

**Political Ecology of Palm Oil Development in the Kapuas Hulu
District of West Kalimantan**

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Statement of originality

This is to certify that to the best of my knowledge, the content of this thesis is my own work. This thesis has not been submitted for any degree or other purpose.

I certify that the intellectual content of this thesis is the product of my own work and that all the assistance received in preparing this thesis and all sources have been acknowledged.

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Albert Hasudungan

Abstract

The purpose of this thesis is to examine how the enrolment of local communities into the palm oil economy is constructing a particular, and complicated, mode of agricultural transformation. I look at the ways that local livelihoods are negotiated in response to diverse palm oil development pathways across three villages in the Kapuas Hulu district of West Kalimantan, Indonesia. This thesis uses a political ecology approach to examine the way agrarian communities adapt their local economic production and social relations in response to the forthright assertion of a capitalist economy upon their local landscape. I do this by examining: i) the multi-scalar institutional arrangements that shape agrarian change; ii) the processes through which land is made available for large-scale oil palm cultivation; and iii) the implications for local livelihoods and agrarian transformation.

I show how the institutional arrangements that shape palm oil developments in Kapuas Hulu are a combination of: i) institutions and governance structures from within the global value chain; ii) institutions external to the value chain (including the government and NGOs); and iii) informal customary institutions peculiar to sites of production. Downstream palm oil companies shape palm oil development by negotiating contract farming with land holders, and by imposing codes of conduct on suppliers, and by providing local infrastructure to comply with their internal business codes. Government shapes the outcomes of palm oil development through a formal regulatory regime, spatial planning, and through the business interests of many state-based actors. In the interests of environmental sustainability, NGOs and conservation agencies contest and reshape these planning frameworks by resisting institutions they believe would create livelihood uncertainty under the palm oil economy. Customary tenure and cultural practices, including *adat*, reshape the effects of palm oil development on landscapes and livelihoods, although I also observe a noticeable shift away from customary swidden cultivation. It was common in my case study villages, for individuals to not actually resist palm oil, but to attempt to participate in the palm oil economy on their own terms, and customary institutions were sometimes employed to achieve this.

The broader palm oil complex requires access to land. Large agribusiness firms have employed various strategies to gain access to land and effectively break the strong customary union of Dayak communities. I apply and further develop the “powers of exclusion” framework of Hall et

al. (2011), which explains processes of dispossession through regulation, legitimation, force and the market. This thesis found a more complicated situation whereby customary elites were intimately involved in processes of land dispossession where they were used as an extension of agribusiness interests, and where processes of legitimation were fueled through a discourse of national economic sovereignty in the borderlands. These local customary elites also employed legitimation and discursive strategies to marginalize opponents of palm oil, backing up their argument with national regulation, and even threats against other community members. In the midst of these institutional collisions, the ability of customary institutions to regulate resource access has been weakened as land markets have emerged, creating space for voluntary land dispossession.

As a consequence of these processes, local livelihoods have been profoundly transformed. Even in those villages that have most successfully resisted palm oil development to date and maintained more traditional systems of natural resource access, they have become marginalised through more limited cash income opportunities whilst their daily needs have become more urgently dependent on cash. On the other hand, in many villages that have accepted palm oil development, households have often experienced local dispossession of their natural assets, but they are advantaged by better social and physical infrastructure and enhanced capacity to diversify income sources. In the process, swiddens are converted to oil palm. Livelihood outcomes are mixed, although a larger proportion of survey respondents reported improved well-being over the last fifteen years as a result of these transformations, particularly as reflected in access to cash income, more secure residency, and the ability to invest in their children's education. Spatial inclusion within the palm oil economy, however, has stimulated local processes of class differentiation. Wealthier and middle income households have secured access to capital, land and labour as the basis to diversify their cash income, whilst those households with fewer livelihood assets have become increasingly dependent on selling their own labour for cash in the palm oil economy.

This thesis provides a unique focus on the political ecology of palm oil development in Indonesia by analysing the otherwise abstract interests of agribusiness capital through the framework of a global value chain and the actions of lead firms. Along with a focus on local customary

institutions in Kalimantan, this approach enriches our understanding of the institutional settings that inevitably mediate the processes of agrarian transformation in the modern economy.

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Terms & Acronyms

APL	<i>Area Penggunaan Lain</i> (Other Development Zone)
AMDAL	<i>Analisis Mengenai Dampak Lingkungan</i> (Environmental Impact Assessment)
BAPPEDA	<i>Badan Perencanaan Pembangunan Daerah</i> (Local Development Planning Agency)
BPDP KS	<i>Badan Pengelola Dana Perkebunan Kelapa Sawit</i> (National Funding Board for Palm Oil Development)
BPN	<i>Badan Pertanahan Nasional</i> (National land agency)
BPS	<i>Badan Pusat Statistik</i> (Central Bureau of Statistics)
BTS	<i>Buana Tunas Sejahtera</i> (A palm oil corporation)
CPO	Crude Palm Oil
EIA	Environmental Impact Assessment
FPIC	Free, Prior, Informed Consent
FAO	Food and Agriculture Organization of the United Nations
GAPKI	<i>Gabungan Pengusaha Kelapa Sawit Indonesia</i> (Indonesian Palm Oil Association)
GDP	Gross Domestic Product
GPS	Global Positioning System
GVC	Global Value Chain
HGU	<i>Hak Guna Usaha</i> (Leasing Right)
HVA	<i>Handelsvereniging Amsterdam</i> (A multinational corporation)
IDR	Indonesian Rupiah
ISPO	Indonesian Sustainable Palm Oil
KKPA	<i>Kredit Koperasi Primer untuk Anggota</i> (Credit Scheme for Member-based Cooperatives)
KNAW	<i>Koninklijke Nederlandse Akademie Van Wetenschappen</i> (A research institution from the Netherlands)
MP3EI	Masterplan for Acceleration and Expansion of Indonesia's Economic Development
NGO	Non - Government Organization

OECD	Organisation for Economic Cooperation and Development
OJK	<i>Otoritas Jasa Keuangan</i> (national government financial watchdog)
PIR	<i>Perkebunan Inti Rakyat</i> (Nucleus Estate Scheme)
PIR-Trans	<i>Perkebunan Inti Rakyat Transmigrasi</i> (Nucleus estate & population redistribution scheme)
<i>Plasma</i>	A term for Outgrower farmers providing raw material to a centralised processing unit / plantation
PNP	<i>Perusahaan Negara Perkebunan</i> (State Owned Enterprise for Plantation)
PT	<i>Perseroan Terbatas</i> (Limited Liability Company)
PTP	<i>Perseroan Terbatas Perkebunan</i> (Limited Liability Company of Plantation)
PTPN	<i>PT Perkebunan Nusantara</i> (an Indonesian plantation company)
RAP	<i>Riau Agro Plantation</i> (an Indonesian plantation company)
RSPO	Roundtable for Sustainable Palm Oil
RTRWK	<i>Rencana Tata Ruang Wilayah Kabupaten</i> (local government spatial plan)
RTRWP	<i>Rencana Tata Ruang Wilayah Provinsi</i> (Provincial government spatial plan)
SKT	<i>Surat Keterangan Tanah</i> (letter of consent over land from village head or sub-district head)
SMART	Sinar Mas Agro Resources and Technology
SOCFIN	<i>Societe Financiere</i> (Belgian financial company)
TGHK	<i>Tata Guna Hutan Kesepakatan</i> (Forestry Spatial Plans)
USD	US Dollar
USDA	United States Department of Agriculture
WEF	World Economic Forum

CHAPTER 1: INTRODUCTION

1.1 Background

During my field work in Janting, Badau sub-district, West Kalimantan, I met an Iban man and discussed palm oil development in his village. Working as a swidden cultivator, he explained to me the complexities of local reactions to palm oil development in his village. The convictions of environmental activists had made him aware of the detrimental effects of oil palm - to land and livelihoods in the present and future.

He told me that he had observed the customary elite of his village acting as an extension of large agribusinesses by deceiving villages to gain access to land for development. Yet simultaneously he had an increasing need for cash to pay for schooling for his children, to cover the costs of motorcycles and electricity bills. Although he opposed large scale palm oil development, he cultivated palm oil in swidden fields and his son worked on palm oil plantations. In reality, regardless of attitudes toward large scale palm oil expansion, working on palm oil plantations and cultivating palm oil were important strategies to generate much needed cash in Janting.

The villages where I conducted my field research were located in the border area of the Kapuas Hulu landscape. This frontier area is characterised by competing economic interests that arise due to the rapid expansion of palm oil. National elites have worried that economic intrusions from across the Sarawak border into Indonesian territory could become the basis of new territorial claims within Kapuas Hulu. These latent fears can be traced back to the territorial conflicts back in the 1960s, when competing territorial claims led to military conflict along the Malaysia – Indonesia border. As such, palm oil plantations in the frontline of the Sarawak border area were established to strengthen economic and territorial claims in this border region. Nationalist claims were verbally asserted, for example, by the past national political leaders, in an attempt to discursively justify the expansion of palm oil as an initiative to strengthen local economic development since at least 2005 (Wakker 2006).

National elites have used various strategies to make land claims in this border area (Noveria, 2016, p.255). Supported through political processes and central government policies, elites have established large scale plantations. Nonetheless in the frontier area, peasants like the farmer I interviewed often saw these policies as questionable.

In the areas of large-scale palm oil development, many remote communities across Indonesia are currently faced with a fundamental dilemma, one which appears to be deceptively dichotomous. Should they embrace the “opportunities” to become integrated within the palm oil economy, with its apparent benefits of improved infrastructure and cash-earning opportunities, or should they resist the juggernaut and prioritise greater autonomy over their lands and livelihoods, but risk ongoing economic marginalisation. This dilemma is currently being faced by several communities in Kapuas Hulu, which presents a spectrum of communities now fully immersed within the palm oil economy, some at its rapidly-transforming margin, and some currently just beyond its reach.

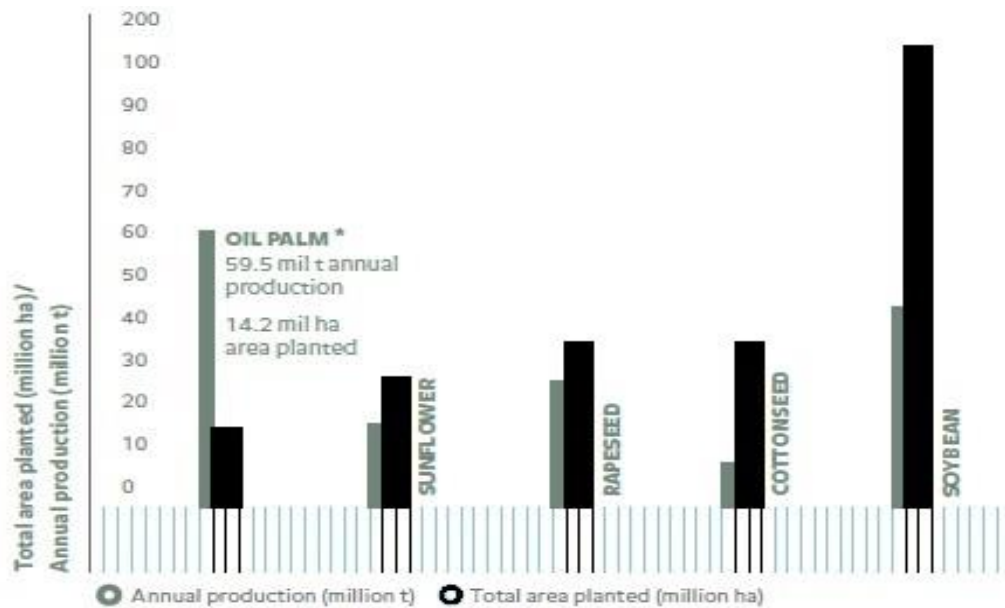
Within the field of human geography, case studies such as this one shows that unique local spatial histories and spatial dynamics play an important role in outcomes (Campbell 2016). For instance, within Janting village, the contrasting opinions and decisions of villagers reflected complex spatial relations with different state institutions, environmental activists and corporations. These negotiations were complicated by a battle between local and national elites who have tried to garner local support for the expansion of agribusiness. National level elites have tried to consolidate palm oil cultivation within large-scale agribusinesses while local farmers continue to cultivate cash and food crops with weak recognition of their informal rights by state institutions.

This thesis will examine how individuals within these village landscapes are becoming enrolled in the palm oil economy amidst a complex constellation of institutional social settings, while examining the strategies available to them to negotiate livelihood pathways.

1.2 Oil palm in Indonesia

Palm oil has demonstrated enormous commercial potential as the cheapest available vegetable oil processed for human consumption. Even compared to other vegetable oils, palm oil offers much more efficient and low-cost production. In the data presented by Sime Darby Plantation (2014) in Figure 1-1, the superior efficiency of oil palm (per unit of land) is suggested by the significant difference between harvested volume and total area planted for this crop compared against alternative vegetable oils.

Figure 1-1 Palm oil and other vegetable oils' yields



Source: Sime Darby Plantation, Sustainability Report, 2014, p.34.

As a result, foreign investors have been interested to make large-scale agribusiness investment in the Indonesian palm oil sector, motivated by vast supplies of cheap labour and large areas of apparently available land (R Cramb and McCarthy 2016a). In terms of financing, Malaysian and Singaporean foreign investors have dominated this investment in Indonesia due the limited land resources available for palm oil expansion in their own countries (Ibid, p.48). By investing in an expansion of land access, these agribusiness corporations can strengthen their prospects and attractiveness on various financial markets (Cramb and McCarthy 2016b, p.8).

For Indonesian policy makers, there has been a variety of apparent economic advantages that have encouraged them to facilitate the expansion of investment in palm oil in the rural areas of Indonesia. By having greater investment in palm oil development, they can stimulate stronger export earnings and obtain foreign currencies that supports Indonesia’s balance of payments and protects the exchange rate. In their domestic economy, for example in Kapuas Hulu, local and national governments can gain levies and various taxes related to the industry, providing an important source of formal and informal revenue. The industry is also seen to create jobs in

many rural regions with few other employment opportunities, and with multiplier effects for the broader economy.

Over time, the arrangements for large-scale palm oil operation have shifted away from direct smallholder participation in palm oil cultivation towards more limited involvement as they only receive dividends from those schemes through various shareholding arrangements (Cramb and McCarthy 2016a, p.35). In the government smallholding scheme in 1978, state institutions made direct interventions to facilitate smallholding palm oil partnerships between various PTPN (Perkebunan Nusantara, or Indonesian state-owned plantation companies) and smallholder farmers (Zen et al. 2016, p.85). Under this smallholding scheme, the state owned companies obtained 30 percent of all proposed palm oil plots, yet the remaining 70 percent was managed directly by smallholder farmers (Cramb and McCarthy 2016a, p.57). In those smallholding schemes, local smallholders could gain access to financial capital and inputs, and sell their fruits to the state-owned corporation at a price determined by the corporation (after repaying any debts incurred prior to the harvest). At the same time, these schemes tended to involve a significant cost for the government and the PTPNs, who would subsidise smallholder production and absorb the risks associated with the delivery of poorer quality product. As a result, a dominant narrative emerged, mainly from within the international donor community, that the industry was badly affected by inefficient government attempts to intervene in palm oil cultivation (Larson 1996). Donors came to believe, in the 1990s, that liberalisation of palm oil development in the hand of private investors would result in far more efficient business outcomes (Budidarsono et al. 2013). In addition, during the 1998 Asian Financial Crisis, and with pressure from an IMF rescue package, the government had to admit they faced major financial deficits and were unable to continue subsidising smallholder development with fiscal allocations. As its financial woes mounted, the government had to admit that the price of cooking oil would inevitably increase (Gaskell 2015, p.41). After various attempts to prevent palm oil exports and to reserve production for domestic consumers, it became clear that these policies actually ended up with failures and inefficiencies (Ibid). As a result, the government made the decision to increasingly liberalise palm oil cultivation across Indonesia during the *reformasi* period (i.e. the period following the fall of Suharto in 1998).

The shifting of greater plantation ownership to the private sector resulted in both benefits and costs. For instance, in a context where many local governments had limited capacity and resources to improve public infrastructure, these public goods were often provided by those large-scale palm oil companies. Hence, they improved accessibility within many remote areas where local people could access various markets faster. On the downside, with increased liberalisation of large-scale palm oil operations, private agribusiness complained that the incapability of smallholders was a significant cause of continued business uncertainty. For instance, agribusiness investors complained of a significant business risk arising from giving responsibilities for cultivation to smallholders within their estate (Cramb and McCarthy 2016a, p.34). These concerns were expressed in the way that labelled smallholder farmers as “unreliable” in terms of managing palm oil production (Ibid). As a result, policy changes allowed greater direct corporate control over palm oil estates, which left the communities (whose land was appropriated) to either receive monetary dividends through various shareholding arrangements or be paid as wage labour.

Potter (2016, p.161) observes that, in 1997, smallholders in Sanggau had already mobilised their own land and labour to pursue their own investments in smallholding palm oil cultivation. This is despite the fact that, in some situations, independent smallholders have to pay higher transportation costs to sell their fruit in the distant mills (Potter 2016, 165). Nevertheless, and given the otherwise difficult circumstances of their lives, the sale of oil palm fruit would provide an important alternative cash income opportunity for them. Most frequently, however, smallholders would combine oil palm cultivation with various other farm and non-farm activities (Cramb and McCarthy 2016a, p.32).

Many of the households I visited in Kapuas Hulu were simultaneously composed of consumers of palm oil products, labourers for palm oil plantations and direct cultivators of oil palm. In a lunch meal taken in Janting, instant noodles were served for lunch in an Iban family home. In the noodle’s ingredient, it was written that palm oil is part of their raw material. The head of the household offered this simple food - which was to be prepared by his wife. During lunch, his wife explained to me that instant noodles were an important part of their daily diet, supplementing rice and other produce that came from their farms. To meet the increasing needs of the cash economy, the adult son worked in the surrounding palm oil plantation from 7 am in

the morning until 2 pm in the afternoon. In another strategy, the household had even converted some tracts of their swidden fields into oil palm fields to supplement their household's cash income. The household had multiple engagements with the palm oil economy. They can engage in casual labour for large-scale palm operations, while also negotiating the sale of harvested palm oil fruits to other palm oil companies. This study will explore the various institutional arrangements between villagers and the corporations that dominate the oil palm industry in Kapuas Hulu, while scrutinising the dynamic processes of livelihood change associated with the relentless expansion of oil palm cultivation.

1.3 Kapuas Hulu

In the process of developing my thesis, my travel from the main market town of Putussibau to Badau allowed me to experience the dense forest cover surrounding the Kapuas Hulu area. Kapuas Hulu is the furthestmost upstream district in West Kalimantan, and it shares a long border with the Malaysian state of Sarawak (see Figure 1-2). The district of Kapuas Hulu is distant from Pontianak, the capital city of West Kalimantan, which is approximately 750 kilometres downstream from Putussibau. Yet from Putussibau to Lubok Antu in Sarawak, across the Malaysian border, the distance is only 160 kilometres. From Badau, it is only 24 kilometres to Lubok Antu, which can be reached by less than an hour's driving by car.

The first reason to select Kapuas Hulu for this research was to observe the dynamics of a border district between two national economies in a remote forest area. The close proximity to Sarawak and the long history of territorial competition provides an interesting and complex background to large-scale palm oil development. In Sarawak, large-scale plantation operations were established much earlier (in 1981) through a joint venture between native landholders and private agribusiness (Cramb 2007, p.219). More importantly, in 1990, Malaysian elites released 600 thousand hectares previously under customary claims for palm oil development (Ibid) and in the following years, a profound agrarian transformation had taken place in Sarawak. However, during that initial period, no palm oil development occurred across the border in Kapuas Hulu. Subsequently, concerns amongst Indonesian political elites grew regarding the potential loss of national sovereignty associated with the frontier areas of Kapuas Hulu. The extremely underdeveloped state of the region has been seen as a risk, as it could lead to the economic expansion of Malaysian activities there and eventually in a possible territorial claim. The

competing nationalisms among these two nations can be traced back to various diplomatic and military tensions going back to the 1960s. At that time, the Indonesian government, led by President Sukarno, challenged Malaysia's sovereign claims to Sarawak during the *Konfrontasi* conflict (Wadley and Eilenberg, 2005), when Sukarno accused the Malaysian federation of being a neo-colonial construction and the two countries engaged in an armed military conflict. Badau in particular became a hotspot in this conflict, which was exacerbated by cold war tensions as Sukarno was increasingly leaning towards the communist bloc. These tensions were subsequently suppressed during the *Suharto* regime, which assumed a far more pro-western stance on foreign affairs. To promote economic controls over the border areas, Suharto gave some large-scale logging concessions to a foundation belonging to the Indonesian army forces, PT Yamaker (Eilenberg 2014c). These logging operations, however, were generally unprofessional and inefficient, and failed to provide local jobs whilst simply locking up the land for security reasons (Ibid, p.165).

Partially as a response to fears of Malaysian economic intervention, Indonesian national elites have been actively promoting large-scale palm oil development in Kapuas Hulu since around 2000, with large-scale palm oil operations beginning in Silat Hilir in 2001 (Shantiko et al. 2013). In personal communication with local politicians, they expressed a concern that Silat Hilir was still located too far distant from the Sarawak border. At the same time, national elites and the military apparatus began to worry about the decentralisation of the issuing of logging permits to local governments, as this tended to result in the local government in Kapuas Hulu endorsing logging proposals from Malaysian investors and subsequently suffering a loss of control (Wadley and Eilenberg 2005). Those same Malaysian entrepreneurs frequently cooperated with local customary elites to facilitate illegal logging exports during the same *reformasi* period to Sarawak (Ibid, p. 20). In response to various media stories exposing such illegal logging along the border with Sarawak in 2005, the national government revoked the local authority to provide logging permits in Kapuas Hulu (Ibid). Then, in a further attempt to assert national control, in 2007, they provided land use permits to any large-scale palm oil developer willing to operate in Badau, Kapuas Hulu. Badau was considered a more strategic location due to its immediate proximity to Sarawak and, in 2012, large-scale palm oil corporations were granted permits to establish plantations in this border region (Shantiko et al. 2013).

The emergence of large-scale palm oil operations significantly impacted processes of land access for traditional swidden farmers. In a previous study, Clerc (2012, p.15) found many lands previously used for swidden cultivation had been converted to palm oil operations. The primarily political agenda to establish palm oil along the frontier of Kapuas Hulu has resulted in a vast landscape transformation away from mixed swidden systems towards an agro-industrial monoculture. Based on a search through local permit records¹, it generally took between one and two years for a large palm oil developer to proceed from obtaining “local consent” to use community land through to being able to plant oil palm in the relatively ethnically diverse areas around Silat Hilir (see Figure 1-2). However, with the more homogenous Dayak communities living in Badau sub-district, large-scale palm oil developers faced greater difficulties in obtaining local consent for land appropriation². In 2007, many local longhouse communities were resisting attempts by corporations to obtain land around Badau. This meant that, from around 2008 or 2009³, the companies initiated a new strategy to develop local cooperation by working closely with some village elites and through this process, they obtained local consent and permits in 2012. The upper reaches of Kapuas Hulu thus presents an interesting case where fairly strong traditional Dayak communities demonstrated some (initial) resistance to the expansion of palm oil in their territories.

Kapuas Hulu also provides insights into the competing agendas of environmental conservation and the imperative of economic development. During trips to Kapuas Hulu in 2016, I conducted several short visits to the village of Ulak Pauk at Embaloh Hulu, where people believed that large-scale palm oil development, as they witnessed it in the other villages, would bring destruction of local natural resources and the environment as well as resulting in land dispossession and cultural decline. These villages are located on the border of the Betung Kerihun National Park, which was formally established in 1995 and provides habitat for the Bornean Orangutan and several other primate species. At the same time, many individual households were struggling to find alternative incomes to meet their increasing cash needs⁴. The existence of a national park in Kapuas Hulu has even encouraged the establishment of local

¹ Tracing local permit approvals in Kapuas Hulu of 2015.

² Ibid.

³ Interview with J, Badau, Kapuas Hulu, 2016

⁴ Interview with A, Ulak Pauk, Kapuas Hulu 2016

district initiatives to promote Kapuas Hulu as a conservation district⁵, with more than 50 percent of the territory classified as protected forest. Out of all this protected area, about 30 percent is within national parks (*Taman Nasional*), while the rest was demarcated as zone of protection forests (*Hutan Lindung*)⁶. Simultaneously, and somewhat paradoxically, the local government has also provided land concessions for large-scale development, including both logging and palm oil development.

International conservation and non-government agencies have been active in attempts to conserve the densely forested areas of Kapuas Hulu. Many of these organisations inevitably come into conflict with the many local advocates and interests for the expansion of palm oil. One of the successes of those opposed to palm oil expansion has been formalization of various regulations to restrict palm oil development. For instance, prior to 2011, various NGOs and conservation institutions had been protesting the expansion of palm oil in peatland. In 2011, along with pressure from global stakeholders, national elites agreed to a moratorium agreement to not convert the area of peatland to palm oil. In 2011, the conservation and activist movements prompted the government to revoke its palm oil plantation permits in forest areas⁷. Under the regulation⁸, any concessions must apply for forest release permits from the national forestry authority prior to converting forest to palm oil.

While conservation organizations have convinced some local communities in Kapuas Hulu to oppose all palm oil plantations, a number of households in Badau and Silat Hilir continued to voluntarily plant palm oil on their own swidden farms. Some villagers in Badau and Silat Hilir have been straightforward in their response to palm oil cultivation, which they believe offered the best available opportunity to generate cash income at present and into the future⁹. Some longhouse community members in Janting also explicitly rejected the presence of any external people in their villages, particularly NGO activists who they thought were trouble-making.

This research focuses on the areas that have been prioritised for palm oil development around Kapuas Hulu. As shown in Figure 1-2, large areas of palm oil concession have expanded from Silat Hilir in the south into Badau subdistricts further north. In Badau, agribusinesses had begun

⁵ Perda Kapuas Hulu No.20 tahun 2015.

⁶ Appendix D, calculation of protection areas in Kapuas Hulu, West Kalimantan

⁷ <http://www.bpk.go.id/news/sawit-resmi-tak-boleh-masuk-hutan-tanaman>

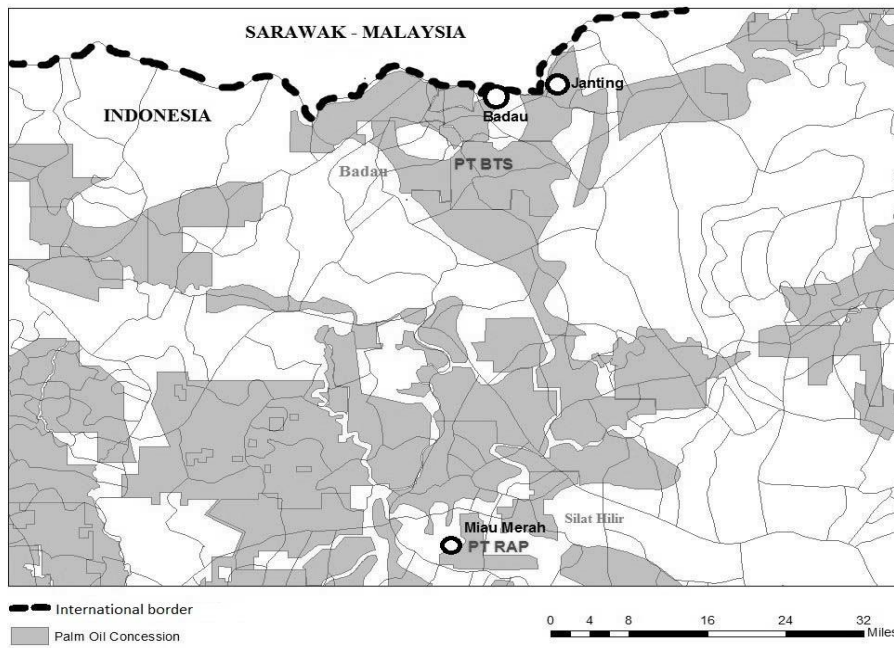
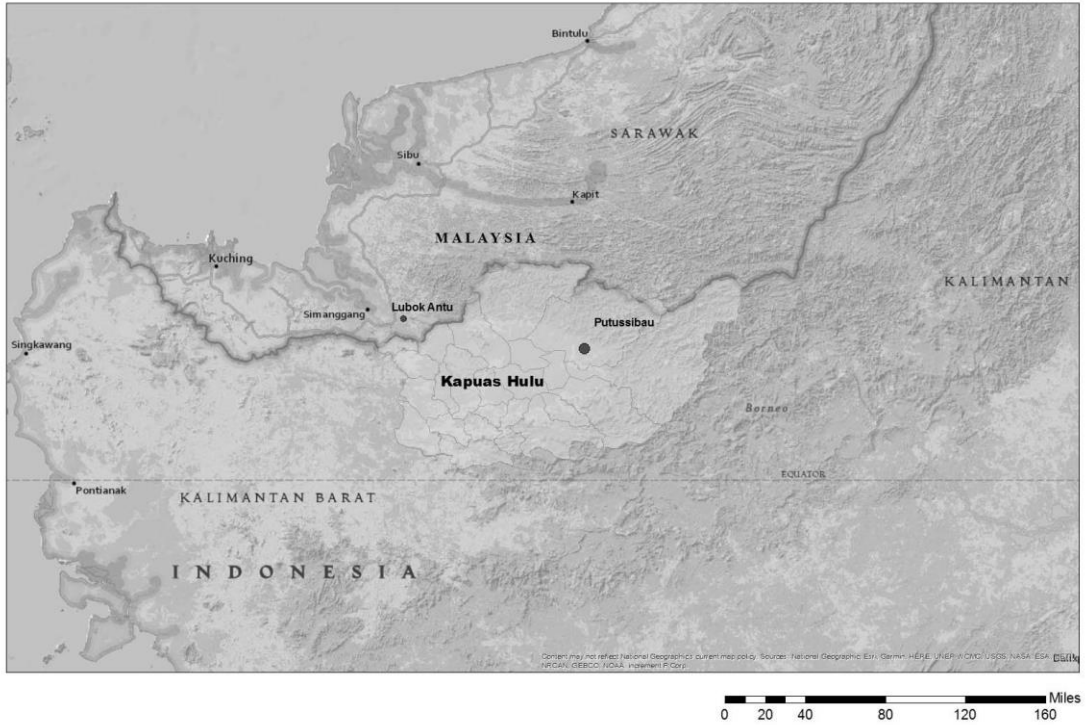
⁸ UU Kehutanan No.41/1999

⁹ Personal communication (pers. comm.) from several villagers in Badau and Silat Hilir, 2016.

negotiations for local land access at the end of December 2006, but were only formally granted land permits from local government in 2012. In Badau, two case study villages were included in the study: Janting and Badau. In Silat Hilir, a single village Miau Merah was studied. In each village, I obtained information and narratives about how changing land use and livelihoods remain relevant as discussions over environmental preservation policies continue and a ban on slash and burn farming remains contentious.

Several visits were also made to villages without oil palm plantations, especially those located in Embaloh Hulu sub-district in the region between Lake Sentarum and the Betung Kerihun National Park. These visits involved extended interviews and insights into the views and attitudes of more traditionally-oriented Dayak communities, or at least those that had not (yet) become absorbed within the palm oil juggernaut.

Figure 1-2 Study site locations



1.4 Political ecology approach

This study adopts a political ecology approach to scrutinise the institutional changes and responses that arose from palm oil investors' interest in Kapuas Hulu. A political ecology approach is used for several reasons. First of all, rather than simplifying problems, political ecology approaches seek to fully detail the multi-scalar complexities of natural resource management at the local level. Rather than narrowly focusing on scientific or technical perspectives, political ecologists pay close attention to political, economic, social and biophysical perspectives (Neumann 2005).

Political ecology also has a long and rich history of examining how agrarian communities adapt to the influx and influence of external capital into their communities (Neumann, 2009, p.228). For political ecologists, multi-scalar analysis of the interaction between humans and the environment is unavoidable (Neumann 2005). In mapping natural resource outcomes, political ecologists do not depend solely on natural causes, but also on human behaviour and how different actors conserve or exploit natural resources. In such human interaction with the environment, political ecologists acknowledge the realities of unbalanced power relations among humans as well as conflicts over conserving some resources and exploiting others.

From this perspective, many environmental problems can be perceived as essentially political economic issues, which arise from the social relations of production within a capitalist system (Neumann, 2009, p.228). For instance, we can see how in the Kapuas Hulu environment, local institutions might be produced by social and cultural norms that arise from everyday living, and how these institutions in turn shape environmental outcomes (Hodgson 2006). However, in the local setting, local institutions do not have a monopoly over the regulation of local resource usage and access. In reality, corporate and state actors, operating at other spatial scales, can conspire together to dictate control over land access for large-scale palm oil expansion.

In this thesis, I will augment the standard political ecology approach with the insights from global value chain analysis, which helps to delineate the specific ways through which capitalist firms are able to exert power over suppliers and other actors. Within this framework, Fold and Neilson (2016, p.197) argue that while corporations (in their cocoa case study) are increasingly able to determine rules and standards in the global value chain, they act in a dialectical

relationship with various state-based institutions as well as NGOs. Within these complex relations of production, it is often lead firms who generate the opportunities and constraints for the participation of different actors (Neilson and Pritchard 2009). In their relationships with local smallholders, Fold and Neilson (2016, p.196) found that corporate cocoa interests were not always aligned with the development interests of local communities.

In my thesis, I will examine the complex issues of how local institutional participation in palm oil development is largely a factor of unequal power relations. For instance, within Miau Merah and Janting villages, while people have planted oil palm, they have also expressed resentment over the injustices of land dispossession arising from large agribusiness interventions associated with palm oil expansion. This study combines political ecology and value chain approaches to examine unequal power relations and how they influence land control and access, and how production in a local setting is influenced by different institutional agendas. The challenge is to look at the way various institutions shape the spatial expansion of palm oil and its implications for communities.

Neumann (2005) asserts that the question of power relations is not only relevant to the control of natural resources, but it is also relevant to the question of how environmental knowledge is constructed. Various actors assert their political influence in order to determine who has access to scientific knowledge and under what circumstances. For instance, those promoting development interventions often argue that privatising land and natural resources is a solution to enhance rural development. On the other hand, biodiversity conservation promotes state control of large territories effectively barring access of local actors. Political ecologists, meanwhile, question ‘which property rights are being secured for whom’ (Neumann 2009). Development proponents use discourses to control access to natural resources, and political ecology approaches hence investigate how the production of natural resource knowledge, as a rational argument, is used to control land and natural resources (Ibid.).

In the cocoa commodity chain, unequal relationships among corporations and smallholders occur where the discourse of ‘sustainability’ has been used to control the supply of cocoa from smallholders in the global market (as presented in the case of Indonesia by Fold and Neilson 2016). In the Kapuas Hulu palm oil environment, there have been actions made by corporate and state actors which exclude and overlook smallholder participation in oil palm cultivation.

Corporate land has expanded in the form of HGU (*Hak Guna Usaha*)¹⁰ land leases, while local lands have increasingly come under corporate management and control. At the intersection of political ecology and value chain approaches, this research scrutinises land conversion and dispossession through palm oil development.

1.5 Research questions

Environmental activists have often claimed that local people reject oil palm due to issues of land dispossession. On the other hand, domestic agribusinesses assert the positive economic effects of oil palm development. In fact, both these claims come at the cost of undermining local aspirations and perspectives (Forsyth 2004, p.10). Rather than relying on compiling livelihood trajectories from secondary data sources, this study understands that the perceptions of different stakeholders are entangled with hidden interests and need to be carefully examined. In order to adequately describe local livelihood aspirations, this study will use a combination of observation, interviews and household surveys.

In order to examine the complex interplay of various actors and institutions associated with the political ecology of palm oil development, I have set myself the task of answering the following central research questions in relation to Kapuas Hulu:

1. What role do institutions perform in shaping the spatial expansion of oil palm cultivation?
2. What are the processes involved with land conversion and land appropriation that enable the ongoing spatial expansion of the oil palm economy?
3. How is the spatial expansion of oil palm transforming rural livelihood aspirations and strategies?

1.6 Thesis structure

The thesis comprises nine chapters. Chapter one consists of this introduction and research questions. Chapter two reviews the relevant literature and presents the key theoretical debates to which this thesis will contribute, including: the importance of institutions in shaping and

¹⁰ In Indonesian national regulation, *Hak Guna Usaha* (HGU) refers to leasing right that is given by the national land agency for private individual or entity over the long-term tenure, say 20 years or more, with possible extendable permit.

sometimes limiting the influence of corporate power along value chains; the application of political ecology to understand the processes through which land can be assembled for capitalist interests while excluding other actors; the shifting nature of contemporary rural livelihoods and agrarian transition; and the various controversial debates in the literature regarding oil palm expansion in Indonesia. Chapter 3 will provide details regarding the research methods used to gather information. The broader context of the global palm oil industry and the place of Indonesia within this industry will be presented in chapter 4, while chapter 5 will provide a detailed history and geography of Kapuas Hulu. The main empirical findings from the thesis will be presented across the subsequent three chapters. Chapter 6 will explain the role of mediating institutions in palm oil development in Kapuas Hulu. Then, the discussions of land access and exclusions will be discussed in chapter 7, following by an examination of livelihood outcomes associated with palm oil development in chapter 8. Finally, the thesis conclusion will be provided in chapter 9.

CHAPTER 2: INSTITUTIONS, EXCLUSIONS AND RURAL LIVELIHOODS: AN OVERVIEW

Within the palm oil industry, there are various institutions involved from large corporations to local community structures that provide labour and land, while in Kapuas Hulu, state supported agribusinesses have established tenure right mechanisms over local lands. This chapter will present the theoretical context of local institutions and how different powers are exercised to influence the cost and benefit structures at different points in the palm oil commodity chain. Political ecology here becomes relevant as a means to better understand unequal power relations throughout the commodity chain. In this thesis, political ecology is employed to assess local resource actions in the context of social relations of production and the broader political economic structures they are a part of (Peluso 1992).

Furthermore, Ribot (1998) associates resource access to powers of particular dominant actors who control natural resource allocation. Powerful actors control access through sanctioning some and dispossessing others and in the process accrue large benefits (Ribot 1998, p.336). This chapter develops a theoretical discussion of linkages between resource access and exclusions to understand the process of land conversions and dispossession within the palm oil plantation sector.

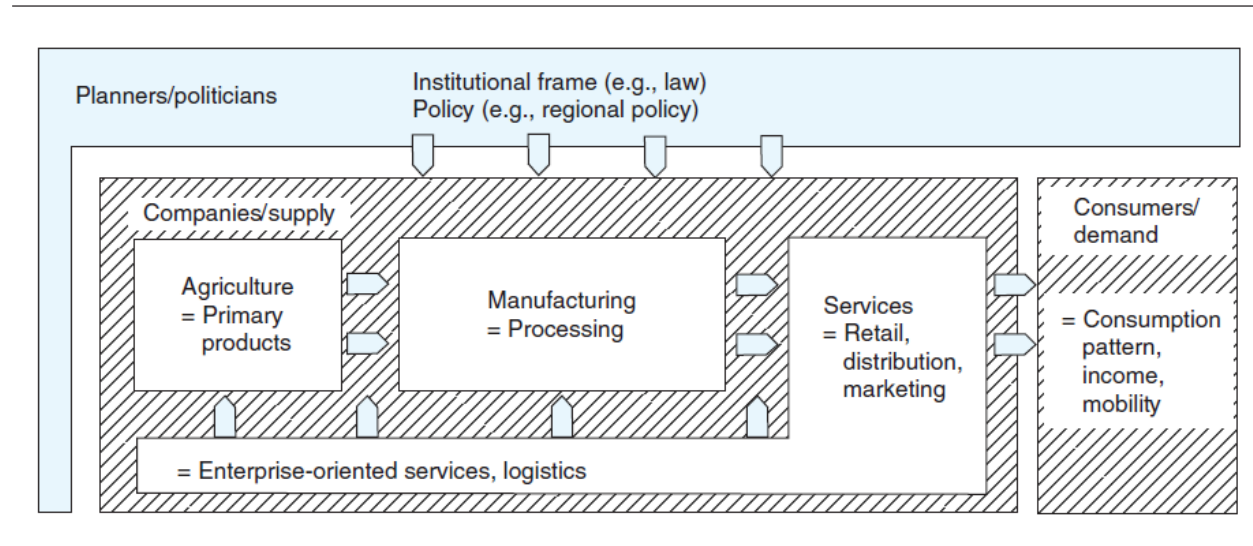
The chapter will also provide a conceptual framework for understanding livelihood outcomes that arise from the influx of palm oil capital into Kapuas Hulu district. In this literature review, livelihoods are understood as complex processes of asset accumulation, labour work strategies and production which are shaped by local institutional factors. While political ecologists have long examined livelihood struggles of local communities in the context of large-scale plantations, it is the interaction with local institutions that seems to shapes livelihood outcomes (Cramb, 2007). Hence, the study assumes that livelihoods are the result of complex realities in the upstream palm oil environment.

2.1 Institutions in agro-commodity chains

The expansion of institutional relations throughout the palm oil economy can be described through examining agro-commodity chains. Agro-commodity chain analysis helps to understand how value is added to agricultural commodities, as they trace production from farms (upstream

production) to primary processors, exporters, importers, product manufacturers, retailers, and on to final consumers (as shown in figure 2-1).

Figure 2-1 Agro-commodity chains



Source: (Kulke 2007, 123)

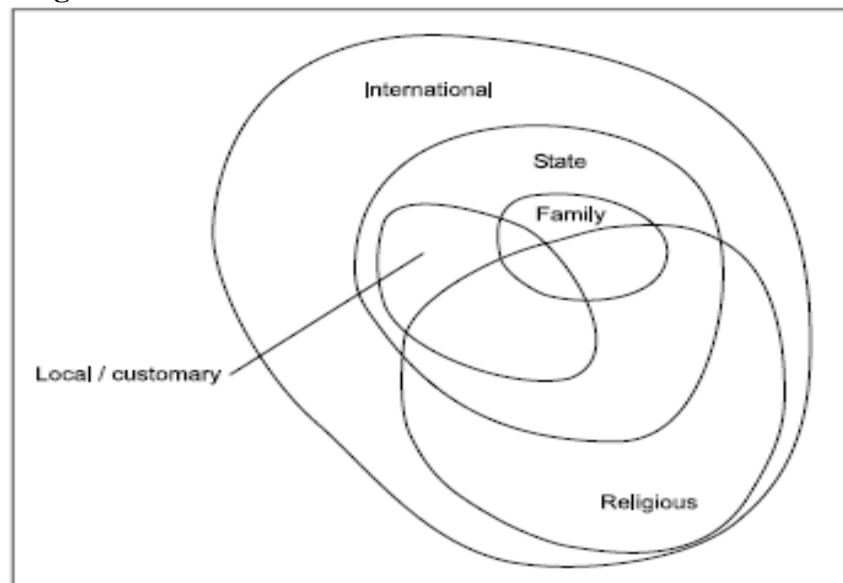
Within commodity chains, there is often a dynamic relationship among different players which governs the flow and allocation of profit and human resources throughout the chain (Hasler 2009, p.202). When examining the entire commodity chain, it becomes clear that different groups make their own rules to regulate and allocate resources among their members.

Rules that arise from different institutions are heavily shaped by the broader context in which they arise, and Hodgson (2006, p.1) asserts that these rules regulate social relation(s). Rules here constrain and open up a variety of choices, actions and possibilities (Hodgson 2006, p.2). He asserts that institutions that arise from different norms are accepted by local communities in their human interactions. Institutions are codifiable when instincts, habits and norms are agreed collectively by their institutional members (Ibid, p.5).

In the case of West Kalimantan palm oil development, Potter (2015b, p.747) describes how Dayak swidden farmers have made informal agreements to conserve garden-plots (*tembawang*) in particular sites which are viewed as collectively owned and cannot be converted into commercial crops. In my observation of the Dayak Iban, garden plots consist of various fruits such as palm fruits, other edible fruits, and green butter nut oil fruit (*tengkawang*). Indeed, local institutions interact with broader institutions to manage their natural resources. In the broader

scale, state and international agencies deliver formal regulation to manage natural resources. Dick & Pradhan (2002) underscore the importance of recognising local institutional power dynamics which assert norms and interests (see figure 2-2). On the other hand, there are national and global institutions that can shape how local natural resources are allocated and controlled (Dick & Pradhan 2002, p.23).

Figure 2-2 Webs of multi-level natural resource institutions



Source: Dick & Pradhan, 2002

In the multi-layered commodity chain, the political ecology approach helps to focus on local behaviours and social production in a broader, political economic setting (Peluso 1992, p.51). For instance, in the case of forest products in East Kalimantan, Peluso (1992) focuses on the issue of dynamic power relationships between local inhabitants who extract rattan, but simultaneously, on the broader political economic setting of logging industries who negotiate with state actors to retain control of forest resources through concessions or permits. The unequal power relations between local resource users and timber industries influences how local users extract forest products. Rattan extraction went from being regulated by local informal rules to being regulated by powerful timber industries (Ibid, p.53).

For smallholder commodities like coffee or tea, corporate power is used to influence commodity production within global markets through a decentralised production process based on smallholder farms. For example, in the case of coffee and tea in South India, Neilson & Pritchard (2009) show conflicting interests of industrial actors who through their power to shape codes of

local institutions shape livelihoods and the participation of smallholder farmers. In the tea and coffee sector, industrial actors have assisted the smallholder farmers to improve their local cash crop production. In another cases, these industrial actors have powers to control production by placing numerous conditions and requirements upon smallholder producers (Neilson and Pritchard 2009, p.211). This control over local institutions was intended to hinder oversupply and to control price values as part of a corporate effort to maintain profitability (Ibid).

