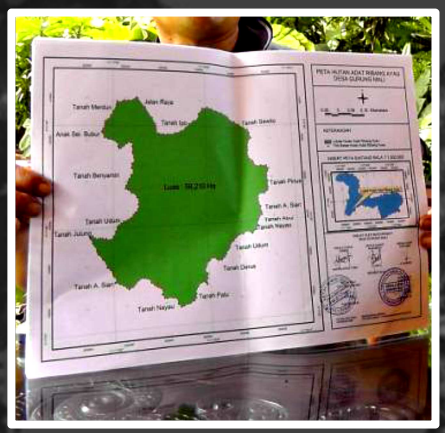
Coping with the traps of Modernity

Why and how Dayaks in West Kalimantan resist palm oil expansion



Johannes Simon Heijn

MSc Thesis International Development Studies 2014
Wageningen University and Research Centre

Coping with the traps of Modernity

Why and how Dayaks in West Kalimantan resist Palm Oil expansion

Msc Thesis Johannes Simon Heijn (Janse)
For the programme 'International Development Studies'
in the specialization: 'Communication, Technology and Policy'
supervised by Otto Hospes (PAP)
Std nr. 880626336070 / Course code LAW050336

Abstract In Indonesia, the rapid expansion of oil palm plantations has led to numerous disputes between local communities, corporations and governments. While corporations often succeed in transforming the landscape with or without the permission of local people, this thesis presents a case were the people did unanimously refuse to admit palm oil corporations on their land. This work examines why these people refused to enter the palm oil scheme and how they attempt to reinforce their position. In the analysis we made use of theories on Political Ecology and the relation between maps and laws.

The case shows that the Dayaks' current way of using the land provides them with food, a cash income, medicine and insurance. Especially original forest is covering many of these demands. Stories told by family members and on television have added to the mistrust of oil palms.

To strengthen their legal and political position, the Dayaks entered in partnership with an environmental non-governmental organization that tries to preserve endangered animals in Kalimantan. By doing so, the Dayaks not only altered their image of indigenous people, but also got indirect access to policymakers on higher levels. By making use of information technology like GPS and satellite imagery, they back up their claims to land and encourage district governments to enforce existing law.

The case shows that resistance against palm oil is not only based on land use preferences but on deeper desires to freedom and sovereignty over lifestyle. While the dispute remains unsolved it is clear that, in order to stand a chance, the Dayaks must actively search for recognition.

Key words: Landscape Change, Palm Oil Expansion, Counter-mapping, Information Technology, Modernity

Table of Content

List of figures

List of Tables

List of Videos

To illustrate certain issues in this thesis, the author made a number of short videos to accompany some of the chapters. The videos can be found online on YouTube.com under the following hyperlinks:

Video 1: Chapter 4 – The High Ground - Running length: 5:02
http://www.youtube.com/watch?v=CsQAGqFPuIg

Video 2: Chapter 5 – The Merits of Knowledge - Running length: 4:51
https://www.youtube.com/watch?v=AR2S6OLtt5U

Video 3: Chapter 6 – On the Map - Running length: 3:00
https://www.youtube.com/watch?v=5WwpI68EAgg

Video 4: Chapter 7 – The Tembak Identity - Running length: 7:55
https://www.youtube.com/watch?v=qH2de68_Z6c

1. Introduction

*"A small Dayak village bravely fights the overwhelming outside palm oil forces surrounding it. Even the hero of this story, a small built man named Antonius Lambung, reminds me of the brave and smart hero Asterix in the famous comics, except that what is happening in West-Kalimantan right now is no laughing matter!" (*Dr. W. Smits in Internet blog, 2013) .

Fighting Palm Oil Expansion- Going against the trend

In Indonesia, and especially in West-Kalimantan, land use is changing in an incredible pace. In only eight years (1996-2003), the area planted with oil palm in Indonesia more than doubled. The area covered with oil palm grew in these years from 2.2 to 5.2 million ha (DJPBB in Potter, 2008). By 2013 Indonesia has produced an impressive amount of 31 million tonnes of palm oil, almost 200 times more than it produced 50 years earlier (Indexmundi, 2013). Palm oil is used in a lot of products (food, soap, bio-fuel) on the Western and Asian market, but the system in which it is produced has been accused of causing social inequality and substantial environmental damage.

Social inequality has been related to lack of transparency, absence of informed consent and unequal benefit sharing (Rist et al., 2010). The system has also been accused of reinforcing patriarchal systems and eroding women's rights (White, 2012). Conflicts around land rights are exacerbating these problems and are often the norm rather than the exception. Violence is often reported as a consequence.

The palm oil market has demonstrated to be able to exclude people from their land and forest resources (see e.g. Potter and Lee, 1998; Rietberg, 2010). From

Table 1 Various estimates of palm oil extension

Area	Amount of plantations	Timespan	Source
West Kalimantan	183,082 ha (productive area)	1997	Potter and Lee, 1998
West Kalimantan	3,200,000 ha (total area)	2005	Sirait, 2009
Indonesia	5,200,000 ha (total area)	2003	DJPBB in Potter, 2008
Indonesia	7,800,000 ha (total area)	2012	Obidzinski, 2013
Indonesia	3,496,483 ha (productive area)	2003	Brown and Jacobson, 2005
Indonesia	6,100,000 ha (productive area)	2012	Obidzinski, 2013
Indonesia	9,400,000 ha (estimation)	2011	Colchester and Chao, 2011

an ecological viewpoint, cutting down the tropical rainforests of Borneo implies a huge loss in natural resources and diversity (Obidzinski, 2012; Brown and Jacobson, 2005). Additionally, these forests are often situated on peat lands that emit large amounts of CO_2 when they are not any longer covered by forest, contributing to global warming (Jaenicke, 2008).

In the Sintang region, in West Kalimantan, palm oil plantations have been extended over a large area and provide land and labour to many communities. Dayaks are the native inhabitants of Borneo and have made use of forest resources for ages. Many Dayaks have seen the forests that they used as a resource being cut for these new agricultural programs.

This thesis, however, is about a small region where the people did not accept the offer of the palm oil companies. In the village of Tembak, as well as in the surrounding villages, the people refused to cooperate. While this move is already reasonably exceptional, the people in Tembak went even further: they actively searched for help in their struggle with these corporations and they found this assistance in a partnership with a nature conservation organization. Their collaboration is adding to the global trend of resistance against capitalist agricultural industrialization.

One of the central themes in this thesis is the question why these people – despite the economic benefits - did not want palm oil on their land. The people in the Tembak region still have to defend their choice not to engage in palm oil production on a regular basis. They are under pressure of government authorities, companies and neighbouring villages that do plant and harvest the fruits of oil palms.

The Dayaks in the Tempunak region have encompassed multiple strategies and approaches in order to maintain their preferred way of living. This thesis will examine these strategies and will primarily focus on the role of partnerships. The people in Tembak have purposely sought for individuals and organizations that have similar views on land use and that have access to modern technology, investors and other powerful resources. Together with these actors, the villagers in Tembak attempt to improve their position in the complex environment of power, policy and conflict that co-emerge with changing modes of land use.

In the abundant literature on palm oil, many authors have suggested that the battle on palm oil extension has already been won (Rist et al., 2010), others have suggested that palm oil extension could be going much more rapid if corporations would bow less to NGOs (Kohr, 2011). Other authors suggested that

alternatives for palm oil cultivation have still to be found - in their report on tree plantings in West Kalimantan, Lesley and Potter wrote:

"Neither government schemes, which have concentrated on intensifying smallholder rubber, nor a variety of experiments funded by NGOs and outside organisations, have so far succeeded in providing sustainable and attractive alternatives to existing systems. While some of the experiments are still in their early stages, they might soon find they no longer have land on which to operate."
Lesley and Potter (1998, p.29)

This thesis wants to examine these statements, by understanding the many ways in which these experiments emerge, gain power and the way in which they affect the landscape and the people.

Research questions

The main goal of this thesis is to investigate the ways in which local actors try to influence a dominant, globalized trend in land use. Therefore, the main question of this research is:

Why do local communities in West-Kalimantan not participate in dominant land use programs like palm oil expansion and what are their strategies to withstand these programs?

The main question includes more specific questions that will be addressed in this thesis. These questions are mentioned below (sorted by chapter):

Chapter 4:
What types of land use are found in the Tempunak province, West-Kalimantan? How and why are they important to people?

Chapter 5:
Why are the Dayaks in Tembak not involved in palm oil production?
Which allies do the Dayaks have in their resistance against oil palms? What is their common ground?

Chapter 6:
Which obstacles do the Dayaks face in order to be acknowledged by decision makers?
How does the partnership between Dayaks and NGOs tries to enter the legal map of decision makers?

What is the role of information technology in their attempts to influence other actors?

Chapter 7:
Why does identity play a role in the political struggles around land use?
How does the identity of these people change under new forms of land use?

Justification

In many tropical zones across the globe, both nature and indigenous communities are under pressure. With this research I hope to contribute to the work of those who try to preserve nature by means of community conservation. Understanding the motifs and strategies of the Dayaks in Tembak can help to improve cooperation between indigenous communities and nature conservation organizations and to build on sustainable partnerships.
My second goal is to get more attention for interdisciplinary research and to build on methodological bridges that could help scientists from different fields of study to understand each other better. In this thesis, I want to connect methodology of different scientific disciplines in order to improve understanding of this case. I hope this case can be an example to people trained in one of the included fields.

Structure of this thesis

This thesis deals with various themes that –while being clearly related- all have their own angles and theories. The second chapter in this thesis tries to explore these various ways of thinking and attempts to draw some connections between the main theories used in this work. Politics is the most important theme and is expressed in three domains: land-use, law and identity. The chapter that follows outlines various methods that are used to understand these domains in real life.

The four succeeding chapters are telling and analysing the case. Chapter 4 focusses on the Dayak's choice for the current land-use practice. It explains why the Dayaks in Tembak prefer this way of land use and how they came at this constellation. The question why the Dayaks did not choose for palm oil is addressed in chapter 5, where the focus lies on partnership. Together with their new allies the Dayaks have better chances at securing their claims on land.

The sixth chapter describes how the Dayaks attempt to legalise their claims by making maps and trying to fall under particular legal categories with the building of an orang-utan centre. The seventh chapter describes how Dayaks struggle

with (representations of) identity in both daily life and the struggle for land. The chapter poses questions on what it means to be a Dayak under rapid changes. In the final chapter conclusions are drawn and results are discussed.

2. Conceptual Framework

Understanding the motives of landscape change demands a conceptualization that recognizes the complexity and the multidimensional nature of this process. In order to unravel this complexity I identify three conceptual dimensions in this chapter: the environmental/landscape dimension, the legal/institutional dimension and the community/identity dimension. While these dimensions are large domains in their own right, in my view they share a common feature – politics. In this thesis, the reality of each of these dimensions is partially or even completely resulting from social struggle.

Landscapes as result of human presence

In the introduction of his book 'Political Ecology: a critical introduction' author Paul Robbins reflects on a visit of Yellowstone National Park. While he must admit to himself that the park certainly looks like 'wilderness,' he cannot escape his thoughts about all the trouble –getting the native Americans out, introducing wolves, banning fire practices and so on- that Americans went through in order to create this large reserve. He concludes that Yellowstone '*is an expression of political power both in its very existence, as well as in the specific distribution of species across its landscapes.*' (Robbins 2004: p. xvi).

Virtually all landscapes on this planet are affected by human presence (Millennium Ecosystem Assessment, 2001), even landscapes that were previously thought of as 'pristine' and 'untouched', like the Amazon river basin, are now sites of archaeological discoveries of previous societies (Heckenberger, 2003). Some authors have gone so far to argue that the term 'wilderness' is a human fantasy (e.g. Cronon, 1996). Humans alter nature and the alterations made to landscapes are not random, nor are they necessarily 'just'. The benefits and costs of these changes are unevenly distributed among society since changes in the environment do not affect people in the same way (Bryant and Bailey, 1997).

Because of the rapid, aggressive expansion of oil palms and the dramatic images that we see on Internet, it is understandable that palm oil is given a lot of attention. But there are two things we should bear in mind. The first one is that there are still many forms of land use next to palm oil. Second, to consider palm oil expansion as a monolithic process would be oversimplifying reality (Cramb, 2012). I will argue in this thesis that overlooking the diversity of land use next to palm oil is obscuring the complexity of both the environment and socio-politics.

So, we cannot ignore the immense politics behind landscapes, but at the same time landscapes continuously escape our control and predictions: a recent example of this is the worldwide decline in bee-species, causing Chinese workers to pollinate flowers themselves with the aid of little brushes[1]. Of course, nobody asked for this development and no politician actively steered governance processes to get rid of bees. Still, the decline in bee populations can be considered a by-product of the human determination of how nature and agriculture should look like.

