. Indeed, there are several elderly women who are farming well into their old age and relying entirely on inconsistent remittances. Remittances are also improving livelihood security in other instances, paying for healthcare and providing a consistent monthly income. Nonetheless, the unequal distribution (Durand et al. 1996) raises questions about how the challenge of an aging rural population will be handled in Sarawak.

Agriculture remains significant for subsistence (rice and vegetables) and cash (oil palm, rubber and pepper) provision for achieving livelihood security, and particularly the food security aspect within it. Whilst there is continual cropping and the village are using pesticides and fertiliser, there were no notable implications on the environment.

We saw a prevalent gendered division of labour, where the men took the heaviest tasks (Jensen, 1974). Further we saw how oil palm cultivation is creating an income source only supplied by men. This is distinct. On the contrary we saw how the female dominated task of weaving mats had the potential to be a lucrative activity for the female villagers in Munggu Sawa, but due to limited tourism and access to market this potential was not realised.

Lastly our research indicates that agriculture may be eroded by the migration trends that leave elderly females working in the field. Despite this, it seems for the villagers of Munggu Sawa agriculture remains significant. This contrasts with Soda (2001) assertion that there is a clear trend of diminishing farming and points towards a gap for future research in order to clarify the relationship between agriculture and recent migration trends in Sarawak.

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Glossary

Abbreviations:

MS: Munggu Sawa

JVC: Joint Venture Scheme

NCR: Native Customary Rights

HH: Household Head

PRA: Participatory Rural Appraisal

SSI: Semi-structured interview

PO: Participant Observation

NTFP: Non Timber Forest Products

COD: Chemical Oxygen Demand

TDS: Total Dissolved Solids

Iban words:

Rumah: Longhouse

Tuai Rumah: Longhouse headman

Bilek: Household, family unit

Tuai Bilek: Household head

Ruai: Common hall or gallery in the longhouse

Adat: Iban customary law

Nguai: the spouse leaving her *bilek* and family in order to join her husband

Bejalai: Male "headhunting" expeditions or journeys to search for new frontiers

Ngirup: Breaks to have some rest while working in the field

Ketap: Hand held blade used for rice harvest

Bemban: Shrub whose stalks are used for mat-weaving (*Donax canniformis*)

Bedurok: Inter-family labour exchange

Langkau: Homemade liquor made out of fermented wine (*tuak*)

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Annex 1: The longhouse structure

The traditional Iban community dwelling of the longhouse characterized the village of Munggu Sawa. Even though a concrete building substituted the old wooden raised one, villagers still live in a common longhouse. This is made up of a series of individual apartments - *bilek* - that belong to a single family unit which is responsible for constructing and maintaining it. The *bilek* is the basic unit of Iban society - both socially and economically - and it ideally consists of a three generations family (parents, children and grandparents) (Freeman, 1974). Property and labour are shared and organized within the *bilek*, which is leaded by a head of the household - *tuai bilek* - normally a man. In addition to the *bilek*, a relevant component of the longhouse is the *ruai*, a covered working and living area that runs the length of the longhouse without side walls, giving the impression of a common hall or gallery . Each longhouse has a headman - *tuai rumah* - chosen by a consensus of the villagers, which is officially recognized as the spokesman from the government (Freeman, 1974).

Annex 2: PRA Ranking Matrix

Female Group PRA Ranking Matrix

Female ranking	Money	Food security	Workload	Productivity	Land use effect.	Chemical input	Gender division of labour
Pepper	● ● ●	● ●		● ●	●	● ●	F=M
Paddy						●	M
Rubber	● ●				● ● ●		F=M
Bemban	●		●	●			F=M
Fruit		● ● ●		● ● ●	● ●	● ● ●	F=M
Oil Palm			● ● ●				F
NTFP			● ●				F
Veggies		●					F

Male Group PRA Ranking Matrix

Male ranking	Money	Food security	Workload	Productivity	Land use effect.	Chemical input	Gender div.
Paddy	● ● ●		●	● ●	● ● ●	● ● ●	M=F
Pepper	● ●				● ●	●	M
Rubber							M=F
Oil Palm	●		● ● ●				M=F
Bemban		● ● ●	● ●	● ● ●	●	● ●	M=F
Veggies		● ●					F
Fruit							F
NTFP		●		●			F

Annex 3: Questionnaire

QUESTIONNAIRE n.

Group n.