For palm oil as a commodity, however, agribusiness corporations have been reluctant to decentralise their commercial production entirely into the hands of local producers. In the Indonesian and Malaysian palm oil industry, corporations often argue that smallholder farmers are unable to control production outputs and maintain standards, thus creating a significant risk on the production side (Cramb and McCarthy 2016a, p.34). Corporate interests have therefore exacerbated livelihood struggles as they have accumulated large tracts of land in an attempt to control upstream production and extract greater surplus.

From a political economy perspective of palm oil development, Cramb (2016) asserts that different institutions have different interests which promote different relations between corporate actors, state actors, and local farmers. Within the value chain, corporations have attempted to control production as a way to maximise their surplus extraction and political patronage (Cramb 2016, p.192). Private actors often fail to consider local livelihood trajectories and the different choices farmers are forced into between responding and rejecting global market forces (Ibid). For instance, in Sarawak, in opposition to the Dayaks who have rejected large-scale schemes, others have shown an interest in cultivating palm oil as long as they are able to receive a reasonable return (Ibid, p. 201).

Within these different livelihood trajectories created by palm oil expansion, the political ecology approach can be employed to observe local institutional changes as a result of capitalist development. In the context of agrarian communities, Neumann (2009, p.208) challenges static conceptions of communities that see them as merely defending local cultures. In fact, agrarian communities adapt their local cultural practices in response to the external capitalist economy (Neumann 2009, p. 208).

In this case study, the consolidation of natural resource access by dominant powerful actors - regional capitalist actors - is occurring through large-scale plantation development in a way that

is problematic for the local community (in a similar way to that outlined by Robbins 2011). From another perspective, smallholders in West Kalimantan, as explained by Semedi (2014), engaged with palm oil as a way to seek alternative cash income to meet basic household economic needs on their own terms. My thesis adopts an approach that acknowledges not only power relations and structures, but also the more complex issues of shifting social relations and livelihood strategies by individuals.

In this thesis, political ecology is used to examine social relations of production in agrarian communities under the influence of a global capitalist economy. In Sanggau, West Kalimantan, a culture of local environmental preservation and labour organisation has emerged around swidden farming activities. Nevertheless, under palm oil expansion, Potter (2015, p.760) has detailed Dayaks changing their farming practice as they reduce their emphasis on swidden cultivation in favour of oil palm. While many still place inherent social value on swidden farming, they have also engaged in oil palm cultivation as a means to meet needs for cash. Hence, they made alternative institutional relationships to engage with distant mills to sell their fruits (Potter 2015a, p.165).

In fact, in the maintenance of basic swidden cultivation, local engagement with oil palm demonstrates smallholders' innovation and adaptive capacity in the context of a changed economic environment (Mertz 2015, p.739). For instance in Niah district, Sarawak, local farmers became aware that upland rice cultivation was unable to overcome the problem of nutrient depletion of upland soils. Hence, they made a pragmatic decision to incorporate fertilisers in the upland environment as the way to offset nutrient losses (Ibid, p.736). This reflects the way smallholder farmers have shaped their agricultural practices by incorporating modern agricultural practices into their swidden cultivation practices. Hence, from the political ecology perspective, local farmers have been marginalised from local resources as capitalist actors have asserted control over land and production systems (Neumann 2009). Commodity chain analyses provide a significant contribution to the field by tracing market expansion and community participation and the resultant distribution of benefits and exclusions (Ribot 1998).

2.2 Resource exclusions

The process of acquiring land for palm oil cultivation can be understood as a process of gaining access to property. Ribot & Peluso (2003) define property as a claim to benefit from things,

where things can become natural resources. In the Kapuas Hulu environment, various properties are claimed through different institutions. For instance, customary leaders can claim *tembawang* (or forest garden) on behalf of the village to be used collectively as their common property on the basis of customary rules. The state can claim the forest area as state land on the basis of state regulation, and private entities can enclose land as private property on the basis of formal certificates they have acquired from the purchase of that land.

The concept of access has a broader relation to property. Access concerns an ability to benefit from a natural resource (Ribot and Peluso 2003, p.154), and it underlines broader social relations to property rights or ownership. For instance, in primary forest areas, the local community can acquire access to natural resources with permission from the state apparatus. Hence, in the intersection of broader relationships of owners and the people who enjoy the benefits of accruing natural resources, access refers to those who actually benefit (Ibid, p.154). In the above example, swidden cultivators can benefit by utilising forest products by gaining permission from the state authority, who legally “own” certain areas of forest.

Examining access brings up questions of power in natural resource management as it scrutinises the various mechanisms, processes and social relations that are exercised to influence the abilities of different people to benefit from natural resources (Ribot and Peluso 2003, p.154). For example, Meinzen-Dick and Pradhan (2002) consider the intersection of property and access in the case of water resources where they examine the different institutions that claim access to water and the different capacities they have to enforce property rights. In the context of Nepal, they found a variety of top down government regulations which dictate the use of irrigation systems (Meinzen-Dick and Pradhan 2002). At the local level, however, the capacity of the state to regulate local water resources was challenged and even ignored by local communities (Ibid, p.13). While the state did not recognise customary rights, villagers instead used local negotiation to regulate natural resource allocation and distribution among themselves (Ibid, p.21).

Resource access can be sub-divided into mechanisms of control and maintenance of natural resource access (Ribot & Peluso 2003, p.158). Control of resource access refers to the capacities to mediate other people’s access, while maintenance of access refers to efforts to ensure resource access remains open. Where the state has a weak capacity to govern resource access such as the case of water in the Dang region of Nepal, local elites remained as influential decision makers

when it came to water allocation. When other social factors came into play such as caste and gender, it could be seen how low caste people and women were often deprived of access to water (Meinzen-Dick and Pradhan 2002). Donor interventions to open up access to water resources only gave a minuscule improvement in the context of a rigidly hierarchical system.

The issue of resource access helps us to think through the social positions of particular individuals or parties in controlling or maintaining the ability to benefit from natural resources (Ribot and Peluso 2003). Examining resource access helps to understand “why some people or institutions benefit from resources, whether or not they have rights to them” (Ibid, p.154). In the case of water rights in Nepal, Meinzen-Dick & Pradhan (2002) state that despite the institutional support of statutory law, the state lacked the capacity to assert a governing role over water allocation. On the other hand, local upper caste elites have powers to control local water rights over subordinate lower caste and people, including women, without necessarily such formal rights.

Ribot & Peluso (2003) reveal that the powers to shape resource access determine to what extent they can reap benefits from the natural resources. These powers often work to exclude other parties (Ribot and Peluso 2003). In fact, such exclusion is almost an inevitable consequence of others obtaining access. In the case of Bangladesh, religious laws grant water resource access for all, but in reality, those local household with low economic status are often deprived of concrete water rights even to acquire water for drinking (Meinzen-Dick & Pradhan 2002, p.25). Actually, dispossession of natural resources appears as a manifestation of unequal power relations in the case of both Bangladesh and Nepal where upper caste and elites dominate resource access.

Political ecology will hence be used to trace the struggles of local institutions to access land and retain livelihoods with the onset of capitalist relations. In particular, local actors necessarily encounter and must negotiate with, local elites, government actors, plantation developers (including timber entrepreneurs) and conservationists, all within the fluctuating pressures exerted by markets and prices (McCarthy 2006, p.24). The outcomes and processes of negotiation over palm oil plantations intersect with different powers of resource exclusion in relation to other parties.

Resource exclusion can include limiting the access of original owners to their disposed land, to totally excluding some (marginal) actors from accessing land at all (Hall et al., 2011). Hall et al. (2011) underscore the importance of different actors and processes in natural resource exclusions. In discussing land dispossession, Rhein (2015) finds that, in West Kalimantan, a variety of actors have been involved in land enclosures and the allocation of concessions. In those scenarios, local strongmen, senior bureaucrats, and influential businessmen have consolidated resources to establish palm oil consortia (Rhein 2015, p.12). Using patron-client relationships, those consortia can shape ownership over particular tracts of land through the concession model. For example, in the decentralization era, the central government retained the broad authority to manage forest areas, while the local government had been granted the authority to manage non-forest areas (Resosudarmo et al 2014). Problems arose, however, when the local government misinterpreted this authority as an avenue to accumulate private wealth by using their political positions to generate revenue through the process of allocating plantation concessions.

Hall et al (2011,p. 4) assert that exclusions need to be understood from political point of views, where resource exclusions inevitably reflect dynamic power relations and create losers and winner. The powerful actors consolidate more resource access through four key “powers” that enable land exclusion and subsequent resource accumulation. Those powers are regulation, force, market, and legitimisation, which will often be combined together in different ways depending on local contexts and relevancies.

In their book, land markets have been used as a mechanism to transfer land access from existing to new owners who possess greater financial capacity (Ibid). In the context of west Kalimantan, for example, powerful actors such as large-scale palm oil developers attempt to negotiate land access with local people and with the state in terms of appropriate monetary compensation to obtain cheap land. As stated by Rhein (2015), negotiations will often involve patron-client relationships as a powerful network structure to pressure local land holders to give up their land. Regulations are often, but not limited to, sets of rules to govern land resource use and access (Hall et al. 2011, p.5).

Furthermore, sanctions and violence can be used to exclude certain people from land. In contemporary Indonesia, local and national governments are constantly being monitoring by civil

society and being restricted by global institutions, such as RSPO, such a way to highlight any acts of violence. Nevertheless, Semedi (2014) finds that customary elites can also manipulate conditions to their own advantages in order to accumulate more land access by dispossessing other community members through the threat of violence. The power of exclusions in the case study of palm oil development emerge as a complex process involving not only formal institutions, like the state or capitalist actors, but also local elite involvement to exclude community members.

Finally, exclusion can be affected through creating a socially acceptable basis of land claims, often through a dominant discourse (*legitimation*) (Hall et al 2011, p.131). In Indonesia's palm oil contexts, corporations can work to disqualify smallholder farmers from having the capability of participating in palm oil development. In brief, powers of exclusions assess the interaction between regulation, force, market and legitimation that collectively devise the changing distribution of land access between social groups.

In West Kalimantan, Semedi (2014, p.233) found that Dayaks suffered from dispossession of their swidden land because of large-scale agribusiness. In other settings, farmers have voluntarily converted their swidden or rubber plots into oil palm fields. These realities of increasing oil palm expansions provide a complex picture of the Kalimantan landscapes. When palm oil prices were high, farmers' market access can be expanded where local communities sell their crops to surrounding private actors. Nevertheless, in reality, Potter (2015, p.761) notes the increasing competition and population expansion in West Kalimantan that has resulted in land shortages. From the capitalist perspective, corporations have an interest in maintaining their monopoly as a way to maximise their profits from large-scale plantations. In the Ngabang area, for example, Acciaoli et al. (2016) report on a large corporation that had been using various methods to monopolise oil palm production through maintaining large land concessions.

In Kapuas Hulu, one corporation has applied their own joint venture system to manage all land disposed by rural people, despite these land holders still receiving monetary dividends from the corporation. To some extent, the smallholders' endeavour to cultivate their own oil palm can interfere with the desire of corporations to accumulate local lands at a cheap price. Inevitably, of course, industrial actors sustain their dominance within the value chain in an attempt to maximise their profits (Fold and Neilson 2016). Utilising the value chain perspective, this study

scrutinises the linkages between industrial interests to control land access and production and the consequences for the participation of local resource users.

2.3 Agrarian transition and livelihoods

The introduction of palm oil development into rural areas has resulted in important transformations where there has been a major influx of capital and labour into the local landscape (Cramb and Curry 2012). This has important implications for rural livelihoods in all their different settings. In the case of palm oil development, different patterns of land, human resources, and capital are mobilised in different ways right across Southeast Asia (Ibid, p.223). In the context of the large sums of capital that are being mobilised by agribusiness, there have been debates about how local livelihoods have been shaped. Both opponents and proponents delivered their discourses to shape the palm oil agribusiness in their own understandings.

Some activists have opposed big business due to the widespread problem of labour exploitation. For instance, Amnesty International (2016), in their campaign report of “The Great Palm Oil Scandal”, highlighted the way the industrial development of palm oil in Indonesia is often associated with child labour exploitation where palm oil companies have benefited from the low costs of child labour. The report describes labour exploitation from palm oil to strengthen the case against palm oil, yet it does not discuss another form of participation by the local communities as smallholding palm oil farmers.

From another perspective, in Sanggau, West Kalimantan, Potter (2015b) shows that the local community not only participated as labour in palm oil development, they participated in smallholder palm oil in their own way. Potter (2015b) shows an alternative assessment of palm oil in Sanggau in West Kalimantan, where smallholder farmers highly value the opportunity to grow palm oil and have even embraced credit institutions to finance their palm oil enterprises.

Other critics have raised concerns regarding the livelihood outcomes from tree-cash crop plantations. For instance, Li (2011, p.283) argues that the development of high-value commercial crops such as rubber, palm oil, and sugar frequently attract mega-farming investors, but she critiques the employment opportunities provided by such large-scale plantations as being less than that for other land uses. In the case of large-scale farming, investors gain substantial profit, while original landowners receive little or nothing (Ibid, p.284). The drawback of her argument

was to neglect the impact of market access made by palm oil development to local participation in palm oil when this is on their own terms.

From another perspective, Mertz (2015) acknowledges the problem of land dispossession from large-palm oil plantations in Sarawak and West Kalimantan. Nevertheless, he suggests that palm oil development has tended to increase the market participation of rural communities while also increasing infrastructure access (Mertz, 2015, p.734). It is found that in Sarawak people living near palm oil plantations can gain income opportunities by engaging with the growing cash economy (Mertz et al, 2013, p.116). Mertz found in other areas with non-industrial palm oil developments that many people have relatively limited opportunity for more cash income (Ibid.). In his livelihood survey, those who embraced palm oil development have been economically better off in the last ten years, while those households without palm oil cultivations have been economically worse off (Ibid, p.116).

Furthermore, Cramb et al. (2009) observe that successive booms of cash crops brought differentiated impacts to swidden farmers. Some swidden farmers are worse off from the large-scale land dispossession and land use-zoning (Cramb et al. 2009, p.343). On the positive side, agricultural transformation has progressed bringing more infrastructure in the form of roads, education and health care to previously isolated groups (Ibid, p.323). Hence, swidden communities do not simply passively resist development pressures. Indeed, local communities adopt new market practices as they engage with palm oil plantations, even while many still retain swidden practices (Ibid, p.323). Cramb et.al (2009, p.329) found that local swidden communities often simultaneously have swidden plots and high-value cash crop plots, although in extreme cases, social-economic changes push youth to leave swidden production altogether. In another case, households concentrate on cash cropping and off-farm work (Ibid, p.331).

Hence, when it comes to the agrarian transition, Cramb et al. (2009) suggest that local people diversify their livelihoods depending on their available assets. Livelihood assets refer to capital owned by the local households such as natural capital (e.g. land access), physical capital (infrastructure), financial capital (monetary assets), human capital (labour quality and availability), and social capital (social support to particular households) (Ellis 2000, p.11).

In Burkina Faso, West (2013) employs the concept of sustainable livelihood analysis to observe local livelihood adaptations under the pressure of extreme droughts. Sustainable livelihoods here relate to sensitivity and resilience. Sensitivity refers to the period that a household is being affected by external shocks (e.g. drought), while resilience refers to the adjustment period needed to adapt and recover from these external shocks (West 2013, p. 343). In this research, it was found that households can adapt during periods of agrarian transition if they have high resilience and are less sensitive to the adverse effects of such external environmental shocks (Ibid). Off-farm labour opportunities such as work in gold mines provided a way to buy grains and accumulate more assets within the dry season. Through livelihood diversification, households in the local area could use livestock as a source of wealth that would help sustain them through droughts (Ibid.)

Palm oil development can bring land dispossessions, but it can also provide new market opportunities for local smallholders, as well as bringing infrastructure into rural areas. Rigg (1998) found that increasing infrastructure access is often an important factor when it comes to livelihood diversification. For instance, in Chiang Mai, Thailand, the development of road infrastructure gave rural households access to new market and employment opportunities (Rigg 1998, p.501). This thesis will assess the livelihood transformation and employment opportunities that come with expanding palm oil development in Kapuas Hulu.

2.4 Reviews of local reactions to oil palm plantations

This section provides a review of the local institutional reactions to large-scale palm oil development in the largest producer countries of Indonesia and Malaysia. This review then examines specific palm oil development issues in Kapuas Hulu, West Kalimantan. In the Indonesian and Malaysian economies, global economic forces shape land use and livelihoods for palm oil expansion in various ways.

The following cases of Sarawak, Jambi and Sanggau underscore local institutional responses in different ways to shape land and livelihood outcomes. Cramb (2007) explains four reasons why Iban Dayak groups can actively participate in cash crop cultivation in Sarawak. These include: adaptable livelihood strategies, different land-tenure strategies, the presence of new settlers, and their active engagement with the market and state.

Firstly, Cramb (2007, p.358) states that differentiated livelihood strategies have strengthened Iban institutions. From his research, the cash economy does not force them to leave their traditional subsistence farming methods, but instead, allows them to combine traditional livelihoods with new ones. Previously, Iban communities had planted traditional rain-fed hillside rice. By the late twentieth-century, changed environmental conditions and restricted access to forests threatened their swidden practices, while the introduction of new crops promised benefits from the cash economy. Instead of entirely abandoning swidden agriculture, they employed a hybrid livelihood strategy. They still defended their traditional agriculture farming practices, although simultaneously engaged with the cash economy. With improved road infrastructure, more Iban began engaging in smallholding palm oil cultivation in Sarawak, Malaysia (Cramb & Sujang, 2013).

Secondly, strong customary arrangements within Iban communities have played a role in their continuing tenure over ancestral lands (Cramb 2007). Customary institutions such as community longhouses, and their local territorial areas remain important for Saribas Iban and have helped them to adapt to a changed agrarian landscape (Ibid, p.360). The longhouse community constitutes an average of 15 to 20 households within a single communal territory (*menoa*) (Cramb 2007, p.53). Within this communal system, individual households still retain individual land rights, but these households are situated within a community territory (Ibid, p.54). With the influx of commercial crops, and an associated process of land increasingly being accumulated by outsiders, land distribution is becoming increasingly uneven. In another setting, the territorial principle remains a survival strategy for Iban (Ibid, p.361). They employ a range of strategies to address unequal land access including temporary rights transfers and borrowing and leasing land. In addition, these communities often place restrictions on village land dedicated to rubber cultivation in an attempt to limit land accumulation (Ibid, p.361). In these communities, it is common for households to pool their common farming land so as to establish temporary lending and leasing mechanisms to redistribute land amongst community members.

With the recent expansion of oil palm, local farmers in Sarawak divide their labour time and resources between oil palm and swidden activities (Cramb, 2015). Yet, increasingly fewer labour resources are devoted to manage their own swidden plots due to the increasingly diversified

nature of livelihoods. Nevertheless, those who engage in swidden still hold onto a shared access system when it comes to hunting and gathering (Ibid, p.786).

Thirdly, Iban communities in Sarawak have been able to adapt to a changed agrarian situation due to their long history of engagement with the market and state since the mid-nineteenth century (Cramb 2007, p.362). In Sarawak, the British-influenced legal system provides opportunities for Iban to articulate their claims of customary tenure through the court system. Customary leaders also functioned as mediators who supplemented the colonial-influenced court system by resolving local land conflicts (Ibid. p56). The engagement of Iban leaders at the local government level enabled them to articulate customary legal traditions amidst local government interventions. As they grew commercial crops in their customary lands, they engaged the global market via both Chinese and Iban traders with fewer impediments (Ibid. p.363).

Community engagement with the state has also been supported by the common law system to counter top-down state policies in relation to land in Sarawak. Oil palm cultivation has been promoted over swidden agriculture in Sarawak since the 1980s, and numerous land projects that have attempted to replace swidden with oil palm plantations have been developed (Cramb, 2015, p. 771). However, in the common law system practised in Sarawak, the community can appeal through the courts to revoke or reject land commodification by the state (Cramb 2013, 4). In contrast, it appears that this legal recourse is not available to the legal system in Indonesia.

Finally, with the influx of settlers to participate in various crop booms, the local inhabitants in Sarawak have adapted to an influx of settlers coming to accumulate land. In Sarawak, migration has contributed to the growth of rural and urban settlements with ethnically diverse populations (De Koninck *et al* 2011). The longhouse community demonstrates resilience amidst a mostly unrestrained land market (Cramb 2011, p.70). Hakka Chinese came into Borneo in the middle of 18th century primarily for gold mining, followed by more migrant Chinese as commercial traders in the 19th century (Ibid, p.59). While they languished under British colonial policy (and that of the Brooke rule) that restricted their trade and other economies, subsequent laws to promote intensive agriculture attracted more Chinese to come into Southwest Sarawak (Ibid, p.59). During these episodes of Chinese settlement in Borneo, they expanded their participation in the commercial plantation boom. However, local Dayaks did not surrender their land to Chinese lenders, as lands were not allowed (under customary tenure) to be used for collateral when

borrowing money, while standing crops could be used for collateral on short-term loans (Cramb 2011, p.70). In Sarawak, joint ventures between Iban and palm oil developers meant that Iban did not sell their land to the state, but provided 60-year land leasing agreements to palm oil developers (Mertz, 2015, p.735). For them, customary tenure was not viewed as an obstacle to the adoption of cash crops in Sarawak as new investments simply allowed the Dayaks to sell palm oil fruits to surrounding mills (Ibid, p.735).

The situation regarding local institutional responses from palm oil development is different in Jambi, Sumatra, as reported by McCarthy & Zen (2016), who suggest palm oil development can improve the livelihoods of more prosperous farmers (often local elites) as they can reap the advantages of oil palm booms. Such farmers are advantaged as they have surplus capital that can be invested into labour and fertilisers, which means they are better able to acquire further rural land for oil palm cultivation (McCarthy & Zen, 2016, p.126). However, many poor farmers in Jambi struggled to hold on to their land as the cash economy became more and more prominent, especially in times of household crises (Ibid, p.129). Hence, smallholder oil palm plots are at risk of being sold to outsiders, while the erstwhile smallholder farmers are forced into low-skilled labour work.

In the Sumatran forest frontier, local inhabitants in Jambi informally had tenure over their traditional lands. At the same time, there have been a massive influx of Javanese migrants was spurred on by the availability of day labour work, and these migrants often apply a more formal approach to land, over which they claim formal ownership (McCarthy & Zen, 2016, p. 129). With the state often ignoring local land claims, tenure security for local people is a major issue where people are vulnerable to outsiders acquiring their land (Ibid.) Those who do not have legal tenure certification are in a grey area and are often in a weak position when it comes to claiming land tenure and hence at risk of losing land access.

In Sanggau, West Kalimantan, the Dayak community continues to practise swidden agriculture in the form of upland rice cultivation (Potter 2015b,p. 751). Nevertheless, their subsistence mode of production was under increasing pressure as large-scale plantations expanded in West Kalimantan (Ibid, p.755). As the cash economy expanded people have had to survive by engaging with the cash economy. Recently, the Dayak have engaged in palm oil cultivation themselves, and by gaining access to credit unions, they are able to finance small palm oil

enterprises (Ibid.p.761). Hence, they now cultivate a mix of crops including rubber, swidden and palm oil.

Within contemporary Sanggau, longhouses have almost disappeared due to a policy from the New Order regime that attempted to ban them, while communal forests are now rare in palm oil dominated sub-districts such as Parindu (Potter, 2015). Unlike Sarawak, the Indonesian government still retains centralized authority over forest areas, such that Dayaks, who rely upon their customary rights to the forest, are often in a weak position to claim tenure (ibid). New settlers were introduced to Sanggau through the transmigration program, which began moving rural people from Java to Sanggau in 1979, such that indigenous Dayaks have faced land pressures from transmigrants and expanding palm oil plantations in their area (Potter 2016). Today a high population density has meant that land has increasingly come under the cultivation of immigrants (Potter, 2015), as reflected in table 2-1.

Table 2-1 Local responses to commercial plantations in Sumatra and Borneo

Factors	Iban (Sarawak) (Cramb 2007, 2011)	Jambi, Sumatra (McCarthy 2006)	Sanggau, West Kalimantan (Potter, 2011, 2015).
Livelihood strategy	Retaining subsistence farming as a hybrid strategy	Palm oil cultivation and labour work	Palm oil cultivation and swidden farming
Land-tenure strategy	Strong	Weak	Weak
Engagement with market and state	Active - to defend their customary institutions	Subordinate to state policies and laws emanating at the national level	Subordinate to government and private actors
Adaptation to new settlers	Strong	Weak	Weak

This research focuses on a district located along the border with Malaysia in an area where large tracts of land have been set aside for environmental preservation. In the preceding section, oil palm development in Silat Hilir was understood as existing at the intersection of industrial agriculture and ‘traditional’ smallholder farming. In Badau, located along the border with Sarawak, contestation over national economic security and large-scale investment in oil palm plantations involves a more complex local situation. This thesis will show how the situation is somewhat different to those reviewed above in their specific local settings, by mapping local reactions in Kapuas Hulu.

CHAPTER 3: RESEARCH METHODS

3.1 Research background

This thesis aims to examine local responses to palm oil development in Kapuas Hulu, West Kalimantan. Fundamentally, this study investigates local institutional changes, land acquisition processes, and livelihood transformation as a result of palm oil development. To address these research objectives, various data collection methods were employed.

Firstly, I collected secondary information to obtain background information on local conditions in the case study sites. These consisted of prior ethnographic studies and various reports from the different stakeholders (e.g government, NGOs). For instance, Dove (2011) presented a detailed ethnographic account of Dayak livelihood activities, the cultivation of subsistence food crops, and their use of labour and land for rubber cultivation, based primarily on fieldwork conducted in the 1980s (Dove, 1985). Later on, he underlines those ethnographic experiences to be relevant field experiences to understand the complexity of swidden farming in Dove (2011). Such background information helped guide me to situate my approach to local community engagement in a way that allowed me to more effectively explore local aspirations and attitudes towards palm oil development.

My research objectives require me to attain a deeper understanding of changing local social relations, power relations, and livelihood transformation. Ethnographic field work has been applied as the suitable research strategy to address these objectives. McCarthy (2006) reveals how the substance of ethnographic field work involves building local contacts, mapping local agrarian characteristics and understanding trajectories of local institutional changes. In my case, ethnographic field work involved spending 8 months in my various case sites across Kapuas Hulu. Further details of my field work schedule are presented in the last section of this chapter.

Other systematic data collection techniques were also used during the period of ethnographic field work, including: participant observation, semi-structured interviews, group discussions and a local livelihood survey. These methods of data collections will now be explained in greater detail.

3.2 Secondary data collection

Roche (2005) indicates that a comprehensive review of pre-existing literature is required to track previous discussions of a subject area and to help identify priorities for further research. My study drew upon the ethnographic work conducted by Dove (2011), who examined in detail the swidden cultivation systems found in Kapuas Hulu. This work demonstrated how Dayak communities still applied swidden cultivation systems in circumstances where cash crops were increasingly integrated within the system, especially the planting of rubber as being complementary to swidden cultivation (Dove 2011). In addition, Eilenberg (2012, p.17-18) made some prior observations of the upland landscapes and remote village environments in Kapuas Hulu, suggesting that a dependence on forest resources resulted in fewer economic opportunities for the Dayak Iban communities who inhabited these areas. The work of Cramb (2007) also provided detailed ethnographic work on agrarian transformation amongst Dayak Iban communities across the Malaysian border in Sarawak, suggesting a relatively successful ability to position themselves within a rapidly changing economy.

This study also collected various reports made by different stakeholders regarding the issue of land use and economic development in Kapuas Hulu, that might be considered “grey literature”. When dealing with such data, Roche (2005, p.183) underscores the importance of substance of power behind the secondary reports. For instance, in tracing various government reports, a distinct discourse emerged which acted to advocate for and defend the interests of large-scale industrial plantations. They frequently did this by proposing mostly top down regulation to consolidate their discourse into policy making. Similarly, there have been several critical reports prepared by environmental activist organisations that seek to construct a discourse of the palm oil industry as being both socially and environmentally destructive in an attempt to delegitimise the industry from a societal perspective. The sometimes contradictory information that emerged from such reports reflects the conflicting interests and trajectories of various institutions, and their ability to shape palm oil development outcomes in Kapuas Hulu.

The Indonesian government (especially through the statistics agency, BPS or *Badan Pusat Statistik*) publishes a large volume of statistical material at various spatial scales often down to the sub-district level. This includes such issues as infrastructure development, economic activity, agricultural production, employment and various other social indicators. I have consulted this

data and have, at times, presented it in this thesis. However, it should be emphasised that the capacity of BPS to collect primary data is limited and they often draw on the data collected by other line agencies which is of highly variable quality. Such data is best used as a broad indicator of actual realities.

Besides these reports, I collected various maps to help guide the research and to identify locations for subsequent fieldwork. There included various online maps available from the provincial government of West Kalimantan and the district government of Kapuas Hulu, which were complemented by maps produced by conservation organizations, such as GiZ- FORCLIME (Forest and Climate Change Programme). These online and institutional maps are overlaid and adjusted with each other to generate a more precise cartographic result. This map was used to demarcate the district, to determine research sites in my study. Similarly to written reports, however, these maps are rarely impartial spatial reflections of reality and are equally imbued with various attempts to construct or support particular discourses or policy narratives.

3.3 Participant observation

By definition, participant observation is a way of collecting information about social activities within a particular society using both verbal and non-verbal clues (Schmuck 1997). In practice, an ethnographer engages in different kinds of activities such as getting involved in community activities, observing, taking notes, and doing interviews (Bernard 2006). In my case study sites, palm oil development was introduced to a rapidly changing local landscape. Based on prior information, local communities used to deal with various forest dependent activities such as swidden agriculture, tapping rubber, and collecting vegetables and fruits from their forests. Participant observation was conducted to trace the day to day activities of what was currently happening within these changing rural landscapes. My study observed livelihood and social relations by recording local conversations and interacting through photos and daily notes. This participation observation was conducted through various stages.

First of all, the participant observation was pursued by gaining a degree of social acceptance within the local communities, as it was obvious from the beginning that I was not a community member. Despite being an Indonesian, I am not a native to Kalimantan. To gain local acceptance, I needed to develop credentials as a legitimate presence in the community, as it is imperative for the researcher to be favourably received, or at least accepted, within the community despite the

position of the researcher ultimately being one of an outsider (Rose, 1997, p.312). I attempted to introduce myself, and to account for my presence, in a way that did not discourage community members from volunteering information. Here, I introduced myself to local villagers as a research student interested in palm oil trajectories, but who did not bring any explicit political agenda or interests, and who had limited direct capacity to influence their local livelihoods.

The participant observation assisted to build a degree of intimacy with the local community as an outsider trying to develop trust with individuals with whom I did not have a previous relationship. Here, I learnt to appreciate their local perspectives, to develop empathy, and to improve my ability to effectively communicate with them (Allsop et al., 2010, p.211). I recognise that having that engagement with local villagers in Janting was particularly difficult. Having read their history of head hunting, I was afraid that any unintended miscommunication with them could have serious implications for my life. These concerns were triggered every time I engaged in farming activities and noticed that they always brought their chopping knife as tools to cut the trees and grasses in their swidden activities. However, based on past stories of their headhunting cultures, I was still afraid of tools used for agricultural activities. Comfortable conversations and mutual relationships were built when I stopped being judgemental about their local daily lives, and daily interaction was built by following their daily activities, such as local swidden cultivation (see Plate 3-1). In their interaction, I found that headhunting was no longer practised by the Iban nowadays.

Furthermore, in my unfamiliarity with local Iban habits and culture, my local positionality was progressed by hearing more and talking less in my local interaction with them. In some cultural ceremonies, they liked to drink high-content alcoholic drinks that they purchased from Sarawak. In another field work setting, young Iban described their struggles to keep engaged in swidden farming when they were interested in pursuing education as a basic need for them. In these situations, I learnt to understand that their local culture was enriched by celebrate many events. My initial inability to engage in local Iban conversations meant I was limited to the use of basic vocabulary. Even so, the use of simple words like ‘yes’ (in Ibanic communities, *aok* or *bise*) and ‘no’ (*nadai* or *nisi*) actually encouraged my informant to open up and supply more information to me. Instead of constantly emphasising their challenges in satisfying growing cash needs, I developed an appreciation for how they rarely complained about their financial struggles, and

this encouraged me to also be thankful for every circumstance I face. As I slowly developed more intimate relationships with local villagers, I learnt to acknowledge their rich cultural diversity and unique perceptions regarding their own ways of their life.

Plate 3-1 The author participating in swidden activities with Dayak Iban in Janting village



Establishing local trust and confidence was, perhaps surprisingly, more challenging in multicultural locations like in Badau and Silat Hilir. In these multicultural settings, the dilemma I faced was to address the uncertainty and scepticism towards the presence of a researcher, as it appeared as though my presence would be rejected by local communities (as elsewhere described by Rose, 1997). In the first three days of my visiting Badau village, there was an initial rejection - especially from the Dayak community. Based on their previously negative experiences of losing land through palm oil development, they seemed to be antagonistic towards being interviewed. Although this village was located next to Janting, I could not extend my local connections in Janting to approach these local villagers. Eventually, I was fortunate enough to meet and develop a friendship with one Malay resident in that village, who offered me a place to live and started to give some little information about palm oil. In these multicultural settings, I

learnt again how villagers in the riverine villages engage in daily conversation. I acknowledged their daily social interaction was established through daily conversation around the river such as during their morning shower time (see Plate 3-2). In spite of my inability to swim, I learnt to persevere in the water and that seemed to generate a degree of local acceptance. In that setting, I also learnt that cultural practices were more oriented towards various multicultural gatherings rather than monocultural ceremonies, and involved activities like playing cards and chess with individuals of different multicultural backgrounds in the village. From such local engagement, community members started to give me connections about key informants who were more knowledgeable about palm oil development. I felt thankful that this changing situation occurred where some villagers began to speak to me regarding palm oil development. The Malay individual whose house I stayed in also guided me towards key Dayak informants who were willing to discuss their experience of land deals and land dispossession.

Plate 3-2 The author participating in social gathering at the river in Badau village



In Miau Merah (my third case study village), my approach was to build rapport and trust by visiting villagers randomly from one house to another. By making such local visits, there was a face to face connection to some key informants (see plate 3-3). It became clear that assumptions that my respondents had familiarity with Bahasa Indonesia would be tested. For example, a

villager from Sebaruk claimed to be more than 100 years old and, despite difficulty speaking in Bahasa Indonesia, he kept using various body languages to make me understand the message. I was fully appreciating his efforts to enrich me with information. Through the visual expressions, I even captured the information needed to answer my research questions. Such interactions emphasised the need for me to develop a more extended Dayak vocabulary, and even though I never developed any real fluency, I could at least use words like drink (*ngirop*) and call out to young men (*ujang*) or understand when people called out to me “young man....young man”, or “*Jang.....Jang.....*”.

Plate 3-3 The author visiting local villager's house in Miau Merah



Gaining social acceptance within a community often requires protracted negotiations across space and, prior to fieldwork in Kapuas Hulu, various local contacts in Pontianak would ask what my research was about. When I told them it was about palm oil development, I was quite shocked that they frequently revealed that it would be a sensitive issue to discuss in my proposed case study sites. Prior to field work, local informants also spoke about conflicts between the villagers of Semuntik and Janting. When I arrived arriving in Putussibau (the main town in

Kapuas Hulu), local contacts then added their stories about some local demonstrations against a palm oil plantation company in Silat Hilir just prior to when I planned to go there in mid-2016. Prior to field work, I wondered about the uncertain responses that my presence might provoke, leading me to be possibly rejected by those villagers. While such information is important to contextualise a study site prior to field work, it can also create pre-conceptions that may not be helpful.

I was told that villagers in Badau and Miau Merah were well known for not welcoming outsiders, especially environmental activists. To overcome that, my local strategy was to adopt a positionality based on the likely feasibility of being able to interact with different people in a relaxed and casual interaction (Allsop et al., 2010, p.214). In the process of building up trust, many times local communities in Janting and Badau asked me about my intentions when collecting data in their villages. Even though I already introduced myself as a research student, they were still suspicious that I may have been from an NGO, a government representative, or held another external role that would make them refuse my presence. I actually had to explain again to them that the researcher's task was to learn local cultures not to offer some policy agenda, and that researchers would disseminate findings in terms of writing media and, in my case, this would be a doctoral thesis. To strengthen my identity, I also showed them my formal research permit from government, along with my participant information statement and support letter from the university.

In my various social interactions, information was periodically recorded and written up in a field journal (as discussed by Allsop et al., 2010, p.214). In the local settings and interactions, I did not set a rigid time to make journal entries, as I maintained flexibility to capture information as convenient to respondent times. Nevertheless, there were some rules of thumb that I followed, such as making journal entries at least three times every week. Sometimes, in the process of field journal writing, drawing on photographic documentation was also useful to review information and observations in a way that would trigger ideas and thoughts about what I had witnessed that I might otherwise ignore in my field notes alone.

3.4 Interviews

In my fieldwork, the interview was devised to capture various attitudes and perceptions towards palm oil development. The information was collected by asking verbal opinions about local

perceptions towards palm oil development in their villages and addressing topics such as changing resource institutions, land acquisition processes, and local livelihood change. The interviews involved various stages such as establishing contact, engaging in the interview process, and closing the interview (as described by Dunn, 2005).

Establishing contact involves selecting informants on the basis of their experiences and likelihood that they would possess specific knowledge and capabilities that could provide relevant information on the topics in my study (Dunn, 2005). Prior to field work to Kapuas Hulu, I had contact with other researchers from CIFOR (Centre for International Forestry Research, located in Bogor, West Java) who had conducted previous social science research in Kapuas Hulu, and they provided me with some local contact points and village leaders in Badau. I realised in the field, however, that I cannot depend solely on village leaders, and I quickly found other contacts during earlier participant observation who also had the capacity to provide important insights and information.

The selection of informants was considered based on their ability to communicate their ideas and experiences relevant to my research investigation (Dunn, 2005, p.112), and this often relied on a “snowball sampling strategy” where I would ask my initial informant about next potential interviewees who had similar capabilities to provide information like them. This helped selectively identify informants with stronger capabilities to answer my questions. Prior to an interview, I arranged a village meeting to introduce myself and to give the villagers information about my interview topics. In addition to interviews within my three primary case study villages, I also complemented those with some respondents in Embaloh Hulu, where I also attended village meetings and discussed similar issues as I had done in my main case sites (see Plate 3-4). Later on, these interview topics were helpful to inform and to filter respondents about their capabilities to answer my interviews. All interviews were conducted on a voluntary basis, and involved obtaining informed verbal consent from informants. During my research, I conducted interviews with various stakeholders to explore local information of palm oil development. The types of respondents based on their locations are provided in the following table.

Table 3-1 Interview informants

Place	Informants
Janting	Village heads, swidden farmers, oil palm labourers, oil palm farmers, customary leaders
Badau	Village leaders, migrants, local inhabitants (indigenous and migrant residents), oil palm farmers, labourers, local businesses/traders, local oil palm cooperative representatives
Miau Merah	Village leaders, migrants, swidden farmers, local inhabitants (indigenous and migrant residents), oil palm farmers, labourers, local businesses/traders, local palm oil cooperative representatives, villager to work as local palm oil companies land acquisition staff
Embaloh Hulu	Village leaders, customary leaders, swidden farmers, local businesses/traders, sub-district head of Embaloh Hulu
Putussibau (capital city of Kapuas Hulu)	Local NGO representatives, global donor conservation staff and representatives, local government representative for the district office of agriculture and plantations
Pontianak (capital city of West Kalimantan)	Provincial environment office/representative (Dinas AMDAL Propinsi), provincial forestry office/representative, Provincial land agency's representative (Dinas BPN Propinsi)
Jakarta (capital city of Indonesia)	RSPO representatives, palm oil company representatives (GAPKI)

Plate 3-4 Local meeting in Embaloh Hulu



Successful interviews require planning and detailed preparations (Dunn, 2005, p.101). Prior to an interview session, I identified that the local risks during the interview would be respondents misunderstanding my interview questions and delivering incorrect information. I applied a semi-structured approach to interviews, which can give more flexibility to address research issues compared with structured interviews. In the structured interview, the questions are already predetermined, but in semi-structured interviews, I listed the topics and developed these further during the interview process. With that flexibility, semi-structured interviews helped me to scope respondents' feedback according to the information that I needed. Another preparation was to select the most convenient place to do the interview. For example, when I conducted interviews with Iban in Janting, the most suitable place was in their houses. I found conducting interviews in their houses gave them more sense of relaxation than interviewing in the swidden fields. Interview topics are presented in Appendix A.

During the interview, a prevalent challenge can be emotional relations and uneven power relationships between respondents and researchers (Dowling 2005). In Embaloh Hulu, some village leaders expressed their opposition towards proposed oil palm development in their village and, based on my assumed power as a researcher, they asked me to voice their opposition with

broader policy makers. This was not a position I was comfortable with. In Janting, my challenge was to overcome emotional situations that arose during the interview. For example, some respondents shared their emotional pains about the way that their land was re-allocated to large-scale palm oil developers with very little return in compensation, and it is undeniable that these emotional expressions influenced my supposedly independent position as a researcher.

To mitigate, or at least transparently acknowledge, such uneven power relations and emotional influence, critical reflexivity was taken to ensure self-awareness in an attempt not to exploit the interview process and to mute emotional influences upon the researcher (Dowling, 2005). To limit emotional relationships with respondents, I returned by reflecting self-awareness about my position and my emphasising my own limitations. The act of critical reflexivity asserted my position as a student researcher with limited capabilities.

After that, closing an interview was pursued based on the sense of continuance, feedback, and clarification rather than simply ending the interview (Dunn, 2005, p.95). In the local conduct of interviews, I expressed my appreciation of the informant's opinions and expressions and provided contact details if they required any further information about the purpose of the interview or results of the study. This act of respect was commonly returned by providing recommendations for subsequent interviewees in their village, such that snowball sampling recommendations were assisted through the act of interview closure.

3.5 Group discussions

Focus group consists of a small number of respondents, between six and ten people, discussing topics initiated by the researcher (Cameron 2005). In focus group discussions, interaction among group members is the key characteristic which is distinguishable with an interview (*Ibid*, p.117). It is debatable, perhaps, whether I actually engaged in "focus group discussions" or simply "group discussions", but the ultimate outcomes and benefits were similar. Firstly, the group discussion was held to collect group responses regarding palm oil development in the local area, and to observe the dynamic between different individuals. Secondly, it was organized to collect information regarding the seasonal calendar of swidden cultivations in the respective areas.

Focus group discussions consist of selecting participants, composing an appropriate focus group, determining the number of participants in the group, recruiting participants, generating questions

and topics, as well as conducting focus groups (Cameron, 2005). In Janting, my concern was to explore swidden activities (e.g. mapping their swidden seasons), to trace perceptions of palm oil development, and to know informants' livelihood aspirations. With these topics, the basis of selecting the participants was that they were swidden farmers and that they had some local experience of palm oil development. In Badau and Miau Merah, I found that it was difficult to arrange focus group meetings given the very tight schedule of many villagers in their agricultural work and in their off-farm activities. As such, I did not arrange specific meetings, but followed their regular village meetings based on their determined schedules.

In Janting, at first, there were six swidden farmers who matched the criteria and were able to participate in the focus group discussion. Later, I could not limit the actual numbers as those six swidden farmers also asked their friends to join in the local discussions, resulting in ten swidden farmers actively participating and contributing their opinions.

During the process of a focus group, the setting can be made informally and is normally led by a focus group facilitator or moderator (Cameron, 2005). I was thankful to another villager who assisted me by providing snacks and local foods, so the participants could enjoy the relaxing moments eating light brunch during discussions. In the focus group, the facilitator was selected on the basis of their familiarity with the research aim and focus group purpose (Ibid, p.124). I recruited a research assistant who could speak Iban and was familiar with my research aims from Putussibau, Kapuas Hulu (outside Ulak Pauk). The research assistant was actually very useful as a moderator to clarify participant's expressions stated in their local language (Iban). This assistant helped me to moderate the focus group discussion and to write the results on the paperboard. In Ulak Pauk, the village head voluntarily participated as moderator to guide the discussion (see Plate 3-5). In the discussion, I also asked the personal opinions of the village head to ascertain their biases. According to Rose (1997), allowing participants to act naturally at social events brings to the fore actual power relations between individuals at such events.

In conducting focus groups, Bedford and Burgess (2002) remind us of the heterogeneous opinions and attitudes among discussants. In Janting's focus group, there were two persons who came to dominate the conversation, while others were quiet and passive. To encourage a more balanced conversation, I worked with the research assistant to encourage those passive participants to give their opinions on palm oil development. Actually, the passive participants

could speak openly when they were tactfully encouraged by the local moderator. Clarification and mediation from the other participants was also helpful to avoid unnecessarily aggressive debates among those dominant participants.

Plate 3-5 Group discussion in Embaloh Hulu



3.6 Household Survey

Prior to the household survey, data from the official statistics agency¹¹ revealed a large, but decreasing, share of labour allocated to the agricultural sector over the last five years. It suggested a decrease by about 6.17 percent in Kapuas Hulu between 2009 and 2014. In 2014, 72 percent of the local population was recorded as working in agriculture, with the largest economic share in 2014 coming from the plantation sector. Other past studies made similar conclusions that farming-based livelihoods were still the dominant livelihood strategy in Kapuas Hulu (e.g. study by Clerc (2012) and Potter (2011)), although Dayaks in Kapuas Hulu are known to engage in both food subsistence farming and cash cropping (Shantiko et al. 2013). Colchester et al.

¹¹ Kapuas Hulu regency in figures, 2009, 2014.

(2006) even reported that about 33 percent of farmers in West Kalimantan are independent palm-oil smallholders.