Laws as maps

If politics is the driver behind landscapes, then law is the vehicle. Traditionally legal scholars have focussed much on the interaction between citizens and (state) law. Legal anthropologists, however, have taken a broader perspective. They did not take state authority for granted as an unequivocal, singular source of power. Rather they see the state as one of the many actors that tries to gain control over other actors and resources (e.g. Peluso, 2008). Neither, the state is seen as a singular source of law. Legal anthropologists use concepts like legal pluralism to point at the multitude of legal sources that are often found in (developing) nation states: traditional law, community law, religious law, etc. Many of these systems exist next to each other and often overlap.

Legal pluralism has been studied quite intensive in Indonesia, perhaps because Indonesia is a young republic that covers a vast array of islands, cultures and religions. Indonesian state law often allows space for other legal systems – religious or traditional- to exist and impose laws. This arrangement is also true for land use systems (Bakker, 2008). The fact that rights on land are only partly under the control of the state gives us a starting point to understand why there are so many disputes associated with land use. There is a great amount of opportunity for ambiguity and alternative explanation of laws as well as an discussion on which legal systems have to be considered as the most important one at a certain point. Forum shopping, a term coined by Van Benda Beckman and Van Benda-Beckmann (1981), indicates the behaviour of exploring different legal systems in search for a set of rules that benefits ones cause the most.

Legal forums, like political forums, exist at different scales. The term scale can be used in multiple ways. Scales are mentioned when scholars want to point at the different levels of government and policymaking, varying from the local to the global. In legal science however, the term scale is used to point at political fields:

[1] http://www.chinadialogue.net/article/show/single/en/5193

a complex of networks and discourses through which actors must manoeuvre (Sneddon and Fox, 2008). A lot of things can change if actors expand their 'arena' to a different scale of policymaking. A conflict can be explained as a 'local dispute on property' or as 'a battle between nature and industry'. By changing the scale and scope of a problem, not only the location, but also the object of a dispute is changed.

Changing the scale and scope of a problem is a political act that can benefit local actors but it can also trivialise their issues. Suddenly new themes, laws and stakeholders become relevant, while others become more vague. This concept is problematized by Bulkely who argues: "*networks are formed through processes of scaling and rescaling environmental governance and are instrumental in such endeavours, while also creating new networked arenas through which governing takes place*" (Bulkely, 2005: 3).

If law exists in various forms and on different scales, how do we understand the way these legal constellations relate to each other? De Sousa Santos is one of those authors that is searching for such an understanding. In his paper on 'laws as maps of misreading' (1987) he proposes an alternative that is based on a cartography analogy. He explains that law, like maps necessarily distort reality: they are simplified representations of a particular territory. De Sousa Santos identifies three mechanisms by which law gets distorted: scale, projection and symbolization. Since I will use these concepts in chapter 5, I will briefly introduce them here:

On a geographical map of the world, we cannot find Tembak, nor see the oil palm plantations in West Kalimantan. On such a small scale, local and regional realities become details or vanish entirely. Equally, national and international law often uses broad and generalized definitions and never specify to local realities. Hence, the type of scale that is used in law is one way in which reality is distorted.

Of course each map has its own topic, depending on its purpose. Geographical maps are different than political maps in what they depict. Equally in law, projection is a way in which reality becomes distorted. Decisions made in the state capital (the *centre*) might not include the local regulatory needs of the places its exported to (the *periphery*). Also, local law might on its turn use regulation that is very personal and difficult to extent.

Finally, each map has its own set of symbols, to understand what we see, we must first familiarize ourselves with the language of that particular map. De Sousa-Santos sees the third analogy in symbolisation in law. While state law

might be symbolized in official contracts, legal articles, courts orders and bills, local law can use narratives, dreams and social consensus as symbols to express law. While authors have welcomed this conceptualization as an admirable approach to law, few authors have actually used this analogy in their analysis. I will make such an attempt in chapter 5.

Maps as Laws

In the previous paragraph I reviewed ways to conceptualize law in the light of legal pluralism and scales. But how must we think about people dealing with law? Like politics, law is present in one form or another in virtually every culture. In her article on property in land use in West Kalimantan, Nancy Peluso (2005) describes two contrasting ways in which Dayaks go over property. In her first case she explains how durian trees function as visual markers by which Dayaks can recognize which family holds ancestral rights to land. However; durian trees do not always hold well in court. When other claimants arrive that have more power and a different understanding of property, the Dayaks must switch to another lexicon and put their claim on paper.

The significance of Peluso's analysis is threefold: first of all, she coined the concept of *territorialization*, which she defines as: *"-the creation and maintenance of specialized zones within which certain practices are permitted based on the explicit or implicit allocation of rights, controls, and authority*" (Peluso, 2005, p2) which connects legal practices with landscapes and emphasizes legal plurality in the field of Political Ecology. Secondly, she discussed the concept of *countermapping* which is the practice of making formal claims to (pieces of) land by making official (or at least officially looking) maps. Although this strategy is not always successful, it is becoming increasingly popular and is also used by the people in Tembak (see chapter 6). Thirdly, she connected these concepts to identity and conflict, which I will discuss in the next paragraph.

Violence is one of the possible outcomes that can result from conflicting claims by various parties. One of the most recent examples in Kalimantan is the culling of the Madurese by the Dayaks in 1996. Nonetheless, there are also political and legal outcomes of land disputes. Bakker and Moniaga (2010), who analysed three cases of competing claims in Indonesia, pointed at three possible constellations trough with claims by traditional communities are being recognized: by direct state recognition, through regional autonomy opportunities or by extra-legal arrangements, like between park authorities and communities. However they stress that obtaining government support is crucial in most cases. In their view the most effective strategy, *"seems to be through broad local alliances involving*

other communities, NGOs, local parliaments and loyal government bureaucrats." (Bakker and Moniaga 2010; p.201-201).

This conclusion indicates that scale is a crucial factor in land disputes. In order to have any chance at recognition, local communities often have to find their ways to higher levels of decision-making. Increasingly more researchers are studying the ways in which communities indulge in 'politics of scale'. Rosa de Vos studied two cases of land disputes on palm oil in the Sambas district and discussed the relevance of using 'scale frames'- the proposed level on which a dispute is resolved (2013). She not only demonstrated that communities and organizations make use of these frames but also that they can be reasonably successful to enter negotiations. However, these scales also have their drawbacks: since no party is in complete control on the symbolization of these frames, they sometimes must accept parts of the 'map' that are not in their favour. In the case of De Vos, this meant that while the organization was making the argument that the district government was responsible for land disputes, they at the same time recognized the district government as a legitimate arbiter in the case. Secondly, the other party –for example a palm oil company –can use this scale frame as well.

In my view, there is a conceptual relation between de Sousa's work on 'laws as maps of misreading' and the use of scale frames. By using scale frames and counter-frames, organizations and communities can make themselves visible on the 'legal maps' of higher layers of decision-making. Instead of their reality being obscured by the scale, symbolization and projection of the law, they now become part of it. For the good or the bad, this also means that they must work with what is already on the map and the way the map is made. How this works in real life is the concern of chapter six. For now it is important to realize that authors have different ways to look at how people deal with law at different scales.

Community and identity

Comaroff and Comaroff, in their contribution to the work 'Rules of Law and Laws of Ruling' (2009) described three themes that would be subject of future research in the field of legal anthropology: the Fetishism of Law and Crime Anthropology were two of them, but the topic that received most of their attention was 'Difference, ID-ology and the Limits of Liberalism'. In their flamboyant analysis, the couple reflected on the tension between constitutional law and community law: *"One species of sovereignty poses particular problems for states on this front: sovereignty based on cultural or religious difference of the kind that refuses altogether the antinomy between private and the public ... the kind*

whose alterity extends, as well, to governance" (Comaroff and Comaroff, 2009: p. 40).
They argue that, in the case of South Africa (were they did their research), there is a shift of politics from ideology to ID-ology – the logos of identity. The desire to sovereignty is not so much based on particular ideas about how the world should be, but rather on the cultural and religious identity to which people attach; on what makes them different.

Identity is a strong driver for local people. The combined perception of who they are and where they belong is strongly connected to their daily lives. Apparently, if their life situations change, their identity is at risk. Hence, claiming sovereignty for community causes from their viewpoint appears to be logical. But at the same time, identity is no solid rock. It is also a way in which we frame people, it includes symbols, stereotypes and representations. Tania Li in her article on communities and property relations (1996) argued there are competing representations of communities. To explain this bluntly: it depends on our political goals whether we frame an inland community as 'noble savages' or 'ignorant peasants' (Li 1996, p. 504). This understanding is not only important for the ways in which I will represent the community that is the object of this study, it is also important to see how the Dayaks represent themselves and how they are represented by other stakeholders (see chapter 5 and 7).

While I will refer to the villagers of Tembak as Dayaks, we will see that this term can be quite misleading, depending on the associations we have with this title. It could suggest a homogenous group of indigenous people with shared norms, a deep understanding of nature and living in poverty. However, as we will see in chapter 7 the people in Tembak are very modern, calculative and are active players in political economy. As Tania Li phrases it: *"Identifying sources of power and leverage is an exercise in which relatively powerless people are, of necessity, particularly adept"* (Li, 1996: p.503).

Identity can both be a basis for a claim to sovereignty as well as concept open for interpretation by which actors can legitimate the reduction of sovereignty. A case study of Nancy Peluso on 'racialized territories' gives insight in this matter:

"Authorities' selective recognition and ignorance of certain production and property practices in everyday life — practices that differed under colonial and contemporary modes of rule — helped construct the notions of 'Chinese', 'Dayak' and 'Indonesian' smallholders as distinctive groups having particular 'ethnic' characteristics and competing interests, though obviously with some overlap acknowledged among them" (Peluso 2009, p. 48).

Peluso writes that the ethnic characteristics, which she mentions in the quote above, are for a great extent based on different styles in land use. When ethic categories were established in the minds of social groups and policymakers, they were linked with particular land practices: 'Dayaks' would apparently grow rice on hills in a system of swidden agriculture, while the 'Chinese' grew wet rice on *sawas* in a more continuous system. While both the ethnic and agricultural definitions were more or less arbitrary and at the best existing in a continuum, they were reinforced by both anthropologists –who used these classifications in their texts - and policymakers who used them to attribute land rights to particular groups (Peluso, 2009).

Studies like these are invaluable in helping us understand how identity is connected to exclude people in land use practices. Her arguments underline that, while it is difficult to escape identity in politics, the use of identity or ID-ology for that matter, is a tricky thing. Similar to scale framing, admitting to a particular ethnic classification could give the benefit of inclusion but at the other hand one also reinforces other stereotypes connected to this image. Identity thus can constitute as a way of 'symbolization' in de Sousa Santos' metaphor of 'laws as maps of misreading'.

To wrap up

In this theoretical framework, I have discussed relevant scientific concepts for three major themes in this thesis: landscapes, laws and identity. Political ecology teaches us that landscape change is the result of socio-political processes. In these processes, law appears to be the main area of contest. I discussed some relevant ways to think about law, with special attention to the work of de Sousa Santos, and I have explored various ways by which actors deal with law, relying on the work of Peluso. Finally the theme of identity was discussed and how it can be used in understanding land disputes.

3. Methods

Research location

The research was conducted in Tempunak, a sub district of the Sintang region, West Kalimantan (see appendix 1). The Tempunak region is interesting for this kind of research in the sense that there is a large variation in land use – there are both villages that are engaged in palm oil production and there are villages that refused to join this new mode of land use. Geographically, the landscape is mixed with both lowland and hill country. Mainly on these hills, extensive parts of forest can still be found as they are more inaccessible.

Most information was gathered in Tembak but neighbouring villages were also visited. Tembak has a population of 199 inhabitants[2] distributed over 50 households. In order to get to this village, one has to drive for three hours through the inlands of Borneo on a muddy road. In the village itself, it is difficult to connect with the outside world: there is no Internet access but there is a phone signal.

While the Tempunak region is mixed with Catholics and Muslims, the village around the Cundung forest is virtually all Catholic. Since there is only one pastor available for a number of villages, the service at Sunday morning is led by a leek. Before the service is held, older men gather in front of the church to discuss recent developments in their town. Social cohesion is large in these villages and the church plays an important role as a binding factor.

Tembak has a primary school and a junior high school. School hours are confined to the morning hours (8-12 hours) and lessons begin with the singing of the national anthem. While the Indonesian government has recently forbidden to give education in the English language at communal primary schools, many children are studying English in their leisure time with the use of phrase books offered by the NGO.

After junior high school, most children leave the town in order to attend senior high school in the city. Here they are getting even more familiarized with a Western life style which forms a sharp contrast with the 'boring' life in the *kampung*. Not surprisingly, many youngsters often choose to stay and work in the city. This is disapproved of by their parents, who would rather see them

[2] Although this figure is probably outdated

come back to the *kampung* and help them with rubber tapping. Older people still rely on their children for their pension.