General information

Name:

Longhouse:

Bilek number:

Age:

Gender:

Number of members of the bilek:

Owned land size (acres):

Level of education of the head of the bilek:

1. AGRICULTURAL PRACTICES

1.1. Farming Activities

Crop	Subsistence	Cash crop	Planted area size (acre)/no of trees	Cash crop income (RM/month)
Wetland Rice				
Hill Rice				
Pepper				
Rubber				
Oil Palm				
Fruits:				
Vegetables:				
Others				

1.2. When did the bilek start to cultivate oil palm? (year)

1.3. How was the land used before oil palm cultivation?

- Food crops
- Other cash crops
- Fallow land
- Primary forest
- Secondary forest

1.4. Is the bilek involved with the Oil palm JVC project?

1.5. If yes, how much land was leased out?

2. Migration and rural-urban linkages

2.1. How many bilek members do not live in Munggu Sawa?

2.2 Household member (living outside) details

Household member	Relationship	Gender	Age	Reason	Location	Duration (For how long)
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						

2.3. Does the bilek receive assistance from the members that are not living there? (yes/no)

2.4. If yes, which kind?

- Financial support
- Labor (farm activities)
- Labor (construction)
- Gifts
- Delivering goods
- Other:

2.5. What activities, other than farming and migrating, are realized by the bilek members to make a living?

- Collection of jungle produce (other than timber)
- Logging
- Enterprise
- Fishing
- Handicraft
- Tourism services (guiding, homestay)
- Receive public support (allowances, subsidies)
- Other

3. Perception of Mount Lesung National Park potential

3.1. Are you aware that a National Park was officially established in the Mount Lesung area? (yes/no)

3.2. If yes, how did you heard about the National Park.

- Head men
- Fellow villagers
- Agencies/Officials
- Mass media

- Other

3.3. Were there any randau sessions discussing the Mount Lesung National Park borders? (yes/no)

3.4. If yes, did you participate? (yes/no)

3.5. Do you think that the Mount Lesung National park will be beneficial to the bilek?

- Not at all
- A little
- Maybe
- A lot
- Don't know

3.6. Have you ever benefitted from tourists visiting Mount Lesung National Park? (yes/no)

3.7. If yes, how?

- Guiding
- Homestay
- Handicraft selling
- Food provision
- Other:

3.8. Is the bilek using the natural resources within the National park territory? (yes/no)

3.9. If yes, which ones?

Annex 4: Mount Lesung peak trail description

Forest and wildlife

The mountain exhibits several waterfalls where a dip is welcome refreshment from the trekking around the dense jungle with humid and high temperatures. The most attractive one is the waterfall *Wong Jampang* that is found if you instead of crossing the river follow it upstream some 20 minutes from the start point of the Gunung Lesung Peak trail. You should be aware that spirits is believed to reside at *Wong Jampang*, and they might punish the ones who offend them. So travelers who come here are advised to treat the forest with respect.

The jungle on Gunung Lesung is mainly characterized by *dipterocarps*; a type of tree, which is found throughout Sarawak. If your fitness and especially balance is poor you'd probably be looking more at your feet than the magnificent wildlife that is found on Gunung Lesung. Wildboar can be seen on the lower slopes of the mountain, if you're lucky you might find a wildboar nest as they collect small trees and pile them together when they give birth to their cubs. Orangutan (*mavas* in Iban) are also found on the mountain as they eat the *engkalak* a seasonal fruit found on the mountain, but since the orangutan are shy you might not encounter any. Unfortunately, the attraction of these animals is accompanied by less desirable counterpart: leeches. They are found in wet areas but can be avoided by wearing long pants or leech socks.

Gunung Lesung Peak trail

Altitude increase	785 m
Distance (start to peak)	3.9 km
Approx. time up	4 hr.
Approx. time down	3 hr.
Difficulty	Hard

Trail description

The trail is marked by white/red plastic strips and red paint on some trees. These marks are more or less maintained throughout the trek. A guide is recommendable and can be hired in Munggu Sawa.

D = distance

A = altitude

D: 0.0 km -0.2 km/A: 29 m - 45 m: The trail starts by the junction leading to Munggu Sawa and Enkeranji. There is a stream which flows under the road in the direction of Munggu Sawa. The trail follows this stream upriver until it cuts right, over the stream.

D: 0.2 km – 1.6 km/ A: 45 m -256 m: The trail crosses the villager's land and you can see pepper fields and rubber plantations on the side of the road. It then arrives at the prayer base camp: a Chrisitan refuge established in 2016.

D: 1.6 km – 2.2 km/ A: 256 m – 321 m: From here the trail cuts directly through the prayer base camp and turns on the hill to the other side. It later arrives at a waterfall. A refreshingly cold dip on the way down is a recommendable experience.