With such apparently diverse livelihoods, this study attempted to capture the change and adaptation of livelihoods since the introduction of large-scale palm oil development in Kapuas Hulu. A questionnaire approach was applied due to its ability to generate insights from a large number of respondents in a way that afforded a less biased set of insights across a representative sample of the communities. The quantitative survey operated through various stages starting from determining the questionnaire format, setting the sample, conducting pre-testing and conducting the questionnaire (as suggested by McGuirk and O'Neill, 2005). The survey questions were mostly closed, allowing quantification of responses and ease of coding, analysis, and interpretation, although extensive notes were also made on diverse topics covered during the survey process. The acquired information investigated the changing nature of communal land access, employment and living expenditure (including food and non-food needs), and general attitudes towards oil palm development.

Before conducting the survey, a key challenge was the absence of any information on livelihood or population characteristics that could be a baseline for my case study sites. With such inadequate information, the preferred strategy was to conduct random sampling of all village households to select the respondents. This consideration followed the similar strategy of past surveys conducted by CIFOR and FORCLIME in other areas of Kapuas Hulu. A total of 120 respondent 120 households were randomly selected from village office lists (using random programming system available in Microsoft excel), with 40 households selected from each village. In those cases where the randomly identified respondents had since left the village, another random sample was conducted in excel.

I prepared a draft questionnaire, which was pre-testing in Nanga Awın, North Putussibau. This site was selected on the basis of apparently similar population and economic characteristics to the target villages, in terms of levels of livelihood diversification. This pre-test allowed me to significantly improve and refine the survey questions and format in a way that would more effectively capture local livelihood realities. The final format of the survey is presented in Appendix B.

Different methods for administering questionnaires have benefits and drawbacks. Bernard (2006) reveals those benefits and risks from self-administered surveys, which can gather large data sets at low costs, but with the risk that the researcher has no control over how respondents interpret questions, and that illiterate and semi-literate respondents will be excluded. For this thesis, my survey was verbally-administered directly by the researcher to respondent with Bahasa Indonesia. The verbal survey method gave me opportunities to clarify the questions that were not understood by respondents during data collection.

3.7 Fieldwork Schedule

In total, fieldwork took about 8 months, with 6 months spent in Kapuas Hulu (see table 3-1) in 2016. In 2018, there was one further month of fieldwork in February to verify data obtained in 2016. Before primary data collection was gathered, the consultation and engagement with local contact points and Indonesian counterparts was made. This involved clarifying conditions in the field and the best way to undertake data collection. In terms of sequencing, the participant observation was conducted in the initial stages of field research and the household survey was conducted towards the end once I had developed a reasonable understanding of local issues and attitudes. In Jakarta, interviews were made with government officials, non-government organizations, international donors, and other organizations related to the research questions issues.

Table 3-2 Fieldwork schedule

Tasks	2016								2018
	Month 1	2	3	4	5	6	7	8	Jan-Feb
Consultation process with local contact points	J								
Local permission & introduction to site location	J & P								
Participant observation		B	B	B/E	S	S	S		
Villages interviews		B	B	B/E	E/S	S	S		
Focus group discussions				B		S			
Evaluation and Pre-testing						N			
Doing household survey interview						B	S		
Interview with stakeholders in Jakarta & Pontianak								P&J	
Verified primary information									P, B, S

(*) B: Badau sub-district; S: Silat Hilir; N: Nanga Awin; P: Pontianak; J: Jakarta; E: Embaloh Hulu

CHAPTER 4: PALM OIL DEVELOPMENT IN INDONESIA

4.1 Introduction

Palm oil is one of the cheapest oils available, being used for both food and non-food applications, including being used as a biofuel. Global consumption for palm oil nearly doubled from 23.4 to 40.1 million tonnes between 2004 and 2012 (FaoStat 2018)¹². In 1965, the largest vegetable source was still coconut oil according to the oil crops yearbook statistics documented by USDA (United States Department of Agriculture)¹³. In their estimation, USDA found that palm oil supplied more edible oil than soybean in 2010 (USDA 2010). This market demand has prompted a major agricultural shift toward palm oil in Indonesia, bringing with it significant land use changes, changes in production structures, and various environmental challenges.

The chapter will firstly present the history of palm oil development in Indonesia, which over time has seen a gradual technological transfer to smallholders, who are becoming more involved in cultivating oil palm. While larger private interests have still disproportionately benefited from these technology transfers, smallholders have been able to take advantage of wider infrastructure improvements and market access, participating in oil palm cultivation in such a way that has supported their household economy.

Palm oil production is part of a more complex system of production arrangements that integrate upstream producers and downstream corporations. While Indonesia dominates global crude palm oil production, much of the value-added processing activities are undertaken offshore. This chapter will explain the production and market structure of palm oil produced in Indonesia including production structures, export details and exports of palm oil from Indonesia.

Furthermore, the rising global demand for palm oil has performed an important role in terms of reshaping processes of rural economic development in many regions, while at the same time presenting a new set of environmental challenges. The global structure of the palm oil industry, and the use of palm oil in various processed food products, has meant that these environmental challenges are being increasingly governed through a global non-state regulatory system. This

¹² Statistics of FAO (website): <http://faostat.fao.org/>

¹³ <https://www.ers.usda.gov/data-products/oil-crops-yearbook/>

chapter will discuss this regulation by global actors such as RSPO (Roundtable for Sustainable Palm Oil), and how it intersects with national and local interests in Indonesia.

4.2 Historical developments of oil palm cultivation in Indonesia

This section will discuss the history of plantation development in Indonesia, which commenced in the colonial era and evolved through state-driven plantation development after independence as many estates were nationalised by the Indonesian government. Meanwhile, the relative fortunes of the smallholder and corporate sector have shifted under different shareholding arrangements, and various forms of partnership (*kemitraan*). Such shareholding schemes were evident in my case studies as part of large-scale private plantation development, as described in the last part of this section.

4.2.1 Colonial era introduction of oil palm to Indonesia

Originating in West Africa, the oil palm tree grows well under humid climates with suitable rainfall, such as Indonesia (Berger and Martin 2012, p.397). Europeans originally brought oil palm to Indonesia, with the first pilot experiment conducted in Bogor, West Java, in 1848 (Ibid.). At the time, the “Malay world” (what would later become the independent states of Indonesia, Malaysia, Brunei and Singapore) was governed as separate British and Dutch colonies. Britain controlled northern Borneo (along with the British adventurer, James Brooke) and the Malay peninsula east of the Malacca straits. The remainder was under Dutch authority. Rubber cultivation, logging, and gold mining have long been important economic activities on Borneo, but Sumatra was being transformed into the Dutch-owned estates (as was the peninsula by the British).

Oil Palm cultivation was initiated in Sumatra in the 1800s, which at the time was considered a strategic location for its expansion, and was further stimulated by competition between the British and Dutch. In the Nusantara (present-day Indonesia) archipelago, the commercialisation of several cash crops greatly expanded at the turn of the 19th century. The opening of the Suez Canal in 1869 allowed a much shorter shipping route to European markets for products from Southeast Asia (Breman 1989, p.177), encouraging more direct supply from those regions around the Malacca straits (Shien 1998, p.303). The Dutch viewed the thinly populated eastern parts of Sumatra as a “waste land”, since it was surrounded by thick forest, and interspersed with

“unproductive” swidden cultivation (Stoler 1998, p.23). From this perspective, the region could be profitably transformed into commercial plantations, made possible by the passing of the 1870 Agricultural Law, which essentially opened up large swathes of “waste land” to foreign investment by agri-capital interests (Stoler, 1998, p.13).

Between 1830 and 1911, global consumption of palm oil grew significantly, driven by its use in soap, candles, margarine, and lubricants for industrial production process (Corley and Tinker 2003, p.4). As a result, the east coast of Sumatra to the south of Medan was developed into what appeared to be one large plantation, which became known as Deli (Stoler 1998, p.14). Prior to 1911, the European investors came to the East coast primarily to develop estates for cultivating rubber and tobacco (Ibid.) Although the Dutch colonial government had authority over the land, private investment from various European investors was dominant. For instance, Belgians came to be important pioneers of oil palm plantation in Sumatra, one of whom was SOCFIN (*La Société Financière des Caoutchoucs*) who began investing in palm oil in northern Sumatra in 1911¹⁴. Later on, in 1913, Franco-Belgian interests owned 97 percent of these oil palm plantations. Nevertheless, twenty years later, Dutch commercial interests eventually came to dominate in Deli, reaching about 59 percent of all palm oil investment. On the other hand, Franco-Belgian interests had shrunk to 33.8 percent by 1932 (Stoler, 1998, p.20).

The Dutch formally acknowledged the rights of local rulers to manage natural resources across Sumatra, where they were given authority to grant 75-year land leases to planters (Stoler 1998). However, these *rajas* or *sultans* were often compelled by the authorities to cede land for European settlements and plantations (Breman 1989, p.20). Local rulers, however, often refused to provide labour to work on these plantations due to their inherently subversive cultures (Stoler 1998, p.25). Stoler (1998) states that the planters were therefore forced to recruit unskilled labour from either the straits settlements (mainly Chinese) or from impoverished villages on Java. Meanwhile, management was almost exclusively European.

In their operation, the Dutch investment bank, HVA (*Handelsvereniging Amsterdam*), expanded their capacity by acquiring a large concession in Deli in 1916-17 (Stoler 1998, p.19). This investment expanded the role of downstream businesses from simply marketing to managing

¹⁴ <http://www.socfin.com/en/locations/companies/detail/socfindo>

plantations soon after acquiring large concession rights in Deli. The total area of land planted with oil palm subsequently increased from 6,920 hectares in 1919 to 75,000 hectares in 1936 (Budidarsono et.al , 2013), just a few years before the Japanese occupation and the war of independence.

In West Kalimantan, the Dutch occupied part of West Borneo (West Kalimantan) in 1848 in response to British expansion in Sarawak (Eilenberg 2014b). While the Dutch occupied West Kalimantan, they did not have a strategy to improve infrastructure. In Sarawak, the expansion of cash crops - in particular rubber and pepper, mainly occurred under the British / Brooke Empire, with the assistance of Iban in Batang Lupar territory (Ibid, p.14). In contrast to the relatively large-scale commercial development of industrial crops in Sumatra, cash crop development occurred in West Kalimantan through cooperation between Chinese and Dayaks. Being popularised by Chinese merchants, Dayaks cultivated rubber in their swidden fields from around 1903 in Sanggau (Potter 2011, p.155). While road infrastructure was not well-developed, the merchants saw the possibility to bring rubber into Pasar Kelua, near Tanjung in South Kalimantan, which could be shipped directly to Singapore (Ibid, p.156). In West and South Kalimantan, rubber remained an important smallholder crop until quite recently (Ibid, p.156). In West Kalimantan, oil palm did not become a high value cash crop until the mid-1970s.

4.2.2 The heyday of state-owned plantation development

Following Indonesia's declaration of independence in 1945, the Dutch returned to Indonesia and made an attempt to recolonise the country. After re-establishing the colonial government through force in 1945, they later acknowledged the independence of the Republican government through the Hague agreement on November 2, 1949¹⁵.

This political transition brought new resource management arrangements to Indonesia. While the Dutch acknowledged customary management, the Indonesian government tried to concentrate natural resource management within a more centralised authority. The government had affirmed their full authority to control all natural resources through chapter 33 of the Indonesian constitution, which states "[T]he land, the waters and the natural resources within shall be under the powers of the State and shall be used to the greatest benefit of the people". The justification

¹⁵source: <http://www.britannica.com/EBchecked/topic/251641/Hague-Agreement>

of this kind of centralised control is to bring welfare for the broader population. Full state control over natural resource management was later achieved through the basic Agrarian Law in 1960. This law states that all land has to be fully “controlled” by the state (Haverfield 1999, p.53) and that customary arrangements shall not contradict the agrarian law.

The national elite also asserted centralised control over plantation agriculture by nationalising former Dutch plantations in 1958 following the West Irian dispute (Mackie 1961). However, government interest in expanding oil palm plantations was primarily driven by international influences, including the advisor of the United Nation Technical Assistance Program. They encouraged oil palm due to the perception that the plantation agriculture was under-developed at the time (the 1950s and 1960s) (Budidarsono et al. 2013, p.179). Indonesia largely followed the lead of Malaysia, where large-scale state intervention had successfully encouraged the expansion of oil palm. Malaysia had begun to promote large-scale plantation agriculture in the 1960s by private companies and by government sponsored land settlement schemes (FELDA) (Cramb and Curry 2012, p.223). In Indonesia, right up until the 1970s, investment into large-scale oil palm was still heavily reliant on state owned enterprises.

To Indonesian policy makers, plantation agriculture has long been viewed as an important engine of economic development due to rising global demand for plantation crops. Hence, following the 1958 take-overs, the state-owned plantations were managed as independent plantation management units (Breman 1989, p.172) known as *Perseroan Terbatas Perkebunan* (PTPs) and *Perusahaan Negara Perkebunan* (PNPs) (Larson 1996). The Ministry of Agriculture appointed and supervised government estate enterprises (PNPs), while government estates (PTPs) had a more independent structure under the Ministry of Finance (Ibid.). These eventually became managed as a series of state-owned plantation companies, *PT Perkebunan Nusantara* (PTPNs) under the Ministry of State owned enterprises (BUMN).

Labour within state plantations was recruited on both a permanent and contractual basis, as explained by Stoler (1998). PNP board directors were appointed by the Ministry of Agriculture and they then directly recruited estate managers and administrative staff (Stoler 1998). Estate managers were responsible for hiring temporary labour where they were required by standard operating procedures to recruit contractual labour through competitive bidding. Nevertheless, this rarely occurred. Rather, the exchange of goods and services between managers and

contractors was built based on a fully-fledged exchange network. Certain contractors had been selected by estate managers and in exchange those contractors needed to give bribes (*pungutan liar*) to maintain “good will” with estate managers.

In the 1970s, smallholding programs were introduced in conjunction with the state-owned plantations. The nucleus estate scheme was established to pursue contractual agreement between state-owned plantations and surrounding smallholder farmers who would grow oil palm for the plantation. In such agreements, farmers would commonly be required to give up 20 percent of their proposed land for oil palm development to the PTPN. In turn, the PTPN provided technical, logistical and financial assistance to the smallholders, whose fruit would be sold back to them (Budidarsono et al. 2013). To stimulate a greater labour supply for plantations in remote rural areas (such as those in parts of Sumatra, Kalimantan and Papua), the government created a population redistribution program, known as “transmigrasi” (Potter 2011). A key objective of this government program was to redistribute the high population density in Java into the outer islands. Indeed, previously, the Dutch had used a similar population redistribution program in the early 1900s to hire contract labour from Java for plantations in Sumatra (Potter 2012, p.281). Later in 1989, global donors such as the World Bank encouraged transmigrasi to specifically meet the labour force requirements of oil palm plantations in the 1990s (Ibid, p.159). The World Bank (1989, p.3) promoted more transmigration to support poor farmers or landless labourers from Java to benefit from commercial plantation development in the remote outer islands. They argued that Javanese farmers with adequate agricultural skills could effectively apply and transfer their knowledge in the land-abundant outer islands. Applying these skills to the government smallholding scheme would, it was hoped, ensure a high degree of self-finance amongst these communities (The World Bank 1989, p.3).

By 1979, the government had began more actively promoting privatised palm oil development in Indonesia. Compelled by a desire to redistribute palm oil assets to domestic entrepreneurs, the government sold 60 percent of the PTPNs to domestic market actors at below market price (Gaskell, 2015, p.40). This policy was associated with export restrictions, which attempted to stabilise domestic palm oil prices in the early 1980s by controlling and restricting exports. By 1984, however, it was estimated that these export restrictions were resulting in lost export revenue of approximately \$369 million per year (Gaskell, 2015). Economists and donors used

these policy failures to promote a more comprehensive liberalization of the palm oil industry, as will be discussed on the following section.

4.2.3 Private plantations & smallholder development

The development of private plantations occurred in response to the weak capacity of the government to engage in large-scale palm oil development. Despite the failures of the oil palm plantation model in the 1980s, the government continued to support oil palm development through the Nucleus Estate Scheme (the *Perkebunan Inti Rakyat*, or PIR) in combination with the transmigration programme (the PIR-Trans) between 1986 and 1994 (Budidarsono et al. 2013, p.180). In addition, they also supplied low-interest credit loans to estate developers. From 1986 until 1996, subsidiary loans were given at a rate of 11 percent per annum for estate preparation and 14 percent per annum for estates that had already produced their first harvest (Ibid).

Bissonette (2013) provides a useful account of the PIR nucleus estate scheme applied by the PTPNs. This scheme consists of a core company (*inti*) and smallholders (*plasma*). Smallholders were beneficiaries of PTPN development programs and received technical knowledge from the PTPNs, as well as access to industrial processing mills managed by = the company. In exchange, they were bound by contract to exclusively provide all oil palm fruit to the company. Yet this form of contract farming provided inadequate technical support for the farmers, many of whom were unable to meaningful benefit from the wealth generated from oil palm cultivation.

During this period there continued to be widespread allegations that state-controlled palm oil policies were fuelling smuggling, leading to inefficiencies, reducing foreign exchanges and contributing to inequality (Gaskell 2015, p.41). The World Bank took this opportunity to push the development of private plantations as a way to absorb labour that was being pushed into remote areas as part of transmigration policies (Potter 2011, World Bank 1989). Private contract farming had been introduced as a partial privatization of the sector under the advice of the World Bank. Yet donors criticised government interventions that provided subsidies to contract farmers which they saw as hindering growth of the sector. The World Bank insisted that the government allow market forces to dictate development of the sector and so in the context of a limited state budget and under pressure from donors, the palm oil sector was increasingly privatised (Budidarsono et al. 2013).

Within the new private model of corporate palm oil production, new partnerships between private plantations and smallholders were established, initially through a program known as KKPA (*Koperasi Kredit Primer untuk Anggota*, or Primary Cooperative Credit for Members) which was implemented between 1995 and 1998. In that period, the government withdrew from direct involvement in plantations, and instead promoted foreign direct investment for large-agribusiness plantations (Budidarsono et al. 2013). Under this scheme, the establishment of large-scale plantations resulted in new institutions that reached down to the village level (McCarthy and Zen 2016, p.122). For instance, under KKPA schemes, land was parcelled out to cooperatives and the cooperatives were forced to allow corporations to manage that land (Ibid). In this instance, smallholders could maintain formal ownership of land which fell under corporate management (thereby forgoing their own management rights) and receive a share of profits from the corporation. Later, this system was modified into partnerships through agricultural regulation since 2007, where the arrangements are quite similar, but with a key difference being a smaller dividend sharing, at a minimum of 20%.

This shareholding system has been applied in my case sites in Miau Merah, in Kapuas Hulu. For instance, in Miau Merah, a corporation (PT RAP) acquired a plantation permit over land of 4,500 hectares of HGU (leasing rights for plantations). Leasing rights are granted to corporations to have exclusive land use for long term periods, e.g. ranging from 20 to 60 years. This concession is negotiated between corporations and the state in a predominately top down fashion. In Miau Merah, 40 percent of the HGU was owned by local villagers, such that a shareholding system was implemented. This involved the corporation fully controlling production, but whereby a share of financial benefits were redistributed, through a formal agreement with a land cooperative, to the original landholding members of the local community. It is common for cooperation between palm oil companies and local communities to have been arranged based on such shareholding relationships. Under this model, the participation of local people in the palm oil industry, and their relationship with downstream companies, is limited to receiving monetary dividends from their landholdings combined, in some cases, with employment as labour on the palm oil estate. In Badau, the shareholding arrangements falls under a new scheme of partnership (*kemitraan*) with similar arrangements as above, except with a smaller overall share of the land (20 percent). Large agribusiness firms have thus been able to control increasingly large areas of

land by negotiating with the government for larger shares of state land while also retaining control over the redistributed land they obtained from local inhabitants. In 2006, the national government introduced a plantation revitalisation scheme, which aimed to replant 1.5 million hectares of ageing palm oil plantations, whether owned by the PTPNs or by private companies (Zen et al.2016, p.99). During that time, private companies took the opportunity to lobby the government for extended land leases to be granted to them from the original land holders (Ibid, p.100).

In addition to the expansion of corporate palm oil, the desire of smallholders to cultivate oil palm in their farms, has also contributed significantly to the expansion of oil palm across Indonesia (Figure 4-2). The large-scale expansion of palm oil development that took place in Malaysia and Indonesia between 1965 and 1980 provided transport and processing infrastructure in Malaysia and Indonesia that has been important for the continual expansion of the industry (Cramb and McCarthy 2016, p.60). In that phase of palm oil development, the Sarawak government showed consistent support over the decades by devoting more assistance for planting grants, inputs, and technical advice (Ibid, p.61). In contrast, the Indonesian government has tended to prioritise large-scale corporate operations, despite earlier activities (in the early 1980s) that were supposedly aimed at supporting smallholder farmers, such as the nucleus-estate schemes. In West Kalimantan, some nucleus estate smallholders had been able to expand their capital and even evolved into a new class of independent oil palm smallholders (Bissonnette 2013). Nevertheless, a process of class differentiation followed, where less successful individuals were dispossessed of their land and became oil palm labourers (Ibid.).

4.3 The global value chain for palm oil

This section will cover the issues of palm oil establishment costs, production, commodity chains and markets. In the first part, it will consider the typical investments that are involved in palm oil production. In brief, it has been found that oil palm cultivation requires more capital per hectare than other popular crops such as rubber and cacao. The relatively higher capital costs of palm oil mean that there is a tendency for it to be cultivated at a larger scale than other crops in an attempt to minimise per hectare costs. In the second part, however, it will be shown that oil palm production has not been exclusively under the control of corporate entities, but that a growing number of smallholders in West Kalimantan also produce the crop. The third sub-section will

address the global commodity chain for palm oil, and the role of downstream processing businesses in West Kalimantan and their multinational buyers.

4.3.1 The economics of oil palm cultivation

Oil palm cultivation is generally recognised as being capital intensive, requiring large amounts of land and fertiliser, but requiring a relatively low amount of labour compared to other cash crops such as rubber and cacao. Different sources provide different estimates of oil palm plantation establishment and production costs. Budidarsono et al (2012) estimate that oil palm establishment costs are typically around 22 million IDR per hectare (around 1570 USD). This establishment cost is indicated as negative cash flow (expenditure) in the beginning stages of plantation development, where it typically takes first four years to recoup the initial set-up expenditure (Budidarsono et al. 2012). Rhein (2015) estimates that large palm oil plantations cost around 25 thousand US dollar per hectare to establish¹⁶. In 2014, the national statistics office in West Sumatra (BPS-Sumatra-Barat 2014) calculated average oil palm production costs to be 7.97 million IDR (570 USD) per year per hectare (BPS Provinsi Sumatra Barat, 2014), but this was presumably referring to an already established plantation. Table 4-1 below reflects the relatively large ratio of capital expenditure to labour costs for oil palm as compared to rubber and cacao.

In table 4-1, capital expenditures of oil palm are much higher expenditure proportion than labour costs. For example, the cost for leasing land was higher than total labour expense of labour (representing 32.37 percent of all expenditure). Conversely, labour costs for rubber and cocoa plantations are significantly higher than other input costs (representing 48.18% and 59.54 % of total production costs respectively). In three respective comparisons, the costs of agricultural inputs for oil palm are much higher than rubber and cacao (see table 4-1).

¹⁶ Rhein (2015) does not specify whether this is the yearly or overall costs.

Table 4-1 Per hectare production costs for oil palm, rubber and cacao

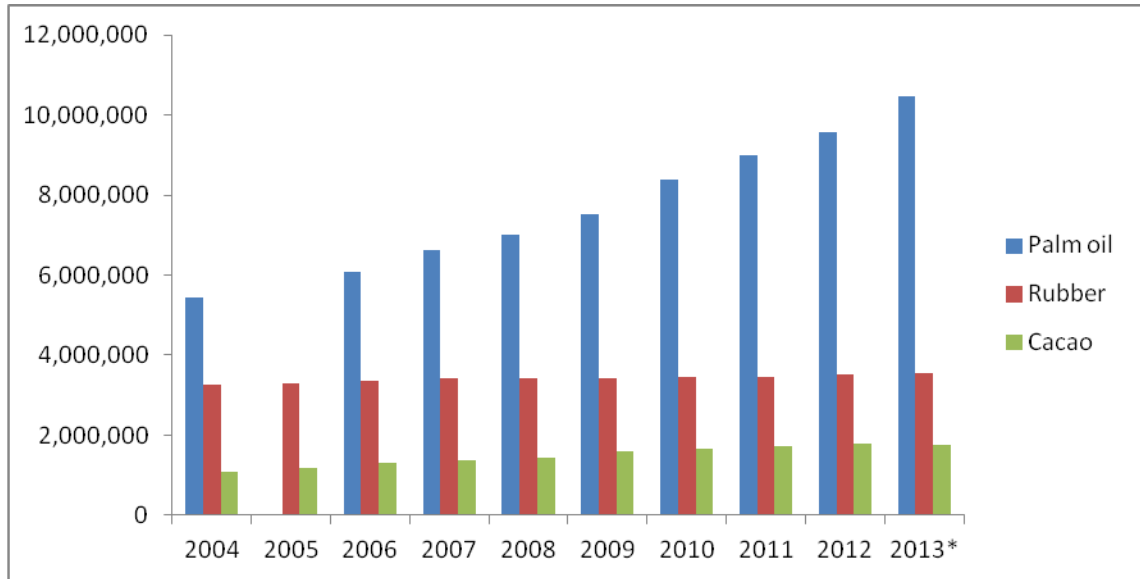
Components (per year at minimum cost)	Oil Palm ("000 IDR")	%	Rubber ("000 IDR")	%	Cacao ("000 IDR")	%
Agricultural inputs (total)	1471.16	18.45	273.43	3.16	1075.65	8.60
Seeds (<i>Benih</i>)	159.56	2.00	104.74	1.21	217.60	1.74
Fertilizers (<i>Pupuk</i>)	1168.09	14.65	106.46	1.24	677.30	5.42
Agricultural stimulant (<i>obat perangsang akar</i>)	2.55	0.03	2.71	0.03	12.53	0.09
Pesticide (<i>Pestisida</i>)	140.96	1.77	59.52	0.68	168.22	1.35
Labour cost structure (total)	2575.26	32.30	4163.1	48.18	7440.16	59.54
Managing land (<i>mengelola lahan</i>)	184.76	2.32	278.1	3.22	556.52	4.45
Cultivating buffer trees (<i>tanam pohon pelindung</i>)	0.41	0.01	0.77	0.01	83.35	0.67
Cultivating plantation crops (<i>tanam sawit</i>)	43.43	0.54	79.71	0.92	142.10	1.14
Maintaining plantation (<i>pemeliharaan</i>)	512.08	6.42	505.39	5.85	1763.99	14.12
Fertilising (<i>pemupukan</i>)	193.62	2.43	39	0.45	247.10	1.98
Controlling insects (<i>pengendalian OPT</i>)	53.27	0.67	55.32	0.64	196.80	1.57
Permanent labour (<i>Permanen</i>)	1587.69	19.91	3204.81	37.09	4450.30	35.61
Land rents (<i>sewa lahan</i>)¹⁷	2581.58	32.37	2904.83	33.62	2931.59	23.46
Other costs (total)	1344.99	16.88	1299.73	15.04	1048.76	8.4
Equipment rent (<i>sewa alat & sarana</i>)	146.45	1.84	135.67	1.57	211.54	1.69
Agricultural services (<i>jasa pertanian</i>)	459.91	5.77	40.08	0.46	8.52	0.07
Other expenditures (<i>biaya lain-lain</i>)	738.63	9.27	1123.98	13.01	828.70	6.64
Total production costs in IDR	7973.39	100.00	8641.09	100.00	12496.16	100.00
Total production costs (in current US dollars)	570		617.41		893	

Source: BPS Sumatra Barat, 2014 (the estimation is assumed under small-scale comparisons by leasing other's land)

In that BPS report, the estimated figure is simulated under a scenario of small-scale oil palm development. Hence, if it is applied on a larger scale, it would incur far greater capital costs to ensure infrastructure development, such as roads, use of drones, bridges and drainage. The higher capital investment for oil palm has important implications for the scale of production, and the total area of land planted to oil palm is considerably higher than that for the rubber and cocoa (see Figure 4-1).

¹⁷ Palm oil can be planted flexibly in less fertile and less humid landscapes under tropical and constant fertiliser supply (see Pirker et al. 2016). This lower soil quality may affect their cheaper smallholding land leasing value to rubber and cacao.

Figure 4-1 Areas under Oil Palm, Rubber, and Cacao cultivation in Indonesia (hectares)

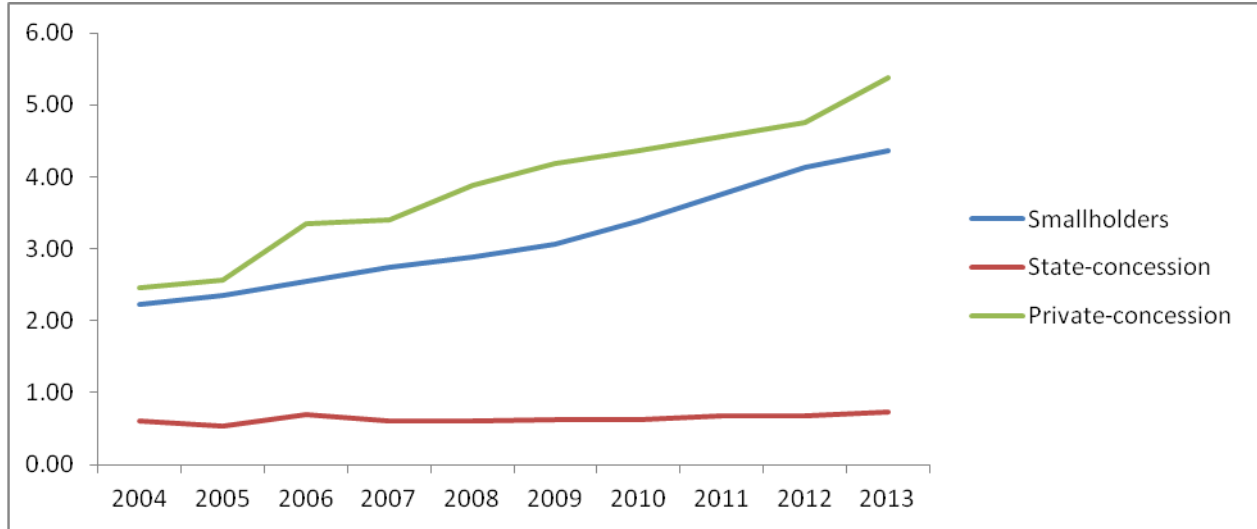


Source: Ministry-of-Agriculture-Indonesia 2017); * estimated data, palm oil estate in 2005 not available, aggregate data

In Indonesia, large-scale agribusiness is generally better positioned to acquire investment (through financial markets) and loans (from banks) that will allow them to expand their plantations, which partly explains the rapid growth of private plantations over the last decade. However, as shown in Figure 4-2, the growth of smallholder cultivation (defined essentially as land not held under formal lease arrangements) has also been substantial. According to RSPO convention, smallholder palm oil farmers are defined to cultivate less than 50 hectares¹⁸. In my field work, many smallholders actually have access to much smaller amounts of land and, in their experience, they believe that an economic scale of smallholding oil palm would be 4 hectares. In that smaller scale of 4 hectares, they can still largely depend on their family to manage it, excepted in harvest times.

¹⁸ See: <https://rspo.org/publications/download/c654430dfcf1b9a>

Figure 4-2 Oil Palm cultivation by ownership type (in Million Hectares)



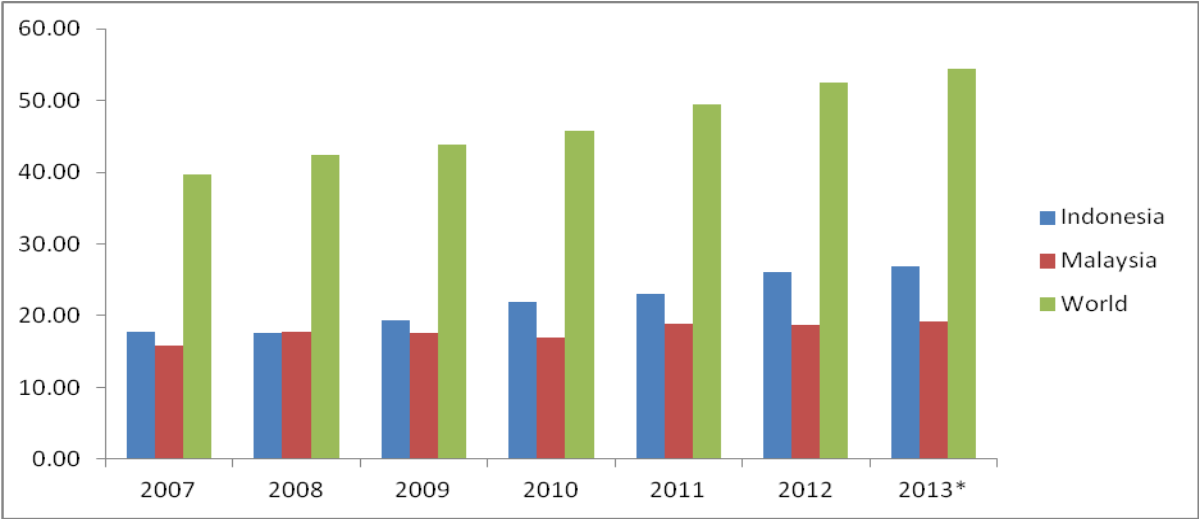
Source: Indonesian palm oil statistics, Ministry of Agriculture ()

4.3.2 Palm oil production

In 2008, many advanced industrialised countries such as the United States and those in Europe suffered an economic downturn due to the global financial crisis, resulting in reduced economic growth in the years immediately after the crisis where (1.9% and -0.6% for US and Europe respectively in 2012). This compares unfavourably with economic growth across Southeast Asia (6.4 percent in 2012)(OECD 2013), where commodity production such as cash crops (especially for the Chinese market) served as an important economic buffer during the crisis. Between 2007 and 2013, Indonesia and Malaysia were the main contributors of global palm oil supplies (see figure 4-3), collectively contributing around 80 percent of palm oil production according to the FAO¹⁹.

¹⁹ Source: <http://www.fao.org/faostat/en/#home>

Figure 4-3 Indonesian and Malaysian Palm oil production (in million tonnes)



Source: FAO website; * = estimated figure, y axis (weight in million tonnes)

In Indonesia, the plantation (or industrial crop) sub-sector is the most important contributor to GDP from the agriculture, fisheries and forestry sectors (see table 4-2). Palm oil is also further processed in Indonesia into cooking oil and other industrial products and, hence, palm oil is also an important contributor to industrial processing in Indonesia, especially in the highly dynamic food processing sub-sector.

Table 4-2 Contribution of different sectors to Indonesian GDP (in %)

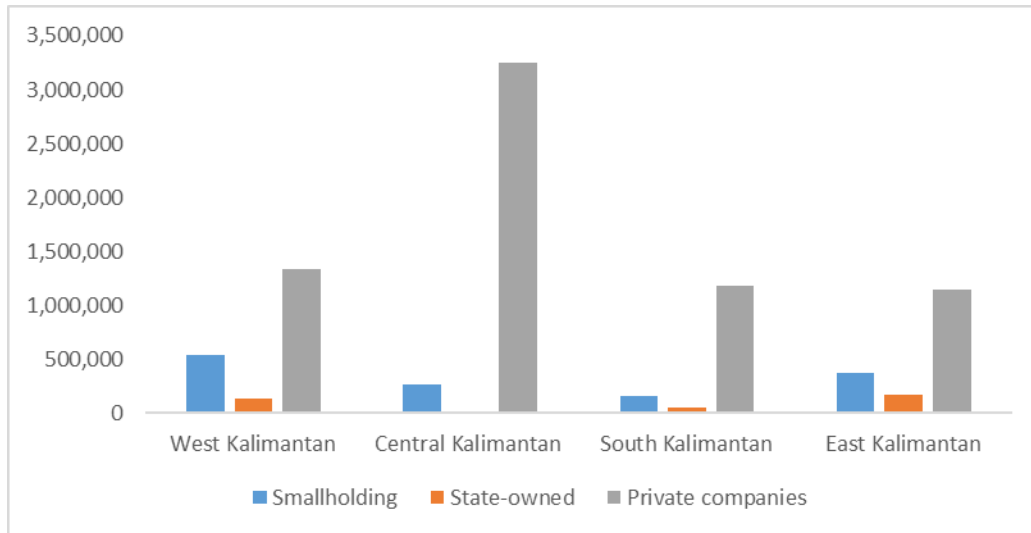
Sectors	2010	2011	2012	2013	2014	2015	2016	2017
Food crops	3.69	3.46	3.55	3.48	3.25	3.45	3.43	3.22
Horticulture crops	1.61	1.6	1.45	1.44	1.52	1.51	1.51	1.44
Plantations	3.91	3.87	3.75	3.75	3.77	3.52	3.46	3.47
Livestock	1.58	1.5	1.52	1.55	1.58	1.6	1.62	1.57
Agricultural services and hunting	0.21	0.2	0.2	0.2	0.19	0.2	0.2	0.19
Forestry	0.85	0.79	0.76	0.73	0.71	0.71	0.7	0.67
Fisheries	2.09	2.09	2.14	2.21	2.32	2.51	2.56	2.57
Mining & Explorations	10.46	11.81	11.61	11.01	9.83	7.65	7.18	7.57
Industrial process oil and gas	3.41	3.63	3.46	3.29	3.19	2.78	2.31	2.27
Industrial processing non-oil and gas	18.63	18.13	17.99	17.74	17.88	18.2	18.21	17.88
Electricity	1.06	1.17	1.11	1.03	1.09	1.13	1.15	1.19
Recycling	0.09	0.08	0.08	0.08	0.07	0.07	0.07	0.07
Construction	9.13	9.09	9.35	9.49	9.86	10.21	10.38	10.37
Trades	13.46	13.61	13.21	13.21	13.43	13.3	13.18	13.01
Transportation and warehouses	3.57	3.53	3.63	3.93	4.42	5.02	5.2	5.41
Accommodation and restaurants	2.92	2.86	2.93	3.03	3.04	2.96	2.93	2.85
Information and communication services	3.73	3.6	3.61	3.57	3.5	3.52	3.62	3.8
Financial services	3.49	3.46	3.72	3.88	3.86	4.03	4.19	4.2
Real estate	2.89	2.79	2.76	2.77	2.79	2.84	2.82	2.79
Corporate services	1.44	1.46	1.48	1.51	1.57	1.65	1.71	1.75
Administration and social security	3.78	3.89	3.95	3.9	3.83	3.9	3.87	3.7
Education services	2.94	2.97	3.14	3.22	3.23	3.36	3.37	3.29
Health and social services	0.97	0.98	1	1.01	1.03	1.07	1.07	1.07
Other	4.09	3.43	3.6	3.97	4.04	4.81	5.26	5.65

Source: BPS (Central Bureau of Statistics), <https://www.bps.go.id/>

If we look at the Kalimantan provinces (see Figure 4-4), West Kalimantan has the largest proportion and total volume of smallholder production. Farmers here have taken advantage of recent access to palm oil mills, although production is constrained by the much lower yields compared to corporate plantation estates (Potter 2016, p.167). Compared to smallholders in neighbouring Malaysia, these smallholders began planting oil palm much later as they did not

initially have access to high-quality planting materials and other government assistance (Ibid, p.167).

Figure 4-4 Palm oil production (tonnes) by different producers in Kalimantan (2015)

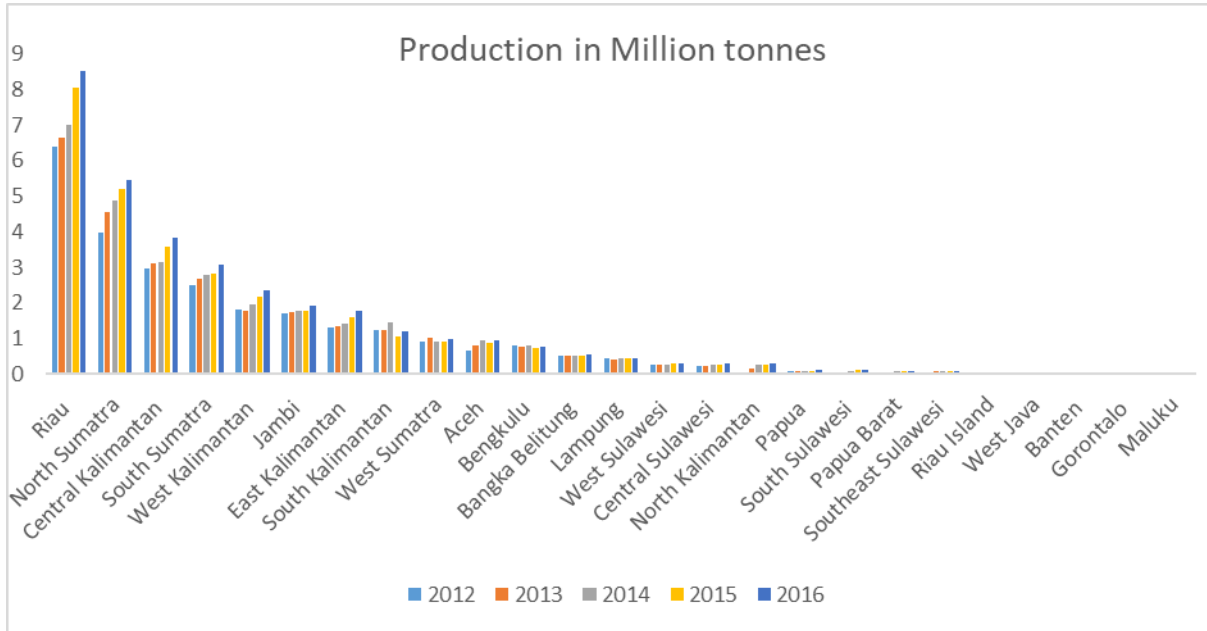


Source: Plantation statistics, Ministry of Agriculture, Indonesia²⁰. (y axis, harvest in tonnes)

Furthermore, West Kalimantan is one of the five largest palm oil producing provinces in the country despite the relatively late introduction of technology and support, such that it currently surpasses Jambi (see Figure 4-5). The growth of palm oil production in West Kalimantan rose by 28.2 percent between 2012 and 2016.

²⁰ <http://ditjenbun.pertanian.go.id/tinymcpuk/gambar/file/statistik/2015/SAWIT%202013%20-2015.pdf>

Figure 4-5 Production by province (2012-2016)



Source: <https://www.bps.go.id/> (y-axis refers to production in million tonnes)

4.3.3 Downstream processing of palm oil

Palm oil can be considered to be a buyer-driven commodity due to the fact that downstream buyer groups or corporations determine the production arrangements of upstream producers (as described by Gereffi 1994). Considering the large scale of palm oil production in West Kalimantan, numerous downstream businesses have established palm oil manufacturing plants to transform the palm fruit into crude palm oil. This crude palm oil will be further processed by larger downstream corporate agglomerations. In 2016, across West Kalimantan, there were around 50 Crude Palm Oil (CPO) mills. About 45 of these mills are owned by private corporations, and about 5 palm oil mills are owned by state owned palm oil enterprises (GAPKI 2016). These mills supply their CPO to major corporate buyer groups who then further process the palm oil for numerous industrial products. Table 4-3 shows the largest mills in each district to be extracted from that data (to have at least 30 tonnes per hour)²¹.

²¹ More complete crude palm oil mills can be accessed in: [http://gapki-kalbar.or.id/admin/files/Data%20pabrik%20pengolahan%20kelapa%20sawit%20di%20Prov.%20Kalbar%20\(2016\).pdf](http://gapki-kalbar.or.id/admin/files/Data%20pabrik%20pengolahan%20kelapa%20sawit%20di%20Prov.%20Kalbar%20(2016).pdf)

State and private businesses that own palm oil mills typically supply their palm oil to a limited number of lead firms. Annual reports of these companies show that these lead firms finance various production arrangements to suit their needs and thus provide a good example of how buyers drive production processes. The table below (4-3) shows the lead firms and their upstream agribusinesses for each district. It has been found that SMART (Sinar Mas), Wilmar, Cargill, and Indofood downstream agglomerations are all large-scale buyers and have their own palm oil mills in West Kalimantan. State-owned corporations had contracts to supply large amounts of their crude palm oil to Unilever who are one of the largest downstream corporate buyers in the world²².

Table 4-3 Major CPO processing mills in West Kalimantan, their ownership & lead firm linkages

CPO Processing Mills	Parent companies/shareholders	Major buyers/leading firms	Location	Per hour capacities (Tonnes/per hour)
<i>State-owned enterprise</i>	PTPN	UNILEVER	Sanggau	225
	PTPN	UNILEVER	Landak	30
<i>(Private companies)</i>				
PT. Bintang Harapan Desa	BHD Group	WILMAR	Sanggau	60
PT. Global Kalimantan Makmur	Provident Agro	WILMAR	Sanggau	60
PT. Sintang Raya	Miwon Commercial Co. Ltd	WILMAR	Kubu Raya	60
PT. Mitra Inti Sejati Plantations	Indofood Agri	INDOFOOD AGRI/WILMAR	Bengkayang	60
PT. Sinar Dinamika Kapuas	Lyman Agro	WILMAR	Melawi	45
PT. Kalimantan Sanggar Pusaka	Lyman Agro	WILMAR	Sekadau	60
PT. Indo Sawit Kekal Cargill	Cargill	CARGILL	Ketapang	100
PT. Polvplant Sejahtera Cargil	Cargill	CARGILL	Ketapang	60
PT. Agro Sukses Lestari	Gunas Investa Group	SMART	Sintang	80
PT. Buana Hijau Lestari	Triputra Agro Persada	SMART	Sintang	60
PT. Bonti Permai Jaya	Lyman Group	WILMAR	Sintang	60
PT. Agrowitarama / PT. SEC	Agrowiratama	MUSIM MAS/WILMAR	Sambas	45
PT. Peniti Sungai Purun	HPI Agro - Djarum Group	SMART	Mempawah	60
PT. Cipta Usaha Sejati		AAK (NESTLE)	Kayong Utara	30
PT. Riau Agrotama Plantation	Indofood Agri	INDOFOOD	Kap.Hulu	30
PT Buana Tunas Sejahtera	Kencana Group	SMART	Kap. Hulu	40
PT. Paramitra Internusa Pratama	SMART	SMART	Kap.Hulu	80

Source: Gapki Kalbar & various corporation annual reports (selected on the basis of minimum threshold of the capacity at least 30 ton per hour).