Other characteristics that make these towns interesting for this research were the fact that they were (1) accessible in the sense that they were used to communicating with foreigners and that they had good relationships with a number of NGOs; (2) actively engaged in processes that drive land use change (see following chapters) and (3) housing, transport and occasional translation were already arranged.

The research was facilitated by the NGO that also hosted a planned reforestation project. The aim of the project is to use the forest near Tembak for releasing a number of confiscated animals (mainly orang-utans). Additionally a seed-nursery was established to grow seedlings of the sugar palm, which will be used to generate an income for the Dayaks. Thirdly, the village will host a research on the growing possibilities of *Shorea stenoptera,* and *Shorea beccariana*; two native tree species that produce oily seeds and that could form an alternative to palm oil.

Interdisciplinary Research

Landscapes and the ways in which humans affect and are affected by them are a concern of a large variety of scientific disciplines, including ecology, geography, anthropology and political sciences. It is an incredibly difficult task to get a representative overview of all the research that is done on landscape change, as each discipline holds different methods, theories and jargon. For non-scientists like policymakers and target groups, the diversity in perspectives must be even more confusing.

While each perspective on landscape diversity has made its own contribution in science, interdisciplinary approaches have been limited. Attempts to understand the sum of the parts have often lost their way in the immense complexity of the cases they studied. In this research we try to make another attempt at interdisciplinary landscape research by bridging the gap between legal anthropology and forest ecology. Borrowing techniques from both disciplines, we start by understanding the relation between people on the land in an apolitical way which is focussed on environmental processes and the implicit economic value that people ascribe to these processes.

This study as a whole could be considered a case study. Case studies are often seen as a study of ‘the exemption on the rule’. A small number of villages that are

not engaging in palm oil extension could certainly be classified as 'an exception' in a region were oil palm expansion is the norm.

Participative research

As a fellow student of me discovered, the theme of palm oil expansion is a very sensitive one. For local people, animals and corporations, it is a very big deal who gains access to land and the topic is beyond any doubt very political. Therefore, I was introduced as an internship student whose main concern was the fruit production of *tengkawang* trees. As this was indeed the topic of my internship, which I executed for the NGO that will later be described in this thesis, this was an ideal starting position to get access to more difficult information. Therefore I started out with participative research and observation. Much information presented in this thesis, including that presented in the chapter on strategies is obtained in this way. Living together with these people also gave me access to a number of anecdotes that explain a lot for the background of the chapter on identity and landscape change.

Being part of an organization that is out to help the people in Tembak, was certainly very helpful in gaining access to these people and their stories, but it also somewhat prevented me to do interviews with companies and government agencies. Therefore, this thesis limits itself to the story of the people of Tembak. Secondly, the organizations that I write on in this thesis were very generous in letting me have a look in their 'kitchen'. While no-one in the organizations that hosted me has posed any restrictions on my writing, I have tried to present these organizations as honest as I can without harming their work.

Interviewing

After a few months I started to conduct more in-depth interviews. While these interviews were very conversational in nature, the topics that I wanted to discuss were pre-selected and the questions were already structured. I spoke with a number of people from related NGOs and a small number of key-informants on their history and on their problems with palm oil companies. When I played the pebble distribution game (see below). I also asked a number of pre-structured questions on the topics of nature conservation and the relation between the people and the project. However, questions on palm oil extension were left out from these small interviews.

While the interviews certainly gave interesting results, which I use in various chapters, the most interesting facts came from 'recreational' conversations with Dayaks, NGO staff members and others.

Pebble Distribution Game

When mapping the landscape appeared practically impossible, I still wanted to connect the practical use of the different types of landscapes to stories on strategies. In order to analyse which types of land use are important for which purposes, we did the pebble distribution game. This way of interviewing is deriving from the field of Forest Management and has proved helpful in many inventories (e.g. Sheil et al., 2008). While this method is better explained in Sheil et al. (2002) in essence it works like this: a number of villagers were asked to divide 50 small stones (pebbles) over ten types of land use that were written and pictured on a poster. We could ask for example: 'What types of landscapes do you consider important for the purpose of building houses?'. The landscapes that are considered most important get the largest amount of pebbles. We asked 27 people in the village to play this game. The households were selected at random with the aid of a list of households made beforehand.

After 10 rounds, one for each category, we asked the villagers to divide the pebbles once more, but this time according to relative importance of each category. The landscapes included were: primary forest, secondary forest, swamp, rice fields, rubber plantations, the river and the village. These were based on examples from the literature and were adapted for the situation in Tembak. After a few rounds there appeared to be a need for an extra field: the market. Of course, the market is not a type of land use, but fact remains that the people increasingly more often buy stuff they need instead of collecting them from the forest. In order to get a better insight, the market was included in the game. The 'try-out' also resulted in the inclusion of an additional purpose: drinking water.

Although we strived to interview individuals, at times the people we interviewed decided to play the pebble game together with another person. This happened at three occasions and we dealt with these 'joint decisions' by multiplying the result of these games with the number of people involved, which did never exceed three. Results of the Pebble Distribution Game were analysed in SPSS Statistics© using a One Way Anova tests and Tukey HSD test. These tests allowed me to find significant differences in the responses.

Filming

As an experimental, additional method, I made video footage of a number of occasions, together with my field assistant. While the aim was making a full documentary, we did not collect enough material to explain the full story. Rather, the pieces of film are used to illustrate parts of the text. The clips are edited in a sober style and can be found at YouTube.com. A list of videos and hyperlinks can be found on page 10.

Limitations of research

Almost all research was conducted in Tembak, with two notable exceptions. Some interviews were conducted at the Orang-Utang Centre in the city, as this is the head quarter of a number of key-informants. While Tembak is only a small town, I believe a lot of the results presented in this thesis can also be valid for the surrounding villages: Sungai Bulluh, Sungai Buaya, Serpang and some other towns. In the final chapters of this thesis, I will further discuss in how far the results can be extrapolated.

The people in Tempunak are bilingual: they speak both Bahasa Indonesia, Indonesia's common language, and the local Dayak language: Bahasa Kampung[3]. As I was only modestly skilled in Bahasa Indonesia, I used a translator for the more in-depth interviews with the Dayaks. Conversations with the organization were often in English or Dutch.

Next to a language barrier, I initially faced a cultural barrier as well. The fact that I was a male, Western student meant that people would often give answers according to what they thought I wanted to hear. While this is something that many anthropologists in Asia have to deal with, I found it useful to constantly compare what people *said* with what they *did*. After a few months most people became more used to my presence and became more direct with their opinions.
Since the organization I worked for was also the organization I studied, I soon got to deal with a conflict of interest. In this paper I decided to write as neutral as I can be on this organization without leaving relevant details behind. It is not my goal to criticise their work here, but to reflect upon their role in land-use strategies and creating images.

Table 2 Translation of different scales and levels

English	Indonesian	Thesis
District	Distrik	West Kalimantan
Province	Propinsi	Sintang
Region	Kawasan	Tempunak
Community	Dessa	Tembak
Village	Kampung	Tembak

[3] Bahasa Kampung literally means: language of the village

3. The high ground

Introduction

This chapter serves as an inventory of the ways in which the land is used in the Tempunak region. The goal is to explain (1) the diversity of land use in this region, (2) the relative importance of each land type as considered by the local people and (3) some explanations for the constellation of this set of land use practices.

As stated before, the villages around Cundung are attempting to maintain their traditional ways of using the land. However, in this chapter we will see that the term 'traditional' is not very useful when we talk about land use in this area. The towns around the Cundung Forest are an exception in the sense that they refused to participate in the dominating scheme of palm oil expansion.

The most straightforward part of this analysis is the description of the different styles of land use. For this, we adapted the classification made by Sheil et al., 2004 which can be viewed in table 4. This list makes a classification between different assemblages. For further analysis it is important to remark that all these different systems are largely created or at least influenced by human actions. Considering the amount of human influence, they vary from high levels of control (rubber and rice plantations) to low levels of control (primary forest).

Tropical forest

Tropical forest is the predominant form of landscape to be found in Borneo. It is recognized as a 'biodiversity hotspot': an area with an extraordinary high amount of species (Meyers et al., 2000). Characteristic for Borneo are the low-land forests, that are standing on peat soils and are known to be regularly flooded in the rainy season. While Borneo has one of the highest rates of tree diversity, dipterocarp trees are the most abundant (Meyers et al., 2009). The rainforest hosts a broad range of wildlife with more than 600 bird species and almost 300 species of mammals. Most animal life finds place up in the trees and on Borneo a large amount of non-avian animals like colugos, snakes, lizards and frogs have specialized in floating from tree to tree.

Tropical forest offers a wide range of products that can be used by man, varying from edible fungi to highly valuable timber species like iron wood *(Eusideroxylon zwageri).* Near Tembak there are a few patches of original forest left. A few

patches of forest are owned by the whole community. These are the last remains of the original forest coverage that expanded the region before extensive cultivation began. These patches are relatively small but are consisting of an incredible variety of tree and shrub species. While these patches used to host a wide variety of larger birds, mammals and reptiles, the villagers have noticed a decline in these species during the past decades.

Rubber plantations

For many families, it is mainly the rubber tree, *Hevea brasiliensis,*
that generates an income. At the time of writing, the villagers could receive 10-12.000 Rp[4]. for one kilogram of rubber at the local market. Daily wages vary between 80 and 150.000 Rp. Rubber tapping takes relatively little time. During a regular working day, an average person will spend 3-4 hours tapping his or her trees. The rest of the day could be spend with crop production or other activities. As some informants have argued, the quality of the rubber produced in the area is not that great. One of the reasons for this is that the collected rubber is sold as a raw product, without any refinements.

While projects in the past have attempted to educate local people to improve the rubber by getting rid of dirt and other irregularities, these methods have not manifested itself in common practice. Typically, people let their harvest lay in water for some time so that the rubber becomes more heavy, which once was economical since rubber is sold per kilo. Of course, buyers are well aware of the large amount of water found in the large bags they buy and consequently prices are lowered. The villagers, therefore, are looking for a second cash crop that could have a stabilizing effect on their income.

As said earlier, the great advantage of rubber growing is the relatively low labour input. A second one is that rubber can be harvested all year round, while it is considerably harder in the wet season as tapping is impossible when it rains. As one informant said, in times when the prices for rubber are low, the villagers are poor in a financial sense.

Rice fields

Like elsewhere throughout Asia, rice is the basis of the Indonesian meal and the importance of rice production must not be underestimated. The villagers in Tembak can, under the current land division, produce enough rice to feed themselves for nine months. With the income they make from the rubber trees, they can buy enough rice to feed themselves for the remaining three months. There a various types of rice to be found in the region of Tembak but they

[4] At the time between 0,80-1,00 €

generally can be divided in two species: wet rice (*sawa* rice) and dry rice (*ladang*).

Until now, dry rice, which apparently is tastier, is predominating. It is often grown on hill slopes. However, this system requires a lot of fertilizer and pesticides and it occupies land that can also be used for other purposes. This is why the Dayaks are increasingly more turning towards wet rice, which is situated in lower areas (former swamps) that are almost continuously under water. This system requires almost no fertilizer and pesticides although the quality of the rice is different from *ladang*. The reason for a shift from dry to wet rice is not only economical. The villagers are very much aware that whatever chemicals they use on their hill slopes, they find back in their drinking water, that is why they try to minimize the use of *round up* and other herbs and pesticides.

Fruit and vegetable gardens

A number of crops, including rambutan, pinang, ginger, coconut, banana, eggplant, pepper, mais, casava and many more are grown by the Dayaks in vegetable gardens (see appendix for a more complete list). Individual gardens are situated around the house, while a few communal gardens are situated around the village. In Tembak a large communal garden is found in a river bend. Many households also maintain a fishpond were small fish (carps) and turtles are kept for consumption.

Crops grown in these vegetable gardens are almost never sold but often shared among neighbours. While these gardens do provide a substantial complement of the household diet, a lot of the crops are only obtained seasonally which means that many items must be bought from bike-vendors (who visit the village at a daily basis) and local shops.

Planted Forest

Families also maintain pieces of planted forest, which they own as a family. They are often situated along rivers or as corridor between rubber and/or rice plantations. Typical tree species found in these corridors are durian, tengkawang and jackfruit. While these landscapes are labelled as ‘planted’ here, it remains questionable which amount of trees in these plots are actually planted. It is certainly true that these forest are managed more intensively than communal forest.

River

Through the village streams a small river with clear water. This river is mainly used for washing and cleaning clothes. Also, the river sand is used for making cement, which is, next to wood the most important building material. The river

bank is very fertile and fruit-trees are commonly found on these sites as well as vegetable gardens.