D: 2.2 km – 2.6 km/ A: 321 m – 415 m: The trail leaves the waterfall and goes by a stream until it hits the boundary to the Mount Lesung National Park a 550 hectare big national park that is placed on the flat plateau on top of the mountain. This boundary is marked by a large sign from the Sarawak Forestry Department stating that this is the boundary to the National Park and several smaller yellow signs that claims the same thing. It is unlikely that the boundary is marked anywhere else than here.

D: 2.6 km – 3.3 km/ A: 415 m - 640 m The trail climbs a fair bit from the national park boundary. And as the ground can be very wet it can be very slippery. Furthermore there are also leeches here on up which trekkers should be aware of. The trail traverses to the left and flattens for a hundred meters and there is a view over the side of the mountain that faces Munggu Sawa.

D: 3.3 km – 3.6 km/ A: 640 m – 801 m: The trail meets its hardest climb. A rope is attached to trees for the whole distance of this climb. There is a large rock which can be difficult to move past. Additional robes are attached here.

D: 3.6 km – 3.9 km/ A: 801-814 m: After the rope the trail meets the flat plateau on the top of the mountain. Up here there are palms. It moves to the other side of the plateau with a view down to Menuang and further out to the sea if the view is not obstructed by clouds.

Annex 5: Research methods matrix

Social Science Methods					
Applied Methods	Number of time used	Reason	Date	Advantages	Disadvantages
Semi-structured interviews	15	Understand specific interesting cases more in depth	Through out	<p>Possibility for the participant to add new perspectives</p> <p>More thorough and reasoned replies than in the questionnaire</p>	Could in some degree be overwhelming for the interviewed because we often were 3-4 students plus a interpreter, especially for those we didn't know so well (M.S. Ulu)
Participant observations	1	Get an understanding of the workflow and routines throughout the day	10/3-18	Easier to have a more natural and "free" conversation	It is not a completely true and fair view of their everyday lives, as the participants will, to some extent, change behaviour because of our presence.
Focus group interviews	1	To gain insight into the various uses of Mount Lesung	8/3-18	The collective perception of Mount Lesung emerges throughout the discussion	Difficult to perform as other than the participants were joining.

Participatory Rural Appraisal: Data Matrix	1 (divided into two groups)	Understanding of agricultural practices from the perspective of men and women respectively	7/3-18	The discussion due to the ranking	Difficult for the interpreters to translate the discussion Individual differences were not expressed in the matrix
Questionnaire	25	Overview and basic information about the villagers	3/3-18	Selection of key informants Quantitative data	Not all questions could be answered the way we thought. We only get answers to what we are asking and it limits our opportunities to acquire new knowledge in areas we haven't thought about/not know about.
Transect walks	5	Overview over the village and its surroundings	Through out	We were able to get our own impressions and experiences of the places	Only able to cover area within reasonable walking distance of the site
GPS-mapping	15	Map the village, its land uses and the Mount Lesung trail	Through out	Able to record the spatial distribution of resources and land use. Allowed us to map the route to the peak of Mt Lesung, which we were able to share with the village	No notable disadvantages.

				in order to 'give back in the field.	
Natural Science Methods					
Applied Methods	Number of time used	Reason	Date	Advantages	Disadvantages
Water Samples	3	Test the quality of the water and see if it was affected by the pesticides	05/03-18	Able to calculate precisely the impact of agricultural chemical inputs.	Couldn't test over time.
Soil Samples	4	Identify possible consequences of the application of pesticides, herbicides and fertilizers	05/03-18	Able to calculate precisely the impact of agricultural chemical inputs.	Couldn't test over time and in a higher number of fields
Forest Resource Assessment (FRA)	3	To understand the resource base of the Gunung Lesung	04/03-2018	Possible to assess biodiversity	Not possible to assess forest loss over time



Munggu Sawa Research Synopsis

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Introduction

Through mixed-methods data collection, this project seeks to investigate whether key changes in the area of Munggu Sawa, namely the introduction of a national park, rural-urban mobility, and oil palm cultivation are impacting differently on the livelihoods of men and women. These themes have been taken from the site description and it remains unclear whether all three of these themes will be included in the final project, this will depend on our findings in the field.

We hypothesise that **the introduction of a national park, rural-urban mobility, and oil palm cultivation are impacting differently on the livelihoods of men and women.**

The synopsis is divided into two parts; firstly the three key points of interest from the site description are outlined and positioned within literature, leading into our research questions. Secondly, the methodologies are outlined. The data matrix is included as an annex.