²² <https://www.unilever.com/news/Press-releases/2018/unilever-ptpn-reach-agreement-to-accelerate-production-of-sustainable-palm-oil-in-Indonesia.html>

The major mill operators in West Kalimantan are thereby financially subordinate to much larger firms and financiers. Numerous influential Indonesian business tycoons are also intimately involved as business owners in many of these corporations (Table 4-4). For example, the Salim and Wijaya Families are both listed in Forbes as among the 50 richest people in Indonesia, having also invested in the infrastructure, properties and telecommunication sectors, as listed in Forbes in 2017. Some members of both families owned some capital share in downstream palm oil companies. They actually made positive business influence to shape rural infrastructure development to rural economy through their other infrastructure business groups.

Table 4-4 Business tycoons' shareholders

Downstream lead firms	Business tycoons' founders & shareholders	Data sources
Indofood group Sinarmas (SMART) WILMAR	Salim's Family Wijaya's Family Kuok Groups	Company's website Company's website Company's website
Cargill	Cargill-MacMillan Family	Forbes & corporate websites

These same infrastructure investment patterns can also be seen within the downstream business policies of Indofood and SMART, both of which aim to enhance supply chain efficiency by investing in upstream palm oil mills. For instance, SMART have built key infrastructure such as warehouses, jetties and ports in strategic locations (SMART 2016a, p.34) (SMART 2016, p.34). More recently, they expanded into South Kalimantan in 2016, from where they have connected their CPO mills into downstream refineries in Belawan and Surabaya (East Java) (Ibid). The Indofood group also has plans to expand key infrastructure to key strategic areas throughout the region in order to support and facilitate the growth of their palm oil businesses (Salim Invomas Pratama 2016, p.29). Two of the other major firms, WILMAR and CARGIL, have also indicated a willingness to begin investing in roads and other transportation infrastructure in an attempt to minimise transportation costs.

Actually, these investments in infrastructure run parallel to the trend amongst palm oil refineries which are increasingly freighting their crude palm oil to foreign refineries, as shown in table 4-5.

These large agribusinesses own palm oil processing refineries not only in Indonesia but India, Malaysia, China and Europe (e.g. Netherlands). These agribusiness expansions generally follow the major crude palm oil export destination to both India, China and Netherlands, as will become clear when I later present trends in trade data.

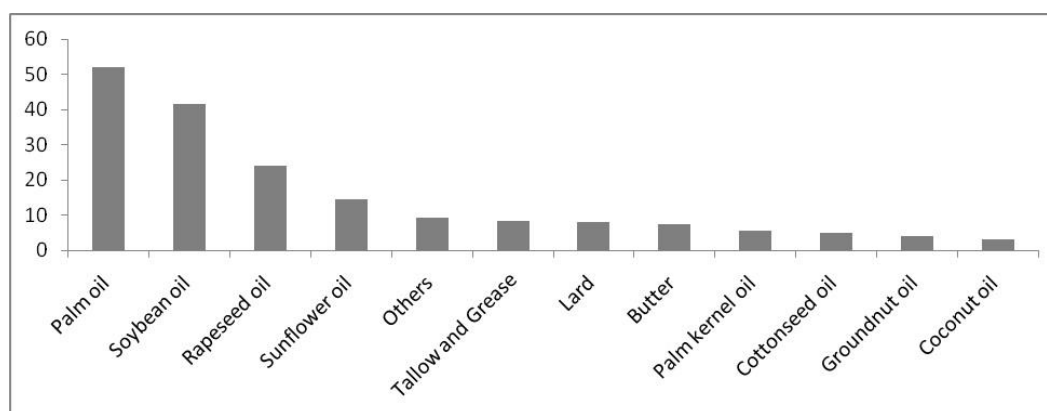
Table 4-5 Some Palm oil processing refineries in different countries

Lead firms	Location of Palm oil processing refineries	Data sources
Indofood group	Indonesia, China, India, Malaysia, European	Company's website
Sinar Mas (SMART)	Indonesia, Malaysia, China, India	Company's website
WILMAR	China, India, Indonesia, Malaysia	Company's website
Cargill	Malaysia, India, China, Brazil, Mexico, USA, European	Forbes & Company's website
UNILEVER	Indonesia, Netherlands, China, India	Company's website

4.3.4 The international trade in palm oil

At the global level, palm oil is the most consumed oil or fat, as shown in figure 4-6 below²³, which also shows how global palm oil consumption reached 52 million tonnes in 2013.

Figure 4-6 Oil and fats consumption (in million tonnes, 2013 data)



Source:Oil-World 2013

The rising demand for palm oil in the global market is due to its comparatively low cost as a key material for both food and non-food products. For example, compared to other vegetable oils, such as soybean, rapeseed and sunflower oil, palm oil is significantly cheaper (Sime-Darby 2014). In 2013, the global average price of palm oil was 850 US dollar per tonne, while other

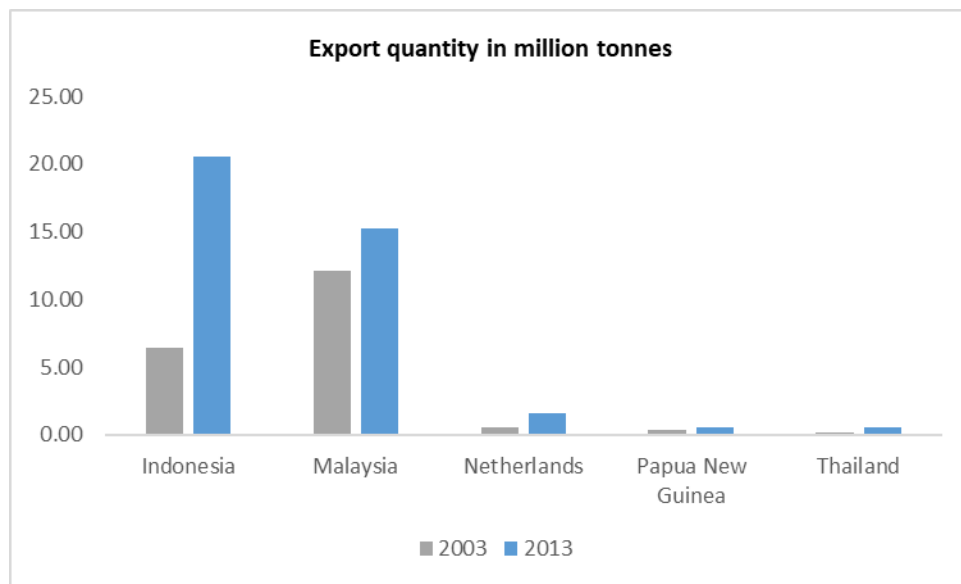
²³ Oil world statistics website

(<http://www.oilworld.biz/app.php?fid=310&fpar=YToyOntzOjI6IkkljtzOjQ6JjYzMTQiO3M6NDdoicGNpZCI7czoyOiIxMiI7fQ%3D%3D&isSSL=0&aps=0&blub=26bc92353fe185973450e4160e44224d>)

oils were more than 1000 US dollar per tonne (Ibid, p.3). Palm oil has been used as a raw material to produce margarine, ice cream, biscuits, chocolate, chips, and a range of baked and fried foods (Net-Balance-Foundation 2013, 15). Palm oil offers a cheap raw material for food processing industries.

The largest exports of palm oil for global markets are sourced from Indonesia and Malaysia. In 2003, Malaysia was the world's leading palm oil exporter when it exported 6.39 million tonnes, but Ismail (2013) describes a weakness of the Malaysian industry as being due to its overreliance on foreign labour - particularly from Indonesia. High rates of urbanisation in Malaysia attracted workers to the cities, leaving a shortage of labour in the countryside (Ismail, 2013, p.18). Furthermore, increased value-adding through downstream processing within Malaysia has contributed to declining exports of crude palm oil products. In Indonesia, high levels of unemployment in both rural (including landless labourers) and urban parts of Java has provided a ready sources of labour for oil palm plantations in the outer islands of Sumatra and Kalimantan. Figure 4-7 shows that palm oil exports from Indonesia surpassed those from Malaysia between 2003 and 2013.

Figure 4-7 Largest palm oil exporters in 2003 and 2013

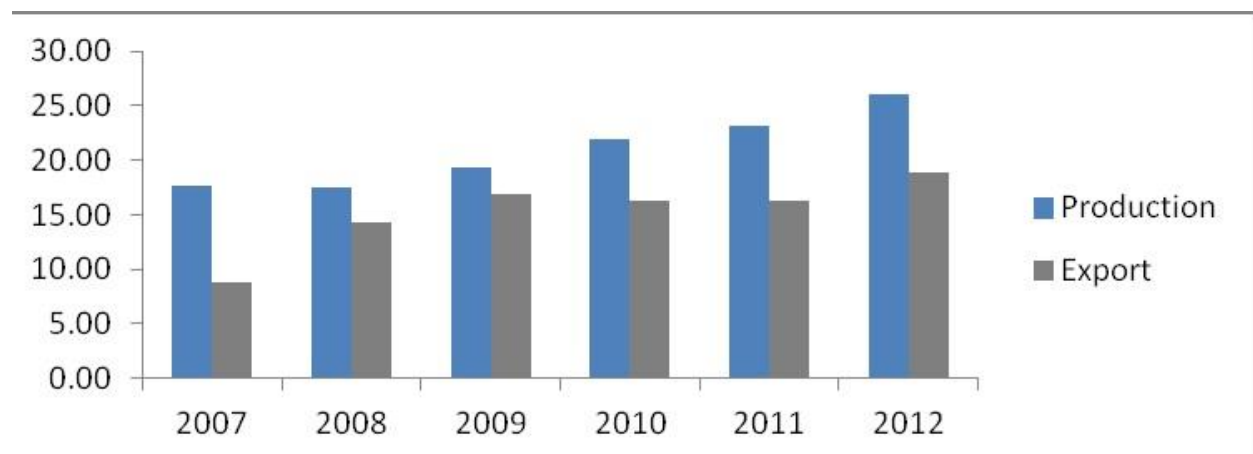


Source: FAOStat (<http://www.fao.org/faostat/en/>)

The largest global demand for palm oil comes primarily from five countries in Asia and Europe (India, China, The Netherlands, Pakistan and Germany). The largest global importers of palm oil were India and China in 2013, which were also the largest importers of crude palm oil from Indonesia. According to official government data, India and China respectively imported 5 and 2.5 million tonnes of CPO from Indonesia in 2013. Imports to these and other countries have been driven by various downstream processing industries located in those countries. In the previous discussion of the palm oil commodity chain it was shown that lead manufacturing firms in consuming countries are increasingly coordinating (governing) upstream producers in Indonesia. There have been reports (The Edge Market 2013), however, that China may be shifting toward soybean as their predominant vegetable oil, and this seems to be reflected in the less rapid growth in China compared to India.

While Indonesia is also a significant consumer of palm oil, production is mostly oriented towards the export market, where it can fetch a higher price than in the domestic market. For example, between 2007 and 2012, nearly two-thirds of Indonesian palm oil was sold to meet export demand (see figure 4-8).

Figure 4-8 Indonesian palm oil exports and production (million tonnes)



Source: FAOStat (<http://www.fao.org/faostat/en/>)

4.4 Environmental governance in the palm oil sector

There are various organisations and political actors who now promote palm oil in Indonesia as a solution to the problems of rural underdevelopment. Those who advocate expanding palm oil

development include both international organisations and various political and business elites within Indonesia. Nevertheless, there are also opponents who tend to emphasise the negative environmental impacts of large-scale oil palm production, and the loss of natural forest that its expansion frequently entails. This section will explain how responses to these environmental concerns became institutionalised in various ways to create a system of multi-actor and multi-scalar environmental governance that is increasingly shaping both environmental and social outcomes in production sites such as Kapuas Hulu.

The expansion of palm oil in Indonesia has been facilitated through private and public sector policies to encourage investment (Pacheco et al. 2017). Over the years, various international institutions have provided financial assistance for palm oil development, including the World Bank and the Asian Development Bank, which provided 35 percent of Indonesia's expenditure on agricultural development and infrastructure between 1974 and 1979 (Gaskell 2015, p.38). During the 1997 and 1998 Asian financial crisis, government policies to limit the export of palm oil exacerbated Indonesia's financial problems, but with pressure from the International Monetary Fund (IMF), the government ceased this policy in the post crisis period.

The expansion of palm oil has brought economic development to the outer islands of Indonesia, where there has been an expansion of local infrastructure development and (many have argued) a reduction in rural poverty (Pacheco et al. 2017, p.1). While these benefits may be debated, my research in West Kalimantan suggests that infrastructure and off-farm income opportunities have indeed allowed local households to diversify their incomes and generally allowed investments into social services like education. Nevertheless, it is undeniable that palm oil expansion has also had major impacts on landscape transformation and deforestation right across Indonesia. In the post-decentralisation era, local governments have been empowered to provide local permits for large-scale palm oil plantation, and there has been a tendency towards local governments promoting palm oil as a strategic agribusiness investment. This has occurred to the extent that some national and local elites use pressing economic development needs as a justification to illegally appropriate land (Pacheco et al. 2017, p.4). In West Kalimantan, for instance, rapid palm oil expansion has seen rampant forest conversion resulting in local conflict.

These environmental concerns have been heavily debated between proponents and opponents of palm oil (Pacheco et al. 2017, p.25). In the context of those debatable facts, however,

environmental NGOs have brought to light the negative environmental consequences of oil palm plantations. In Kapuas Hulu, some environmental activists have highlighted the detrimental impacts on the local environment (e.g. clearance forest covers) and local livelihoods as a key rationale of their agenda to resist palm oil. This local issue will be further discussed in chapter 6. Environmental campaigns aiming to limit palm oil expansion have been disputed by the palm oil industry in Indonesia, with the Palm Oil Business Association in Indonesia (GAPKI) arguing that palm oil is not the source of deforestation and even stressing the positive environmental impacts of plantations, such as the ability to absorb carbon dioxide (GAPKI 2013, p.32). In the context of this uncertainty, markets have been seeking ways to ensure that palm oil producers comply with environmental sustainability standards without affecting economic development goals. One proposed solution has been to focus on sustainability at the supply side in a way that addresses the interests and concerns of different stakeholders (Pacheco et al. 2017), resulting in the emergence of voluntary certification schemes along global palm oil value chains.

The most widely recognised voluntary certification process became formalised as the RSPO (Roundtable for Sustainable Palm Oil) in 2004, which determines whether corporations are eligible to be certified as recognised sustainable palm oil producers. This international certification organisation consists of different stakeholders including oil palm growers, palm oil processors and/or traders, consumer goods manufacturers, retailers, banks/investors, environmental/nature conservation NGOs and social/developmental NGOs (RSPO 2013). While governments are not actually members of RSPO, the RSPO certification acknowledges that environmental regulation is an important part of their governing principles.

Rather than incorporating RSPO into their plantation development policies and programs, the Indonesian government decided to instead create their own palm oil certification program in 2010, which was named ISPO (Indonesian Sustainable Palm Oil). This initiative has been led by the Ministry of Agriculture and was intended to serve two purposes: to enhance Indonesian palm oil competitiveness in world markets; and to reduce carbon dioxide emissions and address other environmental concerns (including reducing deforestation)²⁴. As such, there appears to be a continued unwillingness of ISPO, and by extension the Indonesian government, to acknowledge the relationship between oil palm cultivation and deforestation (refer also to the ISPO-published

²⁴http://www.ispo-org.or.id/index.php?option=com_content&view=article&id=51&Itemid=209&lang=ina

document Oil Palm Plantation and the Wildlife 2012²⁵, which simply describes Indonesia wildlife without referencing any relationship to oil palm).

Theoretically, ISPO is a legally binding system whereby certification is only issued after palm oil developers have been audited to comply with ministerial regulations, such as environmental assessments and other legal requirements (Gillespie and Harjhanti 2012). Not long after the launch of ISPO, GAPKI withdrew from their RSPO membership in 2011²⁶. However, the weak government capacity for oversight and environmental law enforcement remains an obstacle to the effective enactment of environmental sustainability initiatives right across Indonesia, and the palm oil sector is no exception. The government has a weak capacity to enforce environmental compliance for agribusinesses. For instance, environmental impact assessments are an official policy instrument to minimise the negative environmental impacts of development and, in Indonesia, this environmental assessment procedure is called AMDAL (*Analisis Mengenai Dampak Lingkungan*). AMDAL is required by law for all new palm oil operations (Gilbert 2009), and an AMDAL commission had been established to review environmental assessments. This commission, however, has been plagued by a lack of highly skilled staff who are free from conflict of interest (McCarthy and Zen 2010), and the commission has tended to be staffed by those who primarily wish to advance their careers within the bureaucracy (Ibid.).

Caldwell (1982, in Wallington 2002, p.22) states that the original purpose of environmental assessment is to incorporate environmental considerations into decisions and to democratise decision making. Indeed, in the absence of any public consultation with affected communities, palm oil projects are almost inevitably prone to conflict. The environmental assessment process does in fact necessitate consultation with affected local communities living around proposed oil palm projects. Rather than conducting democratic and proper environmental assessment, however, the environmental assessment process has long been viewed merely as an administrative procedure that proponents have to complete (Kompas 2008). In extreme cases, these distorted environmental assessment procedures are the only formal assessment that occurs (McCarthy and Zen 2010).

²⁵ <http://www.ispo-org.or.id/images/Wildlife2012.pdf>

These overlapping standards, regulatory procedures and rival certification systems have caused uncertainty and confusion in regard to the sustainability of Indonesian palm oil products. Although the government certification system was formulated by copying principles and criteria from RSPO (Hospes 2014), the credibility and independence of the audit process is questionable. A key difference is in the lack of clarity in the ISPO system over public participation. For example, while RSPO underscores the importance of FPIC (Free, Prior, Informed Consent), this has not been clearly defined in ISPO (Ibid, p.430). As such, many foreign buyers in the west, including the Netherlands government have preferred to continue requiring RSPO-certified palm oil products (Hospes 2011). Given the importance of The Netherlands markets as already discussed, the impact of this decision is important. Influential international NGOs, such as WWF²⁷, have been at the forefront of both developing the RSPO standard initially and then lobbying both lead firms and consumers to demand products use RSPO-certified palm oil only. Consumer boycotts in various countries have then been just as influential as government regulation in driving environmental practice change in Indonesia's palm oil sector. Legally binding certification (as with case of ISPO) does not necessarily lead to environmental sustainability as weak government capacity for oversight has led to poor environmental compliance. Promoting several overlapping standards may potentially create uncertainty and confusion for palm oil producers in their attempts to meet production standards demanded by global markets.

The system of environmental governance in the palm oil industry is a combination of efforts by various actors, including both state-based institutions at various scales in Indonesia as well as NGOs, consumers and business interests within Indonesia and abroad. This combined influence has, over time, generally resulted in an increased demand for companies to engage with, consult and ensure benefits for local communities. At the same time, it needs to be recognised that these various environmental governance processes have often been irregular and inconsistent, and indeed often subservient to the needs and priorities of lead firms and other business interests within the industry.

²⁷ <http://www.wwf.org.au/what-we-do/food/palm-oil#gs.BowZrGM>

CHAPTER 5: KAPUAS HULU - GEOGRAPHICAL CONTEXT

5.1 Introducing Kapuas Hulu

Kalimantan has long been famous for its natural resource wealth. “Kalimantan” is translated from the Malay word which means "river of precious stones", alluding to the historic economic significance of gold and diamonds since the seventeenth century (Heidhues, 2003, p.17). In the past, South Borneo in particular (or the Banjar Kingdom) was closely integrated with broader Chinese trade networks. However, apart from some coastal trading ports in the far north, much of the interior of Borneo remained isolated, with dense tropical forest inhibiting communications and making effective colonisation difficult due to poor access to the interior (Ibid, p.17). Long rivers such as the Barito, Mahakam and Kapuas were the principle mode of communication between coast and the interior.

West Kalimantan province consists of several districts with very different degrees of accessibility to the capital city, Pontianak. Kapuas Hulu is the most remote, being located some 700 kilometres to the northeast of Pontianak. In Malay and Indonesian language, Kapuas Hulu is associated with the highland areas, or at least the upstream sections of the Kapuas river, since ‘Hulu’ means upriver. People in the capital city often call Kapuas Hulu ‘Uncak Kapuas’ which refers to forested uplands and river networks.

Upland landscapes are characterized by dryer sandy soil, higher-elevation, compact surface landscapes, and less susceptibility to floods. Before palm oil was introduced, the upland areas were remote with few connections to the provincial road network. During the early stages of palm oil development in the area (beginning in the early 2000s), new roads were initiated in the southern part of Kapuas Hulu (Shantiko et al. 2013). Later on, this basic road infrastructure was further extended into northern Kapuas Hulu through a central government program to strengthen economic development in the border areas (Eilenberg 2014a, p.2).

In the upland areas, it is generally not possible to cultivate wet rice like in Java or the delta regions of mainland Southeast Asia, and local inhabitants have long practiced swidden farming (see Plate 5-1) alongside hunting and gathering in the forest. For the Iban Dayaks in the region, swidden cultivation has historically been a key part of their culture, and will be discussed later in relation to the broader landscape changes occurring in Kapuas Hulu.

Plate 5-1 Swidden Plots in Kapuas Hulu



Source: Fieldwork in *Janting*

There are various unique natural features in these upland landscapes. For instance, in the exterior area surrounding the coast, much of the original and secondary forests have been cleared due to development activities, including for road infrastructure, while forest cover is much more widespread further inland. Furthermore, peatlands can be found in the area surrounding Kapuas upland watershed and are generally associated with swamp areas (*rawa*)²⁸. Kettridge et al. (2015, p.1) describe the capacity of the upland peatlands to absorb and hold water, with biophysical process in the peatland slowly releasing water into the streams. Danau Sentarum is an extensive peatland ecosystem in Kapuas Hulu, which is now part of a National Park. Local Dayak and Malay communities have long used the peatlands as both a source of livelihood (fishing and gathering other products), and leisure. With abundant water resources, peatland forests are often considered to be attractive sites for oil palm plantations, which has resulted in a dramatic reduction in the extent of peatlands. Before 2000s, before the introduction of oil palm, there were some wet fields that utilised the rich water supply from their peatlands. In general, however, the peatlands would be dried through canaling to allow agriculture, including for flat swidden plots.

²⁸ www.kapuashulukab.go.id/downlot.php?file=RPJM-bab2.pdf

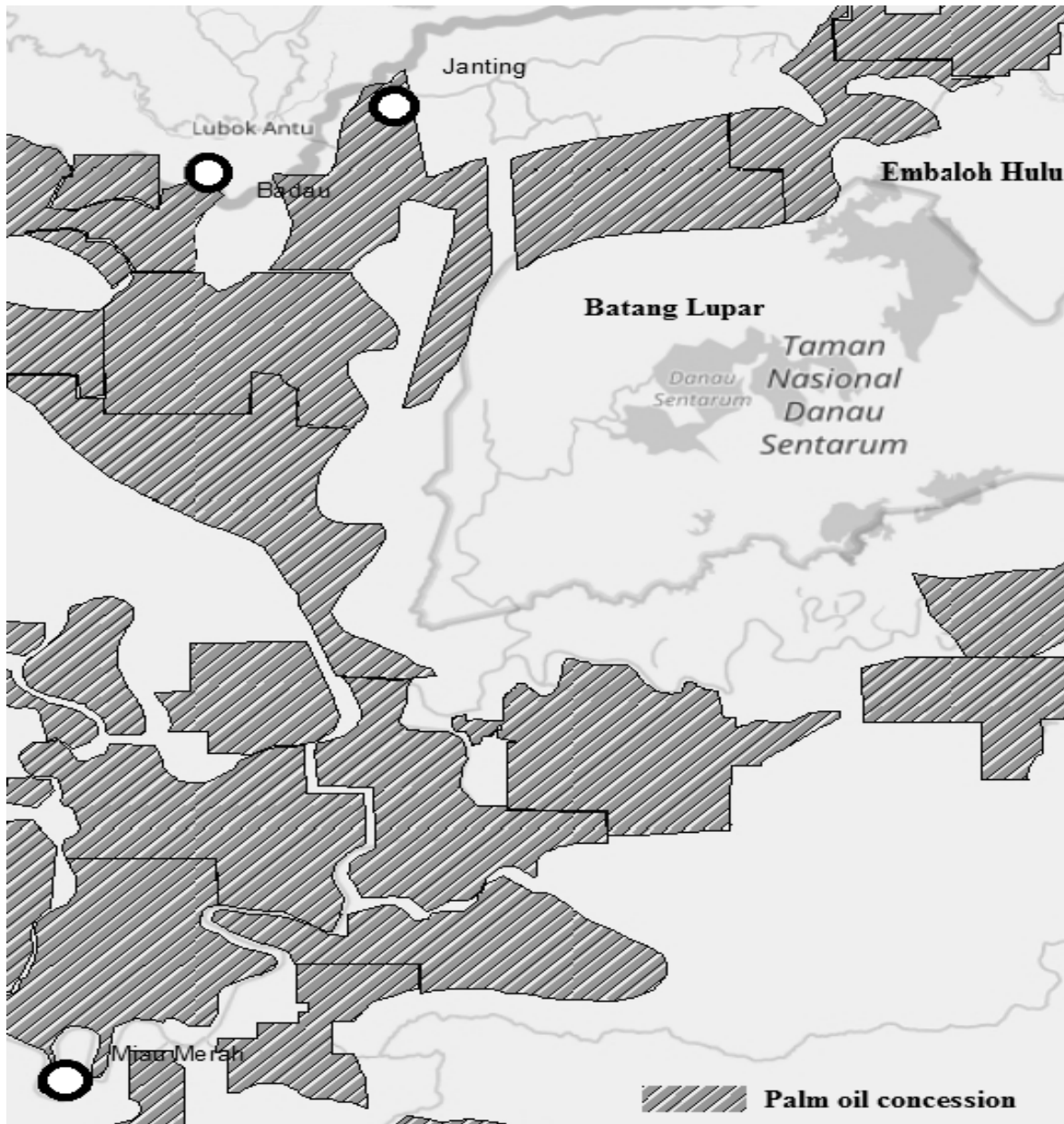
Besides the important tropical forest and peatland ecosystems, Kapuas Hulu is also significant due to the small rivers and lakes that function as the headwaters of the Kapuas River system. The length of this river is about 1100 kilometres, according to information from the Netherlands research institute, KNAW (*Koninklijke Nederlandse Akademie Van Wetenschappen*)²⁹, making it the longest river in Indonesia. Boats can easily pass along the Kapuas river to Kapuas Hulu, except during extreme dry periods (Lusiana et al. 2008). As a result, Malay fishermen (who normally inhabit the coastal regions only) can be found all along the river right up to Kapuas Hulu where they have long settled to earn a living (MacKinnon et al. 1996). In the forested uplands, the influence of Malays in political decision making was historically minimal in comparison to the longhouse customary organization. For instance, during Dutch occupation in the early 19th century, the Malay Kingdom was subjected to Dutch colonial control, while the Dayak Iban weren't (Wadley 2003, p.96). During 1918, Malays established permanent settlement surrounding Batang Lupar (Ibid, p.108), and by the period of my 2017 fieldwork³⁰, Malays had strengthened their position by securing various political positions in local bureaucracies and parliaments, and now exert a dominant political and economic influence throughout the river system.

Field work sites for this thesis are located in two subdistricts; Badau and Silat Hilir (refer to Figure 1-2 earlier). Figure 5-1 presents the more detailed geographic location of the field sites, showing the case study village of Miau Merah in Silat Hilir sub-district, and the two case study villages of Janting and Badau in Badau. These areas have witnessed major landscape change from when they were essentially remote forest areas in the 1960s, with an early road network to their current chequering by plantation leases (Figure 5-1). Since palm oil arrived in Miau Merah in 2001 and in Badau in 2007, infrastructure has been built by both the state and by private corporations, with the extension of the road system (both public and private roads) closely following the spatial establishment of major plantation concessions (known as *jalan sawit*).

²⁹ <https://www.knaw.nl/en/international/scientific-cooperation-with-indonesia/joint-research-projects/hydrology-geomorphology-links-in-the-kapuas-river>

³⁰ Field note participant observation in Kapuas Hulu, 2017

Figure 5-1 Field sites in Kapuas Hulu



*) Batang Lupar stands for subdistrict

Source: Author

5.2 Ethnicity and demography

Since the arrival of palm oil in Kapuas Hulu in the early 2000s, there has also been an increase in migrant populations in the district (see Table 5-1). On the other hand, with a much larger area compared to Pontianak (the capital city of West Kalimantan), the population density in Kapuas Hulu remains much smaller.

Table 5-1 Population Size and density (2010-2014)

Variable	Area	2010	2011	2012	2013	2014
Population number	Kapuas Hulu	222,160	227,424	231,512	236,136	240,410
	Pontianak	554,764	565,856	575,843	586,243	598,097
	West Kalimantan	4,411,400	-	-	-	4,716,000
Population density (per km ²) ³¹	Kapuas Hulu	7.44	7.62	7.75	7.91	8.06
	Pontianak	5,104	5,249	-	5,438	5547
	West Kalimantan	30	-	-	-	32

Source: Indonesian statistic offices (BPS)

The case study villages are home to various ethnicities and occupations as shown in table 5-2, with the most heterogeneous population composition found in Badau.

Table 5-2 Demographic composition in the case study sites

Features	Janting	Badau	Silat Hilir
Major ethnic groups	Dayak Iban (62.5%)	Melayu (50%), Dayak Iban, Java	Java (43%), Malay, Dayak Sebaruk
Number of households	128	665	294
Major occupations	Farmers, Non-farm labours	Non-farm, fishermen, traders	Farmers, Non-farm labours, traders

Source: surveys in field locations in 2016.

I was told different stories as to how these villages have come to have the demographic characteristics they have today. Janting village was apparently formed through migrations of Iban from Sarawak into Kapuas Hulu, with many Iban families speaking about their family networks in Sarawak. In the middle of the 1800s, despite the boundaries made by the Dutch and British, many Iban migrated between Sarawak and Malaysia (Eilenberg 2012). In interviews with a customary leader in Janting³², it was explained how the man's grandfather originally came from Sarawak and first inhabited the border areas of Empanang in Kapuas Hulu. Before the subdistrict of Badau was formally established in the 1950s, influential Iban customary leaders from Batang Lupar requested his grandfather to stay in Janting and fight against local rebels rather than return to Lubok Antu, Sarawak. In return he was granted territory in Janting. Before 1964, this territory was named Badau Bunut and was apparently inhabited by approximately 12 households. Yet, in 1964, they changed the name of the village to Janting³³, and the population has increased by a

³¹ Total area of Kapuas Hulu is about 29,842 km², and population density was estimated by dividing population with total area

³² Personal communication with YE, Janting, Kapuas Hulu, 2016.

³³ Personal communication with YE, Janting, Kapuas Hulu, 2016.

factor of ten to 128 households. Most are farmers alongside some landless labourers who work for a local palm oil corporation³⁴.

In 1951, the village of Badau was also originally inhabited by Iban groups (Desa Badau 2012). Nevertheless, in 1961, Malay from Pinoh and Jongkong in southern Kapuas Hulu migrated to Badau with the objective of trading rubber with people in Sarawak. In the early 2000s, logging came to Kapuas Hulu and these attracted more people to occupy this village, with population growth further increasing after palm oil operations commenced in 2012. Local inhabitants mostly worked as traders, temporary off farm labourers, as civil servants or in plantation companies (Ibid.), and many Malays in Badau have become river fishermen in the local area.

In Silat Hilir, the major ethnic groups are Javanese and Dayak Sebaruk. Dayak Sebaruk are a sub-group of the Iban community, originally migrated from Sintang³⁵. This village was officially recognised in 1975 with 30 households³⁶, and later people from the village resettled in Miao Merah. In 1970, the Suharto regime provided huge timber concessions across the archipelago as a key part of his national development program (Wadley & Eilenberg, 2005, p.24), and these development projects aimed to spur on regional economic development in the remote border districts (Ibid). Yet, for policy makers, a major obstacle to natural resource development was believed to be labour shortages in these otherwise remote areas, and a major component of development schemes at this time was population redistribution from Java through *transmigrasi* (Eilenberg 2012, p.255). These Javanese migrants began occupying the exterior of *Silat Hilir* around the 1980s³⁷.

With the intensification of oil palm cultivation in the mid-2000s, Sumatran farmers (from local conversation some people revealed from Riau, North Sumatra, and West Sumatra), who were cultivating oil palm on small crowded plots where the labour to land ratio was high, started migrating to Borneo where land was much more available. Even though economic growth was focused on the larger towns, some Chinese migrated to the peri-urban areas of Badau, Putussibau, and Silat Hilir to establish their own businesses beginning in the 2000s. They were

³⁴ Personal communication with numerous local community in Janting, Kapuas Hulu, 2016.

³⁵ Personal communication with indigenous people in Miao Merah.

³⁶ Village's website: <https://www.miaumerah.desa.id/first/artikel/99>

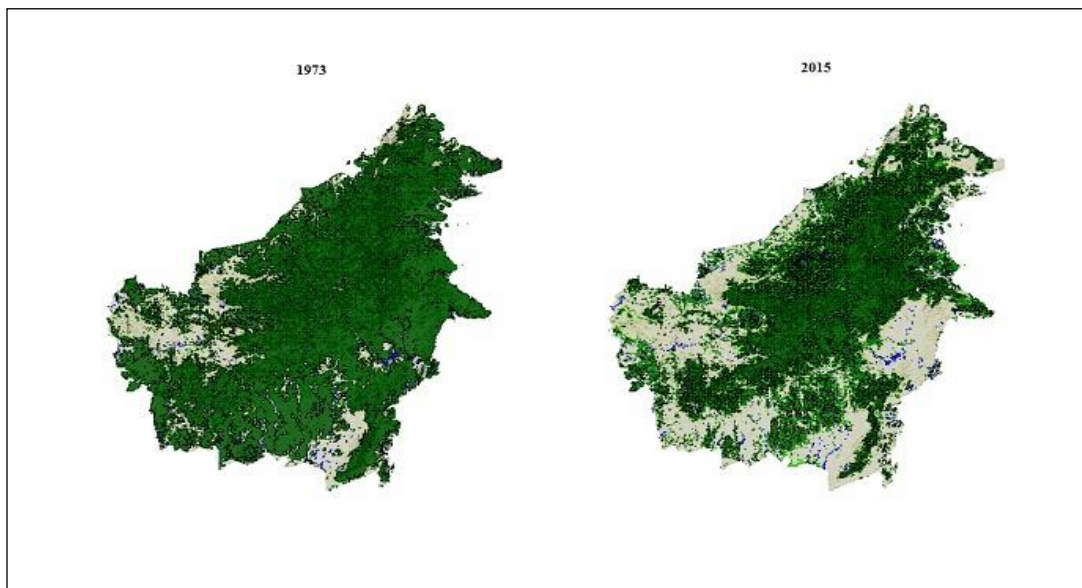
³⁷ Survey interview.

mostly coming from Pontianak and Singkawang to try their fortune in these rapidly growing semi-urban areas.

5.3 Landscape changes

CIFOR³⁸ has estimated that about 18.7 million hectares of old growth forests in Borneo islands were cleared between 1973 and 2015 (see Figure 5-2), of which industrial plantations contributed to about 9.1 million hectares.

Figure 5-2 Forest cover loss in Borneo Island



Source: maps from CIFOR (<https://data.cifor.org/>)

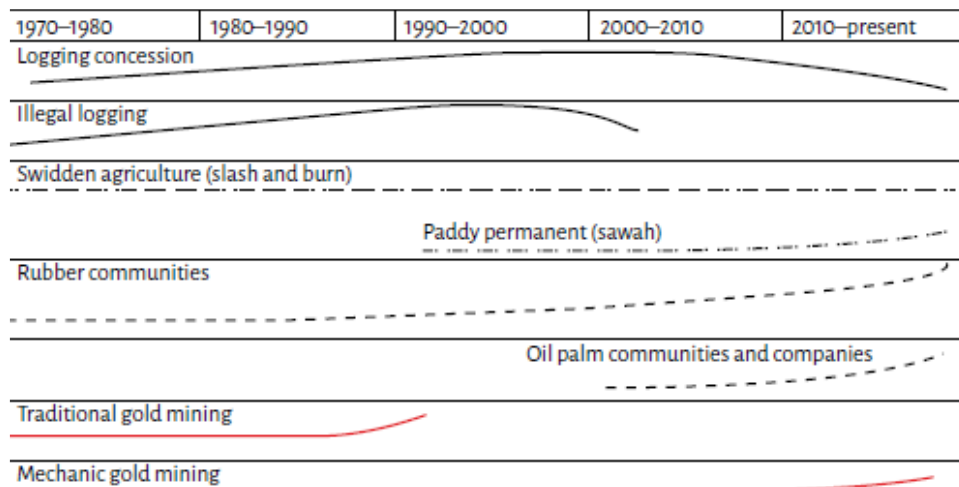
In Kapuas Hulu, land clearance has occurred in various stages as land uses have changed. Leonald & Rowland (2016) have examined land use in Kapuas Hulu and shown that external interventions of the state and capital investors have resulted in a large-scale transformation of swidden into oil palm plantations. Prior to the 1970s, Kapuas Hulu was too remote for commercial plantations, so instead most investors focused on sourcing from smallholder farms (Leonald & Rowland 2016, p.97). Dove (2011) demonstrated that even prior to the 1970s, Dayak groups participated in various high-cash crop cultivation (e.g. rubber, pepper), but their farming was focused around smallholder plots.

³⁸ <https://forestsnews.cifor.org/50454/progress-and-preservation-a-dichotomous-struggle?fnl=en>

Prior to the 1970s, despite having a moderate impact on forest regrowth, land use change due to rubber and pepper was relatively insignificant at scale. Rubber cultivation was identified as a commercial part of a managed forest, and Cramb (2007, p.80, p.95) further explains how swidden agricultural systems on Borneo island allowed for the regeneration of secondary forests by applying a fallow rotation of at least seven years. This time period was opposed to Freeman’s estimation that fallow rotations at least was between 12 to 15 years (Freeman 1955)

In the early 1970s, industrial logging operations began to occur in Kapuas Hulu (see figure 5-3), with Wadley & Eilenberg (2005) describing how proposals for logging plantations would be endorsed by national elites, corporations and the military. At the time, the Suharto regime allocated huge timber concessions under the national development program, which heavily relied upon private investors (Wadley & Eilenberg 2005, p.24). In the early 1970s, for instance, the national government approved large-scale timber concessions in Kapuas Hulu to a corporation with a strong military connection, PT Yamaker, to enact their political agenda of economic exploitation and delivering industrial plantation economies as a backbone for national security (Ibid.).

Figure 5-3 Historical land use changes in Kapuas Hulu



Source: Leonald & Rowland (2016) in page 97, Note: The y-axis shows relative increase/decrease in activity

In 1997, Indonesia faced a financial crisis and, as a result, national industrial processing and financial sectors became less viable, as the Indonesian political elite used logging concessions to

raise state revenues in the context of declining economic growth. Then, in 1999, decentralised resource management began to deeply impact land use in Kapuas Hulu. The local *Kabupaten* government had been given authority to grant small-scale logging concessions in the form of joint cooperatives between local communities and logging businesses. Nonetheless, these local decentralised land bureaucracies were misused by various local elites in West Kalimantan who were engaged in log smuggling into Malaysia during the early 2000s (Eilenberg, 2014c, p.10).

In Kapuas Hulu, overseas Malaysian logging entrepreneurs saw the potential benefits of logging in Indonesia, and began negotiations with Sarawak-based Iban networks to clear forests on the Indonesian side to supply the timber industry in Sarawak (Eilenberg, 2014c, p.26), where they paid local villagers between 2.52 and 4.46 USD per tree for clearing in the early 2000s. These entrepreneurs were operating in Kapuas Hulu until the mid-2000s and promoted forest conversions to fuel the logging industry. Figure 5-3 suggests that the logging industry reached a peak land use expansion in the beginning of the 2000s.

Nevertheless, in that period, the central government continued to criticise local elites and communities who they claimed were mismanaging forest resources and exacerbating illegal logging and corruption (Eilenberg, 2014c, p.26), and they subsequently revoked the right of the local government to allocate logging permits under 100 hectares. The expansion of logging was stopped by sending military and police officials to crack down on illegal logging and the illegal shipment of logs overseas was stopped in 2005 (Ibid, p.11).

In the post-logging environment, national elites worried about a lack of development in the border areas of West Kalimantan and the continued possibility of cross border smuggling (Eilenberg 2012). National elites endorsed large-scale oil palm plantations as a local economic development solution in Kapuas Hulu from the early 2000s (Leonald and Rowland 2016), but land conversion into large-scale plantations took a few more years to eventuate. In 2005, national authorities initially attempted to mobilise state owned corporations to promote large-scale palm oil plantation in the border areas of Kapuas Hulu, but their concessions were revoked as they overlapped with the Betung Kerihun National Park (Eilenberg 2012, p.248). Along with that, international non-government organisations, with their local allies, were beginning to step up their campaign criticising national elites for their promotion of an industry that was having major environmental impacts, such as deforestation and soil erosion (Ibid, p.249).

National elites turned to another strategy in response to strong pressure from international and local stakeholders (Eilenberg, 2012). To execute their interests of palm oil development, national authorities used land use policies to convert forest zones into areas designated for plantation development (Borneonews.co.id 2016). In Kapuas Hulu, by 2017, there has been more than 10,000 hectares of land made available for palm oil development³⁹. Local inhabitants stated that between 2006 and 2007, large agribusinesses made local surveys with the intention to push forward large-scale palm oil plantations. In the following years, they had successfully retained permits as a product of their negotiation with national and local elites. The concessions were carried out by converting dryland swidden plots and fallows into large-scale palm oil plantations. The process of land dispossession will be further discussed in chapter 7.

As large-scale palm oil development got underway, local communities have in many instances continued to pursue smallholder farming practices. In Miau Merah, local smallholder oil palm plantations were initiated in 2010 and, even when large companies in the area rejected the fruits sold by smallholders, other palm oil companies outside Kapuas Hulu would still provide a market for their fruit⁴⁰. It was not until around 2014 and 2015 that many local communities began converting their subsistence food plots into oil palm plantations on a more substantial scale. In Janting, local Dayaks initiated this trend from about 2013, and by 2017, many local Dayaks had converted their swiddens into oil palm plots (Plate 5-2). These conversions have had wide ranging cultural and economic effects as well as contributing to land use change, as will be discussed in both chapter 6 and chapter 8 of this thesis.

³⁹ Interview with district plantation office representative, Kapuas Hulu, 2016.

⁴⁰ Personal communication with village leaders and local villages authorities.

Plate 5-2 Local Dayak planting oil palm on a former swidden plot



Source: field work in Kapuas Hulu, 2016.

5.4 Regional economy and livelihoods

In the past five years, the structure of the regional economy in Kapuas Hulu has begun to change in quite profound ways. While the largest single economic contribution from Kapuas Hulu continues to be agriculture, Table 5-3 indicates a decline in the economic importance of logging due to the changed licensing processes outlined previously. The importance of plantations has steadily increased, such that it is now the largest single contributor to natural resource-based output in the district.

After the fall of Suharto, right up until 2005, economic initiatives were put in place by political elites to open up forests through road building in order to facilitate the logging boom. By 2007, the slowly improving road infrastructure in Kapuas Hulu had evolved into large paved roads, a widespread electricity system, and cell phone towers (Eilenberg 2014a, p.22-23). By 2010, the expansion of oil palm plantations and new demands from migrants and manufacturing had led to the establishment of offices and roads around large concessions. With large scale infrastructure development since 2007, Kapuas Hulu economy has become more locally connected and provided local economic development benefits for the rural economy. The expansion of infrastructure can help residents access markets connected to Sarawak where they can sell their

farming produce and access cheaper consumer goods (Eilenberg 2014a, p.22-23). In the local economy, the cost of gas cylinders is cheaper across the Malaysian border, and some people use this opportunity to re-sell it back to Putussibau at a higher price. The strategic location in relation to Sarawak has meant that there is an incentive for local retailers to set up their trades in the surrounding area. Besides this, the development of infrastructure provides better supply chain connections for manufacturers to ship and to receive raw materials. Traders and manufactures have contributed a significant share of non-farm economic development in Kapuas Hulu (Table 5-3).