Gold mines

Although this landscape is not featured in the Pebble Distribution Game it is worth mentioning. Especially younger people spend a few months each year in the gold mines.

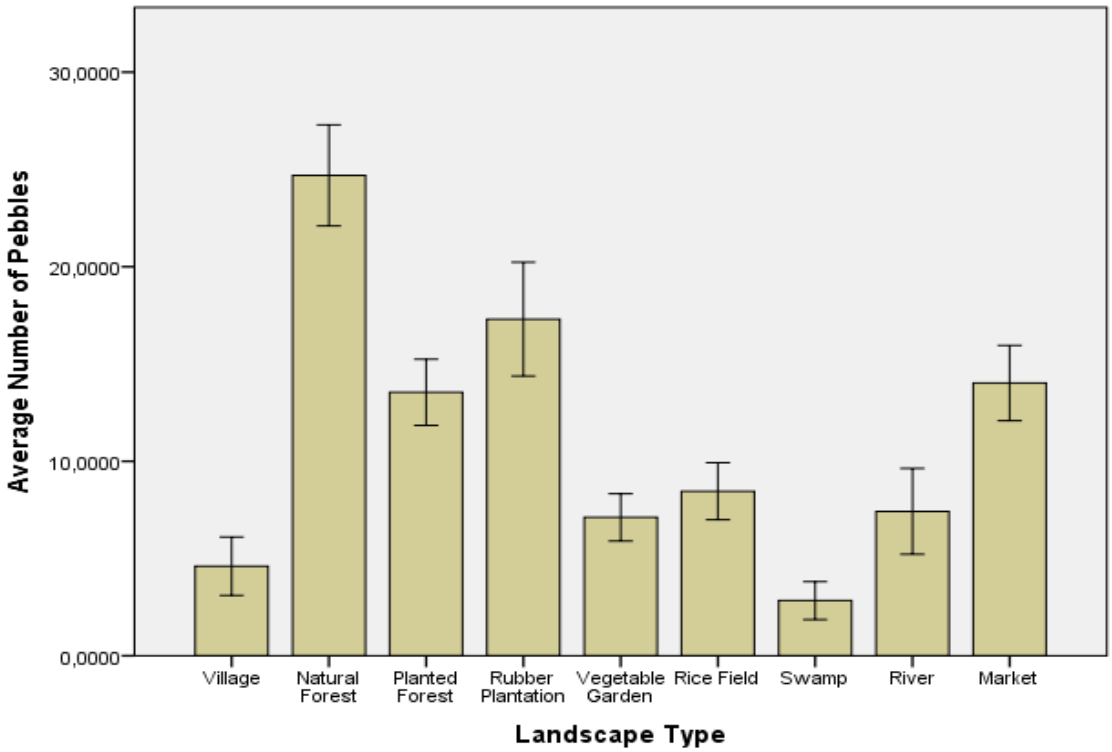
Table 3 Translation and definition of various types of land use

Name Category	Name Indonesian	Definition
Primary forest	Hutan primer	Unlogged forest
Secondary forest	Hutan secunder	Logged forest
Village	Kampung	Village ground including area around the houses
Rubber plantation	Perkebunan karet	All rubber plantations that were in use
Rice field	Ladang / Sawah	Both dry and wet rice fields
Fruit garden	Perkebunan Sayur	Area were fruit and vegetables are grown, often next to water
River	Sungai	The river and its shores
Swamp	Rawa	Forested wetland
Market	Pasar	Places where one can sell and buy things like food, tools, gasoline, raw rubber

Importance of Landscapes in Tembak

Now the most common types of landscapes in the region are introduced, we want to connect these landscapes to their purpose. To find out which landscapes are important and to what purpose, we did the pebble distribution game. This game is explained in more detail in the chapter on methodology, but in essence each interviewee is asked to divide 50 stones or pebbles among a number of cards, as each card represents a landscape.

Figure 1 Relative importance of each landscape altogether with 95 % CI Error bars.



The results can be significantly (p=0,01) divided in four groups[5]: The natural forest was elected as the most important form of land use, with an average of 25 pebbles, followed up by second group, which includes: the rubber plantation (17 pebbles), planted forest (13 pebbles) and the market (14 pebbles). The third group consists of vegetable gardens (7 pebbles) , the rice field (8 pebbles) and the river (7 pebbles). The swamp and the village were elected least important and form the final group. Some interviewees explained there are not so many swamps compared with other landscapes and that they are often turned into rice fields.

If we look more into the importance of each landscape for particular purposes[6], we see why forest and plantations are considered so valuable: they directly relate to the three uses that were considered the most important: food, water and income. If we assume 'importance' reflects actual use, than the Dayaks obtain more than half of their building material from the forest and a third of their medicines. Surprisingly, the role of the market is relatively small: some building materials like cement and metal are bought at the market as well as a number of food items, but no water.

[5] See Appendix 1 for Tukey HSD test
[6] See Appendix 1 for circle diagrams for each purpose

While we should not rely on these graphs for getting an accurate idea of the actual amounts of food, timber and income that are obtained from different landscapes, we can draw some important conclusions from this inventory. The first one is that no single landscape accounts for one single purpose. Even rubber, the main 'cash tree' found in Tembak, is only considered to account for half of the villagers income. That being said, it is clear that the planted and natural forest together are delivering a large supply of goods: clean water, medicine, food and building materials. The fact that the people realize this, could be part of the explanation why the people in Tembak refuse to engage in a palm oil system. As one interviewee said: *"money is not the most important thing for us. The most important thing is food. That's why we like the forest so much. It supplies us with everything we need."(interviewee, 3 November 2012)*

Land use cycle

The heterogeneity of the landscape in Tempunak forms a large contrast with the homogenous palm oil plantations that one can find between Tempunak and the Kapuas river. However, as we saw in the importance diagrams there is also a division of purposes for each landscape. If we put it quite crudely: rice and other subsistence crops form the basis of the households food supply, while rubber provides an additional monetary income. The forest is there to provide special needs like wood, particular food items and clean water.

However, the relation between these food items is more complex. Until now, we left seasonality out of the equation, but of course the importance of crops and landscapes varies over season. Similarly to what Dove found (1993), rubber becomes more important in the months where the old rice is already eaten and the new rice still has to be harvested. It is also in these months that people go to the gold mines to obtain an additional income form mining.

Overall rubber forms a very strong complement to subsistence crops: it grows on places which are often too dry for most crops, it is very flexible in harvesting and when tapping is not possible because of rain, work can still be done in the rice field or vegetable garden. Dove even discovered that rubber even positively enforces the income from rice fields. This is explained by the fact that when a household has a bad harvest, it can tap rubber to supply an income for this crop while at the same time they can prepare the rice field for the next cycle. If a family would not own rubber, the time that they would need for preparing the next cycle would interfere with the time they need to work for their meal in that period.

Like the rubber gardens, the forest provides a kind of bank account as well. In times of low income or when a family has to organize a marriage or wants to build a house, trees can be harvested in order to gain an additional income from wood, although this happens not so often. In the meantime, the forest provides a continuous source of clean water, food items and medicines.

Diversity in land use not only permits the Dayaks to deal with the seasons and temporal shortage, it also helps them to react on economic opportunities. As Gönner (2011) demonstrated for the Dayak Benuak in East Kalimantan, by temporarily focussing on a more particular item (rubber, rice, NTFP's) from the stock, local people can adequately react on 'waves of opportunities' - periods when there is a high demand for a particular product. While we did not research these effects for the people in Tembak, it is clear that the Dayaks easily can balance their production according to the demands for local products.

New tree experiments

Currently, some of the villagers of Tembak who work closely with the project are developing new ways of land use that build on the planted forest, described earlier in this chapter. One of the most important adaptations that is experimented with is the introduction of the sugar palm (*Arenga saccharifera*). This palm has the remarkable ability to produce sugar-water in a very efficient way. The sugar palm can be tapped on a daily basis by scratching a small piece of the bark. The tapped sugar water can be made into sugar or can be transformed into ethanol, which can be used in turn as gasoline.

There are a number of benefits of the sugar palm that make it an attractive economic source to the Dayaks. The first one is that the tree, in contrary with the rubber tree or the oil palm, is endemic – that is to say it is native to Indonesia and hence resistant against most local pests. Secondly, the tree is quite shade tolerant and performs best in mixed forest gardens. The third reason is that the production of sugar water does require little to no extra fertilizer. The fourth reason is that, like with rubber, the Dayaks can decide themselves when to tap.

While the sugar palm certainly looks promising, there is still a lot research going on to prove the economic feasibility of these trees and the best ways to grow them. Several drawbacks of the tree are indicated as well: first of all, harvesting the sugar palm is quite labour intensive and secondly, to make ethanol from the sugar water, it needs to be cooked –demanding energy input.
Other tree types that the Dayaks are interested in, are Gaharu (*Aquilaria malaccensis*), a tree that, when injected with a type of fungus can produce

valuable medicines, and *tengkawang* trees (*Shorea sp*.) that produce *illipe* nuts, which are rich in unsaturated fats.[7]

Like rubber, the 'new' trees crops that are introduced in Tembak are intended to build progressively on the current system of land use. Both the sugar palm and *tengkawang* can be added in the rotational system of rice, rubber and forest. The difficulty of this new system is that it takes a lot of work and, more important, time to produce a sample of such a landscape. However, as we saw the rubber system building on rice rotation systems, we can see that the implementation of such a system is simply a continuation on things that Dayaks were already doing: planting trees.

To wrap up

The current land use system in Tembak is mainly based on rubber and rice production. While rice is the most important subsistence crop, rubber is the economic complement that enriches the family livelihood with a salary income. While most families are engaged in year-round crop production, additional food items are purchased from local stores or motorbike stores. We also see that the Dayaks relate their water supply to the existence of forest on the hills. This may already explain a bit about why the Dayaks do not want oil palms on their land.

Based on these results, it appears that the Dayaks are neither completely relying on forest resources nor on market economy. They make use on what both systems have to offer. This 'in between' type of economy makes it very difficult for other stakeholders to classify them. In the following chapters we will see how different stakeholders deal with this question.

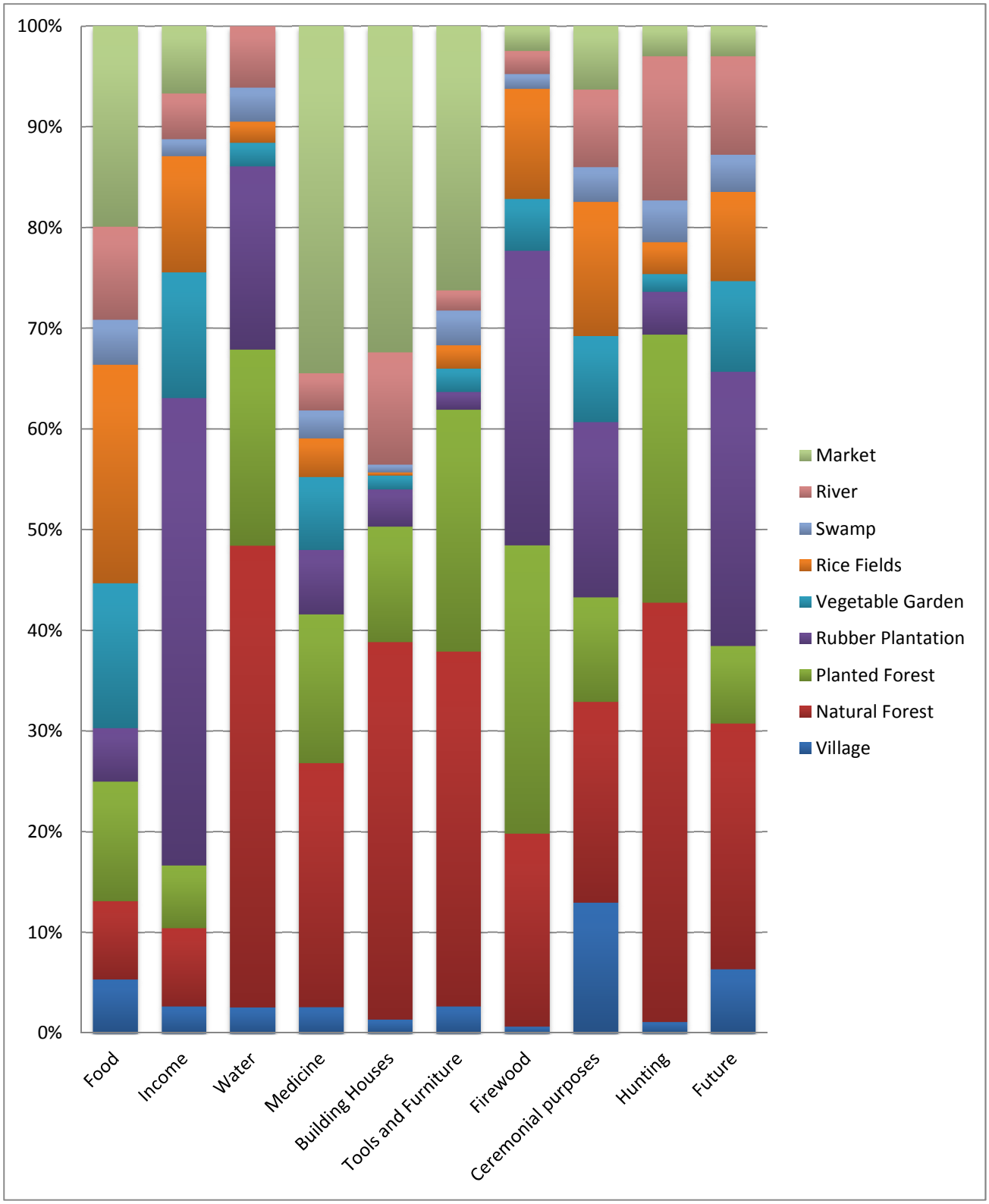
It appeared that the Dayaks had a very good idea on who owned what land and sometimes they would trade pieces of land with each other, but on the short term, land ownership was a fixed matter. This does not apply to the way in which the land is used. Occasionally land that is used for harvesting rubber is transformed into a rice field, a secondary forest or a fruit garden.