Research Focus

Our study is guided by the understanding that gender, and its intersection with other social variables, is an informal institution that mediates livelihood strategies and outcomes for men and women (Ribot and Peluso, 2003) (White and White, 2012 p.997). Informal institutions are socially embedded power structures that regulate behaviour, constraining and creating opportunities for different people (Jakimow, 2013 pg. 499) (Ribot and Peluso, 2003). This gendered perspective is the point of departure for investigating the changing livelihood strategies in Munggu Sawa, at the interface of local struggles and more global trends (White and White, 2012. P. 997).

Research Framework

Livelihoods can be defined as the “activities that are used to generate the means of household survival” (Ellis, 2000 p.40). Livelihoods are complex, dynamic and multifaceted processes that are entangled with complex process of exclusion. Thus their complexity can be difficult to capture. Frameworks have been developed as a useful guide for organising fieldwork whilst capturing the messiness of the social world.

The Sustainable Livelihoods framework (Scoones, 1998) will be used to guide our research about how gender mediates access, livelihood activities and outcomes. This framework is relevant to our research as it has institutions at its centre. This study understands gender as an institution, and thus the framework can be used as a guide to map out how gender mediates access (the ability to derive benefit from assets, Ribot and Peluso, 2003), activities and outcomes.

Oil Palm Cultivation

Malaysia has been at the forefront of oil palm production, and since 1990 and 2005 the area of land cultivated by oil palm has increased by 1.8 million hectares. This is linked to the Malaysian state’s focus on economic expansion (Anderson et al, 2016).

Existing literature about the expansion of oil palm cultivation focusses partly on concerns about environmental degradation and changing livelihoods (Anderson et al, 2016). Concerns about the sustainability of large scale oil palm cultivation due to monocropping and deforestation opens out questions about the potential sustainability of small scale cultivation, independent of large companies. This potential is constrained by the resources required for

maximising yields and for transport (Rist et al, 2010). Research about how oil palm cultivation is affecting genders is emerging, from the literature, two key themes that are interesting to this project are firstly that men and women have different gender roles within oil palm agriculture and secondly women are excluded from the decision making process and the most highly paid roles in the cultivation (White and White, 2012)(Elmhirst et al, 2017). Elmhirst et al (2017) explores the extent to which independent smallholder oil palm in Indonesia represents a “space of hope” for a more equitable outcome from oil palm cultivation. She concludes that women are able to influence the decision making process through male counterparts, but that patterns of exclusion are still prevalent.

The Munggu Sawa site description 2017 shows that small-holder oil palm cultivation is being adopted as a livelihood strategy in response to the unstable prices of pepper and rubber. The cultivation of independently owned oil palm therefore presents an opportunity to contribute towards both the debates about the potential of independently owned small-holder oil palm as a more sustainable source of oil palm, and secondly towards the debate opened out by Elmhirst et al (2017) about the ways in which gender mediates access to resources associated with small-holder oil palm cultivation, livelihood activities and outcomes.

Objective:

To establish if oil palm cultivation is impacting differently on the livelihoods of men and women.

In order to understand this objective we want to understand: firstly, understanding how the agricultural practices within the field site of Munggu Sawa are changing, secondly what the impacts of oil palm cultivation are on livelihood outcomes.

Rural-urban migration

Between 1970 and 2015 the population living in urban areas increased from 27 per cent to 74 percent in Malaysia (UNdata, 2018). Half of the Sarawak population now live in cities (Figure 2). Temporary and permanent migration to urban areas as a livelihood strategy is becoming increasingly important for rural households. Access to formal employment is often limited for rural-urban migrants and informal employment is heavily relied upon. Therefore temporary migration patterns have emerged, this is termed circular migration (Agergaard & Thao, 2011). Livelihoods depend upon incomes from temporary jobs and incomes from rural farming. Rural-urban migrants can be described as “living in-between”, being simultaneously involved in events, activities and relationships in the two spaces (Resurreccion, 2005). Remittance relationships represent an emblematic dimension of this “in-betweenness” (Agergaard & Thao, 2011), as the flows of money between migrants and their families maintain their connections.

Historically, Iban traditional communities have been characterised by their mobility in order to obtain land for shifting cultivation and temporary journeys undertaken by males for headhunting (R. Soda, 2001). These expeditions, *bejalai*, were culturally important for Iban and represented a rite of passage from childhood to adulthood. The word *bejalai* has become increasingly associated with temporary male rural-urban migration, in the context of shifting markets values of rubber, timber and oil (Soda, 2001). Circular migration has developed into one of the most relevant components of Iban livelihood diversification. In Munggu Sawa, almost every household in the longhouse have family members working for most of the year in Sri Aman,

Kuching, Miri or in peninsular Malaysia (Record Site Description, 2017). They maintain their ties to their bilek (household) in the longhouse by providing support to their families through financial assistance, general maintenance and returning during festive seasons.