Table 5-3 Local economy of Kapuas Hulu (contribution to GDRP)

Sectors	2010	2011	2012	2013	2014	2015*
Agriculture	27.50%	27.32%	27.04%	27.09%	25.85%	25.06%
Food Crops	2.64%	2.64%	2.62%	2.86%	2.47%	2.34%
Horticultural Crops	2.10%	2.11%	2.15%	2.14%	2.10%	2.10%
Plantation Crops	10.30%	10.39%	10.49%	10.71%	10.64%	10.48%
Livestock	1.77%	1.78%	1.79%	1.78%	1.83%	1.82%
Agriculture Services & Hunting	0.07%	0.07%	0.07%	0.07%	0.07%	0.07%
Forestry and Logging	7.29%	6.92%	6.56%	6.17%	5.26%	4.88%
Fishery	3.33%	3.41%	3.36%	3.36%	3.44%	3.36%
Mining & Quarrying	7.24%	7.31%	7.49%	7.56%	7.66%	7.74%
Manufacturing	12.29%	12.32%	12.03%	11.88%	11.82%	11.81%
Electricity and Gas	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%
Construction	16.07%	16.55%	16.98%	17.37%	18.05%	18.52%
Wholesale & Retail Trade (including repair of motor vehicles & motorcycles)	11.84%	11.79%	11.73%	11.73%	11.90%	12%
Public Administration and Defence; Compulsory Social Security	6.64%	6.07%	5.95%	5.62%	5.54%	5.65%
Others (or miscellaneous)	18.41%	18.63%	18.77%	18.76%	19.17%	19.21%

Source: BPS, Kapuas Hulu (GDP at constant market price), * is estimated figure (<https://kapuashulukab.bps.go.id/>)

In respect to local livelihoods, while the trade of vegetables and fruits has declined, numerous Iban and other Dayak villages near the border and surrounding the national parks (e.g. Embaloh Hulu and Batang Lupar) continue to practise swidden cultivation as part of their daily food production, many following the traditional swidden calendar presented in Table 5-4.

Table 5-4 Swidden calendar of Dayak Iban in Kapuas Hulu

Swidden work	May	June	July	August	Sept	Oct	Nov.	Dec.	Jan.	Feb	March	April	May
Slashing the main trees (<i>nebas</i>)		X											
Felling remaining scrub (<i>nebang</i>)			X										
Burning (<i>bakar</i>)				X									
Planting (<i>nugal</i>)					X								
Weeding (<i>menyiangi</i>)						X	X	X					
Harvesting (<i>panen</i>)										x	x		
Carrying (<i>niki benih</i>)												x	
Rice festival (<i>gawai</i>)	X												x
Starting a cultivation (<i>Berangai ke reban</i>)		X	X										

Source: Focus group discussion in Kapuas Hulu (Janting)

Based on focus group discussions held in Janting and Embaloh Hulu, it was found that swidden cultivation practices between Dayak Taman and Dayak Iban are similar, but Dayak Taman begin their swidden work in the beginning of July. From the local conversation, Dayak Taman are considered part of the larger clans of Tamambaloh which originate from Embaloh Hulu and Hilir. Farmers stated that before land was burnt, the surrounding forest would be cleared approximately one month in advance. One month is required to allow the land to dry out after trees have been felled. In the Iban calendar this happens between May and June, but in the Taman calendar it occurs in July. I tried to ask the reason for time lags, but they just revealed to follow their grandparents regarding the swidden seasonal date.

Prior to the clearing of weeds, Dayak communities make sacrifices to local spirits by slaughtering chickens as a request for good harvests and resilience against pests. In Iban culture, the man uses a dibble stick to seed the soil (*nugal*) to make planting holes, which the women fill it with rice seeds (*menih*). In swidden work, the sowers line follows after the line of the dibblers. Prior to collecting the swidden harvest and drying it on the upper roof of their house, there is a ceremony that involves slaughtering chickens and providing eggs and rice as a sacrifice (see Plate 5-3). Two months later they make a rice festival (*Gawai*) to celebrate and thank local spirits for the harvest they have obtained, and this has become a major cultural event for all of West Kalimantan.

Plate 5-3 Ceremony prior to carrying paddy(s)



Source: taken in Ngaung Keruh, Batang Lupar, Kapuas Hulu

With a growing awareness of the need for more education and other cash needs, local inhabitants surrounding Kapuas Hulu have diversified their economy by working as labourers in various sectors (see Figure 5-4). In the early 2000's, palm oil was already produced in Miau Merah, and this further expanded into Badau in 2012. This palm oil establishment since the early 2000s has opened up more opportunities for the inhabitants of Kapuas Hulu to work as wage labourers. In the latest population census in 2010⁴¹, in aggregate numbers, the plantation sector was the largest source of employment. This might be influenced by employment absorption in southern area of Kapuas Hulu where the palm oil was established earlier⁴².

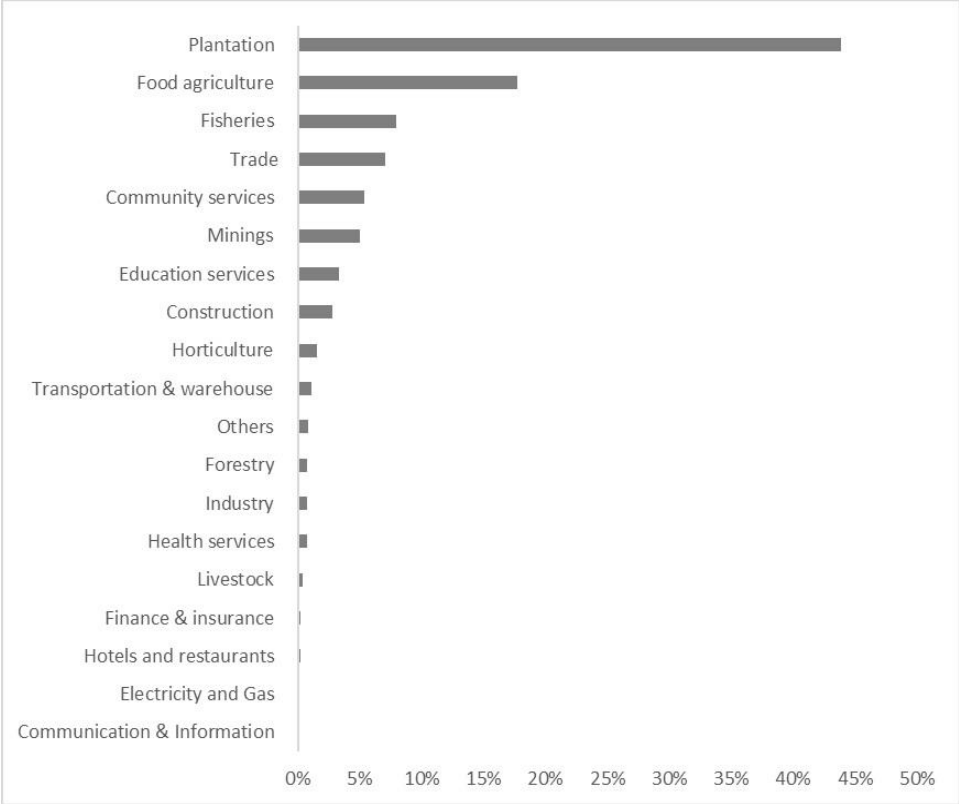
In addition, there have been other cash crops to be cultivated that require labour (e.g. pepper, rubber). In rubber labour arrangements, local smallholders can assist their neighbours to tap

⁴¹ Population census in Indonesia was held every 10 years, the next one would be in 2020.

⁴² Palm oil operation in Miau Merah, Bika and Putusibau Selatan (southern Kapuas Hulu) began before 2010.

rubber during their off-season. Prior to 2012, the rubber prices reached 41 thousand IDR per kilogram (Kompas 2012) and, in Kapuas Hulu, the revenue sharing of rubber crops between labour and land owner had been generally favourable towards labour. Labour retains 60 percent from the net revenue, while the remaining share goes to the rubber land owner. A final source of employment was in retail, as local entrepreneurs hired local people to work in their shops in the commercial district. This trade sector is the fourth largest source of labour work in Kapuas Hulu (see Figure 5-4).

Figure 5-4 Labour participation (population above 15 years old) in Kapuas Hulu



Source: Population census, 2010, BPS (<https://sp2010.bps.go.id/>)

5.5 Institutional settings

In Kapuas Hulu, there are various formal and informal institutions that work to regulate natural resource access and usage. In formal arrangements, the central government has created a national certification system which allocates land access rights to plantation companies, which is known as *Hak Guna Usaha* (HGU). HGU is the leasing rights for individuals or parties to access land for agricultural use that was formerly categorised as state lands, and which are generally set for between 20 to 35 years, according to negotiations with local communities. This leasing right can

be extended upon approval from the national government, as long as the conditions set by the government are met⁴³. Prior to obtaining a HGU, the local government makes local land allocations and provides location permits to agribusiness investors. In Kapuas Hulu, the local environmental office did not have permission to conduct environmental assessments, such that environmental assessment is still carried out by the provincial environmental assessment commission (*KOMISI AMDAL provinsi*).

Local communities also have their own informal institutions to govern natural resources. For instance, local Dayaks have customary institutions such as hamlet leaders (*Tuai rumah*), village leaders (*Patih*), and *Tomenggong* (equivalent to customary sub-district leader) who all play a role in natural resource management. Based on local observations, rights are granted to households to exploit particular village lands by conducting discussions between households, *Tuai rumah* and *village leaders*. On the other hand, *Tomenggong* have the responsibility to determine customary forests for a particular village.

These formal and informal institutions often overlap in complex ways. For instance, while customary leaders have their own specific tasks, local governments influence their resource management through the hierarchical bureaucracy, and while local customary leaders control customary institutions, formal leadership is extended through the election of local leaders who can push for state intervention. This has been defined by Wadley & Eilenberg (2005) as *dusun-desa* political organisation (*dusun* stands for hamlets, and *desa* stands for villages). A key task of these type of leaders is to acknowledge informal land ownership of the local community (*surat keterangan tanah*, SKT).

In terms of land use planning, local governments encourage the local community to have formal land titles through local land use plans. However, in the case of Kapuas Hulu, when the local community applied for land certificates, they were met with bureaucratic impediments and excessive costs⁴⁴. Furthermore, in the forested areas, resource management is now back under the control of the central government (Resosudarmo et al. 2014, p.264). In this process, the Ministry of Forestry and Environment designated a map for forest land use decision making (Ibid.), under which swidden farming in secondary forests would not be allowed. Within official state maps,

⁴³ See UU no.5/1960 & Permentan 98/2013

⁴⁴Personal communication with swidden farmers in Janting, Kapuas Hulu, 2016.

swidden farming has not been acknowledged as a permitted agricultural activity by forestry authorities. In addition, within local government maps, there have been conflicting trajectories of spatial commitment between conservation and land development. In Kapuas Hulu, some local forestry officials celebrated the symbolic effort and concern for environmental protection by proclaiming the district to be a “conservation district” in 2003, at the same time as another district institution, the district local plantation office, advocates and promotes the expansion of oil palm in Kapuas Hulu.

CHAPTER 6: PALM OIL INSTITUTIONS AFFECTING KAPUAS HULU

6.1 Introduction

This chapter will give an account of institutional factors which have shaped large-scale palm oil development in Kapuas Hulu, West Kalimantan. In considering how institutional settings impact resource access, this chapter will focus on the following: i) the institutions and governance structures that form the global value chain for palm oil; ii) the broader external institutions⁴⁵ in which the value chain is embedded; and iii) the local-level customary institutions of Dayak communities.

In Kapuas Hulu, large-scale plantations pursue profit through cheap land deals and the utilisation of cheap labour. Nevertheless, local actors engage with different parts of the value chain in an attempt to establish beneficial relations. New opportunities to engage with other sections of the value chain often emerge as the market develops beyond the local area. In that context, there have often been conflicts between the government and environmental activists over palm oil development. While the government promotes palm oil development, opponents use a variety of local perspectives and strategies to promote environmental preservation. With their increasing need for cash, local communities often face dilemmas and uncertainty when it comes to the question of oil palm and livelihoods.

Within these complex scenarios, numerous local inhabitants in the field sites have decided to voluntarily engage with the palm oil economy, as customary swidden practices around land use and labour have been reconfigured to incorporate oil palm cultivation. Drawing upon field work in Kapuas Hulu, this chapter demonstrates the way multi-tiered institutional structures involve negotiations that ultimately shape the nature of this engagement.

6.2 Governance and institutions within the palm oil value chain

The cultivation of palm oil has been a particularly attractive investment option for various national and global economic actors over the last few decades. Access to large areas of land at reasonably low cost in Indonesia, along with rising commodity prices, have seen an increasing

⁴⁵ That is, those institutions that are not directly involved in the production process (e.g. states, NGOs, etc.).

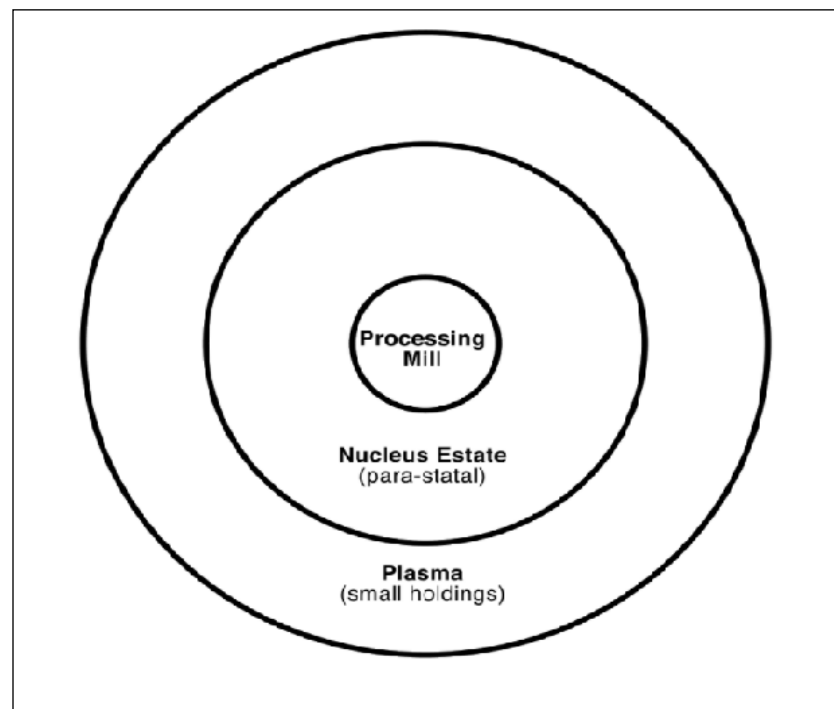
number of actors investing in the sector. Prior to the recent palm oil boom, various agribusiness corporations had shown an interest in rubber plantations in Empanang. Yet the relatively high investment costs, ongoing high labour costs and price uncertainty in the global market (caused in part by increasing competition from synthetic rubber), have meant that further investment had stalled (Dove, 2011). Nevertheless, more recently, investors have been attracted back to Kapuas Hulu due to new investment opportunities in the palm oil sector.

Key factors driving large agribusiness to Kapuas Hulu include the abundance of natural resources and cheap labour. However, in the interest of mobilising cheap plantation labour, market actors and their accompanying institutions have tended to marginalise the desires of smallholders who also want to develop their own small-scale oil palm businesses (Cramb & McCarthy, 2016b, p.5). Agribusiness actors have helped construct a discourse around poor smallholder agricultural capacity and productivity in order to accumulate land and assert control over, and access to, land resources. To convince the government of the superiority of large agribusiness over swidden cultivation in West Kalimantan, agribusiness investors present local swidden cultivations as useless and unproductive (Potter, 2011). This is a part of attempts to acquire cheap land, which is otherwise presented as ‘under-utilised’. This process of land dispossession will later be discussed in the following chapter.

As stability over inventory supplies of raw crude palm oil is crucial in the vertically integrated agri-food supply chain, decentralising oil palm fruit production to smallholders would be a risk for long-term supply certainty of raw materials. At this stage, agribusiness firms seek ways to negotiate contractual agreements which allow them greater direct control over upstream production sites. This, however, has meant that value chain mechanism have attempted to involve local communities on the one hand (primarily as labour and gatekeepers of land access), while also excluding them in another sense. A common contractual form that has emerged between smallholder farmers and corporations was a modified version of past contractual arrangements between corporations and rubber smallholders in Empanang. In the past, corporations mobilised labour and capital in Empanang through the nucleus scheme arrangements (see figure 6-1), which were generally considered unsuccessful (Dove, 2011, p.29). Under this contractual arrangement, lead firms acquired the land of local Dayak communities in Empanang by enclosing some of their land and ensuring exclusive access. In return, the

agribusiness firm provided technological transfer, training in cultivation methods, market access, and other input assistances to local smallholders (plasma). Nevertheless, eventually these plantation firms lost interest in this plasma arrangement due to the extensive costs involved (Ibid.).

Figure 6-1 Nucleus - rubber scheme in Empanang, Kapuas Hulu



Source: Dove (2011), p.29

In the context of oil palm cultivation, large-scale agribusiness investors desired to maintain direct control over agricultural production practices and this has occurred over time. For example, in Badau, PT BTS made a contractual agreement with the community where local farmers were enrolled as labourers, and where the corporation oversaw local production. Within that arrangement, PT BTS acquired a lease over the land of local inhabitants for 30 years under a HGU land lease, but, in return, the corporation provided 20 percent of dividends from all their harvests to community members (KOPSA-MGB - BTS, 2010, p. 4). In Silat Hilir, another firm was involved in a similar scheme to acquire community land where 40 percent of plantation land

was reallocated back to the local community (as plasma fields). Within these arrangements, the firm still maintains control over oil palm production in these plasma plots⁴⁶.

In that contractual engagement, asymmetric power relations began to appear as the agribusinesses failed to acknowledge informal power relationships within local institutions (Gillespie, 2016). For instance, rather than allow smallholders to autonomously cultivate oil palm, under the contractual agreement between the company and landholders, community land (plasma land) became increasingly controlled under corporate management (KOPSA-MGB - BTS, 2010, p. 4). The autonomy of local farmers in production was restricted by corporate policies and procedures, and in the cases of both Silat Hilir and Miau Merah, the involvement of local communities began to increasingly resemble that of labour on a large-scale operation despite earlier land-sharing contracts.

To sustain their control over cheap labour and land, large agri-businesses even began to reject palm oil fruits supplied from independent smallholders. Under Indonesian palm oil regulations, cooperatives should act as intermediaries between corporations and smallholders to mediate market access to palm oil companies⁴⁷. Nevertheless, local cooperatives face a conflict of interest due to the weak legal and financial position they occupy relative to agribusinesses (Gillespie, 2016). A cooperative in Badau for instance had particularly weak decision-making capacity in regard to these issues, and was reluctant (or unable) to deal directly with the company, and instead looked to the government to intervene on their behalf. Local cooperatives felt compelled to follow corporate policy in terms of rejecting palm oil fruit from independent smallholders:

“We are legal entities, hence we cannot make decisions independently by ourselves....we try to endorse government decisions [local community selling fruit to the plantation company], yet they are rejected because there was no decision from government....there is no deal...even though everything should be in reference to government’s decision” -Interview with A, Head of plasma cooperative, Badau, West Kalimantan, 2018.

Despite the existence (at least on paper) of institutional arrangements aimed at ensuring community participation in the palm oil sector, the reality is that governance structures within this strongly buyer-driven value chain (such as company policies, procedures and rules) have tended to dominate the prevailing institutional environment at the interface of companies and

⁴⁶ Personal communication with H, head of plasma cooperatives in Miau Merah, 2016.

⁴⁷Peraturan Menteri Pertanian No.14/2013.

communities. The weak bargaining powers of cooperatives was especially evident in Miau Merah, where many local community members were suspicious of the financial performance, integrity and accountability of the cooperative, an institutional form ostensibly established to protect their interests⁴⁸. The limited autonomy of the plasma cooperatives, and their weak bargaining position, had developed partly in response to high levels of indebtedness (primarily to the company) that the cooperatives had assumed through the development process.

Lead firms in a global value chain will position themselves strategically amongst competitors to serve the interests of global consumers and to meet consumers expectations in respect to economic, social and environmental conditions (Neilson *et al.*, 2018). This is often related to a highly buyer driven governance structure within the chain. Gereffi (1994) states that lead firms often enact such governance within a chain not necessarily through direct ownership of upstream firms, but through decentralised production settings, outsourcing and indirect control. In Miau Merah and Badau, the lead firms are Sinarmas Resources and Technology (SMART) and Indofood Agri respectively. SMART is the lead firm behind PT BTS in Badau, meanwhile Indofood Agri is the lead firm behind PT RAP. PT BTS was not under the direct capital ownership of SMART, but SMART has a contract with Kencana Agri, subsidiary of PT BTS, to appoint their upstream corporation as major crude palm oil supplier⁴⁹, while PT RAP supplies CPO to Indofood Agri as a wholly-owned subsidiary (IndoAgri, 2016). Both Indofood Agri and SMART are important suppliers for the domestic market, for which they manufacture consumer products, while also exporting to various markets across the Asia Pacific and Europe, in line with patterns discussed in chapter 4.

Global markets are exerting an increasing influence on the ethical practices of Indonesian palm oil companies, as particularly evident during the 2015 World Economic Forum, when consumer groups challenged palm oil companies to not only focus on cheaper palm oil-products, but to also address the social and environmental sustainability of upstream production (WEF, 2015). The most crucial concerns voiced by consumer groups and NGOs, in relation to West Kalimantan, are tenurial conflicts and deforestation⁵⁰. Indeed, issues of deforestation and land conflicts in Kapuas Hulu are interrelated, as when palm oil companies appropriate fallow lands or

⁴⁸ Personal communication with several plasma recipients, Miau Merah, West Kalimantan, 2016

⁴⁹ <http://kencana.listedcompany.com/misc/ar2008.pdf>

⁵⁰ <https://www.cifor.org/gcs-tenure/research/research-sites/indonesia/west-kalimantan/>

community forests, and then subsequently clear this land of secondary forest. IndoAgri and SMART are both members of the Roundtable for Sustainable Palm Oil (RSPO), a form of accreditation aimed at addressing the ethical concerns of consumers through the value chain, such that RSPO recognition thereby helps strengthen corporate branding for palm oil companies. Despite this membership, these companies have struggled to resolve upstream conflicts in Badau and Miau Merah⁵¹. Based on a key criteria of RSPO, it is very clearly stated that corporations need to resolve conflicts and bring positive social economic impacts to surrounding local communities.

“Where there is a conflict on the condition of land use as per land title, growers should show evidence that necessary action has been taken to resolve the conflict with relevant parties...” (RSPO, 2013, p.9)

The failure of third-party mediation (involving both local government and NGOs) to address land conflicts in oil palm plantations and to achieve win-win solutions for both the community and company has resulted in more firm-centric approaches to dispute resolution. An alternative approach to obtaining ethical legitimacy, adopted by Indofood Agri, has been to initiate social investments through their Solidarity Programme within their upstream operations (IndoAgri, 2016). Through this program, they have delivered improved community health and education facilities in an explicit attempt to improve relationships with the local community to address past tenurial conflicts. They present their sustainability commitments as follows:⁵²

“Relationships with communities and smallholders are strengthened through regular engagement activities under these Programmes, which aim to alleviate conflict over land rights and strengthen business continuity, as well as improve community health, enterprise and education. Projects under these Programmes are prioritised based on the findings of social impact assessments.”

Such an approach is a common value chain occurrence, whereby supplier firms will implement upstream operations set by lead firm manufacturers (Gereffi, 1994, p. 97). In this case, PT RAP is following a standard social investment program that has been initiated by Indofood Agri. This program is an attempt to enable a long-term advantage that serves the corporate interests of securing and upgrading local labour supply, but it seems less likely to address the underlying local tenurial conflicts in Silat Hilir. For example, field observations and interviews identified an

⁵¹ Personal communication with some villagers in Badau and Silat Hilir, 2016.

⁵² See: <http://www.indofoodagri.com/misc/A.How-we-manage-sustainability-2017.pdf>

ongoing disagreement between the community and company in relation to a lack of transparency in the payment of dividends in Miau Merah⁵³. The local community had even pursued their protest over unresolved land tenurial conflicts to the local parliament in Kapuas Hulu (Suara Pemred Kalbar, 2018).

These institutional interventions along the value chain have functioned in other ways to enhance local human resource capabilities and to induce rural development. It was generally acknowledged by local community members that the presence of these agribusiness firms had resulted in improved access to education and health facilities⁵⁴. This social investment program also has the potential to make social contributions by reducing inequitable access to job opportunities between migrant and indigenous people, since earlier plantations in Miau Merah had tended to provide more opportunities to better-educated migrants⁵⁵. Nowadays, with improved access to education and health, indigenous people are upgrading their basic formal education as an important pathway to accessing jobs on the estates and elsewhere. In an interview with a younger, high-school educated, Dayak man, having the ability to write, read and understand basic numerical calculation allowed him to work as a field supervisor on a plantation. He explained:

“I am Dayak Sebaruk, I am 35 years old. I am engaged with swidden cultivation, work on an oil palm plantation, and have also planted my own oil palm. Now, I own a one-hectare oil palm farm, which I started to plant in 2011. I sell some [of my fruits] to improve my economic condition.” -Interview with KA, Miau Merah, Kapuas Hulu, 2016.

Furthermore, in SMART policy making, education plays an important role in securing a better relationship with the community, and also to secure and improve the capacity of their potential labour force. SMART describes the specifically standardised education facilities in their upstream operations:

“Children of our employees and casual workers living in the estate receive free education from kindergarten to junior high school and heavily subsidised higher education. In the wider community, children living around our estates receive heavily subsidised education at all levels. To further encourage our employees to send their children to school, we provide free school bus services for all students. We believe that having access to basic medical care is a basic human right. To meet this need, we have built healthcare facilities in most of our estates and staff them with qualified medical professionals to serve our

⁵³ Personal communication with K, Miau Merah, 2016

⁵⁴ Survey interview with local communities in Miau Merah, 2016.

⁵⁵ Personal communication with H, Miau Merah, 2016.

employees and their families as well as the local communities”, Communication Progress of SMART (SMART, 2016)

In Badau and Janting, the local community was generally satisfied with the level of improved access to education and health care facilities⁵⁶ despite their disappointment with previous land negotiations with PT BTS. In Badau, the company implemented programs to establish schools in the estate and a free school bus to children to come into the school. In Badau and Janting, I found that the younger Dayak generation (ie. less than 40 years old) was accessing labour opportunities through their better education levels relative to older generations.

In addition, the institutional intervention of SMART to expand road and mill infrastructure has extended participation and market access of smallholders in other ways. SMART itself is a subsidiary of Golden Agri Resources (GAR), a Sinar Mas Group company listed in Singapore, which asserts a commitment to value chain development:

“With large scale and integrated nature of our palm oil operations allow us to promote efficiency, productivity, quality and sustainable growth across the entire value chain. GAR has been expanding its downstream presence and is well positioned to grow a global, diversified customer base through strong distribution, branding, merchandising, destination processing, shipping and logistics. As we constantly develop our upstream and downstream capabilities to enhance performance, we are able to leverage logistical advantages, to supply our products to the world as the partner of choice”⁵⁷.

In my field location, in Badau, SMART had invested a large amount of money to establish 300 kilometres of road infrastructure linking Badau and Silat Hilir (AntaraNews, 2011). Furthermore, its investments have included expanded mills in Badau, Silat Hilir, and Sintang, including two refinery mills in Badau and Silat Hilir in 2012 with a total value of 300 billion rupiahs (Ibid). This expanding infrastructure program has been promoted by SMART Agribusiness to serve their business interests to increase efficiency along their supply chain, yet local communities are also benefitting as they extend their fruit sales both outside Kapuas Hulu (e.g. to the more established mills further downstream in Sintang) and in local markets⁵⁸. They use palm oil infrastructure without any direct financial contribution to its establishment or maintenance.

⁵⁶ Survey interview with local respondents in Badau and Janting, 2016. See also survey responses in Chapter 8.

⁵⁷ Source: <http://www.sinarmas.com/en/agribusiness-and-food.html>

⁵⁸ Personal communication with J, Miau Merah, 2018.

Palm oil mills sourcing from an outsourced smallholder supply base depend upon a network of local collectors. Many community members have successfully upgraded their position within the value chain to occupy more lucrative positions as collectors, or middlemen⁵⁹, where they use the improved infrastructure to supply the mills in Sintang. They act as local market channels from smallholders to broader value chain actors, and use their economic position to coordinate and increase smallholder production. These collectors obtain profits based largely on owning vehicles for transporting fruit, and their margin per kilogram is approximately equal to the transportation cost per kilo if the farmers instead want to ship the fruit themselves collectively with their peers. These chains continue to be effectively governed by lead firms, who create limiting institutions for participation, including through price and standards setting, although collectors also retain some autonomy in this regard. Within the field sites during early 2018, the official market price for palm oil fruit in Kalimantan ranged between 1600 to 1700 IDR per kilo, while in Miau Merah, local middlemen can push the price down to 1300 IDR per kilo⁶⁰. These smallholder farmers sold their palm oil fruits at this lowered price due to their inability to find other buyers and the high costs associated with transporting fruits themselves.

Hence, from the preceding discussion, it is found that palm oil companies in my case sites operate to minimise their internal supply chain risks by directly controlling, or governing, upstream production. Sometimes, these companies exploit local resources through contract farming with landholders. However, external consumer concerns over sustainability also pressure them to improve their brand reputations through enhanced upstream engagement with communities, such as the social investment programs delivered by SMART and Indofood Agri that go beyond formal regulatory requirements. While their intentions to resolve tenurial conflicts through such programs are questionable, they have delivered improved social and physical infrastructure, which has improved local participation in palm oil development. In a nutshell, this buyer driven governance has transmitted sustainability concerns and expectations from global consumers into specified corporate actions to voluntarily deliver public services that were previously unknown in this relatively remote district.

⁵⁹ Personal communication with several palm oil smallholder farmers in Miau Merah, 2016.

⁶⁰ Interview with YI, Miau Merah, Kapuas Hulu, 2018.

6.3 The broader institutional setting of the palm oil value chain

The palm oil value chain consists of various direct economic actors – smallholder outgrowers, collectors, processors, exporters, product manufacturers, supermarkets, financial organisations etc. These actors, and their value-adding activities, constitute the input-output structure of the chain, with a buyer-driven governance structure dictated by the needs of lead firms. These various economic actors are then embedded within a broader set of institutions shaped by various external stakeholders and many of whom have a major impact on oil palm cultivation at the local level. In Kapuas Hulu, the Indonesian state, operating at various scales, is clearly a key element of this broader institutional setting, and acts to either promote or inhibit the spatial expansion of oil palm plantations. Meanwhile various environmental and conservation interests, including international NGOs, have performed a further critical role in bringing public attention to environmental concerns affecting the palm oil industry, and their actions, agendas and interests are reshaping the way smallholders engage with palm oil and their ability to develop their own livelihood trajectories.

Ribot (1998, p.331) emphasises how state institutions shape access to resources, and how this will be influential in determining profit distribution along a value chain. In the context of palm oil development in Kapuas Hulu, there are various state agents including the local government, national and provincial land agencies, financial regulators, and conservation agencies that shape industry expansion. Principal amongst these state roles is facilitating the allocation of land access to preferred actors. National and local authorities have played important roles expanding oil palm cultivation by supporting migrants (*transmigrasi*), and providing subsidies, loans, agricultural extension and infrastructure. The national land agency, agricultural authorities and local government also play important roles in controlling land access for palm oil companies that operate in rural areas. The endorsement of large-scale land palm oil plantations has emerged from national level agricultural authorities (Permentan-98, 2013).

The expansion of oil palm plantations has been a key pillar of state policies through which to promote agricultural modernisation in border areas. Simultaneously these policies have encouraged large-scale appropriation of land resources, as will be discussed in the following chapter. These local and national interventions are mediated through local government such as the regional development planning board (BAPEDDA), which also oversees the spatial planning

process. In Kapuas Hulu, palm oil companies must negotiate with these local development institutions to acquire large-scale land for palm oil development. In an interview with the plantation office, this negotiation had been conducted prior to obtaining local permits from the local land agency in Kapuas Hulu⁶¹. While the district head has the authority to approve concessions, this local development agency has strong economic influence over local land use decisions.

The state land agency (*Badan Pertanahan Nasional*) is the only state institution that is legally allowed to issue leasing concession rights (HGU) in Kapuas Hulu, and elsewhere in Indonesia. If the lease area is below 1000 hectares, the authority falls upon the provincial land agency in West Kalimantan⁶². Prior to gaining concessional rights, corporations are legally required to negotiate first with local communities about their proposal to establish large-scale palm oil plantations. In these situations, state agents will often look negatively upon swidden cultivation while embracing and supporting the need to develop oil palm plantations. A frequent problem is that state agents overlook the informal rights of swidden cultivators and customary rights. Despite the national constitution urging recognition of customary rights, political elites have prioritised the accumulation of revenue over incurring costs associated with managing local customary rights. Certain representatives of the state were quite explicit about their attitudes towards customary rights, which is seen to be clearly subservient to state claims over land.

“In here (West Kalimantan), customary rights do not exist. These would require satisfying formal requirements, such as the presence of local customary and collective rights. In fact, these cannot be observed - they are just able to claim access to sacred forests to collect local resources. The company was granted the [legal] concession based on the prior legal status of that being state land.” Interview with a staff member of the West Kalimantan Provincial land Agency, Pontianak, West Kalimantan, 2016.

These state land authorities tend to create a regulatory dichotomy between state land versus formal ownership rights, suggesting an absence of informal rights or customary tenure over land, contributing to various local conflicts, competing claims and ultimately the ability of corporate interests to acquire land at relatively low cost. This issue will be explained further in the following chapters.

The central government has endorsed an independent authority to channel financial loans to the

⁶¹ Interview with PS, Plantation office in Kapuas Hulu, Putussibau, Kapuas Hulu, 2016.

⁶² Interview with the West Kalimantan Provincial Land Agency, Pontianak, West Kalimantan, 2016.

palm oil sector, the national palm oil funding agency (BPDP KS), which was established in 2015 through presidential decree⁶³, and which had evolved from a previous program to channel micro-credit to smallholders under national financial and economic authorities. Under that decree, the state enforces levies upon all palm oil exports, and in return they will cooperate with state-owned banks to channel those funds toward palm oil development. To gain public acceptance, the government promoted a discourse that focused on the benefits of replanting which would assist smallholder farmers (Bisnis.com, 2016). While some funds do get channelled into plasma plots and independent smallholders, in the Kapuas Hulu case study sites, these “plasma plots” have long been under the direct control of large-scale oil palm plantations. At the local level, most of the actors that were provided significant financial assistance were financial organisations, such as local banks and credit unions and, with some flexibility, farmers can access fertilisers, herbicides and motorcycles from this local financial assistance⁶⁴.

A further role of local and national plantation authorities has been to provide agricultural assistance through seeds and fertilisers. For instance, in 2016, the local community in Janting had been provided with palm oil seeds from the national authority so they could plant their own oil palm⁶⁵. In addition, through the local agricultural development office, the national authority distributed subsidised fertilisers for the intention of using on local food crops.⁶⁶ Based on conversations with oil palm farmers, these subsidised fertilisers were widely used for oil palm, but were accessed through the food crop farmer groups, while swidden farmers are generally ineligible for accessing these subsidised fertilisers. While the government provided fertiliser cards to prevent misuse of fertilisers in 2018 (ie. reallocation from food crops to oil palm), the local oil palm farmers kept using these cards to access fertilisers to support oil palm cultivation. At the same time, there have been growing issues of fertiliser scarcity in Miau Merah.⁶⁷ In this situation of scarcity and local competition for fertilisers, some prosperous farmers have opportunistically secured fertiliser stocks to sell to smallholder farmers in Miau Merah.⁶⁸ At least, some informal fertiliser suppliers among farmers can add some solutions for their fertiliser deficits.

⁶³Peraturan Presiden (Perpres) Nomor 61 Tahun 2015

⁶⁴ Personal communication with some palm oil farmers in Miau Merah and Badau, Kapuas Hulu, 2016.

⁶⁵ Interview with YE, Janting, Kapuas Hulu, 2016.

⁶⁶Permentan 310/12/2017.

⁶⁷ Interview with J, Miau Merah, 2018.

⁶⁸ Ibid

In contrast, conservation institutions work to limit agricultural expansion by formalising land settlement through land use zoning that see large area of forests become conservation areas. In a conversation with the sub-district head in Badau in 2016, however, it was explained that corporations could still expand oil palm plantations in Badau, as zoning regulations in that area could still be converted to oil palm plantations despite the area surrounding Embaloh Hulu being demarcated as protection forest. Hall et al. (2011, p.65) have explained how the exclusion of local communities from accessing agricultural land can occur because of domestic and international actors seeking to expand conservation zones. In West Kalimantan, state conservation agencies appear to have overlapping authority with development agencies who endorse conservation. In the past, the national forestry authority had demarcated the national park of Danau Sentarum and Betung Kerihun National Park as a preservation area that would forbid any development activities. While, Badau and Silat Hilir are not part of that protection zone, donor conservation agencies have raised the possibility of expanding the protection area in the buffer conservation zone of Embaloh Hulu and Batang Lupar.

According to some spatial plans, the buffer zone was a grey zone between development and protection. However, to prevent the intrusion of palm oil expansion, international organisations have cooperated with local forestry officials to endorse environmental restoration programs. In those areas, the donor agency distributed rubber, coffee and gaharu seeds as part of local forest restoration which were being promoted as part of a local livelihood alternative (GAHARU, 2016). Despite fluctuating rubber prices and the difficulties of growing coffee in local soils, those economic alternatives are claimed as strategies which will protect local land and natural resources from the dangers of palm oil expansion⁶⁹.

Under the influence of conservation institutions, substitution of swidden into permanent agriculture was also promoted to conserve forest. For instance, in 1999, forestry officials and the state conservation agency in Kapuas Hulu cooperated to effectively criminalise slash and burn farming by making land burning an offence⁷⁰. In response, local activists and community members protested these actions until, eventually in 2009, a new national regulation revised this

⁶⁹ Interview with J, staff of international conservation organization, Putussibau, Kapuas Hulu, 2016.

⁷⁰ UU No.41/1999

ruling by incorporating provisions for indigenous farming systems⁷¹. These multiple interpretations created confusion and ambiguity over the different land use zones and allowable land use practices.

In cases elsewhere in Southeast Asia, conservation interventions have been reported to exacerbate local vulnerabilities through eviction and local livelihood losses (Hall et al., 2011, p. 61). Conservation agencies attempt to protect their conservation zones from palm oil intrusion, and this can often destabilise relationships between the national conservation agency and the local community. One such example occurred in Embaloh Hulu over the issue of timber use in Batang Kerihun National park. In 2010, a Dayak Tamambaloh longhouse was burnt and when reconstructing the longhouse, the community harvested timber from inside the national park⁷². Under customary laws, the local community have the freedom to harvest forest resources under the permission of customary institutions. Nevertheless, under formal forestry regulations, harvesting forest resources in the conservation area was strictly prohibited, and these contradictions evoked conflicts with the national park authority. Due to ongoing conflicts, community leaders decided to temporarily shut down the office of Conservation in their area⁷³ until the issue was finally resolved when the conservation authority gave temporary timber harvesting permits to local communities.

During field visits to Embaloh Hulu and Batang Lupar (both of which surround the national park), the absence of oil palm in these villages was identified as contributing to livelihood uncertainties. Some villagers instead depended upon off farm labour work or farm work elsewhere, including within oil palm plantations.

“I worked as a handyman, tapping rubber, sometime hunting for my pleasure. When there was a program, I once planted cocoa but this failed. Then, I planted pepper but this also failed. I depended on rubber [to sustain my household economy]. However, I was assisted by my adult children who lived respectively in Malaysia and East Kalimantan. My son has worked as a financial accountant for the palm oil company in East Kalimantan”. Interview with J, PulauManak, Embaloh Hulu, 2016.

In the context of oil palm expansion in Indonesia, non-government organisations often associate oil palm with loss of biodiversity, soil erosion, problems of greenhouse gas emission and pollution of soils and waterways (Levang, Riva, & Orth, 2016, p. 284). These non-government

⁷¹ UU No.32/2009.

⁷² Personal communication with customary chiefs of PulauManak, in Embaloh Hulu, 2016.

⁷³ Personal communication with J, PulauManak, Embaloh Hulu, 2016.

organizations, however, also expand their focus on negative impacts towards social issues to build up broader public opposition to oil palm development. In Silat Hilir, the downstream agribusiness firms was accused by one international non-government organization of exploiting child labour and paying low salaries, while also destroying rainforest and habitat for *orangutan* (Greenpeace, 2017). This opposition has also seen attacks on financial institutions for unethical investments. For instance, some NGOs have exposed the irresponsible provision of US\$ 1.66 billion of credit from the Malaysian financial bank, from 2010 to 2016, to six large companies in Indonesia involved in deforestation activities and sought to use the financing of palm oil as a critical point of leverage.

Environmental organisations reconstruct the institutional settings of the chain at various scales. At the local level, non-government organisations have worked with some villagers to convey opposition to oil palm, and successfully reshaped local opposition towards the expansion of oil palm plantations (Acciaoli, G & Dewi, 2016, p. 339). In Janting, the influence of NGOs on the local community occurred through engagement between village activists and NGO staff, where the latter actively urged local villagers to refuse oil palm development in the area. For example, in visiting Ulak Pauk in Embaloh Hulu, local community members received small pamphlets from a non-government organisation in Jakarta about the negative impacts of palm oil on their local communities. In these pamphlets, this non-government organisation identifies lack of employment and dispossession from palm oil development.

“Palm oil plantation destroys local livelihoods. The local community has been cultivating food crops for hundreds of years. Rotation and swidden cultivation in particular has allowed for the regrowing of forests. Palm oil development erased that subsistence foods and other agroforestry incomes such as rattan, resin rubber and pepper.” Local pamphlet from non-government organization, NN, UlakPauk, Embaloh Hulu, Kapuas Hulu, 2016.

Such non-government actors tend to present villagers as living in harmony with the environment prior to the introduction of oil palm, who lived as ecologically noble savages powerless to resist the change enacted upon their livelihoods (as described also by Levang et al. 2016, p.284). In Kapuas Hulu, an influential local non-government organisation, Lanting Borneo, was involved with around twenty-four local communities across Kapuas Hulu.⁷⁴ To portray the environmental

⁷⁴ Interview with DU, chief of local Kapuas Hulu’s NGO, Putussibau, 2016.

problems from oil palm, this local activist associates the impact of marginalising customary communities from the challenges of oil palm plantations.

“Currently, we advocate the endorsement of customary rights in Kapuas Hulu. With regard to palm oil development, we ask the customary community to calculate costs and benefits from accepting palm oil development. We can make conclusions that the customary community only received 0.1 percent, yet they lost their rights for 35 years along with their rubber. In fact, by working in their rubber fields, they can use it for their daily shopping needs” Interview with DU, chief of local Kapuas Hulu’s NGO, Putussibau, 2016.

This approach where environmental activists advocate upholding and protecting customary rights appears to have gained some favourable traction in the eyes of local communities. Nonetheless, the inability of the NGOs to differentiate between oil palm as a smallholder crop and large-scale oil palm plantations meant that they can unnecessarily distance themselves from community interests (Levang et al. 2016, p.285). In the pamphlet disseminated by activists, oil palm was linked to labour exploitation, as follows.

“In the Indonesian palm oil sector, labour rights such as decent pay, freedom, and their ability to negotiate are suppressed. Agreements and expectations from palm oil companies about employment are rarely met. Many people face a worse situation than before the arrival of oil palm.” - Local pamphlet from non-government organization, NN, UlakPauk, Embaloh Hulu, Kapuas Hulu, 2016.

This argument seemed to ignore the existence of local participation, both as smallholder oil palm and as wage-earning, low-skilled plantation workers, both of which were widespread in my case study sites. They also failed to mention the continued mutual existence of palm oil labouring and swidden farming, which is often conducted simultaneously to secure an adequate income. From another perspective, the oppositional stance taken by activists acted to raise local expectations about alternative livelihood improvements, which were rarely realised (Acciaoli, G & Dewi, 2016, p. 339). In Embaloh Hulu, for instance, local activists from various non-government organisations in Putussibau promoted swidden cultivation and rubber as a way to sustain their economic livelihoods. This discourse which also seeks to maintain rubber as a part of local livelihood was voiced by non-government organisations in a local seminar.

“Rubber is not only a source of cash income and livelihood activity, but also a founding local livelihood. While the local community shifts to other crops, rubber plays an important role to sustain household economies. Rubber is the social capital for local development” -Presentation delivered by Swandiri Institute in BAPPEDA office of Putussibau, April 19, 2016.

In addition, maintaining rubber and swidden has been promoted as the best alternative to oil palm by local NGOs:

“Before the oil palm plantations came, they could tap rubber, do swidden cultivation, sell Tengawang, harvest durian. They can grasp money. We asked them to calculate that, your land can be sustained for 35 years. There will be non-government organizations to assist you in the agriculture, fisheries and other sectors.” Interview with DU, chief of local Kapuas Hulu’s NGO, Putussibau, 2016.

Nevertheless, aspirations and monetary needs in West Kalimantan have been growing amongst locals, and this has resulted in greater interest in education, healthcare, and goods such as motorbikes and electronic equipment (Levang et al., 2016, p. 284). Involvement in new palm oil opportunities has offered opportunities to meet these desires and needs. In Janting and Silat Hilir, some local farmers acknowledged that palm oil cultivation allows them to engage in the cash economy. Nevertheless, in the areas that had rejected oil palm cultivation, such as the communities surrounding the buffer conservation area of Embaloh Hulu and Batang Lupar subdistricts, local people were confused about what livelihood alternatives could be pursued to help meet cash needs. In these communities that had closer relationships with various environmental activists from Jakarta and Putussibau, local people were more likely to complain about their economic burdens and the difficulties they faced to acquire those basic and secondary needs in the absence of palm oil.

It can be seen that the broader institutional settings of the palm oil sector, most notably the influence of the state and environmental NGOs were creating conditions that were influencing – sometimes in contradictory ways – the nature of community engagement with the sector.