This chapter shows that a switch to palm oil is, based on current land use practices, by no means necessary. The current, diverse way of using the land serves both economic, social and health goals which probably would be altered if the people would move to palm oil. This does not mean that the people of

[7] For more on Tembak trees, see my internship report: 'Economic opportunities for the Dayaks, which goes also more in depth on the results of the Pebble Distribution Game

Tembak are not interested in development. On the contrary: the fact that they are experimenting with new crops shows that they are in for innovation. In the next chapter we will see that there are other forces that feed the palm oil dilemma for these people.

Figure 2 Which landscapes are important for which purposes?



This graph shows the average division of pebbles (transformed to percentages) for each type of land use. It shows that each type of landscape serves multiple purposes. Note that forest is considered important for many categories including water. This graph is based on 26 games that we played with inhabitants of Tembak, 286 distributions in total. There was no big difference between answers from men and women.

5. The Merits of knowledge

Introduction

This chapter analyses why the people of Tembak refused oil palms, when companies made the man offer. It also shows how they are involved with conservation work of western NGOs[8]. It attempts to show that both parties have obvious interests in working together but that they are also strategic in the way which they deal with each other and the outside world.

Palm oil expansion in West Kalimantan

In the previous chapter we did not discuss oil palm plantations as a landscape, since there are no oil palm plantations in Tembak... yet. But with government plans to increase palm oil production from 19,2 million tons of crude palm oil in 2008 to 40 million tons in 2020 (MOA in Rist et al., 2010), the pressure for land conversion is high. Palm oil is a major driver of deforestation and loss of environmental services. While there are some initiatives like the Round Table of Sustainable Palm oil, the definitions of what counts as sustainable are still very broad and ambiguous (Rietberg, 2010).

While environmental damage is more or less a fact, the impact of oil palms on communities is much more debated. Opponents reported high levels of conflict – like Sirait (2009) who reported 94 violent conflicts in West Kalimantan in the past decade. They also accused palm oil companies of land grabbing, reducing living standards – especially for women and violating human rights. At the other hand palm oil has been widely accepted by many communities. Rist et al. (2010) studied this apparent contradiction and came to conclude that palm oil *can* improve income and livelihood standards. They argued that conflicts are almost always the consequence of unequal benefit sharing, lack of transparency, lack of freedom, and prior informed consent and the lack of clear land rights. In other words, it is not palm oil in itself that forms the problem but the social constellations that are used to produce it. Feintrenie et al. (2010) argued along the same lines that: "*rather than giving up their land to the companies they [the smallholders] would prefer producing fresh fruit bunches on their own individual plot*" (Feinterie et al. 2010: p 394).

[8] In this thesis, the names of the organizations are fictitious.

Cramb and Curry (2012) showed that there are various constellations in which palm oil is produced and they discussed four of these constellations in depth. To summarize: the tree crop can be produced by large estates, smallholders and some intermediate steps like the Nucleus/Plasma estate-smallholder schemes in which smallholders give a part of their land to the company. In return the company plants trees on both the smallholder's land and the land that was surrendered by the company. Furthermore, the company, by contract, buys the fruits that are produced by the farmers. However, the profits of fruit production are reduced by the costs of credit, transportation and pesticides.

In the end, palm oil expansion is neither a monolithic capitalist process nor a guarantee of socio-economic backwardness. There are reasons why communities could be interested. Still, the Dayaks in Tembak refused to join *every* form of palm oil production. The question is:

Why the Dayaks did not engage in palm oil production?

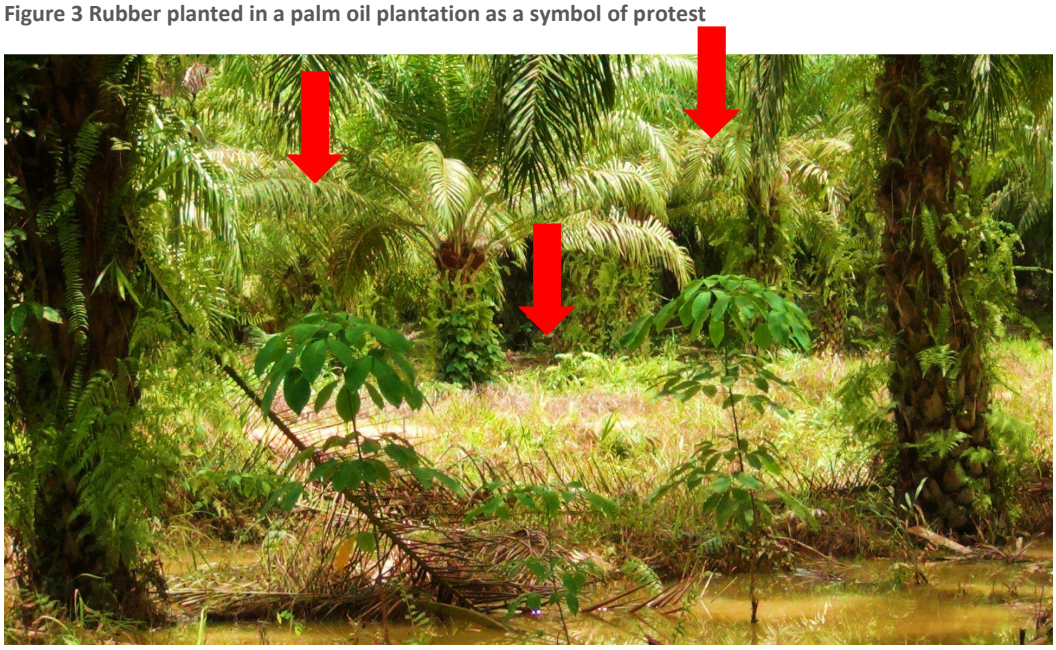
While the process of palm oil expansion is already taking place for more than 40 years in Indonesia (Cramb and Curry, 2010), palm oil companies have been visiting Tempunak villages only very recently. The first officials that wanted to negotiate palm oil expansion on the hill slopes of Tembak arrived only in 2011. By that time, they were already too late. The villagers already had informed themselves about the effects of palm oil on their land, their income and their future. They unanimously decided not to get involved in palm oil production and they showed the door to the representatives of different companies five times in a row.

Considering that palm oil is already growing for so many years in the region, how can we explain the late confrontation between the villagers and oil palm representatives? A likely explanation is that the village is situated in the inlands of West Kalimantan in a hilly country. As palm oil cultivation demands a lot of water input, lower areas are likely preferred above higher areas. Also, the region is quite remote and has a poor road system.[9] Transportation costs are expected to be somewhat higher in the hills than the more low-laying areas (see map). Only when the amount of lowland forest becomes scarce, higher areas become more interesting. While these are just assumptions, fact remains that the decision to switch to palm oil became evident just a few years before writing.

[9] Driving from Sintang to Tembak, it was not an uncommon sight to see a truck, overloaded by oil palm fruits stuck in the mud - especially in the rainy season.

In interviews with the people of Tembak, a number of reasons came up that explain why the palm oil was found suspicious. First of all, the people in these villages do not live in isolation. They often have family members that live in the city or in plantations who they occasionally visit. Stories about corporations' misbehaviour were often travelling quite fast. The uncle of my host family lived at a high age in the plantation and was so fed up with the palms that he, as an act of resistance, planted rubber trees between the oil palms (see picture...) . *'Let them stop me if they want!'* his words supposedly were when NGO officials brought him a visit (Interview, 24 November 2012). These stories travel fast among villages and they lead to lively discussions on the prospects of palm oil.

Figure 3 Rubber planted in a palm oil plantation as a symbol of protest



Secondly, the people in Tembak, watch television. Violent conflicts are often reported on the local news and appear in newspapers. As the violence against Madurese between 1997 and 2000 has demonstrated, news travels fast among Dayaks and opinions can quickly turn. By the time the corporations were visiting Tembak for inventory, the people had already heard a lot on their tactics (see Rietbergen 2009). One of the inhabitants said:

"[I do not sell my lands] *because I don't like these oil palms. It's not good for the water and its using a lot of pesticide. You have to pay for a lot of things. And also, palm oil plantations know a lot of conflict. Everywhere: conflict, conflict, conflict. Here people do not have conflict."* (Interview, 2 November 2012).

There are other, more indirect, reasons why the palm oil corporations failed to get access to Tembak. One of them is education. A large number of people in

Tembak has enjoyed higher education. When the company visited the Dayaks in Tembak, the people had just finished building a water powered generator. They had themselves figured out how to build such a machine and they learned that tree coverage was essential for maintaining high water levels that would power the generator (see previous chapter). Water generators are now becoming more and more popular in the region and politicians finance the building of the dams and machines as part of their propaganda.

It remains difficult to connect education levels to the motivations that people have for particular choices. However, it remains clear out of many of the stories that people told me, that people were much more informed than I suspected. During a meeting of several (former) village chiefs the men were talking in rapid Bahasa Kampung, which I could not follow. At a certain point, I caught up the word 'Eindhoven', which is a Dutch city with a famous technical university. Initially I thought I had misheard the word, but later, when I talked with one of the English speaking man what they had discussed, he explained to my surprise that they indeed were discussing the innovations of the Technical University and about the solar challenge.

In contrary with other stories on community conservation, the efforts on protecting the forest from logging and palm oil plantations was not initiated by a foreign organization; it was started by the people themselves. Already in 1996 people in Tembak and surrounding villages played a role in getting rid of the Madurese.

A new partner

In 1999 the Dayaks heard about the work of an organization that was experimenting with sugar palms and agroforestry. The stories they heard sparked their interest. From that moment, these inhabitants started to collect information on these projects. They even sent the local pastor (who worked in many of the surrounding villages) to visit a large project by this organization in East Kalimantan and in Sulawesi. When representatives of the organization finally arrived in May 2010, together with the chair of OONL, the Dayaks in Tembak already had a large dossier on them.

Father Jacques is one of the last missionaries active in West Borneo. The man, already living for 45 years in the region, started as a catholic priest and, while he still works on his religious duties, his main concern is preserving the local cultures in Kalimantan. He started a foundation that hosts a local-craft

programme, that creates income for –among others- Dayak women based on their local craft.

In 2009 the assistant of father Jacques went to visit a number of villages in the Tempunak region that were engaged in this program. One of the villages she visited was Tembak. The people in Tembak explained her about their trouble with palm oil companies that already had attempted to gain access to their land. Father Jacques, who had many contacts with other organizations, had recently befriended another formerly Dutch person who was very actively supporting developing alternatives to palm oil.

Hearing the messages from the people in Tembak, father Jacques connected these people with this man who, on his turn, send one of his partner organizations OUO to the village. This organization is currently active in Tembak. OUO is a small Dutch organization that, together with father Jacques runs the Sintang Half Way House. At the same time that the people in Tembak were looking for assistance in order to deal with palm oil companies, OUO was looking for a place to release their confiscated orang-utans.