Objective:

To understand if there is a difference between the livelihood outcomes for men and women when mobility is adopted as a livelihood strategy.

Taking into consideration the relevance of the rural-urban dynamics as presented above, the research will be oriented: firstly, towards the collection of data about the characteristics of urban-rural mobility; secondly, collecting data about the reasons people migrate; thirdly, how rural urban mobility impacts gender dynamics within the bilek and on a community level.

Potential tourism

Research suggests that Iban women's work is undervalued within the cultural tourism sub-sector (Yea, 2000 P. 35). This implies a gender differentiated division of labour. Nonetheless, tourism within this sub sector can be financially rewarding for women, particularly in the production and selling of crafts such as weaving, creating income opportunities for women (Yea, 2000 P. 35). According to the description of Munggu Sawa weaving of mats constitutes an income for some female villagers from the TR Asoi's longhouse (Record Site Description, 2017). To what extent the production and the selling of this good is merely a potential to be realised in the future is yet to be determined.

An example of how tourism can affect long-house communities is found in the case study of Bario, Sarawak (Harris, 2009 P. 125), a community only reachable by air. The community of Bario has grown their tourism industry rapidly between the 1990s and 2009. This growth presents an example of how tourism within remote rural areas can be realised and communities developed. Research shows how the community development through tourism can exclude some members of society (Schellhorn, 2010). Especially local women within the community of this case study in Lombok, Indonesia struggle to access the new opportunities for income that the tourism industry constitutes (Schellhorn, 2010 P. 115). It would here be interesting to determine whether similar gender dynamics occur within Munggu Sawa.

In the context of the Munggu Sawa, the Sarawak Forestry Department established the Mount Lesung National Park in 2013, partly due to the prospective enhancement of eco-tourist visiting the area, creating income opportunities for village communities (Record Site Description, 2017). An example of a similar initiative that established the Batang Ai National Park in Sarawak (Horowitz, 1998) is useful in determining the possible effect of the Mount Lesung National Park to Munggu Sawa. In the case study of Batang ai National Park, it was shown paramount to have a strong relation between the rural people and the state officials establishing clear incentives for the rural people to give up land to the establishment of a national park (Horowitz, 1998 P. 371). Whether similar incentives are clearly formulated within the communities of Munggu Sawa, and whether this is part of the reasoning for the reducing of the Mount Lesung National Park territory with 75% is yet to be understood.

Objective:

To understand if there is a difference between the livelihood outcomes for men and women when migration is adopted as a livelihood strategy.

To investigate this objective we are interested in; firstly understanding the process of the establishment of Mount Lesung National Park, secondly we want to understand what was regained of access to natural resources when the national park was reduced and whether there is a difference in access regained between men and women, and lastly our study is trying to understand how potential increase in tourism could provide new income sources, and whether there is gendered difference in who benefits from these new income sources.

Methodology

In order to collect the data needed for the research a mixed methods approach was chosen. A data matrix (see Annex) was elaborated in order to visually organize the connection between research objectives, questions, sub-questions, data required and methods for data collection. In the next section the proposed methods will be described in further detail.

Questionnaire

- **Presentation of the method:**

The interviewer asks all respondents the same series of pre-established questions with a limited set of response categories. The interviewer records the responses according to a coding scheme that has already been established. High level of closeness, low level of interviewees participation.

- **Data that we expect to obtain:**

- a. Quantitative data about general socioeconomic characteristics of the longhouses
- b. Quantitative data about the agricultural practices within the longhouse territory
- c. Quantitative data about the magnitude of migration flows
- d. Quantitative data about the perception of the potential of the National Park

- **Selection of participants:**

The questionnaire will be realized with villagers representing 60% of the households within each longhouse.

- **Equipment**

Printouts of the questionnaire, pen, notebook for eventual comments

Semi-Structured Interviews (SSI)

- **Presentation of the method**

The semi structured interviews is a method used for supplementing structured questionnaires. Semi-structured interviews are compiled of open-ended questions thereby leaving room for interviewees to participate in establishing the focus of the interview.

- **Data that we expect to obtain**

- a. Qualitative data about the limitations of the oil palm cultivation.
- b. Qualitative data about the division of labour within the oil palm plantations.
- c. Qualitative data about oil palm as a stable source of income.
- d. Qualitative data on the reasons why people migrate.

- e. Qualitative data on the consequences of the migration for the entire community and the separate bileks.
- f. Qualitative data on the potential of tourism as a new income source and whether women gain less or more than men.