6.4 Customary institutions in Kapuas Hulu

The Ibanic community has a complex customary culture that manages natural resources and addresses conflicts in Kapuas Hulu (Yasmi et al. 2007, p.604). For instance, in Ibanic customary culture, the community lives in a longhouse consisting of between 10 to 30 households, with a longhouse head called the *Tue Rumah*. Between the 1950s and 1960s, Janting village consisted of 12 households living in one longhouse⁷⁵, while Badau had 20 to 30 households living in one longhouse. To demarcate the territory between longhouses, it would be customary for

⁷⁵ Interview with YI, Desa Janting, Kapuas Hulu, 2016.

communally-managed agroforests called *Tembawang* to be established (see Plate 6-1). *Tue rumah* imposed sanctions on any external people who collected resources without their approval, and the negotiation of territorial claims among longhouses was decided on the negotiation between *Tue rumah* and higher leaders of several longhouses, known as *Patih*.

Customary institutions have had a significant influence on the regulation of subsistence cultivation, namely swidden cultivation, in allocating land access and facilitating reciprocal labour exchange. For instance, within Dayak communities in Badau and Silat Hilir, villagers would obtain exclusive rights to family land after it was transferred by their grandfather. Farmers would take the risk and invest energy to open forest areas for their own swidden plots, but only after gaining local approval from customary leaders. Clearing primary forest posed major risks such as being attacked by crocodiles, sun bears, or poisonous snakes. In addition, *Tue rumah* also had the role to monitor labour reciprocity among the household within the longhouse, and they would impose customary sanctions if the labour exchange was facilitated by monetary payments.

In the emerging palm oil economy, there has been a shift in local preferences for individual, rather than longhouse, residency, although this shift is likely due to a confluence of social factors. In Janting, in my personal communication with swidden communities, scarce wood resources as well as past conflict among customary leaders contributed to the diminishing role of longhouse unions. Here, the role of *Tue Rumah* to regulate land and labour access has been diminishing, but now they depended for their customary decisions on the higher level of official, the *Patih*.

Plate 6-1 Collective forest garden (Iban: Tembawang/Tembawai)



Source: fieldwork in Kapuas Hulu

Local Dayak culture and institutions are strongly associated with swidden cultivation. Dove (1983) highlights past studies of swidden cultivation which demonstrated its economic and cultural importance for Dayaks in terms of inheriting collective norms and food production, even as rubber has long been a complement to the cash crop economy for Dayak households (Dove, 2011). Nevertheless, there continue to be several misconceptions from various external actors with respect to swidden cultivators, who are considered incapable and reluctant to engage with oil palm development⁷⁶.

Based on observations in Janting and Silat Hilir, local communities have largely incorporated oil palm cultivation into their swidden plots, revealing diverse attitudes towards both oil palm and swidden farming, with a marked generational pattern. For example, discussions with older people in Janting and Miau Merah revealed their continued commitment to swidden land uses,

⁷⁶ Personal communication with various local government and non-government actors

while at the same time they had begun to embrace the palm oil economy⁷⁷. For example, a 59 year old Iban man explained to me how he had started to grow oil palm in his mixed 11 hectare swidden.

However, it was also found that swidden cultivation is typically valued the least in terms of monetary income amongst younger farmers in three surrounding villages. Due to the influences of urban lifestyles and mass consumerism, the youth were often less interested in swidden farming (as also described by Cramb *et al.*, 2009, p. 329). In Janting, several younger Iban men had invested in education so as to diversify into various cash-based livelihoods. During a meeting with a 41 year old Iban man, it was explained how he had been able to access formal education and related this to the fact that he no longer practiced swidden cultivation. He had slowly increased both labour and capital investments into oil palm cultivation under the increasing affluence of oil palm growing relatives who he had previously encountered during a previous trip to Malaysia:

“In 2013, I went to Lubok Antu visiting my relatives in Malaysia. He shared his story about the unpleasant experience of planting pepper, rubber, swidden and running a local shop. A Chinese man persuaded my brother in Malaysia to plant oil palm, saying it was more beneficial than pepper. I then took 500 (oil palm) seeds. I started to plant despite the warnings of local villagers. Nowadays, I have no longer practice swidden cultivation, as I expect more from the oil palm harvest” - Interview with YE, Janting, Kapuas Hulu, 2018.

Some other Dayaks in Badau shared similar opinions about swidden cultivation. For example, in a meeting with a well-educated Dayak man in his mid-40s, it was stated that swidden cultivation had largely become irrelevant to his livelihood.⁷⁸ Instead, he had invested most of his cash income into rental properties.

“Ten years ago, I had followed my father into swidden farming. Yet, now I no longer do swidden cultivation. I realised the difficult economic situation in Badau. I use income from rubber to invest in rental properties. I am 47 years old now.” Interview with Dayaks in Badau, J, Kapuas Hulu 2016.

Another Iban man in Badau in his mid-30s had moved away from swidden cultivation to local trading after receiving a university degree from Malang. He also preferred to purchase foods rather than grow them.

⁷⁷ Personal communication with swidden farmers above 50 years in Janting and Miau Merah.

⁷⁸ Personal communication with Dayak, J, Badau, Kapuas Hulu, 2016.

“I was born here. I am a local trader, but not a farmer. I purchase my own food, as I cannot depend on this local society. I purchase from Malaysia. I cannot fully depend on the city [Pontianak].” J, Badau, Kapuas Hulu, 2016.

In Miau Merah, it has been found that some older Dayaks, above 50 years, cultivate oil palm in their swidden plots. To inherit swidden, these older generations made mixed farming between palm oil and swidden farmers. Yet, for younger Dayaks, swidden cultivation is often seen as the least productive form of income generation and has little social value⁷⁹. In local interviews, one Dayak man admitted that swidden cultivation is a relatively marginal livelihood activity due to the importance of cash generating activities such as wage labour and oil palm cultivation, and he no longer practised swidden cultivation⁸⁰. One Sebaruk farmer modified his swidden fields to accommodate palm oil cultivation.

“I work in a palm oil company here... I am not involved in swidden, but my parents are. However, I am involved in oil palm and rubber cultivation. Palm oil has not yet been harvested, but rubber has. To me, swidden is insufficient for us.” (AS, Sebaruk, Miau Merah. Kapuas Hulu, 2016).

Furthermore, it has been reported elsewhere how the local transition to perennial cash crops resulted in an increasing pattern of individualised land tenure and the weakening of community governance (Cramb et al., 2009, p. 331). This was observed, for instance, in Miau Merah, where customary institutions had traditionally demarcated village boundaries based on natural signs obtained from their parents. However, to their descendants, obsolete boundaries can create local conflicts in the local adoption to capital intensive crops as oil palm. During field work, one Sebaruk man explained how he preferred using GPS (Global Positioning System) navigation, and the use of a letter of consent from the village head (SKT), to demarcate land boundaries when purchasing swidden from other villagers.⁸¹ Previously, land boundaries among members of Iban in Janting were demarcated according to customary inheritance of natural signs such as rocks and rivers– techniques that are still sometimes applied, but are declining in their popularity. Customary leaders continue to negotiate and demarcate boundaries between neighbours by planting bamboo clumps, as can be seen in plate 6-2.

⁷⁹ Personal communication with various Dayaks below 50 years old in Miau Merah.

⁸⁰ Interview with AH, Miau Merah, Kapuas Hulu, 2018.

⁸¹ Interview with YI, Miau Merah, Kapuas Hulu, 2016.

Plate 6-2 Re-demarcating with small bamboo to secure private property



Source: local fieldwork in Janting, Badau.

Besides an increasing trend toward perennial cash crops, declining traditional practices of labour exchange have also been observed (as also described by Cramb et al. 2009, p.331). In the past, labour exchange was employed in Kapuas Hulu to overcome labour bottlenecks during planting, weeding, and harvesting (Dove, 2011, p. 176) . For Dayak and Iban culture in West Kalimantan, these reciprocal labour arrangements are known as *kabanbelayan* (Sather 2006, p.90). Members of longhouses provided their labour to the other longhouse members in reciprocal arrangements.

With retaining strict reciprocity, each longhouse member is not allowed to give material returns or surplus rice in exchange for their labour (Ibid.). In Iban culture, cooperation between the local community members is particularly useful when it comes to labour intensive activities such as felling trees and harvesting subsistence food crops (Cramb, 2007, pp. 82–84).

During fieldwork, it was found that instead of complying with the traditional labour exchange rule, many instances of labour exchange now involve monetary contributions, where labour was paid in cash. The wage rate is heterogeneous among different villages, and in Miau Merah labour can bargain higher rate due to more off-farm opportunities there. For instance, in Miau Merah, one Dayak paid 80 thousand rupiah per day to villagers who assisted him in his swidden farm.⁸² Due to labour shortages, one Iban revealed that he needed to hire outsider labour by paying 50 thousand rupiah per day to assist him in the harvest of paddy in Janting⁸³ For perennial cash crops, labour exchanges are usually based on monetary exchange and, in both Janting and Miau Merah, labour would be hired for 100 thousand IDR to harvest palm oil fruit⁸⁴.

From a livelihood perspective, the shift towards non-farm labouring work has been adopted as one part of a multi-pronged strategy to continue with their farm plots and can even be used as a strategy to accumulate resources and invest in larger smallholding plots (Rigg et.al 2016, p. 319). Due to the increasing pressure to generate cash to access education and health facilities, numerous local farmers engage in labouring work and cash crop farming. Land dispossession due to plantation development elsewhere has been reported to lead local communities to challenge the unequal outcomes of land enclosure and processes of agrarian differentiation (Hall et al., 2011, p. 160). However, non-farm work has played a significant role in reducing land sales from economically distressed farmers (Ibid, p.154). For instance, a Dayak Iban woman in Janting⁸⁵ expressed her belief that off-farm labour opportunities were no longer restricted just to men. Fifteen years ago, there was no plantation, and women were almost exclusively involved in swidden cultivation. This young woman was divorced from her husband and had been left with a child. Yet, while palm oil plantations did not provide her with significant money, she found this work beneficial because it allowed her meet her daily cash economic needs. The advantage of oil

⁸² Interview with YI, Miau Merah, Kapuas Hulu, 2016.

⁸³ Interview with YI, Janting, Kapuas Hulu, 2016

⁸⁴ Interview with YE, Janting, Kapuas Hulu, 2018

⁸⁵ Personal communication with VM, Janting, Kapuas Hulu, 2016

palm cultivation was that it provided her with the flexibility to also work on her swidden in the afternoons as well.

“The advantage of working in palm oil mills is that money can be earned while I still engage in swidden cultivation. I work from 7 in the morning to 2 in late afternoon. Afterwards I continue my swidden work... Fifteen years ago, women could not seek financial income apart from swidden, yet I can make it to work in the palm oil plantation.” - Interview with KA, Dayak farmers, Miau Merah, 2016.

She revealed plans to also work as an oil palm smallholder. In Miau Merah, young oil palm farmers embraced various off-farm labour work as opportunities to accumulate cash incomes.⁸⁶ Indeed, many had already purchased 4 to 5 hectares of swidden lands from their neighbours to plant oil palm⁸⁷.

In addition, heterogeneous local institutional formations emerge for sharing resources to lower the transportation costs of palm oil. Some farmers sell directly to mills in Sintang. As these mills are distant, transportation costs are a major burden for individual farmers. Hence, they made collective agreements to share transportation costs. Local farmers use the proportion of fruit by weight to be freighted by trucks as a new institutional arrangement.

“For example if you, me and your friend carried a total of 7 tonnes of fruit, you, 3 tonnes, me 3 tonnes, and your friend 1 tonne, there is a total of 7 tonnes which is multiplied by the selling price from the factory and so the transportation cost will be discounted from the total sales revenue. It is determined how much per kilo, let's say about 280 IDR per kilogram. Hence, the heavier they are, the larger the transportation costs.” - Interview with J, Miau Merah, 2018.

Customary institutions in Kapuas Hulu (such as an attachment to swidden cultivation) had once played the critical role in determining livelihood aspirations and engagement with new economic opportunities. These institutions are still important for some Dayak communities, and especially the older generation, and can be seen to have mediated the integration of these communities into the palm oil economy. Yet, over time, the influence of these institutions has tended to decline and the palm oil economy has become an increasingly important influence on local cultural institutions.

⁸⁶ Interview with AS, Miau Merah, Kapuas Hulu, 2016.

⁸⁷ Ibid,

6.5 Conclusion

This chapter has examined the various institutional trajectories that have shaped the livelihood dynamics associated with the expansion of oil palm in Kapuas Hulu. Within the value chain itself, there have been various institutional forms created and maintained by various value chain actors, but increasingly under the influence of powerful lead firms. For example, there have been unequal powers to contract farming opportunities between plantation companies and local inhabitants as local land is incorporated within large-scale oil palm plantations. While plantation businesses disregard the original land owners under contractual agreements, there is another process of establishing palm oil related infrastructure. This infrastructure development provides both choices and access to local inhabitants so they can engage with the larger value chain that reaches beyond Kapuas Hulu, and often in quite beneficial ways. Local actors occupy different positions in the value chain to improve market access and strengthen their position within the value chain.

State actors and NGOs can both improve and potentially disrupt local capacities to adapt to the presence of oil palm plantations. However, it seems that these external institutions often promote their own interests above the interests of people in Kapuas Hulu. Those confrontations result in difficulties for local community members who are faced with major dilemmas when it comes to livelihood choices.

In the choice between maintaining the status quo or adopting cash crops, local institutions in the field study sites negotiate different social norms to embrace oil palm plantations. In fact, a new institutional environment has evolved to accommodate palm oil participation among local community members. The engagement of local communities with palm oil suggest that these communities are assessing the costs and benefits of palm oil and creating institutional responses that in many instances embrace palm oil. Due to increasing needs for education, market-bought foods, many in the local community are turning to the cash economy.

CHAPTER 7: LAND APPROPRIATION FOR LARGE-SCALE OIL PALM DEVELOPMENT

7.1 Introduction

Over many decades, policymakers in Kapuas Hulu have portrayed locally abundant land resources as ‘marginal lands’. More recently, these same actors have promoted conversion of what were earlier characterised as swidden and forest landscapes into large-scale oil palm plantations. According to the logic of policymakers, the state-backed conversion of frontier lands into oil palm can bring about numerous benefits. Those benefits include the strengthening of government influence in the border district as well as increased state revenue from agribusinesses and the generation of employment opportunities. On the downside, the expansion of large-scale oil palm plantations has been accompanied by the ongoing disregard for and marginalisation of local informal land rights and customary access institutions.

This chapter examines the formal and informal processes through which large areas of land are appropriated by agribusiness investors, while local communities are effectively excluded from accessing that land. These processes involve a series of negotiations between investors and both state structures and local communities. The ensuing political negotiations can be seen as a process leading to the effective exclusion of certain actors (especially local communities) from areas designated for oil palm. In their book, *Powers of Exclusion*, Hall et al (2011) explain the complex interplay of processes that are used to exclude some actors from land while privileging others. They identify four powers, which can be summarised as powers of the market, powers to legitimate, powers to regulate, and straight out force, all of which are evident in Kapuas Hulu.

Within broader planning processes, a political discourse of promoting and sustaining the palm oil sector has become enshrined within various spatial planning regulations that influence land use outcomes. Various international organisations also legitimate and promote policies that encourage the expansion of large scale oil palm plantations, with national and local elites often tailoring these development narratives to serve their own interests. These policies, however, have met with strong reaction and opposition from non-government organisations and local communities. Opposition to palm oil has grown substantially and, as described in Chapter 6, this

has been supported by international environmental organisations and NGOs and is leading to sustained public debate domestically within Indonesia.

The state bureaucracy also informally promotes oil palm expansion by purposefully choosing to work through ambiguous legal and spatial planning categories, resulting in decisions that allow for the de facto expansion of oil palm. Within these ‘grey areas’, as stated by Sikor & Lund (2009), local and national governments have a weak capacity to effectively and adequately monitor and evaluate existing and proposed oil palm concessions. Agribusinesses are then able to manipulate these processes to influence the local community, partly through their ability to convincingly present a particular narrative of economic development related to palm oil. Ultimately, these distorted and opaque processes in turn tend to advantage corporate interests by giving them access to under-priced land.

Agribusinesses in Kapuas Hulu, however, found that their patron-client relations with district elites were not adequate to provide them with unfettered access to local lands, and to gain access to land they also had to additionally negotiate with local customary elites. This was due to the nature of the institutional settings of the value chain described in Chapter 6, whereby community consent has become a requirement. Customary elites in Kapuas Hulu were found to use threats, discursive legitimation and regulatory mechanisms to ensure land was effectively provided to companies. This often resulted in major disagreements between different customary leaders and community members about the extent of land to be granted to oil palm plantations. The resulting pressures placed upon customary institutions has also been subsequently exploited by migrants in order to gain access to land. With the declining importance of customary tenure systems, a private land market has arisen as an important further mechanism of land redistribution and exclusion.

7.2 Formal regulatory processes of land appropriation

Areas that have been converted to oil palm plantations have continued to grow, following an approval process mediated by local district elites, even after the local announcement that Kapuas Hulu was to become a conservation district. In 1999, there were few cases of land being provided to oil palm plantations, but oil palm concession land had grown significantly to an astonishing

464,000 hectares⁸⁸ by 2015. Much of this land was allocated through central land use authorities working in partnership with local elites, although the processes of land allocation were often opaque and based on securing mutual benefits for both local and national political elites and agribusinesses.

The production of exclusive access rights over land is ultimately political and involves dynamic power relations (as described elsewhere by Massey, 2009, p. 18). In Indonesia, land use decisions are often made in a top down hierarchical way, involving the Ministry of Forestry and local governments who delineate between development zones and forestry zones (Chakib 2014, p.14). Spatial land zoning is a critical process that involves three tiers of government: local district governments make their own spatial zones (*Rencana Tata Ruang Wilayah Kabupaten - RTRWK*); these are negotiated with forestry officials and their forestry zoning plans (*Tata Guna Hutan Kesepakatan - TGHK*); finally, these are incorporated into provincial zoning plans (*Rencana Tata Ruang Wilayah Provinsi - RTRWP*). This spatial plan then determines the scope of formally allowable activities on particular lands. As a part of these negotiations, local governments typically attempt to reduce areas that are zoned as state forest, thereby opening up land to oil palm conversion. In a general sense, forestry authorities would lose their authority over lands once they had been converted into designated non-forest use areas, such that negotiations over these forest lands becomes an institutional contest between the forestry department and local authorities to maintain territorial influence and possible access to rent-seeking opportunities.

Allocating oil palm concessions (HGU, or *Hak Guna Usaha*) almost inevitably results in access loss for local communities. In the case study sites, two palm oil corporations, PT BTS (PT Buana Tunas Sejahtera) and PT RAP (Riau Agrotama Plantation), were granted HGU concessions under different conditions and even though compensation was provided to smallholders due to loss of land during this process, many believed it to be inadequate. In the land titling and leasing system, power relations work in the favour of the government which is able to overrule the informal property rights of smallholders (McCarthy, 2006). While Chapter 6 described some of the customary institutions related to land access and use, these have generally been marginalised

⁸⁸Data perkembangan perizinan Perusahaan perkebunan di Kabupaten Kapuas Hulu (Keadaan Tahun 2015).

against the overly bureaucratic land tenure systems that have been introduced by the state. The rationale for local government to override local customary land tenure systems is discursively constructed through an argument that these systems are poorly adapted to encourage economic development. Local policy makers have propagated a discourse of swidden cultivators as lazy farmers in interviews with local media (Suara Pemred, 2017):

“We have a large amount of land, yet our farmers are the source of our problems, as the cultivated land has been shifted into sleeping land [ie. underutilised]. The works [of establishing oil palm concessions] should not be delayed and must be started as soon as possible.”

This discursive strategy is then formally complemented by a complicated bureaucratic process for allocated HGU concessions, as presented in Figure 7- 1. For instance, through the permit process, corporations have to negotiate with various state institutions and, prior to applying for a HGU, corporations have to negotiate with local development agencies to get information about land availability, obtain local permits, and undergo environmental assessment (AMDAL). After they meet these various requirements, they can negotiate with the national land agency (BPN) to finally obtain HGU leasing rights. In the complicated bureaucracies, some elites actually provided faster processes to applications by informal negotiation to pass some stages as mere formalities. These complicated settings have promoted informal patron-client relationships between elites and companies to ensure the process is a smooth one.

Much of the land previously accessed by the local community was not formally certified (ie. they did not have formal land title, or *Hak Milik*). One Dayak man explained that excessive costs prevent many villagers from going through the land certification process.⁸⁹

As local villagers have weak formal claims to land, agribusinesses are able to take advantage of formal land allocation systems to gain access (in processes described by Hall et al., 2011, p. 146). For instance, in Badau, company representatives attempted to gain the support of local leaders by offering up-front compensation payments to village leaders⁹⁰, on the apparent assumption that such payments would persuade influential local leaders to convince other villagers to give communal lands to the company. One local community member, alluding to the actions of company spokespersons, said:

“They frequently came into my house to try and persuade me to give up my land by promising employment. I thought all my family members would become field supervisors... Yet, I am now disappointed that I gave 31 hectares of my land.” (NN, female, Janting, Badau, 2016).

In Miau Merah, verbal promises of wealth and jobs were also given by the local palm oil consortia to local villagers in exchange for giving up their lands. In Miau Merah village, a local Dayak palm oil farmer felt deceived by a company official, who made several promises at the time in the formal process when local consent was required.

“The spokesman told us that if we join the palm oil company, we will never suffer loss. We would not have to work, as the dividend would be delivered to us. In harvesting season, we could even purchase a television and receive money. We can just stay and relax in our home.” (Y, Miau Merah, Silat Hilir, 2016).

However, after joining the company by leasing their land in a long-term agreement involving small dividend returns, the respondent felt disappointed by the lack of income he received.

As presented in Figure 7.1, compensation should be paid to existing land users prior to an HGU concession being issued. This process of receiving compensation (and thereby effectively surrendering rights) occurred in a social environment dominated by the company. Using their influence over national and provincial land regulation processes, large-agribusinesses are able to push down land compensation prices far below market prices. During the process of establishing

⁸⁹ Personal interview with HG, Janting, Badau, Kapuas Hulu, 2016.

⁹⁰ Interview with B, Janting, Kapuas Hulu, 2016.

the plantation,⁹¹ the company was in a strong position to dictate terms of compensation, and generally treated villagers as project recipients (who should be thankful for the company “gifts”) rather than rightful stakeholders. In Badau, villagers who supplied land to a local company for 30 years (ie. the duration of the lease), were heavily swayed by the promises of work and income that were made to them during the early stages of negotiations. In return, they were paid 250,000 IDR per hectare (19 USD) (Shantiko et al., 2013). Under a community agreement, previous land holders in Badau subdistrict were to be re-allocated 20 percent of the land that had been given to the company. Nevertheless, under subsequent developments, all plantation land, including the land ostensibly redistributed to the community, came under the full control of PT BTS⁹². Dividend payments provided by the company varied greatly, depending on their fruit harvest and production rates in that particular area, but a single villager would on average receive approximately 60 thousand IDR per month (around 4.6 USD).⁹³ Although it was claimed that the local community had been consulted about the company’s decisions, there were few opportunities for villagers to meaningfully discuss their needs and aspirations.⁹⁴

⁹¹ UU 98/2013 about large-scale plantation.

⁹² Document of Plasma contracts with community

⁹³ Interview with B, Janting, Badau, 2016.

⁹⁴ Personal communication with J, Badau, Kapuas Hulu, 2016

Plate 7-1 Large scale oil palm concession in Badau



NB: The sign reads "Take care!! Fires are dangerous"

In Miau Merah, the situation was different again from that just discussed in Badau. In Miau Merah, the company did not initially provide monetary compensation for acquired land as acquisition happened 20 years ago and compensation procedures were even less effectively enforced at that time. Rather, the company took control by directly managing 40 percent of land allocated to farmers.⁹⁵ Yet, farmers received regular payments for fruit harvested from their plasma production plots, which were calculated based on the weight of total fruit production in all their plasma plots. For a normal season, the total payment would be between 400 to 900 thousand rupiah (or 30-67 USD) per month. Farmers can earn approximately 1 million (or 75 USD) if fruit production is optimal, otherwise the rate will be lower. Through these arrangements, PT BTS, was able to secure over 6 thousand hectares of land under a HGU

⁹⁵ Capturing from local cooperative financial report, 2016

concession.⁹⁶ In Miau Merah, the company was able to secure about 4.5 thousand hectares in total. With these leasing rights, the company was able to assert legal authority over the land and how it was used, including the right to grow oil palm, and the right to redistribute plots to smallholders if they chose.

7.3 Discursive Strategies to Appropriate Land

The formal regulatory system is underpinned by various powerful discourses regarding the most appropriate use of land and processes for allocating use rights. Contestations over land use essentially arise from competing models of reality that have been assembled in order to promote particular interests. Here, discourse is employed by powerful actors to allow the construction of a particular way of framing reality that delegitimises alternative framings (a process elsewhere discussed by Street, 2001). The way in which different discourses are used often shows how power is being contested among elites. Dynamic power relations can also be observed between central and provincial governments as they release and reclassify forest areas for oil palm development. Provincial and local elites have continually challenged centralised national forestry authorities as those central government interests collide with their local spatial formulations for economic development. For example, provincial elites have employed particular narratives in order to resist forestry designation, including the exclusion of swidden cultivators from conservation areas.

“I found that state rights for conservation zones overlap with the [informal] rights of the community. The local district authorities announced a conservation district, yet they also allocated oil palm concessions. The local community lived in the buffer zone and did shifting cultivation, while the conservation area is under management of the central government.” - Interview with provincial forestry staff, Pontianak, West Kalimantan, 2016.

While the classification of forestry land as “Production Forest” enabled some economic opportunities in the past largely related to logging, and National Park designation could help support a local tourism sector drawing visitors to the forest, for the most part forestry management of land is not generally presented as a very promising local economic driver. As a result, provincial and district governments are often keen to endorse forest conversions to other uses, even when this process can effectively marginalise local land use and resource access

⁹⁶ Data of land concession in Kapuas Hulu, West Kalimantan, sourced from local plantation office in Putussibau, 2015.

rights. In 2016, the provincial government formally converted 13.5 thousand hectares of protection forests in Kapuas Hulu into non-forest areas.⁹⁷ According to the political proponents of this process, the conversion of forests would result in new legal rights for the local community.⁹⁸ In reality, it seems clear that the economic and political interests of district and provincial elites was the driving motivation in that conversion as it supported state policies that promoted oil palm expansion, and coalitions of businessmen and politicians would stand to benefit. After those forests were converted into development zones, other local elites also pushed the narrative of opening up ‘marginal swidden lands’. This narrative was also legitimated and reinforced by official development agencies at the national level, although it diverted slightly from a global discourse that advocated the expansion of market-based forms of production as a replacement of traditional farming systems.

Various reports written by multilateral development organisations are similarly underscored by an agenda which promotes rural development and large-scale agribusiness as economically superior to swidden farming. In such reports, the concept of ‘utilising’ ‘marginal’ areas or ‘wastelands’ is discursively presented as a key strategy to increase the efficiency of production. For instance, in the 2008 World Development Report (published by the World Bank), commercial crops were advocated as a key means to achieve poverty alleviation. In line with this argument, commercial smallholders would provide their surplus crops to local markets as a key way to expand commercial agriculture (The World Bank, 2007, p. 3). Furthermore, it was argued that smallholders can be linked to the global food market through direct partnerships with agro-industry (Ibid, p.2). Referring to rural poverty in Africa, the World Bank (2007, p.1) emphasizes that subsistence farming is often the only means by which rural people can survive in economically difficult conditions. While this is undoubtedly true in many cases, it is also the case that many subsistence farmers who have low asset endowments have no option but to continue to endure unfavorable living conditions in subsistence production. The report also suggests that subsistence farmers are frequently “buyers of food and sellers of labour” and that the unfavourable conditions endured by many swidden farmers have rendered them incapable of engaging in commercial crop production. They can only function as laborers.

⁹⁷Presentation of Provincial government to national parliament, May 30, 2016.

⁹⁸Interview with provincial forestry staff, Pontianak, West Kalimantan, 2016.

“Many others are in subsistence farming, mainly due to low asset endowments and unfavourable contexts. Consuming most of the food they produce, they participate in markets as buyers of food and as sellers of labour.” (World Bank, 2007, pp.5-6)

Such assessments help construct a discourse around the perceived inefficiency of traditional swidden farming of the land, which has led to the promotion of large-scale plantation farming to replace local food production. As another example, Deininger et al. (2011, pp.19-21) emphasise the suitability of oil palm production when compared to subsistence farming and other competing commercial crops. They advocate the introduction of oil palm plantations in areas currently known as ‘wastelands’ or ‘*alang-alang*’ (Deininger et al 2011, p.21). The sentiment here is that it assumes that subsistence can be valued at market prices. In fact, different scholars exploring the issue have argued that swidden cultivation was used as a form of survival based on rural self-sufficiency (see Cramb, 2007; Dove, 2011), with surpluses sold to other areas after establishing local self-sufficiency (Clerc, 2012).

In the remote frontiers of the border districts of Kapuas Hulu, the political elite have pushed for the widescale replacement of swidden farming with large-scale oil palm development (Eilenberg, 2014c, p.162). During the post-new order government, national elites were aware that any attempt to destabilise the country’s borders could be a threat to national security. This would be especially so if Malaysian interests expanded their economic activities in Kapuas Hulu. To resist such pressures, national economic sovereignty was established in an attempt to supposedly maintain self-sufficiency and dignity relative to the rising economic power of Sarawak in Malaysia. For example, in 2005, former Indonesian President, Susilo Bambang Yudhoyono, made the following claim:

Our plan is to develop the areas alongside the border for palm oil plantations, forestry, and tourism centres. If we can develop this from the west to the east, security and stability will be better. Palm oil and agricultural cultivation will raise incomes, absorb the workforce and increase regional taxes. Meanwhile, we will be able to keep on nurturing the sense of nationhood and being Indonesian.⁹⁹

In this context, land policies were justified to institutionalise new arrangements that would see the development of the border regions, with national regulations formulated to accommodate large-scale plantations. The President’s statement was in essence motivated from a rising awareness of the underdeveloped status of the border areas (Hamid & Widiyanto, 2001). To

⁹⁹ Political statement of SBY as quoted in Tempo. 2005. Border integrity, Tempo, English edition No. 50. 16–22 Aug.

support the development of the region, a new national land policy of ‘grand design’ was made in 2011, which laid out a 15 year master plan which included a large scale agrarian zone in the border areas of Kapuas Hulu (Eilenberg, 2014, pp. 157–158). The national government pushed the establishment of large-scale plantation estates as a part of a plantation zone (which they referred to as *Kawasan Agropolitan*). Prior to that time, in May 2005, the national grand design included an unlikely plan to release 1.8 million hectares of forest in thin bands (up to 10 kilometres) along the West Kalimantan border area (Ibid, p.167).

Nonetheless, these policies were challenged and opposed by various actors, as activists and affected villagers took actions to oppose these national land use plans. Opponents felt that the government decision to release 1.8 million hectares of land for palm oil development in the border areas was made without consultation and ignored the informal rights of local communities (Wakker, 2006). Often, this opposition was spearheaded by non-government activists to gain public attention, attracting sympathy and network support from particular international NGOs. In turn, international NGOs (along with some international donors) who were critical of these policies applied pressure on national elites within Indonesia in a partially successful attempt to change national land use policies (Ibid). In an attempt to encourage the growth of the palm oil industry, national and local political actors did, however, eventually modify formal planning processes to designate an oil palm zone in the local spatial plans in Kapuas Hulu (Eilenberg, 2014). Local land use authorities approved the release of 360,000 hectares of ‘waste land’ to be converted into palm oil concessions in the border districts (Ibid, p.15). With the euphoria to maintain national sovereignty in the borderlands, agribusiness investors realised that the establishment of oil palm plantations close to Malaysia could lead to cheaper CPO transportation costs.

The ability to construct a powerful narrative about the benefits of oil palm and the backwardness of swidden systems has been critical to legitimising the formal land appropriation process, but it still required the active enrolment of local community members.

7.4 Intimate Exclusions within Communities

Both government processes related to the formal approval process, and the requirements of sustainability standards such as RSPO, require that plantation companies obtain the prior and informed consent of local communities, and for relevant compensation to be paid. The process of

obtaining this consent in Dayak villages was complicated (and was arguably also facilitated) by horizontal conflicts amongst community members. Plantation companies frequently gained access to land through establishing patron client relations with customary elites, which broke the cohesion of longhouse communities.

In these processes of land appropriation, customary institutions are constantly challenged by various external interventions orchestrated by interested parties (companies and their state-based allies) that frequently use customary leaders as instruments of their interests. In the first stage, market powers were a powerful influence over customary elites. Prior to making local land deals, companies negotiated with various village elites surrounding Badau. In an interview with a village elite, I was told how a company representative came to him in 2008 to explain about proposed oil palm operations.¹⁰⁰ During that time, an ethnic Dayak leader occupied the position of village head of multi-ethnic Badau, and the company gave many verbal promises concerning future economic prosperity, if some village leaders that supported oil palm acquiesced to company requests. Afterwards, in 2009, the company representative took village leaders to the company's other plantation in Riau.¹⁰¹ Seeing the apparent material prosperity that came with oil palm in Riau, local leaders were convinced of its benefits.

“About 30 village leaders were invited to a feasibility study in Riau. They were shown the development in the company's concession, and in return we gave the land to them. Yet, those promises were misleading. What they had promised was different to current reality.” (J, Iban, Badau, 2016).

Through these field trips and other activities, the company had expected key leaders in the village to convince villagers to agree to land transfers. After these trips, influential figures and local village elites were also recruited in an attempt to influence other local Dayaks to give up their land. As negotiations progressed, the company sought further way to influence internal community dynamics, and increasingly relied on patron-client relations stretching down to the village level in an attempt to secure the flow of natural resources from village lands. McCarthy (2006, p. 210) provides a similar example of such processes in Aceh, where village and district officials were provided with bribes in exchange for allowing the logging industry to control local resource extraction. Oil palm operations in the case study villages share many similarities with this case and, in Badau, patron-client relations are primarily used to make informal arrangements

¹⁰⁰ Interview with J, Dayaks, Badau, 2016.

¹⁰¹ Ibid.

between the company and local elites. For instance, prior to consultative meetings, an Iban leader in Janting witnessed the behaviour of local village leaders:

“They told us only about the positive aspects of plantations. However, they were lying. Before they acquired the local land, they gave [money] in envelopes [to village leaders]. After they got what they wanted they just left.” - Interview with B, Janting, Kapuas Hulu, 2016.

Surrounding Badau, the company hired various village leaders to act as local representatives who would attempt to mitigate the effects of land dispossession in Iban communities. In Badau, Iban village leaders had been hired by the company to help acquire land throughout the Badau subdistrict. These particular figures were hired due to their linguistic and cultural affinities with other Iban in the area.

“I was recruited to seek land for the company in Empanang in 2008. I had to explain to villagers the way to work in the plantation. In that meeting, I discussed the agenda of village representatives of UPA (*Unit Pelayanan Anggota* – A centre providing services to members). One hamlet has 3 people as a representative. They mediated communication with the cooperative.” Interview with J, Badau, Kapuas Hulu, 2016.

Through what became an influential patronage relationship, the various powers of exclusion (as presented by Hall et al., 2011), including regulation (e.g. as legal basis power for disposing informal rights), force, markets and legitimation were combined by those customary interests to pursue the enclosure of common land. For example, it was stated by other Dayaks in Badau that some village elites came to ask his kin in Badau to join the list of villagers willing to sell their land to the rubber company prior to oil palm establishment in 2013. In Kekurak village in Badau subdistrict, it was stated by villagers that some local elite had deceived their kin into selling land. As land conflicts emerged, customary elites from Kekurak met with NGOs and media organisations to discuss the problem of land dispossession (Chamim, et al, 2012). At the time of the meeting, it was alleged that some local leaders (apparently supported by the company) were intoxicated and acted aggressively toward the activists, damaging their cars and threatening them with violence while riding their motorcycles aggressively nearby. Later, Dayak thugs made explicit threats that the activists would be harmed if they did not leave the local territory.

Customary elites recruited to promote company interests visited their kin in order to deceive them into giving up land. They emphasised that large oil palm plantations would bring financial

prosperity to those who supported them and labelled anyone who rejected this opportunity as foolish and backward.

“In the beginning we rejected oil palm, but there were two people who urged the local people to accept. They said we were stupid when other villages had opened up to large-concessions, but we had not. The company has extensive financial resources that they can use against local people in the court. I think they are impatient, as I suspect they are bribed. They came to other villagers’ houses to urge land sales.”
Interview with YI, Janting, Kapuas Hulu, 2016.

In another instance, I was told how oil palm supporters in Janting village would threaten villagers who refused to support the company, and re-asserted national regulations to strengthen their argument (ie. scaring them with the prospect that they might be violating the law)¹⁰². These customary leaders stated that the land they occupied was state land and threatened local people that if they did not cede access over this land they would later lose it to the state.¹⁰³ In this case, regulatory forces (and their possible enforcement) have been mobilised to intimidate fellow local Dayak villagers.

In various interviews with Dayak community members, it was revealed that many people had hoped that the establishment of oil palm plantations would improve their household economies. For instance, in an interview with local inhabitants in Janting, one Dayak community member sold large tracts of land with the expectation that their children would be given supervisor jobs within the company¹⁰⁴. They later discovered that these promises were not fulfilled and greatly regretted the loss of their land.

On the other hand, those who rejected oil palm were often forced to leave their longhouse community to form new longhouses. Social pressures from large-scale oil palm supporters were imposed upon those who rejected oil palm in such a way that they eventually left the longhouse. Swidden farmers who rejected these schemes were often influenced by NGO activists, such as farmers in Janting, who explained the local influence of environmental activists from Jakarta who had been publicising land issues associated with oil palm cultivation. Highly exaggerated claims were often made by such activists, such as the claim that oil palm plantations have “worse

¹⁰² Personal communication with YE, Janting, Kapuas Hulu, 2016.

¹⁰³ Personal communication with YE, Janting, Kapuas Hulu, 2016.

¹⁰⁴ Interview with M, Janting, Kapuas Hulu, 2016

labour conditions than the past Japanese occupation [during WWII]”¹⁰⁵, when forced labour and physical torture were widespread.

Village communities, then, are presented with highly divergent narratives from external agents about future prospects should they choose to cooperate with oil palm companies, resulting in divided aspirations, sometimes leading to serious horizontal conflicts and even violence. During one interview, one local Dayak man revealed that his father in law had opposed the oil palm company on the basis that the terms and conditions of the agreements were both unclear and fluctuating¹⁰⁶, such that he was subsequently verbally abused as a result. In another instance of intense debate, one man who supported large-scale palm oil ended up in a sword duel (using the machete like weapons known as *mandau*) with another man who was opposed to the company. Other similar conflicts within Iban villages between supporters and opponents of palm oil were commonly reported.¹⁰⁷ Such conflicts can sometimes lead to imprisonment, such as a case in Janting, when an Iban man contested his neighbour’s recently placed boundary markers for land sold to the company, leading him to physically threaten a company representative with his *mandau*.¹⁰⁸ The Iban man was later sentenced to jail:

“My older brother was convicted by the law because of that conflict over the land (boundary). He cannot find a legal solution to that issue. He brought his *Mandau*, and the company representative claimed he was attempting to kill him. He was prosecuted in Putussibau.” Interview with N, Iban, Janting, 2016.

Conflicts can also occur between communities, and are often related to communal and customary territorial claims, such as occurred along an ambiguous boundary between Janting and Semuntik villages. According to Janting villagers, the Semuntik villagers had sold the communal forest of Janting villagers to the company without their permission or discussion which immediately resulted in conflict. This occurred despite various kin and cultural relationships between Dayak Iban villagers of Janting and Semuntik.

“We had a local conflict with the villagers of Semuntik. Prior to oil palm arriving, there was collective land between Semuntik and Janting. However, they pursued their interests to sell communal land to the company. Because their land was very small, they also took our land. Hence, we have a conflict with the villagers of Semuntik over the large-scale oil palm operation.” Interview with R, Iban, Janting, 2016.

¹⁰⁵ Interview with YI, Janting, Kapuas Hulu, 2016.

¹⁰⁶ Personal communication with TT, Janting, Kapuas Hulu, 2016.

¹⁰⁷ Interview with YE, Janting, Kapuas Hulu, 2016.

¹⁰⁸ Interview with N, Janting, Kapuas Hulu, 2016.

In Janting, after customary institutions were challenged, those who rejected palm oil plantations imposed social sanctions upon those who supported previous land appropriations. This included not inviting, or excluding, those who stayed in the longhouse community from attending certain customary meetings to make some local decisions. As a result, several meetings related to oil palm have been shifted to other venues. Similarly, during field work in 2016, longhouse residents in Janting could be very unwelcoming towards external guests if they were staying with households known for their opposition to oil palm. Usually, longhouses were important sites for various social gatherings (as I observed was still the case in Embaloh Hulu), yet the local Iban community in Janting was not really functioning in this way due to increased intra-community conflicts. In Janting, I observed that social gatherings were made in more distant sites away from the longhouse, and longhouse remained comparatively underused (see plate 7.3). Such tensions had become a common feature within community life, and could make field research especially difficult at times.

Plate 7-2 Underuse and partial abandonment of a "modern" longhouse in Janting



NB: Some of the longhouse walls have been renovated with cement to reduce any future risk of fires

These and other conflicts within Dayak communities were frequently perceived, by local migrants and non-Dayaks, as a sign of weak customary institutions that could be exploited to gain access to resources. Some Malays in Badau, for instance, would eagerly disregard the legitimacy of swidden lands and any remaining customary institutions on land conflict resolutions to present a narrative of swidden as ‘dead land’ that should be converted to oil palm.

One such Malay informant even rejected the legitimacy of oil palm smallholdings and insisted on the large-scale plantation model.

“I can see here much dead land, with no real oil palm plantings except those by the company. We shall manage those dead lands to become oil palm. It is better to be converted to oil palm plantation rather than being left to local land management. Beside it can give additional local revenue, it can extend the local employment.” Interview with B, Badau, Kapuas Hulu, 2016.

Furthermore, another Malay villager complained about the malfunctioning of customary institutions and their inability to resolve any conflicts external to the longhouse clans.

“Here the local land conflict was usually resolved through customary institutions rather than through the police. However, in customary land tenure, there are so many rules and a confusing bureaucracy. It is better to apply [formal] policies.” Interview with Z, Badau, Kapuas Hulu, 2016.

In Miau Merah, Dayaks constitute a smaller proportion of the local population compared to Malays and other migrants, such that these migrant groups have more comprehensively challenged the customary practice of swidden farming by the Dayaks. They argued that swidden was a destructive agricultural practice that causes smog in neighbouring countries. The official Village Head (*kepala desa*) explained:

“I need to explain the effect to indigenous farmers. I already tell them the smog will go overseas [to Malaysia]. I did not blame the swidden, but just the way to convert them with slash and burn practices. We find no progress to reduce slash and burning farming. It took two months to socialise that to farmers.” (N, the village head, Miau Merah, Kapuas Hulu, 2016).

The decline in customary resource tenure institutions has also facilitated a further powerful mechanism driving exclusion and unequal land possession among villagers – that of the market itself. Growing numbers of villagers of Badau and Silat Hilir have become engaged in land markets associated with oil palm, such that increasing local economic differentiation has evolved as a result of oil palm development.

7.5. Exclusion and differentiation through market processes

Individuals who have succeeded and possessed large-amount of cash income, either through early adoption of oil palm and hard work or, more commonly, through privileged access to local natural resources, have expanded their interests to acquire more land through local market transactions. In Miau Merah, a younger Dayak man had access to various forms of off-farm

income, including a salary as a field plantation supervisor, and obtained revenue from his planting of rubber and palm oil crops¹⁰⁹. As a result, he purchased a further 5 hectares of swidden land from his relatives to be converted to oil palm. In Janting, one Iban man I interviewed had accumulated financial wealth through his own oil palm harvest, as a relatively early adopter, thus allowing him to purchase a further 10 hectares of land from fellow villagers at a relatively low price¹¹⁰.

At the same time, those who lack initial income or other forms of capital, or whose farms are poorly maintained, or who are exposed to sudden price volatility for their outputs, find themselves forced to sell their land into the hands of wealthier villagers. While a land market accommodates the successful actors to accrue assets, the market also works to exclude those who have been made vulnerable by their fluctuating, but ever-increasing, cash needs. Financial distress caused by the need to pay electricity bills, or to meet various social expenses such as health and education, was a common cause of land sales amongst households I interviewed. In Miau Merah, for instance, where the palm oil economy was more advanced, I met an old Dayak farmer, who claimed to be 101 years old and who was in poor physical condition. He had sold his plasma plot entitlements to other villagers and was subsequently forced to seek off-farm work in and around the village¹¹¹. In a similar case in Janting, a 65 year-old Iban farmer had sold his four hectares to other villagers as he did not have access to sufficient financial capital to properly invest in oil palm, and was reduced to seeking odd jobs in the village¹¹². Oil palm cultivation tends to require much larger upfront access to financial resources than some other crops, and is less amenable to intercropping. As such, processes of social differentiation seem to occur much more rapidly in oil palm frontiers than for other commodity boom crops, and land dispossession amongst kin and community, often based on voluntary negotiations and market forces, is a common pattern.

The process of converting customary tenure towards individual property rights is a complicated one, and no doubt highly varied, but one such mechanism was presented to me in Badau when a Malay man sought to purchase land held under customary tenure. He was unsure of the

¹⁰⁹ Interview with AS, Miau Merah, Kapuas Hulu, 2016.

¹¹⁰ Interview with YE, Janting, Kapuas Hulu, 2016.

¹¹¹ Personal communication with R, Dayak, Miau Merah, Kapuas Hulu, 2016.