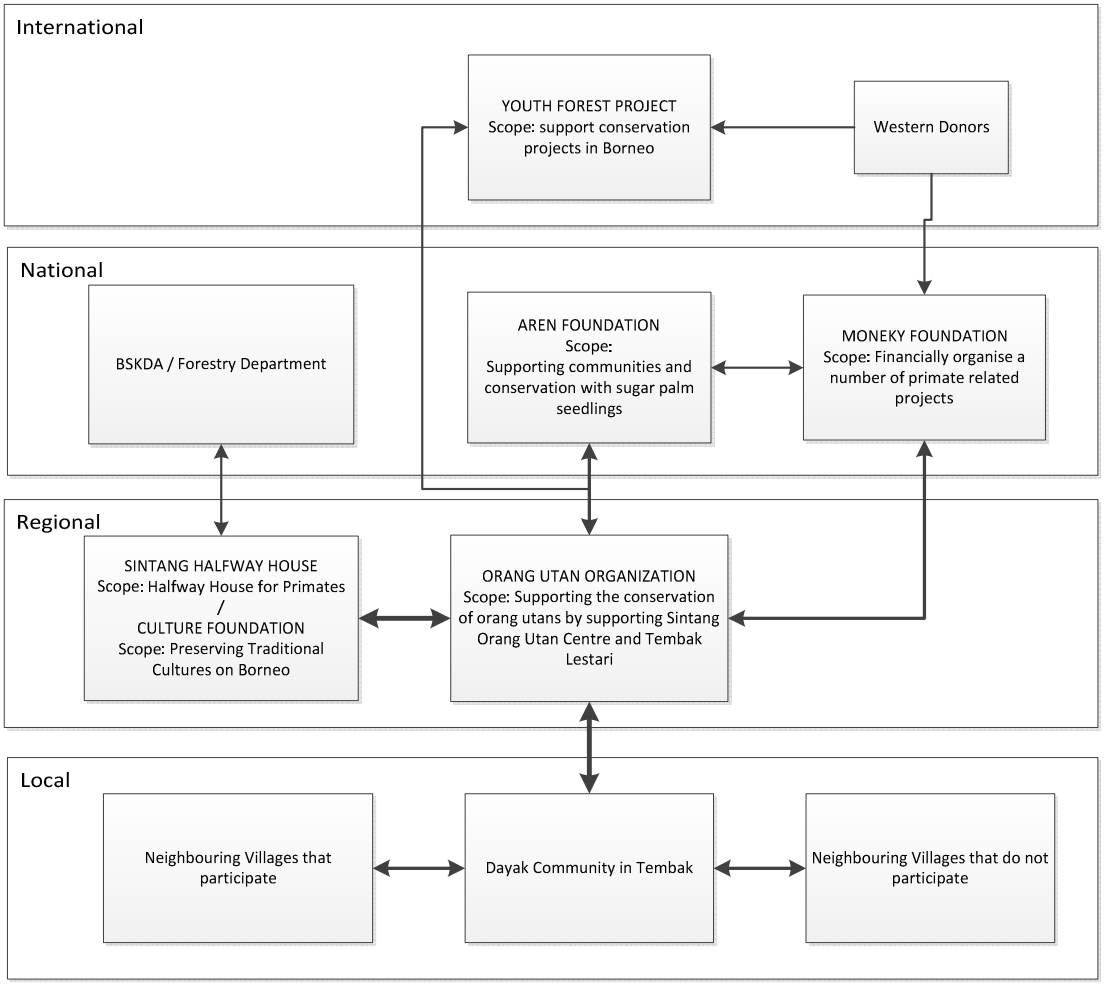


Figure 4 Network of involved NGO's

Interestingly, this NGO was not the only potential candidate for collaboration. Also the government has attempted to collaborate on a reforestation project around 2007. However, the Dayaks stopped working together when the funding stopped. With a brand-new fundraising programme based in The Netherlands, the current project is expected to be financially strong enough to support their activities in Tembak.

While OUO is a relatively small organization, it does not work in solitude. It receives assistance from befriended NGOs. It should be noted here that although we mention the names of the organizations, in reality, the relationships are between key persons of the different organizations. The chair of OUO is befriended with the chair of the Aren Foundation, the chair of the Monkey Foundation and the chair of the Culture Foundation. Because of these relationships, the small organization in Tembak has access to a number of valuable assets: the Aren Foundation provides OUO with knowledge on the sugar palm, the Monkey Foundation provides legal assistance and the Culture Foundation arranges transport. Secondly, these organizations have access to many other stakeholders. One organization has people that are skilled in GIS, the other one has access to certain types of maps, and so the network encompasses many resources and stakeholders that can be used and dealt with.

This network of, predominantly NGOs is not so rigid, as some actors become more important or less important over time. During my stay in Tembak, OUO changed their 'relationship-status' with various other NGOs and also suffered an internal regime shift. Key actors actively engaged in disputes on social media sites like Facebook and YouTube, where the different actors try to discredit each other by pointing at flaws, mistakes and unprofessional acts of each other.

Benefits for both

Despite the various changes and struggles in the network, the partnership is still viable and is currently working together on three projects. The core project is building a rehabilitation centre for orang-utans in Tembak which is situated on the border of the forest fragments that the Dayaks lend to the NGO. Secondly, in order to facilitate tourists and community meetings, the Dayaks build a small longhouse that was financed by national donors. Finally, the NGO and its partners are involved in assisting the Dayaks with developing economic alternatives like the sugar palm (see previous chapter). In the underlying table, I summarize what I believe are the main goals that the partners hope to achieve with these three projects.

Table 4 Overview main projects of Dayak/NGO partnership

Project	Benefits Dayaks	Benefits NGOs
Sugar palm project	Extra economic opportunity	More environmental friendly land use
Orang-Utan centre	Incomes trough tourism, jobs	Place to rehabilitate orang-utans and other animals
Long House	Community centre, stimulation of culture	Place to do research and to facilitate volunteers and/ or tourists

During the interviews with the villagers we asked among others, what the people expected from the initiatives of the NGO. I especially focussed on two of the projects: the sugar palm and the orang-utans. People were allowed to give as many answers as they liked. These were the most common answers:

Table 5 Expectations of Orang-utan project

What are your expectations on the project with the orang-utans?	Times Mentioned
Income	7
Education (in general)	5
Cultural exchange (knowledge, language)	3
Jobs	3
Tourism	2
Keep forest	2
Preservation of culture	2
Nature education	2
Fun to see orang-utans	1
Keep cleaning	1
Open the mind of the people here	1
Help the people not to hunt the orang-utan and other animals	1

Table 6 Expectations of sugar palm project

What do you expect form the Sugar Palm?	Times Mentioned
Income	11
New facilities	1
Increased equality	1

Better transport	1
Less pressure on the forest	1
Easier work	1

While the NGOs that are involved are obviously having more environment based expectations of this project, we see that income is the main driver for the Dayaks to participate. This is more prominent for the sugar palm than for the orang-utan project, as the Dayaks associate the orang-utans also with educational and cultural benefits. Important is that both partners have different reasons to participate. How these differences are dealt with is the subject of the next paragraph.

(Representations of) a common ground

One of the things I brought with me to West Kalimantan was a Camera Trap; a device that is increasingly more used in ecological research and conservation. Basically, it is a camera with a movement sensor that one can attach to a tree. The camera starts to make pictures; and/or videos when it's censor notes movement. Since it works without making sound or smell it is ideal to make pictures of rare animals. We installed the camera a number of times in the forest hoping to make some nice videos of the local wildlife. However, the result was surprising: we did manage to make videos of two animals (some squirrels and a porcupines) but we also photographed some hunters that were trying to shoot a bird. When I showed these videos to the project leader, he frowned and said that it was of course logic that people of Tembak still engaged in hunting activities, but that strong agreements should be made to prevent hunting in the future.

Figure 5 Painting by one of the school children in Tembak

Hunting is one of the obvious 'difficult points' in the relation between the Dayaks and the nature organizations that want to work with them. Some villagers confessed that hunting 'was their preferred past time' and that they 'loved to hunt'. Understandably, a group of Dutch naturalists have a very different view on hunting than the Dayaks. How do these groups deal with these differences? The

story of Pak Apui – the medicinal man in the village of Tembak, is very illustrative. In the past he used to hunt for birds and monkeys. At one time he had shot an orang-utan:

"Pak Apui holds me by my arm and says, I only once killed an orang-utan. It is not right, they can read our minds, they are persons. But this one time when we went out to collect rattan and our group split up, all of a sudden I heard several gun shots and when I rushed back I saw this mother orang-utan with her baby and she was bleeding, seriously wounded by the shots of my friends. I felt to sorry, but I had to release her from her suffering so I shot once and it killed her falling down… Tears are in his eyes…" (Blog article - 2012).

While I find this a beautiful emotional story and while I do not doubt the sincerity of Pak Apui, I cannot escape to analyse how this story works as a symbol of unity. I believe it is no coincidence that Pak Apui told this story to a key person within the conservation organization and I also believe it is no coincidence that it ended up in a blog that addresses a large audience of Western conservationists. The story clearly illustrates a bridge between traditional practices and modern initiatives. It is one of the ways that illustrates how the Dayaks and Westerners are finding a common ground as a basis for their partnership and how they show this common ground to the outside world.

While both the NGO and the Dayaks are very skilled in creating a joined narrative (see also chapter 8), there is room to question how strong this bond will be when more of the projects facilities are established. When we reflect on the results in the previous chapter, we can see already a potential conflict of interest. To recount, the Dayaks thought the natural forest contributed to a quarter of their medicine needs, a third of their construction material and a fifth of their firewood and ceremonial needs (see again appendix 2). The small fragment of 58 ha, which is the piece of natural forest that is closest to the village, might be far more important than the Dayaks and the NGO initially perceived. Hence, we must pose the serious question on how the partnerships think to regulate access to the forest. When the forest school for orang-utans is opened, will the people of Tembak still be able to collect medicines and firewood in this forest? If not, will they be compensated for this? It is likely that these questions will only be answered when these conflicting interests will collide in reality.

In the meantime, both Dayaks and the NGOs are working very hard on their relation. While the Dayaks already gave in on their hunting practices and showed commitment to preserving the orang-utan, field workers of OONL have a different problem: the stereotype of the nosy Western. During meetings of

representatives of the different organizations that work together this issue was actively discussed. They decided to 'not send' any white people to rescue captive, wild animals as this would suggest an image of 'neo-colonial practices'.
The strategy keeping white people out of the animal rescues and creating goodwill among inhabitants shows that maintaining a partnership takes very strategic consideration on what and how to show each other and the rest of the world what they are doing.

To wrap up

In this chapter we discussed a number of reasons why the Dayaks in Tembak resisted oil palm expansion: they were aware of the negative side of palm oil by what they saw on the news and because of the stories they heard of relatives. Surprisingly, *they* took the initiative to engage into a partnership with a nature conservation organization. The term partnership suggests two stakeholders, but as we have seen, the Dayaks actually joined a whole network of players that operate on various scales. From a Western point of view, it is only too easy to underestimate the independence and networking-skills that the people in this region have. Instead of primitive and marginalized, these people are actively engaged in politics and do inform themselves.
Secondly we see that the people of Tembak and the NGO have obvious benefits in working together. At the other hand there remain some factors that are conflicting.
Finally, we see that both the Dayaks and the NGO actively steer their image in certain directions to get access to particular resources.

6. On the Map

'Law, in Indonesia, is a contested value by itself' (Bakker and Moniaga 2010: p. 200).

The complexity of Indonesian Land Law

Legislation and the regulation of land claims has always been terribly difficult in Indonesia. This is first of all because of the diversity of regimes that have ruled over the people in Indonesia. Each regime pressed their mark on land legislation. The Dutch, who ruled the country for three and a half centuries, have, during their colonial rule, maintained several systems of administration. The *domeinverklaring* from 1870 declared all land to be state property. If people could show that they made continuous use of (cultivated) land, this land would be declared 'customary land', which would fall under 'customary law'. As Peluso (2005) explains, European and Chinese migrants could lease land but were never able to claim 'customary rights'. Usually, customary lands were basically left from state maps and considered a 'residual' category. While the *domeinverklaring* legislation was first enforced in Java, the colonial rulers tried to expand this legislation to other islands by declaring regions as 'political forest'. Already during these days, conflict over land was overly common.

Figure 6 Ancient map of Borneo

An ancient map of Borneo in the Sintang Museum of Cultural Diversity reveals how little the colonists knew about the inlands of this large island. Imagined mountain ranges were drawn, leaving forest patches and a lot of empty space between them. Even now authorities are often oblivious of the people that live 'upstream'.

The colonial territorial system could be argued to be the basis of the current land use legislation. Nowadays access to land is basically regulated by the Basic Agrarian Law (BAL) and the Forestry Law. The Basic Agrarian Law has some articles that recognise customary law (adat): adat rights can be registered but they have to be reinterpreted first as private land rights. The underlying assumption of this legislation is that customary law would ultimately be replaced by national law (Supomo in Bakker and Moniaga, 2010). Customary land claims are often processed by the National Land agency, which holds the mandate to enforce the BAL.

Forest land is directly managed by the state's Forestry Department and falls under Forestry Law. This law also leaves space for customary claims, but only if those claims do not conflict with 'national interest'. Since 'national interest' is not defined any further, it is basically up to decision makers to explain whether claims are conflicting with this national interest or not. Also there is ambiguity about which communities can make claims to 'customary land'. Indonesia has a large variety of cultures that migrate not only within a region inlands but also from island to island. The conflict between Dayaks and Madurese in 1997-99 are an example of the clash between a migrant community and local tribes.