- **Selection of participants**

As we are pursuing an understanding of these aspects through a gendered lens. Key individuals should include both men and women. Selection can be guided by analysing the responses to the questionnaire.

- **Equipment**

Dictaphone, pen, paper, question guide.

Participant Observation

- **Presentation of the method**

Participant observation is the thought that you have to participating in something in order to understand it. Relevant participatory observation within our fieldwork could be; the daily work with oil palm cultivation, daily household work within the bileks, the production of mats.

- **Data that we expect to obtain**

- a. An understanding of the practical work with oil palm production.
- b. The daily routines within a particular bilek where migration has happened.
- c. An understanding of the process that constitutes the production of mats.

- **Selection of participants**

Participants would be farmers doing practical work within the oil palm fields. A bilek where one or several people have migrated to work in nearby cities. And the particular women who were weaving mats and mentioned within the field site record.

- **Equipment**

Pen, paper, work-cloth.

Case studies

Case studies are a concentration on particular cases proven interesting within an overall objective. In our study this could be combined with the participatory observation; for example if we find households where particular members have migrated. Another case study could be one of the farmers from Munggu Sawa who lost his land to the Mount Lesung National Park but later regained it. Or the women weaving mats for selling to tourists and other villages, understanding what significance this production has to these particular woman.

- **Data**

- a. In depth qualitative data that highlight specific examples of:
 - The effects on migration on a household level.
 - The effects on the farmers that had their land comprised within the national park.
 - The significance of mat weaving for women as a source of income.

- **Participant Selection**

The selection of participants is mentioned above.

- **Equipment**

Pen, paper, dictaphone,

Participatory Mapping / joint analysis of aerial photographs

Participatory drawing of a map representing the longhouse territory, highlighting most important natural resources, land uses and infrastructure. Contrast with aerial photos.

- **Data**
 - a. Distribution information about land-uses and natural resources in relation with National Park borders;
 - b. Qualitative data about the local knowledge of the territory and the perception of what are defined as most important resources;
- **Participant Selection**

The activity could be realized with key informants that were involved in the negotiation of the National Park borders, i.e. the headmen of the two longhouses.

- **Equipment**

Poster and markers, aerial photographs.

Timeline

This method provide the opportunity to discuss about the events and changes that have taken place over time in the study area, pointing them out on a timeline.

- **Data**

Qualitative data and narratives about the process of creation of the National Park and the negotiation of its boundaries;

- **Participant Selection**

The activity could be realized with key informants that were involved in the negotiation of the National Park borders, i.e. the headmen of the two longhouses.

- **Equipment**

Poster and markers.

Transect:

Cross sectional diagram of an area constructed as a joint exercise with local informants during walks for observing, discussing and registering the endowments and problems of the area.

- **Data**

Qualitative data about the main land uses in the longhouse area and their change over time

- **Participant Selection**

The method could be realized with a key informant who knows the history of the longhouse community, i.e. the headman or an old member.

- **Equipment**

GPS, dictaphone, pen and notebook

Mapping (GPS)

Mapping the study area, will give a visual overview where distances, size of different areas and different tracks is shown.

- **Data**
 - a. Location of the boundaries of the National park
 - b. Accessibility of the National Park and the characteristics of the trekking routes (duration in time, length in kilometres, points of interests)
- **Participant selection**

The method could be realized with key informants who have particular knowledge of the territory of the National Park and possibly with someone who already guided tourists in the area.

- **Equipment**

GPS, pen and notebook (with a table for GPS-coordinates), computer (for data processing)

Seasonal diagram

Seasonal diagrams are meant to understand what happens in different seasons within a particular field site. This is useful as fieldworks often are short and therefore does not encompass all activities in a whole year, as these activities might vary according to season. The seasonal diagram acts as a way to understand the field site throughout the year.

In the case of Munggu Sawa seasonal work outside of the village might be acquired throughout the year, resulting in periods with less or more migration to obtain this work. Furthermore, oil palm production depends highly on the seasonal calendar as does the tourist season.

- **Data**

- a. Knowledge on whether migration back and forth from Munggu Sawa is connected to specific seasons, such as harvest.
- b. Information about seasonal difference in terms of types of crops cultivated and workload distribution;
- c. A difference in the amount of tourists visiting Munggu Sawa in relation to season.

- **Participant Selection**

Households experiencing migration. Oil palm farmers. And villagers not migrating for work with knowledge of tourist patterns.