¹¹² Personal communication with R, Dayak, Miau Merah, Kapuas Hulu, 2016.

customary land demarcation and the rights of dispossession held by the Dayak individual with whom he was negotiating, such that he called customary elites and various other villagers to determine the new boundary of the land¹¹³. He effectively bribed several influential individuals to secure his claim:

“Previously, I used to only deal with land holders in purchasing land. Now, I need to bring 10 neighbours where my land is located. I give them cash of say 100 thousand IDR [10 USD]. I want to hinder any external parties claims, so that I insist that they collectively point out the boundaries. After that I propose for *SKT* (land claim letter from the village head) to approve with those signs of those neighbours.” Interview with A, Badau, Kapuas Hulu, 2016.

This engagement may actually suggest an increasing influence of customary land institutions over time (compared to the informant’s behaviour in the past) that need to be accommodated by potential new resource users. However, it also demonstrates the relative ease through which land exclusion can occur through the marketisation of land. In Miau Merah, some local migrants would attempt to shore up their claims by obtaining formal land certificates as soon as practically possible to avoid any future customary claims on land that was previously made by land tenure customary institutions. In local land market transactions, they instead invited the customary leader as a formality and as a reference to the past history of that land. In fact, the decision to determine local land sales and purchases was depended more on the voluntary transaction between local buyers and sellers in Miau Merah. In these various cases, it can be observed that customary land institutions were subservient to processes of market-based exclusions, and to the certainty of regulation (formal land certificates), and appeared to be becoming increasingly irrelevant in the regulation of local resource access.

7.6 Chapter conclusion

Large scale oil palm development has resulted in land appropriation and the exclusion of some individuals from accessing land. This has occurred as a result of various mechanisms, including the regulatory processes associated with spatial planning, formalizing private concessions (HGU), through discursive strategies and through establishing local networks with customary elites. While local communities have, at times, been able to call on external institutions to mobilise support for their struggle against land appropriations, sometimes making an impressive

¹¹³ Interview with B, Kapuas Hulu, 2016

resistance movement, they are engaged in a negotiating space with highly unequal power relations. National and local elites have more successfully configured alternative strategies to incorporate regulations, force and market pressure to achieve their aims. The outcome of this process has been large-scale landscape transformation across Kapuas Hulu away from a mosaic of forests, agroforests and swiddens towards a mostly monocultural oil palm plantation, although this process remains incomplete.

Formalizing the process of allocating large-scale concessions combines regulation and discursive narratives to accommodate the interests of global markets. These interests are able to concentrate land resources into their hands through regulatory mechanisms that ensure that this is achieved at a relatively low cost. They rely heavily on negotiation and networking with various national and local elites within the state apparatus. While there has been a countermovement from environmental activists and other NGOs to recognise customary rights and to reject oil palm expansion, this countermovement has largely failed to take into account the reality that many community members are actively embracing the crop and engagement with the broader oil palm economy. Many swidden farmers expressed disappointment towards environmental advocacy groups in that they have been largely unable to generate alternative income-generating activities for the community. As a result, many have established their own oil palm smallholdings in an attempt to secure a cash income.

To acquire local land from customary Dayak communities, large-scale agribusinesses have cooperated with some customary elites to enable the dispossession of previous land users. In that process, customary elites have themselves drawn upon regulation, legitimation (through the construction of a dominant discourse and the manipulation of customary institutions) and even threats to make that happen. The ensuing horizontal social tensions and conflict within Dayak communities has led to the fracturing of customary longhouse institutions in some cases. With weaker customary institutions, land markets have accelerated as an alternative to facilitate “voluntary” land dispossession, resulting in increasing social differentiation in village society.

CHAPTER 8: LIVELIHOOD TRAJECTORIES IN KAPUAS HULU

8.1 Introduction to Livelihoods

This chapter aims to evaluate changing livelihood trajectories which have resulted from palm oil development in Kapuas Hulu. According to the common narratives of environmental activists, the expansion of oil palm results in both rural land dispossession (which was described in Chapter 7) and negative livelihood disruptions. The latter claim is based primarily on the logic that local livelihoods are largely dependent on natural resources and subsistence agriculture. This chapter will assess the changing livelihood patterns resulting from the expansion of oil palm through three village-based case studies. This study suggests that natural resources are of declining overall significance as the sole livelihood asset of villagers. Rather, local people have a range of income generating strategies to allow them to access education services, health services and consumption goods. Ellis (2000) describes the various household assets (also known as capitals) commonly accessed to construct a livelihood strategy as consisting of: natural assets (e.g. land holding); their human capabilities (skills, education, health); financial assets (including financial cash asset); access to physical capital (including infrastructure); and their social networks. Ellis (2000, p.7) underscores the importance of examining various household capabilities and assets to understand their livelihood strategies. In fact, rural dwellers can utilise various livelihood strategies to sustain their household economy in various circumstances (Scoones 1998).

This study will examine local livelihood responses to the expansion of oil palm in Kapuas Hulu, West Kalimantan, and draws primarily on household surveys conducted across three villages (Miau Merah, Badau¹¹⁴ and Janting) that show different levels of engagement with the oil palm economy. Firstly, oil palm development in Miau Merah was the earliest in comparison to other case study villages, where it started in the early 2000s. Due to the early establishment of oil palm, the local community has had a longer time to learn cultivation methods and take advantage of infrastructure development to sell locally cultivated oil palm. Independent smallholder oil palm cultivation began in Miau Merah in 2010. In Badau and Janting, large-scale oil palm

¹¹⁴ Badau is both the name of the case study village and the sub-district (*Kecamatan*)

cultivation has only occurred since 2012, resulting in similar infrastructure developments as in Miau Merah, although the establishment of independent smallholders occurred relatively quickly (by 2013).

There are major demographic differences between Janting, Badau and Miau Merah villages. In Janting, the majority of people are Iban, which means the village is more culturally homogenous (see table 8-1), while the other villages are more multiethnic. In Miau Merah, the multiethnic structure was driven primarily by government transmigration policies from the early 1980s¹¹⁵, while many migrants moved to Badau to pursue logging and then palm oil work. In a story I was told by an Iban man in Badau, Badau village used to be open fields with very few longhouses established prior to 1960s when Iban occupied the areas as part of their swidden cultivation cycle.

Table 8-1 Ethnic composition of each village

Villages	Ethnics
Janting	Dayak Iban (62.5%), Malay (22.5%), Others (Java, Batak, Chinese, Dayak Suruk) (15%)
Badau	Malay (50%), Iban (30%), Others (Java, Sundanese, Arabic, Padang, and Dayak ahe) (20%)
Miau Merah	Java (42.5%), Dayak Sebaruk (27.5%), Malay (15%), others (15%)

Source: survey in Kapuas Hulu

In this study, I have attempted to understand the differential impact of the oil palm economy on different wealth groupings within the villages. Table 8-2 shows the criteria used to determine relative wealth (asset-based and access-based), and the average (and median) reported incomes from each group. The following discussion is based largely on a household survey that covered a total of 120 households (40 selected randomly from each village on the basis of household lists provided by local village offices).

¹¹⁵ Personal communication with Javanese villagers in Miau Merah, 2016.

Table 8-2 Wealth based income categories

Households' characteristics	Poor households	Middle households	Rich households
Criteria	No electricity OR No toilet OR No motorbike	Own at least 1 motorbike, 1 electricity and 1 toilet	Own at least 2 motorbike, 1 television, or own car or refrigerator, and have electricity access and have own toilet.
Average annual household cash income (IDR)	16,100,000	35,500,000	150,000,000
Median annual household cash income (IDR)	15,400,000	30,000,000	107,000,000
% of Survey Respondents	28.33%	55%	16.67 %

Source: Survey in Kapuas Hulu

The chapter will explain the different assets villagers have, income diversification, land use change and livelihood outcomes. In particular, the study will examine how the community continues with subsistence livelihoods, engages with cash crop cultivation and off-farm livelihood activities in the context of palm oil development. In addition to the three case study villages where the formal survey was conducted, I will also make some livelihood comparisons with villagers living in Embaloh Hulu, where large scale oil palm plantations have not yet been established (and so provides something of a control village). The results show that while oil palm has generally reduced natural resource assets, it has led to the development of human and physical capital that have provided income diversification opportunities for villagers and subsequent development of financial capital. These patterns are markedly different from Embaloh Hulu.

8.2 Natural assets

Before the survey was conducted, I conducted a 10 day visit to Pulau Manak and Ulak Pauk villages, both located in Embaloh Hulu. Those who rejected palm oil development in these villages were influenced by NGOs as well as the obvious environmental impacts of polluted water, and local land dispossession.¹¹⁶ Discussions were held with villagers about their livelihood situation in the absence of palm oil development. Many villagers rejected oil palm plantations in order to retain ownership over communal forests and prevent environmental pollution and degradation of local ecosystems. Yet, some of them also acknowledged that in the

¹¹⁶ Interview with S, Dayak Tamambaloh, Pulau Manak, Kapuas Hulu, 2016.

absence of oil palm, they would have to migrate in order to find employment.¹¹⁷ In Ulak Pauk, respondents stated that they still needed food, and they also consumed high-value products and petrol, and purchased gas for cooking.

Prior to the survey in Janting, there was a focus group session to map the condition of local natural assets and livelihood diversification.¹¹⁸ When asked about natural resource loss, participants wanted to focus on local land dispossession, loss of communal forests and decreasing fish resources. Yet, they also found more labour opportunities and other income opportunities from their engagement with oil palm plantations.

Furthermore, in specific interviews about changes to natural assets, respondents in the case study expressed major concerns about loss of land and poorer soil quality. In Miau Merah, some Javanese migrants obtained 2 hectares of land from the government in 1983.¹¹⁹ After the establishment of oil palm, one migrant sold 1.75 hectares of land to a oil palm plantation, but later purchased another 0.75 hectares of land to cultivate rubber. In Janting, swidden farmers sold large amounts of swidden land to oil palm plantations - 31 hectares in one case.¹²⁰ In other circumstances of limited land and growing aspirations for cash needs, swidden farmers cultivated various cash crops on their available land. Survey respondents reported a decline in land access across all three villages (Figure 8-1) over the last 15 years, which had reportedly made it difficult to continue subsistence food production as their primary livelihood activity. Instead, their livelihoods adapted to encompass both on-farm and off-farm income generating activities.

"I cannot make swidden due to losing land to the companies – now I only do fishing and take some remaining forest... Previously, (with large amounts of land) swidden rotations would be 8 years, but now they are only 1 to 3 years.... We also faced difficulties in following government suggestions to certify the land due to the difficulties with the bureaucracy." (HG, Iban, Janting, 2016).

¹¹⁷ Personal communication with some villagers in Pulau Manak and Embaloh Hulu, 2016.

¹¹⁸ Focus group discussion in Janting, Kapuas Hulu, 2016.

¹¹⁹ Personal communication with K, Java transmigrant, Miau Merah, 2016.

¹²⁰ Personal communication with M, Dayak swidden farmers, Janting, 2016.

Figure 8-1 Total of Area of land accessed in all villages



Source: survey, 2016.

When asked about changing soil conditions over the last fifteen years, there was a widespread perception that soil fertility had declined significantly (Table 8-3). The higher migrant communities in Badau and Miau Merah were less interested in subsistence agriculture and had a greater focus on trading and fishing. In the past, local Dayaks employed indigenous knowledge to improve soil fertility, most notably through an extended fallow, but these methods are no longer effective (or possible due to land constraints) to remediate poor soil fertility. Hence, they increasingly use synthetic fertilisers to mitigate poor soil condition in their plots (see table 8-3), including on their swiddens. This fertiliser use was highest for Janting, where in fact swidden is still widespread and suggests a decline in both the quantity and quality of this key livelihood asset. During field work, it was observed that swidden farms would be scattered in upland locations, while rubber fields are typically located alongside rivers (see Plates 8-1 and 8-2).

Table 8-3 Perceptions of Soil Degradation (% of participants)

Perception	Janting	Badau	Miau Merah
Less fertile today compared to 15 years ago	79.49	50	64.86
More fertile today compared to 15 years ago	0	0	2.7
Similar fertility	15.38	25	10.81
Not living here 15 years ago	5.13	18.75	21.62

Table 8-4 Fertiliser Use in Different Field Sites (in %)

Fertiliser usage	Janting	Badau	Miau Merah
Not using	37.50	64.86	47.50
Using	62.50	35.14	52.50

Source: survey, 2016.

Plate 8-1 Upland Swidden Farming with new rubber plantings



Plate 8-2 Established Rubber trees near river



8.2 Physical assets

Despite the degradation of natural assets, palm oil has brought about physical and social infrastructure to the villages that have accepted oil palm plantations. Investments in infrastructure are made by both the state and directly by companies, who justify it as a means to improve supply chain certainty and social legitimacy, as described in Chapter 6. Roads, mills and transportation infrastructure allow for the harvesting of non-storable fresh fruit bunches.

There are important observable differences in levels of infrastructure between villages which had accepted oil palm plantations, and those that had not, and infrastructure development in the latter was noticeably worse. In the case study sites, there was extensive development of physical and social infrastructure. For example in terms of road infrastructure, during the focus group discussion in Janting, Dayak participants acknowledged that an extensive road network had been built by the oil palm companies. In personal communications with villagers in Miau Merah, they also acknowledged the increase in road connections surrounding their village. In contrast, it was not possible to drive a car to enter the village Ulak Pauk. The contrasting poor condition of these roads is presented for Miau Merah (in Plate 8-3) and Ulak Pauk (Plate 8-4).

There were also contrasting claims from villagers regarding access to clean water, with villagers in Ulak Pauk and Pulau Manak claiming that it was possible to drink water from the Embaloh River (a claim made without any water standard tests), while in Miau Merah, villagers believed that the water from the river located near the plantation was no longer safe for drinking. The perceived decline in river water quality in Miau Merah noted earlier was compensated for by the provision of a piped water system (Plate 8-5), which could be interpreted as the substitution of natural capital (Plate 8-6) for physical capital (Plate 8-5). In Janting and Miau Merah, local private sector water provider was responsible for delivering fresh water to local villagers, although in Janting, they needed to pay 3000 to 4000 IDR (about 0.2 USD) per household per month to obtain fresh water. This water infrastructure system was not present in Embaloh Hulu. Rather, villagers still obtained water from the Embaloh River, which inhabitants used water for washing clothes, cooking and bathing.

Plate 8-3 Road Conditions in the Area Surrounding Miau Merah



Plate 8-4 Road conditions in the Area Surrounding Ulak Pauk



Plate 8-5 Piped water system in Miau Merah



Plate 8-6 Direct Water Source in Embaloh Hulu



Figure 8-2 Satisfaction with Education Services in Oil Palm Villages

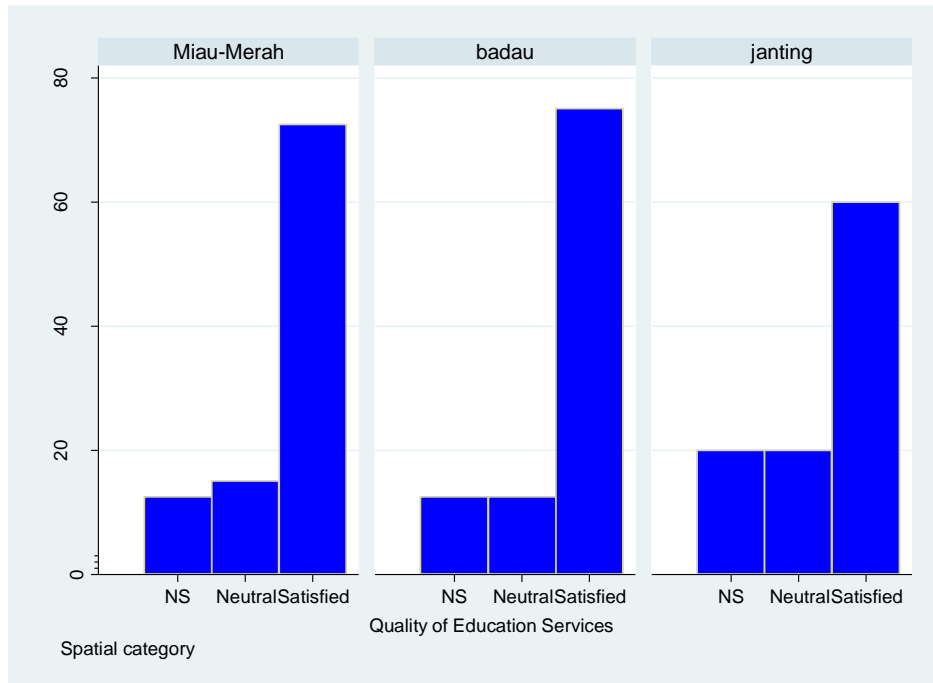
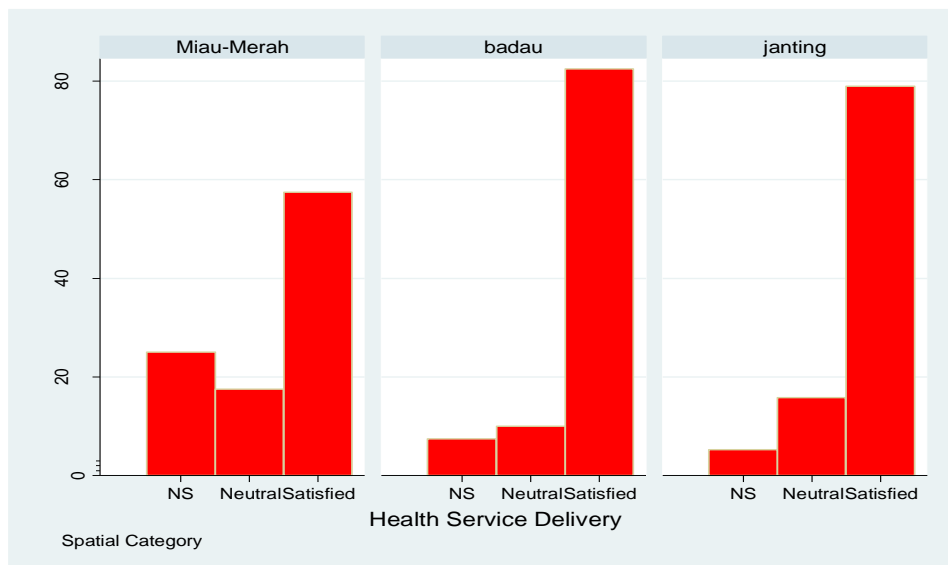
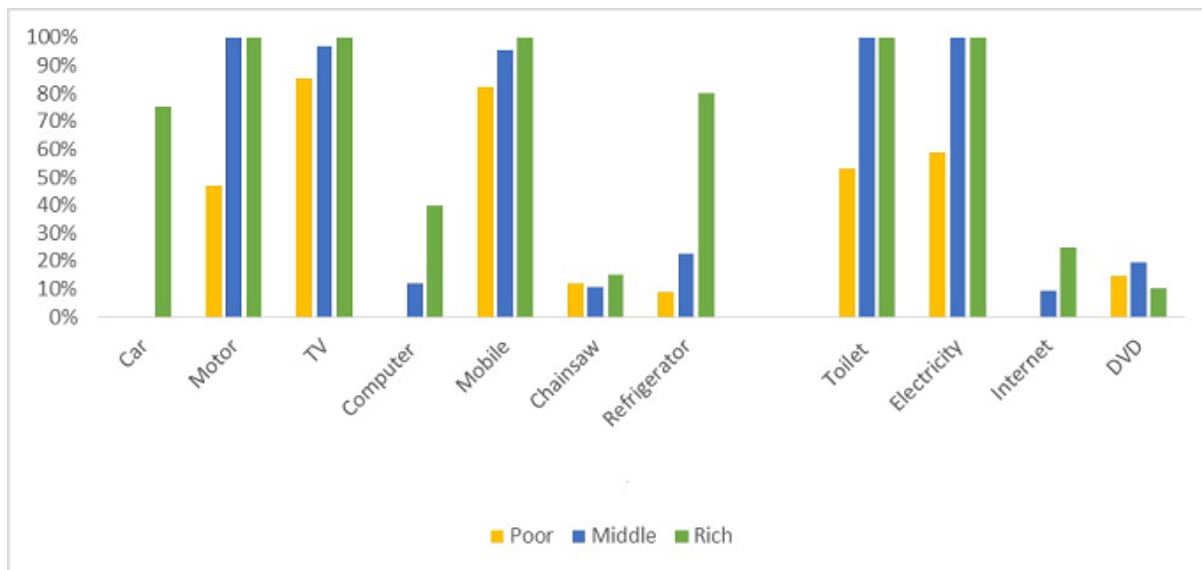


Figure 8-3 Satisfaction with Health Services in Oil Palm Villages



Extensive physical infrastructure development has allowed local villagers to diversify their ownership of various economic assets. According to various livelihood studies (e.g. Ellis, 2000, Scoones 1998, West 2013), the ability to diversify economic assets is often a factor of wealth gained from income generating activities, although these will vary with different classes of wealth. While middle and rich households (who comprised more than 70% of my respondent households) were all able to purchase motorcycles, many poor households also owned motorcycles (See Figure 8-4). The majority of respondents also accessed information through television media and through their mobile phones, which also allowed access to information about palm oil prices and job opportunities outside their village. With the availability of power generators in their villages, the majority of respondents use electrical appliances (see Figure 8-4), although internet usage was still quite low due to weak telecommunications signals. Motorbikes, mobile phones and electricity were considered vital physical assets that improved the livelihood capabilities of households.

Figure 8-4 Ownership of Household Economic Assets of Respondents in All Three Villages



8.3 Financial Assets

Financial capital is important to households in their various livelihood trajectories, and it is equivalent to monetary investments or access to finance that can be used to increase the

productive capacities of particular households (Ellis, 2000, p.8). Financial capital might include livestock that is easily converted to cash and used a mode of savings in many rural communities. Before financial institutions came to the villages, local villagers raised livestock and sold them to acquire cash when needed. To most Dayak villagers living in Janting, livestock has a dual function of being both a monetary asset and used within customary ceremonies. In the case study villages, the most popular livestock are chickens and pigs, which can be sold in the market with approximate prices displayed in Table 8-5.

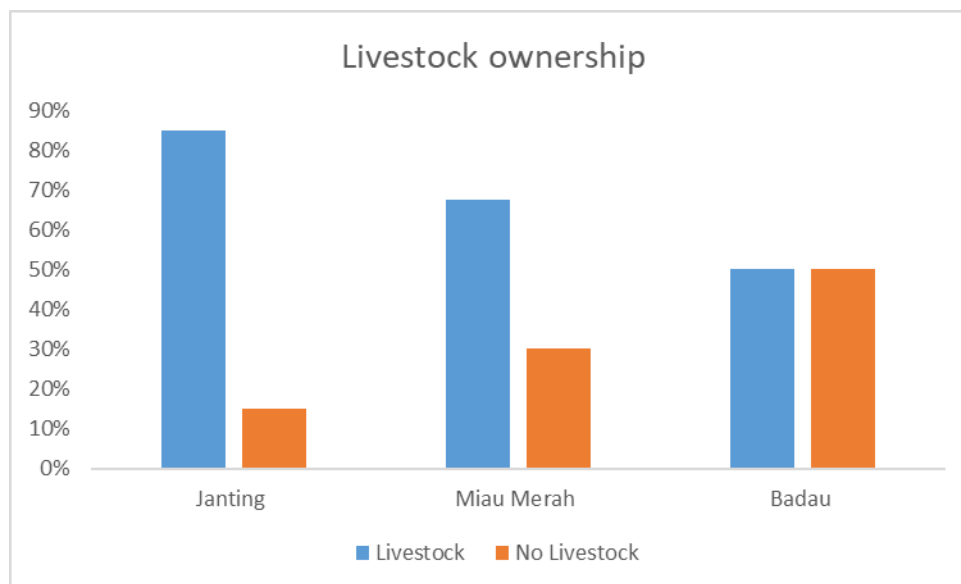
Table 8-5 Price of Livestock (estimated with mid-value)

Livestock	Approximate weights	Mid-Price per kg	Mid - monetary value (IDR)
Pork	30 - 60 kg (mid-45 kg)	IDR 70,000	3,150,000
Chicken (consumption)	2 - 3 kg (mid-2.5 kg)	IDR 35,000	87,500

Source: local market price in Pontianak, West Kalimantan (<http://www.antarakalbar.com/>; <http://pontianak.tribunnews.com>)

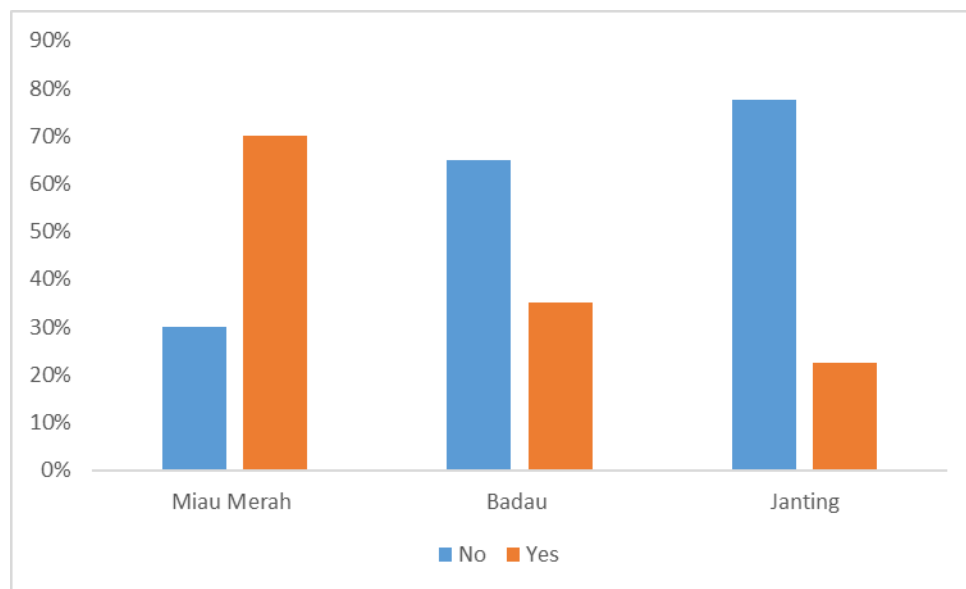
It was found that most Iban respondents (especially those in Janting) owned livestock (Table 8-4) as both household economic assets and for sacrifices in various customary ceremonies (e.g. rice harvest festivals, marriage ceremonies, etc). Across all villages, however, the majority of households owned livestock.

Figure 8-5 Livestock Ownership in each Village



Despite this high dependence on livestock as a financial asset, I also identified increasing access to formal financial services, which appears to have occurred in parallel to the growing availability of financial products associated with the palm oil economy. This is suggested by the increasing access to financial institutions for those villages (Miau Merah) that have been integrated in the palm oil economy for a longer period (Figure 8-5). Since 2001, local financial institutions have provided various services to those broadly engaged with the palm oil industry. In Miau Merah, plasma dividend payments were redistributed to land holders through the mediation of local banks.¹²¹ In Miau Merah, greater financial access is required by local villagers when buying and selling palm oil from mills in Sintang, and when acquiring the inputs required for oil palm cultivation. The majority of households in Miau Merah now access financial institutions (see Figure 8-6). In Badau subdistrict, where palm oil development began in 2012, and where recruitment into the plasma scheme was initially conducted through an informal third party (*mandor*)¹²², fewer villagers access financial institutions.

Figure 8-6 Villagers use of financial products from financial institutions (i.e: own a bank account)

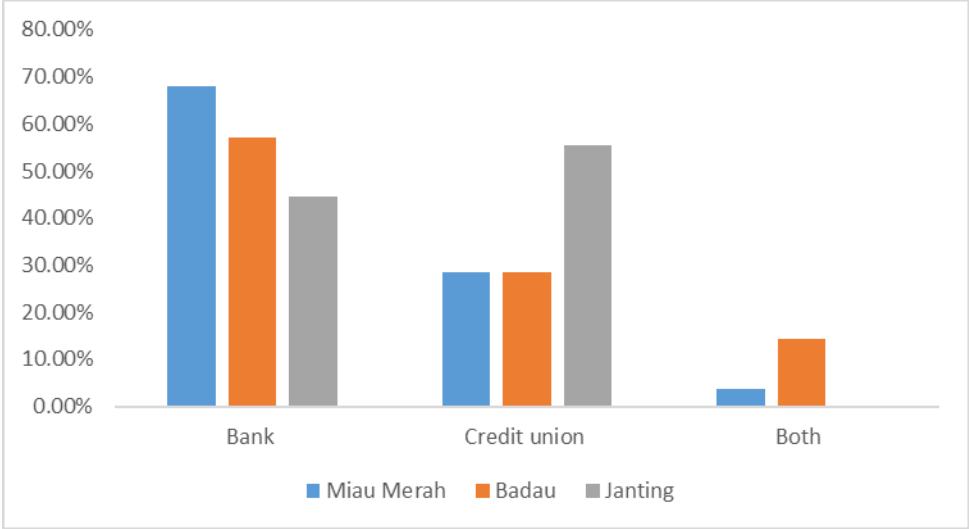


¹²¹ Interview with H, local cooperative, Miau Merah, 2016.

¹²² Interview with T, Janting, Kapuas Hulu, 2016.

With the emergence of financial institutions (banks and credit unions), people choose different organisations for particular reasons. For instance, while it is a one-hour motorcycle trip to Sintang, it offers many local banking branches which serve various financial needs, while banking in Badau is limited due to the smaller population and local banks have cumbersome requirements when providing loans to households. Villagers often struggle to access credit due to not having formal land tenure and hence collateral for loans, while fieldwork in Janting suggested that many people were accessing the less-restrictive credit unions (see Figure 8-7).

Figure 8-7 Preferences for Accessing Financial Loans



In West Kalimantan, the main credit union was initiated by a foundation from Pontianak, *Yayasan Pancur Kasih*, in 1996, and most of its users are farmers (Giring 2013). In 2001, *Yayasan Pancur Kasih* established a branch in Kapuas Hulu to deliver a variety of financial services to rural communities and since that time there have been an increasing number of credit unions serving rural households. The requirements to access credit from credit unions are much less restrictive than other mainstream financial institutions, and many credit unions are directly approaching longhouse or Dayak communities to offer financial services (CIFOR ASFCC Team 2014). With expanding loan disbursement, these local microfinance institutions increase accountability and remain under the supervision of relevant financial authorities. In 2015, their performances were monitored and under the surveillance of the government’s financial watchdog (OJK) (Bisnis Indonesia 2015).

8.4 Human Capital

Within the literature on livelihoods, education and health are recognised as a part of human capital, and Ellis (2000, p.5) underscores the importance of education and health as a basis for livelihood diversification. Well educated and healthy individuals are able to more easily switch between non-farm and on-farm activities (Ellis 2000, 66). Younger population structures are also generally more productive and able to contribute to household livelihood strategies. Table 8-6 presents the age distribution of all individuals within respondent households across the three villages, suggesting that Miau Merah has the highest proportion of young people as a result of higher in-migration.

Table 8-6 Age Structure in Three Case Study Sites

Age range groups	Janting (%)	Badau (%)	Miau Merah (%)
0-20	31.21	36.69	37.13
21-40	36.31	31.36	37.13
40-64	26.11	28.4	21.56
above 64	6.37	3.55	4.19

NB: This refers to all family household members (total: 473 individuals)

With the relatively lower proportion of aged individuals, respondents in Miau Merah also have a higher chance of having obtained formal academic qualifications as compared to villagers in Janting. Table 8-7 shows that the school accomplishment rate is much higher in Miau Merah than in Janting, where a full 31% of individuals have no education and no intention of future study. With greater human resources, people in Miau Merah have more opportunities to switch between farming and non-farming sectors, while in Janting, villagers are heavily dependent on family members to enter into the cash economy.

Table 8-7 Academic Enrolment and Accomplishment

Formal Education	Miau Merah (%)	Badau (%)	Janting (%)	District Average
Does not possess any formal qualification & no longer studying	14.37	16.27	31.01	28.07
Not yet reached school age	11.38	1.81	3.16	
Studying in elementary school	13.17	18.07	12.03	
Holds elementary school certificate & no longer studying	16.17	21.08	18.99	
Studying in junior high school	7.19	6.02	5.7	
Holds junior high school certificate & no longer studying	17.97	13.25	10.76	26.1
Studying senior high school	1.8	3.61	3.16	
Holds senior high school certificate & no longer studying	13.17	15.06	12.03	13.24
Studying for diploma or bachelor	1.8	0.6	0.63	
Holds diploma or bachelor certificate	2.99	4.22	2.53	3

NB: all family household members (total: 473 individuals), the district average are cited from BPS Kapuas Hulu

(<https://kapuashulukab.bps.go.id/>)

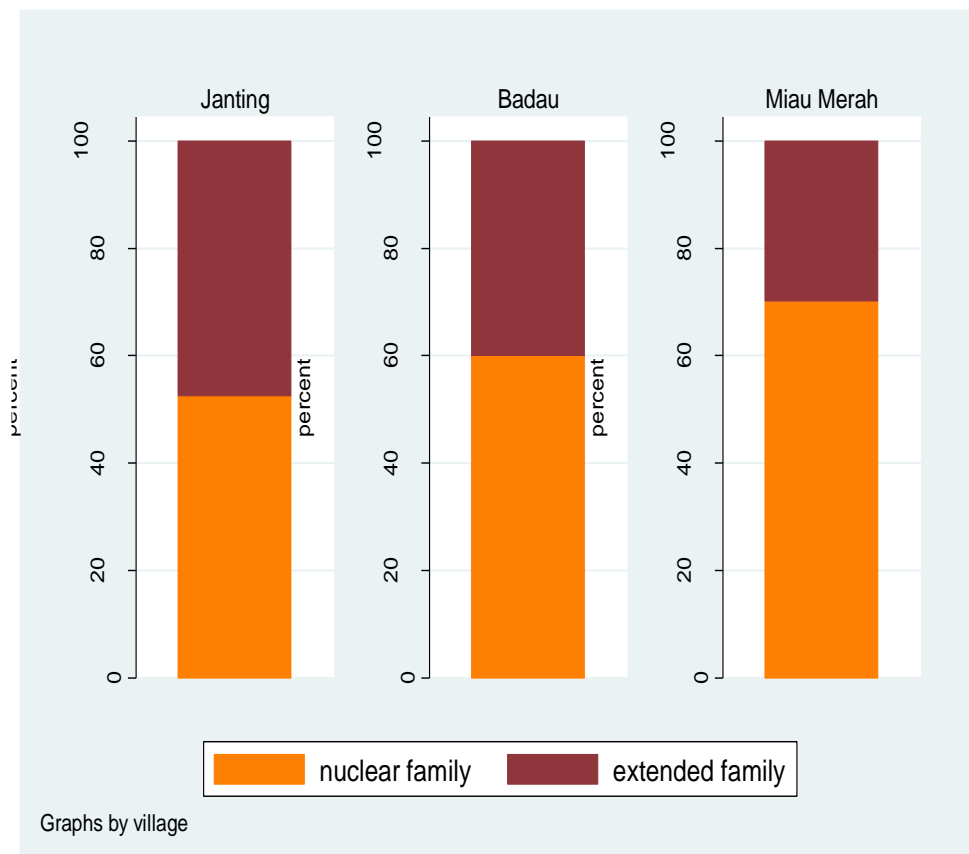
8.5 Social Capital

Social capital is defined as social support from social networks as well as the claims, affiliations and associations that are used to pursue various livelihood strategies (Scoones, 1998, p.8). In Kapuas Hulu, there exists social support from the government to poor households, such as the subsidised provision of rice to the poorest households (based on an official list of poor households made by the government). Observations during field work revealed that these lists have been controversial among rural villagers as lists are often outdated and invalid, with reportedly very poor targeting and distribution in the program. Through the program, eligible households can purchase rice at the highly subsidised price of 2,500 IDR per kilogram. My household survey also found apparently poor targeting within the program, with a relatively even distribution of participation rates across all three wealth categories (Appendix C). Otherwise wealthy households were also benefiting, suggesting that they probably possessed important social capital, such as social connections with village elites involved in the original listing process.

Local villagers also form extended households as a way of exchanging social support among different generations. According to West (2009) an extended family is defined as two or more nuclear families living together in one house, suggesting that such configurations offer enhanced flexibility and support among household members to pursue their livelihood strategies. West (2009, p.279) suggested that extended families also include the married children with spouses who live with their parents' house. This includes a more flexible internal distribution of labour, with support for productive-age individuals to find off-farm wage work, while elderly family members often reciprocate by contributing to housework. With constrained human resources capabilities, Ellis (2000) reveals the possibilities of specialization of each member according to their human resources to the advantage of larger household sizes. Based on observations in Kapuas Hulu, households in Janting depended more on using younger family members to find off-farm work, while leaving farm work to older family members.

Respondents in Janting village depended more on these extended family exchange mechanisms compared to other villages, but they are still quite common across all villages (see figure 8-8). Households took advantage of having large numbers of family members by diversifying into off-farm livelihood activities. There were numerous Dayak respondents in Janting with between 7 and 12 people within one household. It seems that poorer households are more likely to depend on such informal social networks than wealthier households, and that increasing involvement in the cash economy (away from subsistence agriculture) was also associated with declining numbers of extended family households. Poorer households were more reliant on family transfers (Figure 8-10).

Figure 8-8 Nuclear & Extended Families across the Three Case Study Sites



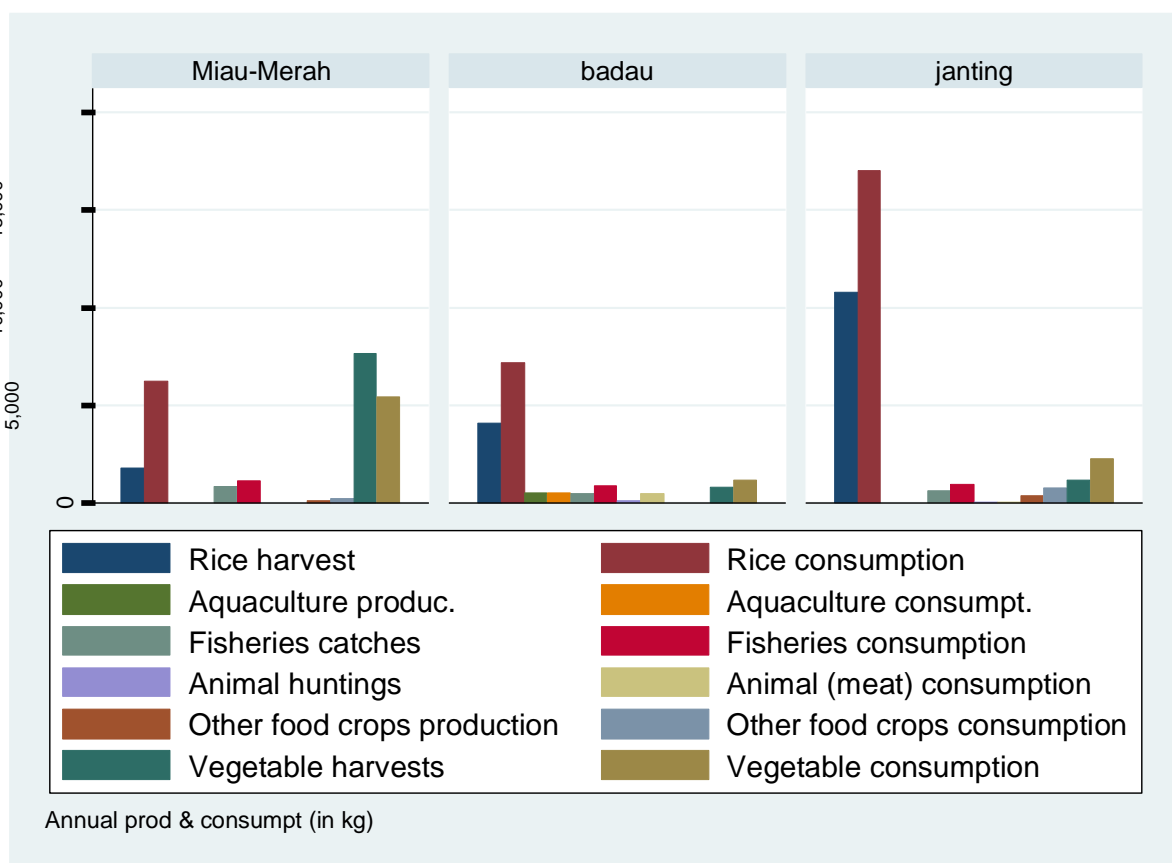
8.6 Changing Food Production & Cash Income Diversification

Recent agrarian studies show that swidden communities are increasingly less reliant on subsistence forms of production (e.g. studies by Cramb (2015) and Potter (2015b)). These studies indicate that livelihood activities have shifted to both cash crop cultivation and off farm livelihood activities, and reflect patterns also observed in my case study sites. With the emergence of cash crops, there has been increasing environmental pressure affecting swidden farming systems. In an interview with an Iban farmer in Badau, he explained that ten years ago he followed his parents into swidden farming, but he no longer considered swidden production the best way to meet his food needs, but was now devoted to pursuing various off farm

businesses.¹²³ In fact, harvest failures, pest threats and increasing consumerist values have been strong reasons for farmers to move out of swidden farming.

With their smaller landholdings, and with new environmental pressures, farmers in the case study sites have faced major difficulties in producing food. The exception was Miau Merah where Javanese migrants were engaging in more intensive forms of production that offset small land sizes and contributed to a surplus of vegetables (see figure 8-9), some of which was sold into local markets.

Figure 8-9 Annual Subsistence Production & Consumption Per-village



(Y-axis refers to aggregated annual production in kilograms, (sample per village = 40, total sample 120))

Where off farm income opportunities were more available, people tended to purchase processed food. To them the risk of seeking a cash income was much smaller than the risk of harvest failures, and cash incomes are seen as crucial for the purchase of higher value consumer

¹²³ Interview with J, Badau, Kapuas Hulu, 2016.

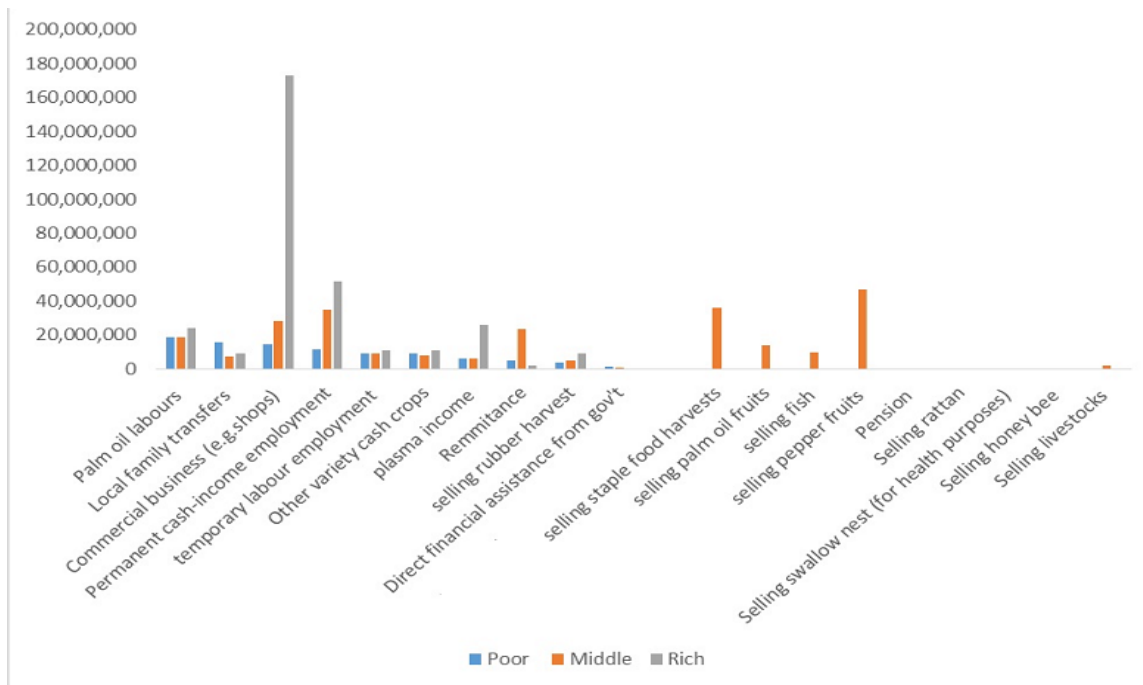
products, while also allowing for the education of family members. In the three case study sites, the presence of infrastructure has allowed them to access markets to purchase higher value consumer products such as televisions and processed foods. In fact, in Janting, there has been a growing concern that households are increasingly dependent upon cash in order to meet their basic needs¹²⁴. Due to concerns over the low level of educational attainment, many families invest in the education of their children and siblings.

Various non-agricultural income sources were identified across the case study villages (see Figure 8-10), and were strongly correlated with particular wealth groups. Interestingly, the sale of certain agricultural produce (pepper, fish, palm oil and rice) was only really important for the middle wealth group (many of whom had invested their off-farm income back into agriculture), while both poor and rich income classes were more reliant on non-agricultural income. Rich households, however, obtained higher incomes from trade, non-agricultural work and plasma dividends (ie. those well-connected individuals who benefitted from earlier land appropriation processes), while poorer households were comparatively more reliant on casual (non-permanent) work as plantation labourers.

Before oil palm was introduced to Kapuas Hulu, many rural villagers had migrated overseas to seek remittances to support their family members in their villages. Since palm oil was introduced, there have been some opportunities for younger family members to share their domestic wage with other family members (through local family transfer).

¹²⁴ Personal communication to various swidden farmers in Janting, Kapuas Hulu.