Adat Law

When I was showing pictures in a field guide of the birds of Borneo, the medicinal man stopped at the picture of the helmeted hornbill (*Rhinoplax vigil)*. The medicine man told me that people could earn up to 2 million rupiah with selling the horn of this animal on the market in Pontianak. But apparently, hunting this animal had become a taboo in many of the villages surrounding the Cundung forest. How did this taboo come to pass?

According to the story, the hunters of a neighbouring village brought a helmeted hornbill with them at some day during the rainy season. The night following this event, in the dreams of the villagers, the same bird appeared and told them that if they would ever hunt him again, the village would be doomed with trouble for many years to follow. Afterwards the villagers decided that hunting the helmeted hornbill was forbidden by taboo.

In a society that has no literary tradition, stories like these are the main vehicle of law. The stories are vivid, have a simple build up and are easy to recall. Also, they refer to powers beyond the control of the people. These are spiritual brokers that enforce the desired behaviour and assume punishment when rules

are broken. Dreams and omens are quite common in Dayak culture and local stories are often quickly spread (Dove, 1996).

Concerning land use (called adat bumai by the Dayak) – adat law often prescribes that who plants trees owns the land (e.g. Peluso, 2005). Clearing land for a plot demands investment of time and labour, therefore it is not strange that forest-dwelling societies are often using this type of ownership. Particular tree species represent who made a plot in the past and therefore, which families in the following generations are having rights to the plot. As Dove describes, a similar idea was used when rubber became more abundant:

"Under the adat 'customary law' of the Kantu (and many other of Indonesia's tribal minorities), rubber-planting establishing greater rights to land than does clearing the forest for a swidden" (Dove 1993: p. 142).

An indicator that these ideas about property are still vital in the minds of the people was already given in the previous chapter. Remember the uncle of Pak Nayau who planted rubber trees *inside* a palm oil plantation (chapter 5)? This action makes sense in the context of adat law: planting rubber trees is a claim of property. A more subtle item in the quote of Michael Dove is the term *greater rights*, suggesting that property rights under adat are by nature not binary but rather analogous. One does not have absolute rights to a piece of land, but simply more rights than someone else.

It is difficult to say how viable adat rules are nowadays. At the one hand lands are still inherited and Dayaks still recognize the significance of durian trees.[10] At the other hand, according to the adat leader, the adat law is often used secondary to state law. In the words of the adat leader: 'If someone murders or steal, we go to the police in Sintang and we go to court.' They do not decide on possible retributions themselves.

As I wrote earlier, customary law is –although ambiguously- accepted as valid by state regulation. Thus the mere fact that the Dayaks maintain such a thing as customary law could already be beneficial to enforce claims of the Dayaks as a group.

[10] Apparently companies that want to make a plantation sometimes send people to get rid of trees that could be used as evidence for claims by local people.

Claiming Land by Making Maps

The Dayaks in Tembak know that they cannot stop influence of the state. The former adat leader recognised that: 'If tomorrow, the regional authorities would decide that these lands have to suit another purpose, I have no idea how we could stop them'. The Dayaks hope that working together with NGOs will strengthen their position.

As written earlier, the Indonesian Law provides a small niche that could be used by the Dayaks: while the Indonesian government officially may decide on land use, she must respect the law of traditional communities – the adat law. The Dayaks in Tembak try to comply with this niche. In order to do that, they have to do two things: (1) they must be able to show that they are traditional and thus enforced to make a claim based on tradition and (2) they must be able to show on which land they make a claim. As I will explain further in chapter 8, I do not believe that it is a coincidence that the people in Tembak dress themselves up when officials visit the *kampung.* Communicating this identity could benefit the first requirement. For meeting the second one, the Dayaks need assistance.

In order to release captivated orang-utans, the NGO was looking for a piece of forest where the confiscated animals could be rehabilitated and eventually released. There are two pieces of forest near Tembak that had caught the attention of the organization. The first was a small patch of 63 ha primary forest located at walking distance of the village, which would be used as a 'forest-school' in which the rehabilitated orang-utans could learn how to live in the forest and how to be 'wild' again. The second piece of forest was much larger: about 20.000 ha. This forest, called 'Cundung' by the locals, would suit as a final release area for the captured animals.

Since all primary forest is seen by the Dayaks as communal ground under adat law, the organization had to make an agreement with the village as a whole in order to use it for nature conservation goals. According to representatives from the NGO, it took not much effort to seduce the people to give them access to this forest. The Dayaks were convinced that this project would be in their benefit, especially because the NGO would arrange new sources of income for the people. The agreement with the villagers was only the first step, although a very important one. The second step was to convince the government. As the organization quickly discovered, there was a logging concession on all the primary forest in the region.

The organization used several ways in order to secure access under state law. The first way was to contest the logging concession. By state law, forests that are

situated higher that a certain altitude are not allowed to be cut. By using height maps, the organization could show that the forests they were interested in were indeed higher than what would be allowed for logging. The second tactic was to opt for a special conservation status: the *Ijin Lembaga Conservasi*. This special status would give the organization permission to use the forest for releasing animals in the site and give special permission to rehabilitate sick animals.

In order to get this status, the organization had to succeed for a number of requirements. They should be able to show that they had enough financial resources to sustain the project for at least one year and they had to build a health-clinic and suitable night cages near this forest. While the first night cage was already build by a group of volunteers two months before I came, the rest of the centre was still to be build when I left five months later.

Finally, the organization was also trying to register the forest formally as adat-ground. In December 2012, the pastor had sent out a team of map makers to measure the area designated for the forest school. The team consisted of two recently graduated geography students who, with the help of a villager and directories of the former village leader, walked along the border of the forest with a precise GPS. While this was an exciting trip for me, the Dayak joining us, told me that he found this trip boring. The land had already been measured for tree times: the first time with a group of international students, the second time with another Dutch student and one time by a Dutch map maker.

One week later, the map was finished, but the pastor was not pleased. Apparently there was a misunderstanding between the map makers and the villagers. The original task was to measure the land used by the people of Tembak, not just the piece of rainforest. A second drawback was that the piece of forest was 5 hectares smaller than initially thought – the size was 58 ha instead of 63. Still, the map was used and combined with other maps of adat grounds in the Tempunak region. All these maps combined would be offered to the Bupati in January 2013, but the Bupati cancelled two appointments in a row and has by now not yet received the maps.

While the map was not yet received by the Bupati, the Dutch fraction of the NGO used the image in order to set up a square meter project, in which Dutch donors can symbolically adopt a piece of land by making a small financial donation. While it could appear to Dutch donors that the project is owning this land, in fact, it is not yet clear who holds the 'official rights' and who will have access.

It remains a dilemma for both partners in how far the piece of forest will be accessible by the people of Tembak. For instance, the NGO is still undecided on whether children should be allowed in the forest where the orang-utans will be rehabilitated, also there is still a dilemma on how to discourage the hunting practices that still prevail (see previous chapter).[11]

Although several villagers had expressed interest in having their land mapped, until now, only forest has been mapped so far. Maps, however are not the only tools that are used as a back up to a land claim. The NGO also uses satellite monitoring. By making use of satellite images they can compare landscapes change in a time-series. The ability to make illegal activities visual is a great asset for the Dayaks. While this project stands loose from the activities in Tembak, the NGO can get hands on this information via their partners.

The Clearing of Saran

While making maps helps to indicate the borders of the Dayak land, satellite monitoring helps to battle other claimants. A short while before I had to leave, something very interesting happened in the Saran Hills. By word of mouth we heard that about 250 ha of trees had been cut to make place for oil palm plantations. This despite the fact that the Dayaks in the neighbouring villages had agreed (with the NGO) *not* to engage in palm oil production. It was even said that people had buried the cut-down trees to 'get rid of the evidence'. While I was very intrigued by this event, my visa was almost expiring and I had to go.

By staying in touch with people of the NGO, I heard second hand what was happening. The NGO had visited the village and wrote a letter to the District Officer, proving with satellite images that the forest had been cut illegally. A month later, the organization reported that the bulldozers were gone from the area. When the NGO contacted the responsible corporation, stressing that the Dayaks in the region were against palm oil, the corporation reacted as followed:

'It is true, the Dayaks *were* against palm oil. But not any longer; we convinced them of the benefits' (In conversation with J. Kern, November 2013).

In reaction to the cutting, villagers of the Saran villages made an official complaint against the responsible company, DSN group, to the RSPO[12]. The RSPO reacted with saying that the accusers where not representing the communities of

[11] See also previous chapter
[12] Round Table of Sustainable Palm Oil

Saran as a whole and that DSN Group had provided evidence that they had paid people a 'reasonable' allowance for the land.

Since the Bupati had promised to facilitate a special meeting with company- and Dayak representatives, at the same time the Dayaks and representatives of DSN group made an agreement that further logging would be cancelled until this official council. Despite this agreement, logging continued in the Saran forest, also in parts that were not even bought by the company. This story, in my view both scary and fascinating, is an open ended one. How it continues can be followed online.

Legal chameleons

Bakker and Moniaga (2010) have indicated three constellations through which legitimization is sought by communities. The first one is via state regulation, the second one via regional autonomy opportunities and the third one is via mutual beneficial solutions through extra-legal arrangements. While the Dayaks are applying for the third option, this is still a very broad explanation of what happens here in legal terms.

A more thorough analysis can be made with the theoretical framework of Boaventura de Sousa-Santos who proposes, with recognition to the work of Nietsche that post-modern conception of law might be characterized as a chameleon, as it changes its appearance according to the biological conditions he is living in. According to de Sousa-Santos, the three 'biological conditions' that matter in law are scale, projection and symbolization. If we look carefully, we see that these concepts are reflected in the case of the Dayaks.

In general, the Dayaks face four obstacles in the legal and the political domains. The first one is not being recognized by policymakers: the Dayaks' problems are virtually invisible on the policymakers agenda, which exists on a different scale.
The second one is being misrepresented in the policy-making processes. Politicians and corporate executives have a rather different idea about who Dayaks are and what rights they have than the people in Tembak, hence their projection differs. Thirdly, the way law is symbolized by Dayaks is different from the traditional way that Dayaks deal with justice. One particular disadvantage is that modern (state) law is written and paper based. Stories, dreams and spiritualism are considered weak evidence in courts.
A fourth problem, that has a lot to do with scale is that laws that could support the Dayaks are often not properly reinforced: forests that are legally protected are still being cut without legal consequences.

Based on this assessment one could conclude that the Dayaks are in an weak position. Legal justice seems out of reach, because how can people get their claims recognized in a system that behaves like a chameleon? While de Sousa Santos does not answer this question, this case suggests the most likely strategy: in a system that changes like a chameleon, one must behave like a chameleon.

The Dayaks could be seen as chameleons who use technology to translate their claims from the spiritual, narrative symbols that they normally use, to the formal and factual type of law that governments conduct. They actively represent themselves as conservationists, rather than poor, isolated forest dwellers. By doing this they try to alter the projection of the policymakers.

Having gained access to an international audience, the Dayaks and the NGO have not only created legal arguments (counter-maps) for their claim, but also a symbolical argument that appeals to our imagination. If we continue with the metaphor of de Sousa Santos of 'Laws as Maps of Misreading' we could argue that there are in fact two forms of counter-mapping: one that directly relates to territorial boundaries and one that counters our cognitive representation of who Dayaks are and what they deserve.

But - being recognized by law is not the same as being recognized in everyday life as laws often lacks reinforcement. The fact that corporations can cut down forestlands that are considered 'unsuitable' for palm oil by law without facing retribution from the state has driven the partnership to make a case against these companies. With satellite imagery and official letters the Dayaks not only take over the task of monitoring but also the accusation for a global audience.

To Wrap Up

This case highlights the two most important assets in the Dayaks toolkit. The first one is access to a network of organizations with shared interests, which was discussed in the previous chapter. The second asset is information technology. Television, mobile phones, internet, GPS and drones with camera - all these information devices are becoming cheaper and easier to use. The information that can be obtained with this technology can be of great political and legal value.

In the reality of everyday life, however, the difficult relation that the Dayaks have with regional and state law, once again shows their struggle with modernity. They recognize that their community law is gradually taken over by state law and that they are becoming more and more under influence of those higher authorities as access to the inland improves.

7. The Tembak Identity

Introduction

Throughout this thesis I have called the people in Tembak 'Dayaks'. While this term is common, it is not free of value. Type 'Dayak' in the search bar of pictures.google.com and see what type of images you get. We see people in traditional clothing, people doing rituals, images that refer to headhunting etc. 'Dayak' (literally 'inland people') is a cover term for over 200 groups of people in Borneo, which all are very diverse in customs, culture, believes and economic practices. This chapter gives evidence that cultural identity is not so much a reference to who these people are, but also (or rather) a political tool that can be used to legitimize claims (by locals) or to in-or exclude people from certain rights (by policymakers). In fact, putting on native clothes can be a strategic act to strengthen a particular image.