- **Equipment**

Pen, large piece of paper,

Annexes:

Figure 1: The Sustainable Livelihoods Framework (Scoones, 1995)

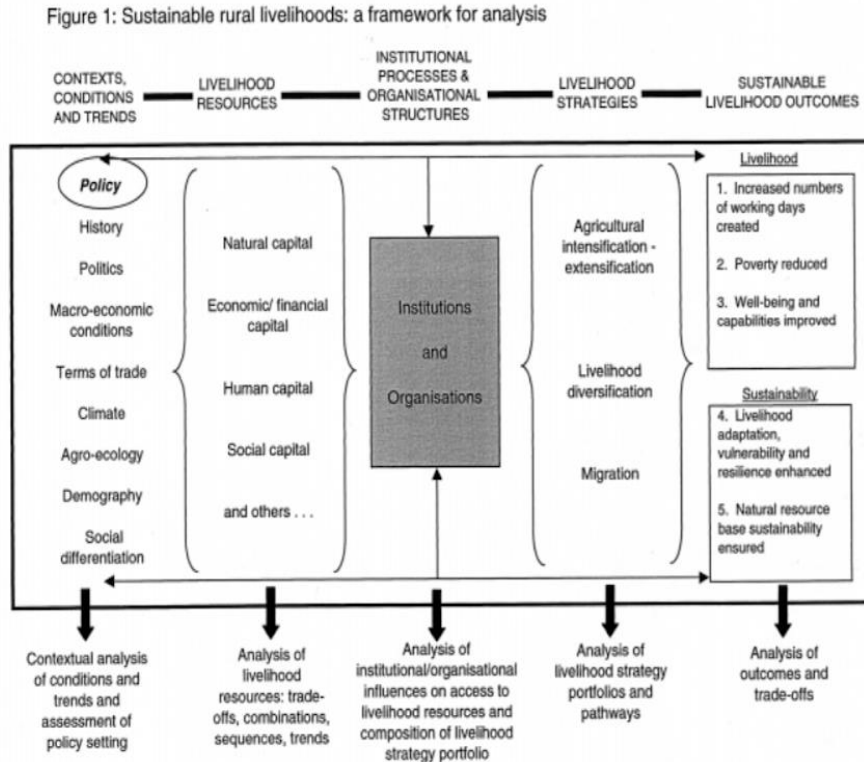
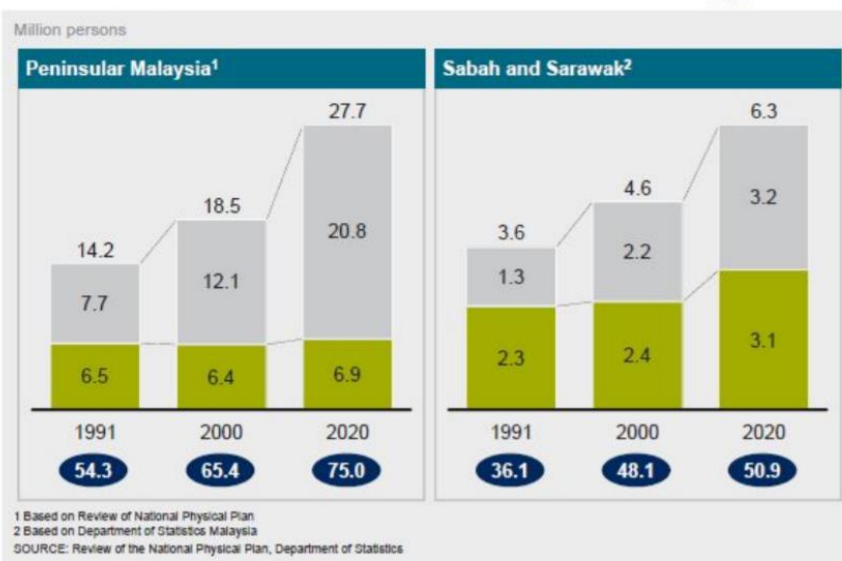


Figure 2: Malaysia population growth and rural-urban distribution (Dufлот, 2012)

Over 70% of Malaysia's population will be urban by the year 2020



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Objective	Research questions	Sub research questions	Data required	Methods
1 To establish if oil palm cultivation is impacting differently on the livelihoods of men and women	1.1 How are agricultural practises changing?	1.1.1 What crops are not being grown anymore?	Quantitative data about the agricultural practices within the longhouse territory;	Questionnaire
		1.1.2 To what extent is oil palm cultivation replacing other crops?		
		1.1.3 How is the oil palm cultivation workload distributed between men and women?	Qualitative data about the main land uses in the longhouse area and their change over time;	Transect
	1.2 What are the impacts of the oil palm cultivation on livelihood outcomes?	1.2.1 What are the impacts on livelihood security between men and women?	Qualitative data about the limitations of the oil palm cultivation;	Semi-Structured interviews
		1.2.2 What are the limitations to the oil palm cultivation? (Transportation to nearby market and revenue obtain by middlemen).	Qualitative data about the division of labour within the oil palm plantations; Qualitative data about oil palm as a stable source of income;	
			An understanding of the practical work with oil palm production; Information about seasonal difference in terms of types of crops cultivated and workload	Participant observation Seasonal diagram