Figure 8-10 Cash Income Sources of Different Households

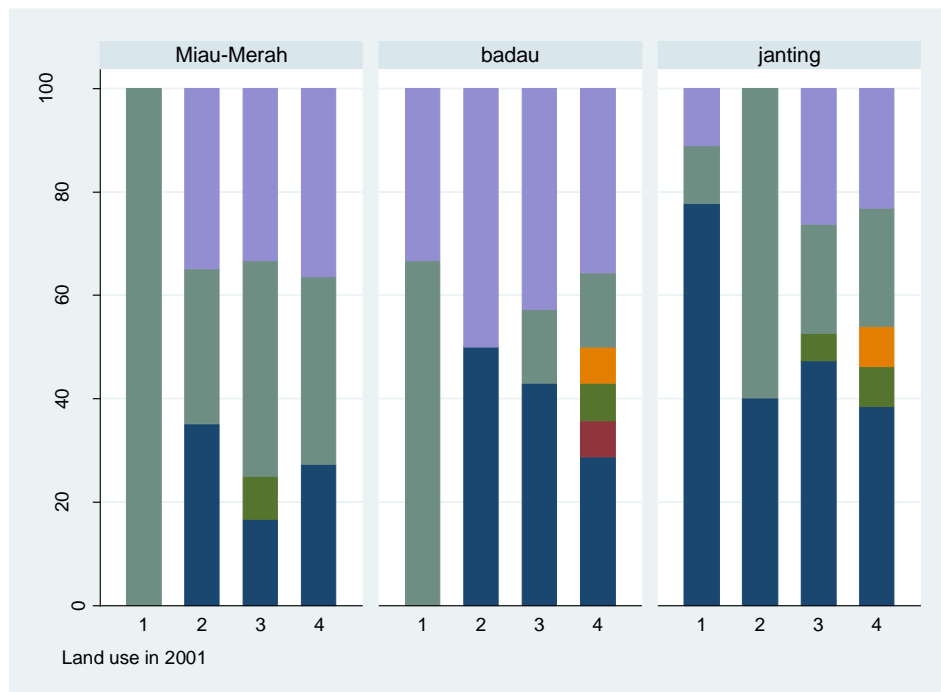


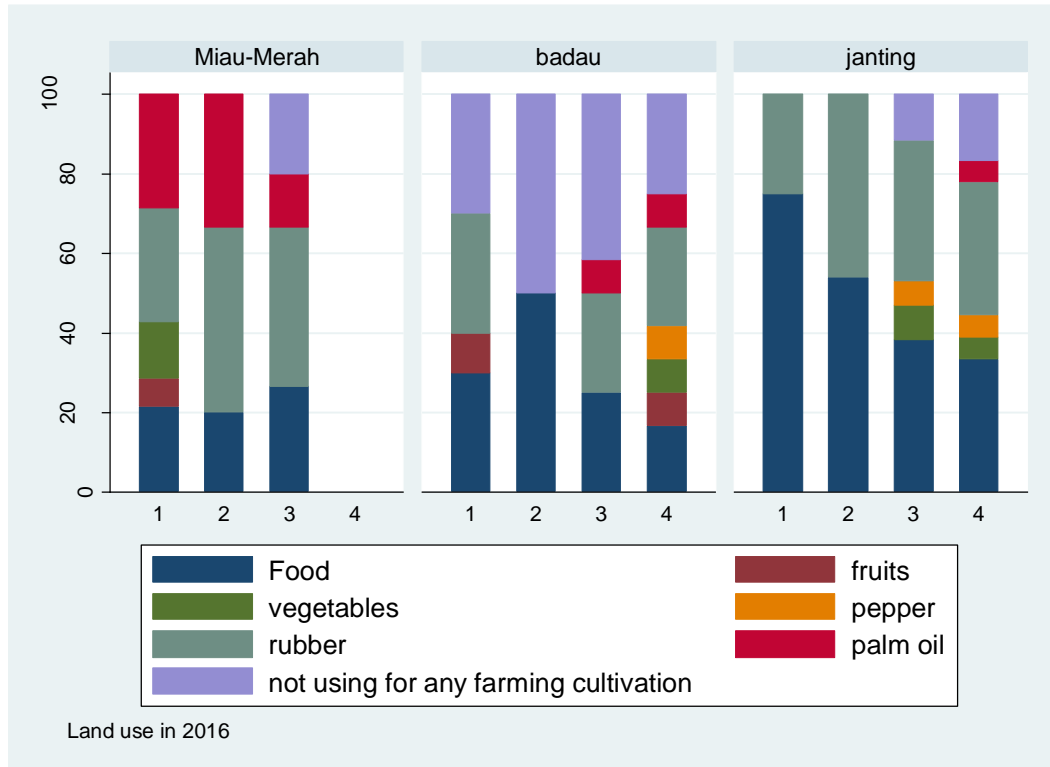
8.7 Analysis of Land Use Changes and Livelihood Outcomes

The introduction of large-scale oil palm cultivation into the case study sites has had major implications on local land use. Prior to oil palm development, local communities in rural forested areas faced major difficulties in purchasing food. For instance, swidden farmers faced difficult mountainous footpaths to reach Sarawak, which was less than 50 km away. In 2001, most of their land was used for food subsistence and rubber crops (see Figure 8-10), with rubber planted in response to the presence of middlemen in their villages. When oil palm was established in the region, there were already existing market structures, but they were relatively limited and often acted to supplement subsistence food production at a time when cash needs were less intense. The widespread access to assets such as mobile phones, electricity and motorbikes (which all have high ongoing maintenance costs) have all contributed to the rapid rise of these cash needs. Nevertheless, the presence of industrial plantations resulted in a major shift in agricultural production (Mertz, 2015, p.734). On one hand these plantations saw farmers alienated from their traditional lands, but on the other provided them with new opportunities to access the market. Figure 8-10 suggests that shifting livelihood strategies have been paralleled with a shift in

dominant land uses. With the introduction of oil palm, land use within villages has also visibly changed, with a major shift away from rubber across the three villages. The largest percentage of households who participated in oil palm cultivation was in Miau Merah which was due to the early arrival of palm oil and extensive infrastructure development. Oil palm cultivation appears to have occurred amongst those households who previously claimed to have access to large fallow areas of land. More than 30% of respondents who cultivate oil palm have plots less than 3 hectares (see figure 8-11). Due to the more recent arrival of oil palm in Janting, fewer people cultivate oil palm, although those who cultivated oil palm (in Janting and Badau) tended to be households who have land above 3 hectares.

Figure 8-11 Household Land Use between 2001 and 2016 based on land size





(Note: 1 is ≤ 1 ha; 2 is 1.01-3ha; 3 is 3.01-10ha; 4 is >10 ha) ; y axis refers to the percentage of households for which that land use is dominant. In the 2016 survey, the random sample in Miau Merah did not select any respondents with land use of more than 10 hectares. Refer to Appendix E.

These results demonstrate that the increasing adoption of oil palm by smallholders, and this (along with corporate plantation-scale developments) is profoundly reshaping local land use patterns. Rubber has often been portrayed by conservation and non-government organisations as an important source of cash income for local inhabitants, and that interventions such as a certification program was responsible for increasing rubber prices from between 5000 to 6000 IDR per kilogram, to 14,200 IDR per kilogram (Bisnis.com 2017). Other local activists insisted that rubber played an important role acting as a land buffer and protecting water reservoirs¹²⁵, although rubber is planted along waterways and in various upland areas (see plate 8-8). However, other actors (including some politicians) were more sceptical of the capacity of rubber to satisfactorily meet livelihood aspirations, due in part to unstable pricing. One politician claimed:

¹²⁵ Local NGOs presentation in Putussibau, April 2016.

“Rubber cultivation has been popular in the areas surrounding West Kalimantan. Yet, the factory was located in Pontianak [700 kilometres from Kapuas Hulu]. Farmers faced discounted price due to high transportation costs. If the price goes down, it exacerbates poverty in West Kalimantan.” Interview with politician during a media visit to Kapuas Hulu.¹²⁶

In the case study sites, rubber was commonly identified as the cash crop of least economic importance for local inhabitants, and far less important than both pepper and oil palm. Farmers tended to only harvest rubber during periods when they urgently needed cash, as suggested by one farmer who stated:

“Even though I have rubber, I have not yet tapped it. These days I am more comfortable to cultivate *padi* (swidden) and working as a palm oil labourer... I follow other people to work as a palm oil labourer... working in oil palm plantation is not complicated, just chopping down [fruit bunches]. Previously I got rid of the [rubber] bark and would harvest... but today I am chopping down.” (TT, Iban, Janting, 2016)

Plate 8-8 Rubber Cultivation in Upland Areas



Source: local fieldwork in Janting

Along with a broader agrarian transformation, positive contributions appear to have occurred towards local well-being over the last 15 years, at least as reflected in survey responses (Table 8-

¹²⁶ <http://www.dpr.go.id/blog/kegiatan-detail/id/1558/berita/1232>

8). Moreover, the vast majority of respondents believed that the palm oil sector had had an overall positive effect on their quality of life, and this was highest in Miau Merah, where the sector was more established. While a majority of households in Janting were also positive about the effects of palm oil, there was also a sizable number who were more sceptical and this may be related to the ethnic composition of the village (predominately Dayak Iban). Focus group discussions in Janting suggested that households were most positive about the potential of oil palm to provide cash income, housing and improved educational opportunities, but many were also concerned about potential changes to their culture and lifestyle. To other locals in Badau and Miau Merah, the palm oil economy has been seen more emphatically as a way to boost their economic well-being. As presented by a younger Dayak man (less than 45 years old) in Miau Merah:

“there are no significant yields for planting swidden... with expanding palm oil local people can have better purchasing power...they can purchase motorcycles... while there is natural resource degradation...but there is economic improvement as well.” (D, Dayak, Badau, 2016).

Table 8-8 Household Well-Being & Attitudes toward Oil Palm Plantations

Well-being over the last 15 years (%)	Janting	Badau	Miau Merah
Getting worse	5.13	12.5	7.5
Similar	48.72	40	50
Better/improving	46.15	47.5	42.5
Positive response towards the effects of palm oil (%)			
Yes	65	80	90
No	35	20	10

Note: (sample per village = 40, total 120)

8.8 Chapter Conclusion

Large-scale oil palm operations in Kapuas Hulu have seen the establishment of primary production for a global value chain in an otherwise remote rural space. The dominant role of downstream lead firms in promoting production of palm oil has proven to be an almost irresistible force reshaping landscapes and livelihoods. A particular type of agrarian transformation has taken place, whereby households have reduced access to natural assets (especially land), but have also seen new economic opportunities and improvements to rural infrastructure.

The improvement of infrastructure in particular improves the capability to diversify into off-farm income, allowing households to use various productive assets to improve their prospects of cash income generation. Market connection has been a crucial factor in the pursuit of smallholder oil palm cultivation. Local communities prioritise better education, health and consumption goods and, in these pursuits, middle and rich households have been most successful in diversifying their income from both on-farm and off-farming sources, often drawing on pre-existing assets. Having the advantage of greater economic assets, some middle income and rich households are cultivating oil palm in small plantations, while households with limited access to various economic assets mostly earn income as temporary labourers.

However, the extensive and dramatic nature of changing land use dynamics has prompted a battle among environmental activists (many of whom promote the maintenance of rubber as a source of cash income) and palm oil proponents (including many within the communities). Environmentalists claim that rubber cultivation fits with local land uses. Indeed, local communities seem hesitant to harvest rubber in the context of fluctuating local rubber prices, and many simply maintain rubber as a backup in the case of urgent cash needs.

Somewhat surprisingly, the majority of respondents have perceived improvements in their well-being over the last fifteen years at the same time as oil palm cultivation has expanded. Local aspirations toward well-being in the survey are based on preferences to improve cash income and improve basic needs (e.g. education, health).

In brief, this study reports on a profound agrarian transformation in Kapuas Hulu that has both landscape and household-scale implications, finding that the boom in oil palm cultivation is radically reshaping livelihood opportunities and aspirations. This study has considered various aspects related to changing livelihood trajectories, such as the local capabilities to diversify livelihood assets, apply different livelihood strategies, and to change land uses practices in response to palm oil development. In the three case studies, palm oil development has induced changes that provide opportunities for local households to diversify their livelihood assets, earn cash income and participate themselves in palm oil cultivation. While the advance of oil palm cultivation in Kapuas Hulu is certainly not occurring without some resistance and community opposition, the generally positive community attitudes are found even when a loss of natural assets is also acknowledged. Communities within the three case study villages were generally not

opposed to oil palm – as a commodity – and indeed, most viewed the nature of changing livelihoods as positive, but they expressed a desire to be in far greater control of the conditions under which they became involved in the sector. This finding highlights the vital importance of the institutional settings (described earlier in Chapter 6) in providing the framework through which community engagement takes place.

CHAPTER 9: CONCLUSION

9.1 The Research Problem

This research has examined the processes through which a profound agricultural transformation is unfolding as a result of the spatial expansion of the palm oil economy in Kapuas Hulu. It has addressed both the institutional drivers of this transformation and the institutional, community and household responses to a highly dynamic situation. The research objectives evolved from within a framework of political ecology scholarship where resource management and rural development problems are not considered solely technical issues, but are often a product of political economy. This thesis applies such an approach to trace the cause and effects of these problems.

Political economy explains specific processes of agrarian transformation processes and social differentiation between (predominantly, but not exclusively) rural households and capitalist industries. Political ecologists underscore the importance of unequal power relations between those actors within a capitalist system (Neumann 2009, p.228). The political ecology approach suggests a need for important discussions around diverse cultural adaptations, social relations, control over natural resource access and the nature of social relations of production under capitalist markets, and for these to be examined at various scales.

In the Kapuas Hulu case studies, various natural resource management challenges have emerged as a result of land use competition between agribusiness industries and smallholder farmers. With the growing commercial attractiveness of palm oil as a commodity, the agribusiness industry is strongly driven to acquire access to large areas of land for primary cultivation and this often involves the appropriation of land previously claimed and accessed by local communities. The appropriation of smallholder lands is widely achieved with the explicit support of various state institutions in such a way that local communities have very little opportunity to dictate the terms through which their livelihoods and land are being fundamentally reshaped within the palm oil economy.

Frontier lands in Kapuas Hulu are discursively presented as natural resource abundant areas in a politically-important border location, making it a spatial battleground over which national elites are attempting to assert control. In the ensuing agricultural transformation, the processes of

establishing large-scale oil palm operations in the rural spaces were followed by attempts to suppress smallholder capabilities and their active participation in the emerging economy. Yet, at the same time, frontier communities have not been passive in this process, and my research presents the way communities have worked within the broader institutional constraints of the palm oil value chain to respond in sometimes surprising ways. In the process, Dayak Iban communities are actively reshaping the constellation of institutional constraints to reposition their engagement with the expanding palm oil economy.

Through the case sites of Miau Merah, Badau and Janting villages in Kapuas Hulu, my study scrutinises institutional changes, power structures and livelihood changes amidst the spatial penetration of the palm oil economy. Specifically, I formulated three research questions to examine the broad processes of political ecology in Kapuas Hulu:

1. What role do institutions perform in shaping the spatial expansion of oil palm cultivation?
2. What are the processes involved with land conversion and land appropriation that enable the ongoing spatial expansion of the oil palm economy?
3. How is the spatial expansion of oil palm transforming rural livelihood aspirations and strategies?

Ethnographic field work was undertaken in the Kapuas Hulu District to examine these complex ecological and institutional problems, and involved a combination of field interviews, participant observation, focus group discussions, household surveys and discourse analysis.

9.2 Institutions and Oil Palm Expansion

Prior agrarian research suggests that the incorporation of rural communities and households into large-scale oil palm development has adverse impacts (e.g. Hickey and du Toit (2007)).

However, a starting point for my study was that the impact on communities and households is far from homogenous and is difficult to predict, and it appears to be highly contingent on place-based contexts. This is suggested, for example, in the diverse outcomes reported in Jambi, Sumatra (by McCarthy, 2010) and in West Kalimantan (by Potter, 2011), where local

engagements as land managers and contract farmers were reported. In response to these findings, I sought to understand the specific institutional framework that shapes the engagement of local communities with the palm oil sector, and I understood this framework to be multi-scalar. I therefore applied a multi-scalar institutional analysis that borrowed from the Global Value Chain (GVC) framework and examined the institutional settings generated: i) from within the value chain by lead firms (and generally understood as chain governance structures); ii) from the broader influences of non-firm actors along the entire value chain; and iii) by local informal, customary practices within Kapuas Hulu.

This case study indeed finds that the institutional settings that mediate the relationship between agribusiness firms and the local community in Kapuas Hulu are multi-scalar and while the dominant consequence of these settings is that local communities are mostly constrained in their room for action, the settings also provide some opportunities for community negotiation to define the terms of engagement. Various formal and informal institutional codes and agreements (including corporate policies, the political economy of firm-state relations, the state regulatory system, and indeed some customary land tenure systems) are constantly changing, but tend to limit the degree of autonomy and control communities have over decisions that shape land use futures.

This approach extends the existing scholarship within studies of political ecology by incorporating the tools of global value chain theory that underscore the powerful influences of both firm-level governance and institutional settings, and examining how these interact with the local household economy. In this study, it was found that leading palm oil companies (many of whom were strongly vertically integrated from plantation through to branded manufacturing) extended their reach into local communities through the establishment of physical infrastructure - by extending road and manufacturing mill investments. These policies were driven by both firm-specific corporate attempts to increase efficiencies, reduce costs and shore up supply certainty, as well as by an attempt to establish ethical legitimacy for their branded consumer products in diverse markets. This extension of infrastructure has played a key role in opening up livelihood and market opportunities within communities.

In their value chain study, Bolwig et al. (2010) emphasised how rural households with adequate capability assets can configure their strategies to simultaneously engage in multiple value chains

in a way that enhances inclusive participation. Even with restrictions being placed by some plantation companies on the supply of fruit from smallholder oil palm farmers, infrastructure improvements allowed access to alternative palm oil factories elsewhere (eg. in Sintang). Furthermore, engaging in the value chain as labour on a plantation was often a means to accumulate capital that could be re-invested in oil palm plots and to change their value chain function to one of oil palm fruit supplier. Prosperous farmers in Badau and Silat Hilir had also transformed themselves to assume further value chains positions, for example as middlemen providing a link between farmers and factory. The ability to assume multiple value chain positions in these cases enabled wider market access.

In local Dayak Iban cultures, social values related to collective resource management approaches were customarily closely associated with swidden cultivation. While swidden systems have been maintained by some Dayak communities (particularly the older generation), there has been a shift towards the planting of oil palm on swidden alongside or following rice, which will presumably have longer term implications for fallowing and soil regeneration. There was an important intergenerational difference in responses and attitudes towards swidden cultivation, with older villagers (above 50 years old) desiring the continuation of swidden practices due to its importance to cultural ceremonies, while the younger generation is less committed to swidden. Even so, many of the older generation maintained that the fallow phase of swidden cultivation could be utilised by practiced through a mixed agroforestry garden including oil palm. However, there are challenges to this strategy and, indeed, the younger generation have tended to entirely replace swidden lands with oil palm as subsistence production was considered an obsolete livelihood activity. Associated with this shift away from swidden, traditional labour institutions based around reciprocity have been significantly monetarised (something which was taboo in the past). Labour reciprocity, however, has not totally disappeared, but this particular social institution has evolved and adapted to oil palm. Households from various multi-cultural backgrounds are pooling collective resources in new ways within the palm oil economy, such as for the purpose of transporting palm oil fruits to Sintang. Similarly, smallholder institutions (formal farmer groups as stipulated by government) have emerged to enable access to subsidised fertilisers from the government, which are used for both food crops and for oil palm.

The global value chain approach is thereby helpful in allowing a multi-scalar analysis of the institutional settings that shape local household participation in the palm oil economy. This ranges from the governance strategies of multinational corporations through to state regulatory structures, NGO codes of conduct, and customary institutions related to labour and land access. These institutions mutually interact to create a set of livelihood possibilities for rural households in Kapuas Hulu. As such, I argue that a specifically value chain informed approach to political ecology, one which examines corporate strategies as an important institutional form, presents numerous opportunities and insights that are likely to be helpful for future studies in political ecology.

9.3 Processes of land appropriation

To understand the actual processes through which land appropriation and conversion to oil palm occurs, this research has extended and adapted the powers of exclusion framework developed by Hall et al. (2011). I do this by presenting three fundamental processes of appropriation: spatial planning and formal regulation; discursive strategies that legitimate oil palm expansion; and informal intimate exclusions within the community, including market forces.

In the political ecological scholarship, struggles over the control of resource access have been discussed as the attempt to suppress traditional livelihood strategies in favour of large-scale industry. For instance, in Aceh, political ecology was applied by McCarthy (2006) to highlight the challenges facing the local agricultural system in the face of powerful industrial logging interests. In Sarawak, national authorities suppressed the ability of swidden farm systems to pursue traditional livelihoods when confronted with the interests for large-scale oil palm operations, constructing a discourse in which local Dayaks were presented as incompetent, lacking the capacity and skills to properly manage local resources (Cramb 2016).

This thesis has added a research contribution to these processes by presenting a case study of how discourses of national economic sovereignty have been further employed to support and legitimate large-scale plantation development policies. This reflected an attempt to resist possible foreign economic claims in Kapuas Hulu and integration within the Malaysian economy, legitimating the establishment of oil palm plantations as a political imperative. The formal regulatory and spatial planning processes in Kapuas Hulu that enabled the establishment of HGU plantation leases were strongly supported by legitimating discourses, especially in regards to the

supposedly unproductive, backward, and inefficient swidden systems. National elites integrated their agenda of national economic control with the interests of large agribusinesses, as they attempted to erase and exclude informal land access through spatial regulations and policies.

During the formal process of gaining plantation concessions, this study finds that these narratives have a dual function to both suppress swidden farming through formal regulation as well as manipulating the aspirations of local communities. It was found that market actors devised subtle narratives to encourage more local people to “freely” dispose of their land in the interests of palm oil operations. By enticing local communities with dreams of a comfortable and prosperous life, company representatives were also able to convince many local people to give up their land for plantation development following a social approach of repeated village visits. Yet, these verbal discourses were frequently not accompanied by written agreements, and market-based processes in this social and discursive environment meant that land deals were made that enabled companies to effectively access land at relatively cheap prices.

The literature on the political economy of agrarian change (e.g. Neumann 2009, McCarthy 2006) has frequently identified intimate partnerships between local district elites and industrial actors as a powerful mechanism for local land dispossessions. This research presents another avenue through which industrial actors cooperate with various local customary elites to further their land dispossession agenda. The role of local village elites in Kapuas Hulu was quickly exploited by corporate interests to draw upon the powers of force and intimidation to pressure villagers not to oppose oil palm development.

Land dispossession also occurred in Kapuas Hulu through what might be considered a voluntary market-based process, although this needs to be understood in the context of strong legitimating discourses and promises of life improvements. Nevertheless, many Dayak villagers in my case study were genuinely interested in embracing the palm oil economy, believing that it offered themselves and their families the best life opportunities, and made market-based transactions over their land. Differing opinions and attitudes towards oil palm within the community often resulted in heated debates and social tensions, sometimes rising to threats of violence and physical conflict. Those supporters of oil palm supported their case through the force of national regulatory frameworks and other legitimating discourses. They threatened and mocked those who rejected large-scale oil palm, while counter mobilisations were also pursued by those

rejecting oil palm expansion, including social exclusion from longhouse organizations and forms of civil disobedience towards the state.

The emergence of local people as a smallholding oil palm supply base in Kapuas Hulu has facilitated further land exclusions, as local processes of accumulation have driven the more successful smallholders to buy up land from their neighbours. The palm oil economy has thereby facilitated an intense process of agrarian economic differentiation among villagers, as those with financial and social capital are able to accumulate more land. On the other hand, the losers have sacrificed their access to physical and natural assets in an attempt to meet their growing cash income needs for their households. Hence, the land market itself has functioned as a process of appropriation causing unequal land holdings and “voluntary” land dispossession among villagers.

9.4 Rural livelihoods in the palm oil economy

Different agrarian studies have presented a variety of livelihood implications resulting from palm oil development. This scholarship tends to emphasise the deterioration of natural resource assets and a broader shift towards the adoption of oil palm smallholdings in West Kalimantan (for example, the study conducted by Potter 2015b; Potter 2016). My research contributes a further detailed picture of the increasing diversification of livelihood assets, strategies and outcomes in Kapuas Hulu, which was supported through a household survey approach.

In other past studies, Dayak Iban were assumed to highly value their land as an important symbol of prosperity, wealth and cultural identity (Cramb 2007). Hence, an egalitarian ethos and a commitment to self-sufficiency (in nearby Sarawak) resulted in the sustenance of swidden-based rice hill cultivation. Nonetheless, in my livelihood survey on the Indonesian side of the border, there appear to be much stronger pressures working against the Iban communities to preserve natural asset based livelihoods like swidden. Decreasing land holding size and poorer soil conditions were identified as strong driving forces, which were partly addressed through the application of fertilisers, but this drew households further into a cash economy and the gradual adoption of “modern” agricultural techniques. Although a comparative study of Iban responses in Sarawak and Kapuas Hulu was beyond the scope of this thesis, the comparison of livelihood strategies with Cramb’s work in Sarawak supports my argument that livelihood responses are

strongly shaped by the prevailing institutional settings operating at multiple scales, as already discussed.

In the current institutional context of Kapuas Hulu, many respondents felt positive benefits resulting from oil palm development, especially regarding the extension of physical infrastructure (such as roads), and social infrastructure (e.g. schools and health facilities) which would otherwise be poorly provisioned. With the increasing availability of these infrastructure facilities, many households developed capabilities to broaden market access and diversify their cash incomes.

In previous studies, there has been much discussion about the shift from swidden into various cash income opportunities, such as palm oil labour or cultivation of oil palm (e.g. Potter, 2015b, Cramb, 2015). This study provides a further explanation of how the adoption of particular livelihood strategies is closely related to wealth income categories among households (as determined by asset ownership and access in the survey). In my case study villages, middle and rich households tended to have the economic capabilities to engage with their own oil palm cultivation, and obtain employment in the palm oil industry in skilled positions. The wealthier households were also associated with investments in small businesses and trading opportunities, many of which had emerged along with the multiplier effects of the palm oil economy. However, poorer households found themselves depending to a greater extent on casual manual labour on the plantations as they became drawn into the cash economy from a less advantageous position.

My research also tracked the land use changes that accompanied shifting livelihood outcomes across the three case studies, finding that both rubber and oil palm were increasingly planted within and alongside swidden fallows, although each crop seems to serve a distinct livelihood function. Despite relatively extensive areas of land planted with rubber in the case study villages, rubber was not generally identified as having strong economic-development prospects. Instead of offering a genuine pathway out of poverty, it was often considered to offer a complementary source of cash reserve during times of emergency. This was in contrast to oil palm, which was planted with the hope of generating wealth, but a higher risk strategy (whilst rubber plots generally required far lower investments of capital and labour). As such, rubber was rarely converted to oil palm, although interestingly swidden plots did seem to be converted. This

differentiated livelihood role is somewhat problematic for opponents of palm oil development who advocate rubber as an environmentally-friendly alternative to oil palm.

In my survey, livelihood outcomes were also evaluated by assessing perceptions of changes in well-being over the last fifteen years, finding that households generally perceived substantial improvements over this time. For many respondents, these improvements were associated with the introduction and expansion of oil palm (despite an apparent loss of natural livelihood assets due to land appropriation). Most importantly, these perceived improvements were driven by the enhanced availability of social and physical infrastructure (education and health) in their communities along with the availability of various income-earning opportunities.

Therefore, this thesis has uncovered the processes of political economy driving land appropriation (and dispossession) in Kapuas Hulu and the institutional structures that are instrumental in shaping outcomes for local communities. However, in the livelihood survey, I also found that the natural resource base of livelihoods was no longer considered important relative to cash income opportunities from off-farm economic activities. There has been a clear shift whereby natural livelihoods assets (access to land and forests) are being substituted by financial (cash income) and physical capital assets (infrastructure), which collectively facilitate improvements in human capital (health and education) – or at least improved access to these social facilities.

9.5 Implications and limitations of the study

The study extends the finding of other case studies examining agrarian transformations and the palm oil economy (such as those in Sarawak, Jambi and Sanggau), which highlighted the various livelihood complexities and spatial process of differentiation. A common thread through these studies, supported by my research in Kapuas Hulu, has been that those individuals and households with initially weaker access to livelihood assets tend to more rapidly and comprehensively marginalised. Consequently, less well-endowed households have struggled to seize the opportunities available in the palm oil economy, suggesting the need for compensatory social support systems – possibly provided by the state – as access to natural assets had previously performed a similar social security function. However, in the different political economic and institutional setting of Sarawak, it appears that households were more empowered to actively engage with the palm oil economy on their own terms.

My case study exhibits more complexities in the local adaptations that incorporate oil palm cultivation within livelihood strategies, and a key distinction with previous studies was the way I incorporated modes of value chain governance as an institutional form that shaped outcomes in Kapuas Hulu. For some local households, global governance structures and their reach into Kapuas Hulu had provided opportunities for market access and infrastructure development.

Field work observations also developed an appreciation of local responses by households to engage with multiple value chain positions as they participate in oil palm cultivation in more inclusive ways. This finding is in contrast with certain policy assumptions that smallholders are incapable of effectively participating in oil palm cultivation. Smallholder households are clearly not just functioning as development recipients, but are actively escalating their roles as producers and contributing to the local economy. Hence, in the process of making local economic development decisions, this research recommends policy makers to listen to the aspirations of smallholders as engaged stakeholders in the development process, thus allowing them to improve social welfare outcomes. A key limitation of this research was that, due to limited resources and time constraints, my research does not explore the roles of financial institutions to improve rural livelihoods in Kapuas Hulu in any detail, despite the potentially transforming effect that financial access could have for local livelihoods. By using livelihood methodologies and approaches, future research can offer other insights into those rural financial institutions to uplift livelihood changes in the local emerging palm oil development.

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Appendices

Appendix A Interview Topics

List of interviewees and interview topics

1. Community Members

- a. Local community demography & social economic characteristics
- b. Community perceptions toward large-scale palm oil development
- c. Changing land access, employment and living expenditure (including food and non-food needs)
- d. Land tenure systems & organizations
- e. The consultation process & involvement from palm oil development

2. Government officials

- a. Perceptions toward palm oil development
- b. Land use planning and allocation processes in Kapuas Hulu
- c. The formal procedures and rules for palm oil permit
- d. The information dissemination & consultation process of large-acquisition process to publics
- e. Palm oil's decision making process and hierarchy

3. Non-Government Organizations (NGOs)

- a. NGOs codes of conduct & structures
- b. NGOs perceptions towards the palm oil development
- c. NGOs program and interventions in Kapuas Hulu
- d. NGOs external relationship and cooperation

4. Plantation Companies

- a. The rationale to develop palm oil business
- b. The financial sources & investments
- c. Human resource recruitment, wages and Standard Operating Procedures
- d. The application process to obtain concession
- e. The consent and information dissemination in acquiring land
- f. Corporate social responsibility (CSR) programs

- g. Industrial relations to external stakeholders

5. International organizations

- a. Organizational structure and codes of conduct
- b. The perceptions toward palm oil development
- c. The program and interventions in Kapuas Hulu
- d. The rationale for that program in Kapuas Hulu
- e. Consultation process and engagement with external stakeholders

Appendix B Household survey to track farmers' livelihood change in Kapuas Hulu

1. Interviewer and date
 - 1.1. Interviewer's name :
 - 1.2. Interview data :
 - 1.3. Household number :
2. Respondent characteristics
 - 2.1. Name :
 - 2.2. Age :
 - 2.3. Gender :
 - 2.4. Ethnics :
 - 2.5. Where do you live :
 - 2.6. When did you live in this village: (a) Since I was born (2.8) (b) migrant coming in
 - 2.7. Where did you live before if you are migrant?
 - 2.8. Are you household head? (a) Yes (b) No (2.8)
 - 2.9. What is your relationship with the household head? (a) Children (b) Wife (c) other relationship, please state.....
 - 2.10. Who are living in your home? (a) one nuclear family (b) extended family (more than 2 nuclear families, or any other relatives)
 - 2.11. How many are the household members in your house:

3. Household memberships

No	Relationship with you	Gender (Male/Female)	Age	Education

4. Household assets

Assets or facilities	Units	When it was purchased/accessible
Car		
Motor cycles		
Television		
Computer		
Mobile phone		
Chainsaw		
Refrigerator		
Rice grinding machine		
Personal toilet/bathroom		
Electricity		
Internet access		

5. Livestock

5.1. Do you have livestock? (a) Yes (b) No (6)

5.2. How many livestock do you have over five years?

Livestock	Units in 2011	Units in 2016
Fighting chicken		
Chicken		
Pigs		

6. Land ownership and acquisitions

6.1. Private land rights

6.1.1. How many hectares (or plots¹²⁷) of land of your private land in 2001: 2016:

6.1.2. If in plots, how much in average of hectare is in one plot: (a) 0.5 hectare (ha) (b) 1 ha (c) 2 ha (d) 3 ha (e) others, specify.....

¹²⁷ Some people of Dayak Iban did not understand hectare in previous interview, so they measure their fields by plots (*bidang*)

6.1.3. Describe your status and their areas (in hectares or plots):

No	Certified	Area in 2001	Area in 2016
1	Ownership right certificate (SHM)		
2	Lease right (HGU)		
3	Right to build (HGB)		
4	Statement of land rights from village head (SKT)		
5	Private plots (not having any acknowledgement letter)		
6	Government assistance land titling schemes (PRONA)		
7	Others		
Total land ownership			

6.2. has there any parties who acquire your private land since 2001: (a) Yes (b) No (6.5)

6.3. Who now has access to land that you previously had access to?

6.4. Please inform me how it was acquired

No	Mode of acquisition	Hectares/plots	When it was acquired	Financial payment per ha or plots
1	Acquired by palm oil through long term leasing			
2	Sold to other individuals			
3	Donated to family or others			
4	Others			
Total				

6.5. Is there any land that you accumulated/added since 2001?: (a) Yes (b) No (7)

6.6. did you accumulate or add more your private ownership

No	Mode of acquisition	Hectares/plots	When you get the land	Financial payment per ha or plots
1	Purchasing from other people or entities			
2	Inherited from your family or relatives			
3	Donated by other parties			
4	Opening primary forests (<i>rimba</i>)			
5	Donated from government			
6	Others			
Total				

6.7. Do you occupy or borrow any communal rights? (a) Yes (b) No (7)

6.8. What types and how many hectares/plots are communal rights you can occupy or borrow?

No	Types of communal rights	Area in 2001	Area in 2016
1	Extended family rights (<i>tanah kongsi</i>)		
2	Communal customary rights (tanah adat masyarakat)		
3	Others.....		
Total land occupation			

7. Land use change

Land use	Land use in 2001 (Hectares/plots)	Land use in 2016 (Hectares/plots)	Land status (Code 1)
Swidden cultivation (food crops)			
Fruit garden			
Vegetable garden			
Pepper garden			
Rubber tree plantation			
Palm oil			
Idle or unused land			
Garden.....			
Non-agriculture fields			
Total land use			

(1) Used by individuals (private property) (2) state property (used by state) (3) Communal or extended family ownership (*tanah kongsi milik keluarga besar*) (4) used with permission (borrowing) (5) used without permission (6) belongs my wife

8. Adapting to environmental change

8.1. What did the condition for soil fertility surrounding your fields in the last 15 years?

- The present soil fertility is better than that 15 years ago
- The soil has a similar fertility in the last 15 years
- The present soil fertility is worst now than that 15 years ago
- I did not live in this village 15 years ago, so I cannot give comparison

8.2. Do you use fertiliser to enhance your soil fertility? (a) Yes (b) No

8.3. How do you find access to have fertiliser to restore your soil fertility?

- a) Rare fertiliser shop or availability in my village
- b) Fertilizer is too expensive
- c) I do not have any money to buy fertiliser
- d) I do not need fertilizer due to good soil fertility
- e) using fertiliser is not allowed in my village due to customary rules
- f) Government supplies fertiliser support to me
- g) I can get fertiliser due to assistance from my relatives or other parties
- h) I can buy fertiliser with a competitive price
- i) Another condition, please
state.....

8.4. What were the functions of river water resources surrounding your village fifteen years ago? (select more than one)

- a) Taking a shower
- b) Washing clothes
- c) Drinking
- d) Fishing
- e) I did not utilise it for any purposes
- f) I did not live in this village fifteen years ago

8.5. What are the current functions of river water resources surrounding your village?

- a) Taking a shower
- b) Washing clothes
- c) Drinking
- d) Fishing
- e) I cannot utilise it for any purposes anymore

8.6. Describe any alternative water resources for your different uses

Water resources	For what uses	Since when	Free or pay
Water pump			
Piped water from hill			
Paid water.....			
Other resources.....			

8.7. Have ever you find any pest in your farming in your fields in the last ten years? (a) Yes (b) No (9)

8.8. Do you find pests threatening your farming yields? (a) Yes (b) No

8.9. Do you use pesticide (anti-pest medicine) to kill pests in your agricultural farming? (a) Yes (b) No

9. Income

9.1. Have you done any subsistence farming (or other own provisioning such as hunting, fishing, collecting) in 2016: (a) Yes
 (b) No (9.3)

9.2. Could I know your annual subsistence production and consumption in the last crop year?

No	Subsistence crops	Annual harvesting	How long it runs out for consumption / or % of total needs throughout the year
	Paddy		
	Aquaculture		
	Wild fishing		
	Hunting		
	Collecting.....		

Do you have any source of cash income? (a) Yes (b) No (10)

9.3. Could I know your source of cash income?

No	Source of cash income	Cash income status (permanent =1, temporary = 2)	% of total cash income	Estimated annual income
1	Selling food crops			
2	Selling rubber crops			
3	Selling palm oil crops			
4	Selling fishes			
5	Cash crop 1.....			
6	Cash crop 2.....			
7	Cash income from contractual plasma			
8	Wage or salaries (permanent as.....)			
9	Casual wage earnings (temporary as.....)			
10	Cash remittances from family			
11	Pensions			
12	Government allowance (e.g.: Cash Transfer (BLT))			
13	Rice supports from government (RASKIN)			
14	Income from household business (.....)			
15	Selling rattan			
16	Selling swallow bird nests (<i>sarang burung walet</i>)			
17	Selling honey			
18	Selling livestock			
19	Other incomes			
Total cash income			100%	

10. Financial and non-financial supports from relatives or families

10.1. Is there any support from your families or relatives who are not live together in your house (a) Yes (b) No (13)

10.2. Please state financial or non - financial supports that they provided

No	Relationship with you	Occupation	Residential place	Supports (code 2)	Frequency (code 3)
Code 2 :Financial assistance = 1, labour support = 2, foods =3, other assistances = 4					
Code 3: weekly=1, fortnightly =2, monthly = 3, every six month = 4, yearly= 5, if it is needed (random) = 5					

11. Farmer's organisation

11.1. Do you belong to farmer's association or cooperatives? (a) Yes (b) No (12)

11.2. What is your farmer's association/cooperatives name?

11.3. What kinds of benefits do you receive from that particular association or organisation?

- a) Access to technical assistance and training from (Government / other organisation)
- b) Access to inputs (seeds or fertilisers) from (Government / other organisation)
- c) Access to capital
- d) Labour-sharing
- e) Others, please specify.....

12. Access to financial services

12.1. Are you member/customer of a particular financial institution? (a) Yes (b) No (13)

12.2. What are the financial institutions you join at? (a) Credit Union (b) Bank

(c) Cooperative

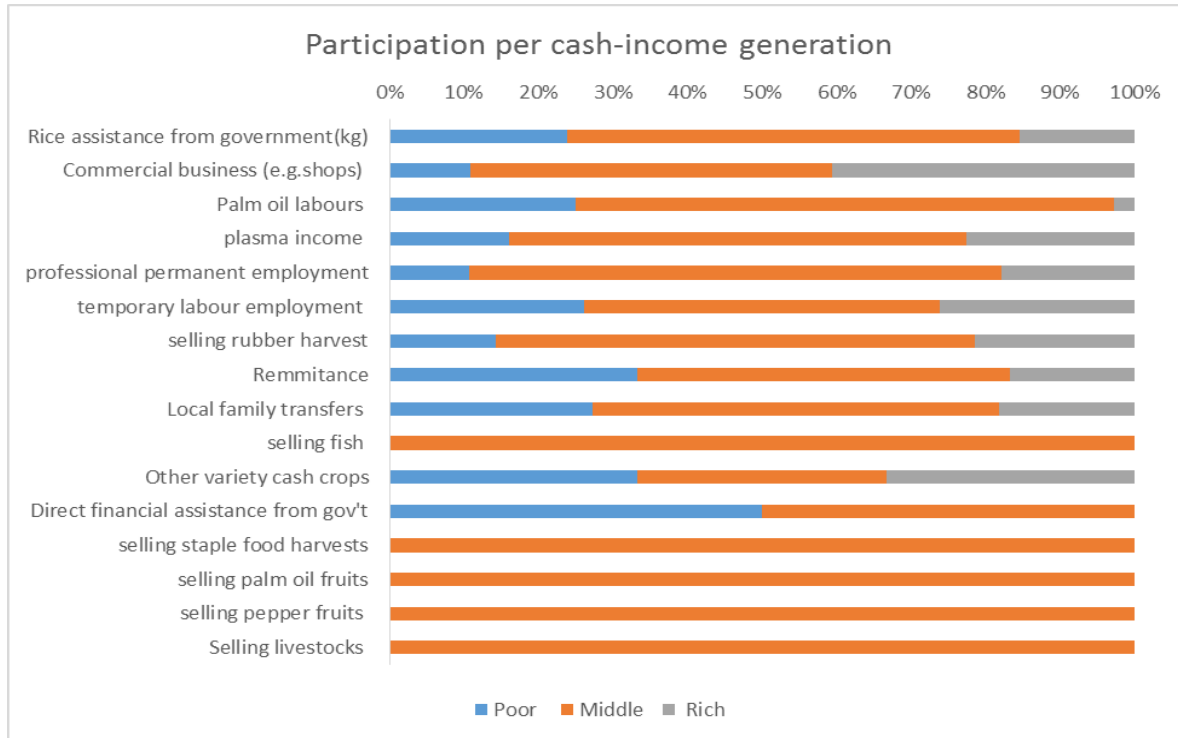
12.3. What are the services that you can access in a particular organisation?

- a) Saving account
- b) Access to loans
- c) Access to insurance (e.g.: agricultural insurance, school insurance, etc)
- d) Access to financial management trainings
- e) Other access, please specify.....

- 12.4. If applicable, what are conditions that must be met to access such financial services?
- a) Saving account :
 - b) Loan access :
 - c) Insurance :
 - d) Financial management training :
 - e) Other services () :
13. Access to public services and infrastructure
- 13.1. What kinds of school are available in this village?
 (a) Kindergarten (b) Elementary school (c) Junior high school (d) Senior high school (e) Academy/university
- 13.2. Does your household able to access those formal educations? (a) Yes (b) No
- 13.3. How do you perceive those academic services? (a) Satisfied (b) unsure (neutral) (c) Not satisfied
- 13.4. What is the road infrastructure that available in your nearby village?
- a) Local road network (*jalan desa*, e.g.: sealed access road or 4WD access)
 - b) Provincial road network (*Jalan negara*, e.g.: sealed road network)
 - c) No road infrastructure in my village
- 13.5. Who did build that road infrastructure? A) Local network: b) Provincial road network:
- 13.6. How do you perceive the road infrastructure near your village?
- a) The road has been overlaid with impermeable asphalt or cements and in good condition
 - b) It has been overlaid with asphalt or cement, but it has been permeable (broken)
 - c) The road has not been covered with asphalt or cement and in bad conditions (broken)
 - d) The road is not even accessible to motor cycle or cars
- 13.7. Is there any government-mandated community health clinics (PUSKESMAS) in your village: (a) Yes (b) No
 (13.10)
- 13.8. How far away is the nearest PUSKESMAS from your house?
- 13.9. What is your opinion regarding the health service in your village: (a) Satisfied (b) Unsure (neutral)
 (c) Not satisfied
- 13.10. Can you access telecommunication signal in your villages (a) Yes (b) No (13.12)
- 13.11. What is the signal condition (a) Weak signal (b) Strong signal
- 13.12. Can you access electricity in your village: (a) Yes (b) No (14)
- 13.13. Does that electricity facility available for 24 hours: (a) Yes (b) No

- 13.14. How often do you experience electric power failure? (a) Never (b) at least once a month (c) others.....
14. Well-being perspective
- 14.1. How do you feel your well-being has changed over the last 15 years
- a) I have a better well-being over the last 15 years, because.....
 - b) No significant change
 - c) I have worse well - being over the last 15 years, because.....
- 14.2. How do you think your well-being (and your family's) will be in another 15 years
- a) I think it will improve in another 15 years
 - b) I don't it will change significantly
 - c) I think it will be worse in another 15 years
15. Palm oil perspective
- 15.1. If you don't currently have any oil palm, would you like to plant palm oil in the future? (a) Yes (b) No
- 15.2. If you have already planted oil palm, would you like to increase you planted area in the future? (a) Yes (b) No
- 15.3. Do you think the expansion palm oil plantations in your village would benefit the community? (a) Yes (b) No

Appendix C Various types of income generations



Appendix D Land use in Kapuas Hulu

Designated area	RTRWP (in Hectares)	in %
Forest area	2,144,713.06	69.2%
Conservation area	935,512.03	30.2%
Protection forests	701,402.48	22.6%
Limited production forest	472,341.92	15.2%
Production forest	35,456.63	1.1%
Convertible production forest	0	0.0%
Non Forest area	953,859.32	30.8%
Total district area	3,098,572.38	100.0%

Sources: BAPPEDA Kapuas Hulu (2011)

Appendix E Households (HH) by total land-use plots in 2016

Total land uses	% HH in Miau Merah	% HH in Badau	% HH in Janting	% HH Aggregate
0 - 1 ha	57.5%	72.50%	30%	53.33%
1.01 - 3 ha	25 %	5%	22.5%	17.5%
3.01- 10 ha	17.5%	12.5%	32.15%	20.83%
> 10 ha	0	10%	15%	8.33%

Source: local field survey, 2016