			<p>distribution;</p> <p>Small hold farmers' views on the Strengths, Weaknesses, Opportunities and Threats when cultivating oil palm compared to the cultivation of other crops;</p> <p>Qualitative data about the men and women criteria to assess the value of crops;</p> <p>Qualitative data about the perceived value of diverse crops and the possible gender difference in this perception;</p>	<p>SWOT workshop</p> <p>Matrix Ranking</p>
<p>2 To understand if there is a difference between the livelihood outcomes for men and women when mobility is adopted as a livelihood strategy.</p>	<p>2.1 What characterises rural-urban mobility?</p>	2.1.1 What is the magnitude of rural urban migration?	Quantitative data about the magnitude of migration flows	Questionnaire
		2.1.2 Where do people migrate to? Nearby villages? Nearby cities?	Qualitative data on the reasons why people migrate.	Semi-structured interviews
		2.1.3 Is the migration temporary or permanent? Is this connected with specific seasons where different jobs are obtained?	Qualitative data on the consequences of the migration for the entire community and the separate bileks.	Participatory observations
	<p>2.2 What is the reason for rural-urban mobility?</p>	2.2.1 What activities are people engaging in when they migrate?		
		2.2.2 To what extent do the households benefit from remittances?		

	2.3 How is this impacting gender dynamics?	2.3.1 Who is migrating? Is there a gendered difference in migration?	The daily routines within a particular bilek where migration has happened. The effects on migration on a household level	Case study Seasonal diagram
		2.3.2 How are household compositions changing?		
		2.3.3 What are the consequences of these changes on gender roles and women’s vulnerability?		
	2.4 What are the consequences of the migration on the traditional long-house community structure?	2.4.1 What are the consequences on the level of the household (bilik)?	Knowledge on whether migration back and forth from Munggu Sawa is connected to specific seasons, such as harvest.	
		2.4.2 What are the consequences on the entire community?		
3 To understand if there is a difference between the livelihood outcomes for men and women when migration is adopted as a livelihood strategy.	3.1 How did the process of creation of the National Park develop?	3.1.1 What is the firstly proposed boundary for the Mount Lesung National Park?	Distribution information about land-uses and natural resources in relation with National Park borders	Participatory Mapping / joint analysis of aerial photographs
		3.1.2 What is the final boundary of the Mount Lesung National Park?		
		3.1.3 Who are the stakeholders that were involved in the boundary negotiation?	Qualitative data about the local knowledge of the territory and the perception of what are defined as most important resources;	Timeline
		3.1.4 What interests were pursued?		
		3.1.5 Is the national park boundary known within Munggu Sawa?		
	3.2 How are the boundaries to the national parks mediating access to natural resources used by the Iban community, and how does this vary between men and women?	3.2.1 What is the natural resource base in the territory?	Qualitative data and narratives about the process of creation of the National Park and the negotiation of its boundaries;	Semi structured interviews
		3.2.2 What is regained in terms of access to natural resources with the final national park boundary compared to the first one?		
		3.2.3 What are the villagers activities within the territory that was disputed with the National park? (NFTP)	Stakeholders involved in	Case study

	3.3 Does the National park have potential to provide new income sources through an increase in tourism, and to what extent is access to these mediated by gender?	3.3.1 What is the past experience with tourism in the village?	the establishment of the national park and its boundaries	Participant observation
		3.3.2 Is tourism perceived as a possible source of income?		
		3.3.3 What new livelihood strategies could be adopted?	The effects on the farmers that had their land comprised within the national park.	Questionnaire
		3.3.4 What are the differences between how community members perceive their role in tourism?		
		3.3.5 What are the limiting factors for tourism within the village?	<p>The significance of mat weaving for women as a source of income.</p> <p>Quantitative data about the perception of the potential of the National Park</p> <p>An understanding of the process that constitutes the production of mats.</p> <p>Information about the location of the boundaries of the National park</p> <p>Information about the accessibility of the National Park and the characteristics of the trekking routes (duration in time, length in kilometres, points of interests)</p>	<p>Case study</p> <p>GPS mapping</p> <p>Seasonal diagram</p>

			A difference in the amount of tourists visiting in relation to season.	
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