A modern lifestyle

Old missionaries and villagers still remember the days that Dayaks were traditionally dressed, lived in longhouses and had to obtain a head in order to marry. Those days are over. Dayaks today (or at least the Dayaks in Tempuak) are very different.
What struck me in Tembak, was that many families own a television and a motorbike. While the latter is a crucial mode of transport, a television in Tembak is a symbol of modernity. The soaps and drama series that are shown by satellite are all situated in a modern world, where people have lifestyles that are comparable with those of people in the West. Commercials on the television introduced products that are hinting at dramatic changes: luxury products like hair conditioner, mobile phones and disposable diapers. Most of the programs are pointing to the benefits of a Western lifestyle. Being modern is not only a matter of lifestyle, it is also a change in appearance: Western clothing, Western haircut and even a lighter skin.

Even in this remote town, younger families dress themselves in Western clothes while older people prefer more traditional outfits. While children play outside with self-made whirlabouts and jumping ropes, inside the house they play with computer games on their game boy or I-pad. In the little stores, people can drink cola, sprite and eat candy bars – when they can afford it.

Also, if one looks at the construction of houses, we can notice a change. While a traditional Dayak house is standing on poles and is entirely made of wood, todays Dayak houses are standing on lower poles or even directly on the ground. Newer houses are painted in vivid colours and are almost always partially made of cement. While Dayaks are often represented as a nomadic society, it appears that the modern day Dayaks choose for permanent residence. Motorbikes allow them to be mobile and cell phones allow them to communicate with family in the city.

Dayak identity

To summarize: the people in Tembak have adopted a number of elements that are typical for a modern lifestyle and it goes beyond saying that the current Dayaks live a radically different life than their ancestors did. Observing these symbols of modernity made me wonder what was left from 'the Traditional Dayak Identity'. Despite the motorbikes and tv's, the people in Tembak still refer to themselves as Dayaks and believe in the strength of their cultural identity. But how this identity influences daily live remains more difficult to grasp: when I asked the interviewee, what we Westerners could learn from the Dayaks, the most common answer I got was: our cultural values. But when I then continued with asking what these values were, answers became more vague. Three values that were commonly mentioned were respecting each other, care for nature and patience.

Figure 7 Dayak children dressing up as 'Dayaks'

It appeared to me that Dayak culture was most present in symbols: stories, dances and even tattoos. On a warm day in October, my supervisor decided to express his empathy with Dayak culture by taking a traditional Dayak tattoo on his shoulder. One of the younger people in the village took the job and, after many hours of mild pain, the supervisor's shoulder was decorated with a traditional Dayak tattoo. When he entered the house of his guest family, former village head Pak Nayau saw the tattoo and said with a serious look on his face: 'Is that not a Balinese design?' The ordeal ended in a long discussion between Nayau and the tattoo-maker weather the tattoo was Dayak or Balinese, this to the horror of my supervisor.

This anecdote illustrates how the content and symbolisation of Dayak culture is under continuous construction and discussion. The question whether an image on a shoulder is Dayak or not, extends not only to dances and images – it is also a common issue in questions on behaviour. For example; Dayaks are no muslims and therefore allowed to eat pork meat, which is consumed in large quantities at every marriage. Along the same logic, according to several villagers, Dayaks care about the forest, and therefore do not plant oil palm.

There are a number of situations where Dayak symbolism is more visually present than usual. These situations can be marriages, welcome ceremonies, official openings of public buildings and funerals. What all these situations have in common is that they attract a public from outside the village. When a neighbouring village opened a new generator, supported by government finance, the officials were welcomed by traditional dances. Young people, that otherwise would be wearing jeans and t-shirts, dressed themselves up in traditional clothes. During the dance they performed traditional elements of Dayak lifestyle: hunting, fighting for a wife and planting rice. Versions of these dances were also performed when I left Tembak to return back to Holland.

In everyday life I did not perceive the people I worked with as Dayaks per se, but rather as Indonesian villagers. But on these official gatherings, I recognised that my perception would suddenly shift. All the clothes and drawings reminded me that the people were Dayaks; having their own rules and way of life. I came to conclude that these representations were implemented strategically. The Dayak identity had become a 'community identity'. It seems that the way in which the Dayaks wield their identities, they install a cultural identity as opposed to other Indonesians and Westerners.

The Dayaks are not alone in using this imagery to benefit their community-identity. The Cultural Foundation, one of the organizations that work with Tembak is explicitly supporting traditional craftwork, in particular the making of Ikat-cloths. As we saw in previous chapters, also the NGOs use this imagery to connect Dayakhood with nature conservation.

While both the Dayaks and NGO officials refer to the same symbols when representing the community, the explanation is different. Sometimes they only differ in emphasis, but at times they are exclusive. When the first funds for building the new longhouse were received by the Dayaks, they immediately initiated the clearing of a piece of land were the longhouse was to be build. However, the work was not done by Tembak residents, but foremost by Javanese migrants that were hired to do the job. While this was probably the cheapest

labour available, the NGO was not pleased with it. The Dayaks were meant to build the longhouse themselves. Why? Because the longhouse was to become *their* community building and who was to explain to a Western public that the Dayaks had hired poor Javanese migrants to build their longhouse?
In chapter 5 I described similar issues of representation in the context of partnership in nature conservation. But these representations go even further than the discourse of nature conservation. They hit at the very matter of access to land itself. Who a 'Dayak' is and what he or she does or does not, is thus explained differently by each stakeholder and is more likely to reflect the believes of this stakeholder than an accurate representation.

The Dayaks in Tembak are –perhaps selectively- adopting a more Western lifestyle, but at the same time they use stories and symbols to express their Dayakhood. While these representations seem to be of limited value in everyday life, they serve not only as reference but also as a claim to land and particular land use practices. Similar to the South African communities in Comaroff and Comaroff (2009) the basis for the claim to sovereignty over land is not based on a set of believes or ideas, but on the sense of identity. In the light of identity, the land becomes territory and the community becomes unique. This expression is strategic in the sense that it directly challenges the projection of the state: the Dayaks desire extra recognition because they are *not* like other Indonesians. They have a different identity and thus deserve different legal treatment. In that sense expressions of identity are not only a style, they are inherently meaningful.

Conservation vs. development?

Despite the strong emphasis on Dayak identity and culture by various actors, the reality is that the people in Tembak –like so many communities around the globe – have to face the pains and gains of globalization. Older Dayaks saw trouble in the fact that young people were increasingly more educated in cities. In these cities, the young people experience the freedom of living on their own without constant being monitored by community members. Often they start using alcohol and drugs. They rarely go back to their village, but they do go to the mines. Because of this trend, the average age in the village rose according to some of the villagers. Traditional values were more and more declining, according to the elders. This trend of migration also imposes a treat to land use – several inhabitants noticed that if the Dayaks would move away from the area, the forest would suddenly become accessible for corporations. As young people spend more time in the cities, the knowledge of the forest is decreasing.

Living in a remote area has some disadvantages. While lot of items like food, water and building materials are almost free, modern utilities like toiletries and gasoline are more expensive than in the city. Living remote can partially exclude people from healthcare and higher education. An evaluation of Levang et al. (2007) also indicated healthcare as one of the main problems in inland towns in Kalimantan. The Punan communities that were studied by Levang et al. expressed that –if they were to choose- they would want to benefit of both locations: cities and towns. They seek integration without loss of identity.

Interviews with the people in Tembak indicate a similar desire. The people are open to better healthcare, education and infrastructure, but at the same time want to preserve their culture, village life and access to the forest. Therefore, it is essential that organizations that want to preserve Dayak culture and the forest are stimulating village development. The NGOs concerned with Tembak are certainly aware of this and they undertake economic and community projects. Constant re-evaluation is needed to make sure that conservation is providing benefits for the village.

To wrap up

In previous chapters we indicated that making use of legal diversity, networking and planting particular types of trees were all of strategic value in enforcing the claim to land. In this chapter I argued that images of the Dayak community could also be classified as a 'strategic' in the sense that they provide stories and meaning that underlie claims to resources. Similar to law, identity is a contested value. While it is likely that traditional lifestyles and culture have been very much connected with land use, as Dayak villages became more 'modern', symbol and practice became disconnected. That does not mean that sentimental reasons are the only ones that explain why these symbols persist. Images of Dayak culture, like dance, tattoos, illustrations, tools and rituals could be argued to serve a new goal: legitimation of access to resources. For Tembak these resources are access to land and increased access to healthcare, education and other government facilities. While the NGO-Dayak partnership is already working on economic and health related topics, they would benefit from increasing effort in education and health. It should become attractive for young people to make a living in the *kampung*.

8. Conclusion and Discussion

Conclusion

At first sight, Dayaks refusing palm oil expansion, is looking like a classic example of what political ecologists call: the marginalization case (Robbins, 2004). It seems to perfectly match the classic David-and-Goliath story (or Asterix, for that matter). However, a more in-depth investigation shows that marginalization is –in this case- an ill-fitting term. If we reconsider the strategies that Dayaks undertake to maintain their position, we see that the case is rather about people trying to work with modernity than people being excluded from modernity.

The methods that they use to cope with (the threat of) landscape change that were discussed in this thesis - networking, map-making, partnerships, symbols of identity and new economic opportunities- are all in some way serving as a way to translate community principles to modern institutions, like market-economy, state and regional law and technology. If anything, the Dayaks try to show that it is not palm oil or backwardness but that there are more options.

Like Li (p. 20) suggested, finding sources of power and leverage is something in which the relatively powerless are arguably good at. The Dayaks in Tembak show that in order to remain their position, they must find allies – people who have the same goal and have means of power and leverage that they need. They realize that, in order to compete with oil palm, they must find an economic alternative. Raising sugar palms and other tree species could yield earnings on top of the income that the Dayaks make with rubber. This new income will, hopefully, match or exceed the money made by palm oil smallholders. The people in Tembak also have high expectations of working together on the orang-utan project that could attract tourism and supply jobs.

For all these initiatives, access to land is vital, that is why the Dayaks defend their claim to land by making maps and using satellite imagery. These tools give them something that is of real value in court: evidence. By adapting to the same legal scale, legal language and by questioning the legal projection of governments and policymakers, the Dayaks are becoming a real concern.

This thesis has also looked at the deeper causes for the Dayaks effort of keeping the companies of their lands. In the first two chapters we saw that the Dayaks

had formed a negative image based on the collective of stories by family members and on the news. The Dayaks in Tembak were properly educated and they knew that their hills were unsuitable for oil palms and that the forests are vital for electricity and drinking water. From the results of the Pebble Distribution Game becomes clear that their current ways of land use are providing them with a vast array of goods and services, for which they otherwise had to pay with income from palm oil. The current system helps them to be flexible: if they are in need of cash, they tap more rubber. If a family member becomes ill, they can cut a few trees in the planted forest. Throwing this system away in exchange for oil palms would, for these people, not only include them in a production system that is based on fluctuating prices at the market, but would also reduce their autonomy. They realised that their current land use gives them more freedom and security and less conflict. The fact that these Dayaks have a clear idea about what they want and what they do not want is a strong advantage in this problem situation.

While it is too early to call it a definite success, the fact remains that by time of writing, the Dayaks finished building a medical centre for orang-utans near the forest as well as a new longhouse. The battle on the Saran forest is still ongoing and –by the latest news- is now in a phase that could be described as a series of dirty tricks.

Even if the Dayaks succeed in obtaining strong rights to the forest, there are some deeper processes that must be addressed if the Dayaks want to secure the land for the future. Migration to the city and erosion of local knowledge are still posing a threat to the project. Also the relations with their partners still know a few unresolved issues, like hunting and financial expectations. In order to secure access to land, Dayaks must secure these issues in their community as well. They must show that they are not only producers of conservation but also of innovation and culture.

Discussion

Several authors have expressed serious doubt on the viability of projects that seek an alternative for oil palms. Potter and Lee, who I cited in the introduction were among those who stress that oil palm expansion happens so quick that there is no chance for these projects to fully mature. It is certainly true that the people in Tembak feel the heat as they see the border of the oil palm plantations coming closer and closer. In a reaction to Rist et al. (2010), who more or less stated that the battle was over, De Vos (2013) argued that "*While this may be true on global scale, this is not true on local or district scale*." (De Vos, 2013 p. 66). In

this thesis I argue that the battle is not so much about palm oil per se but about something more profound. It is true that the Dayaks refute oil palm expansion, but not because of the tree, but because everything that comes with it: contract farming, large trucks, production deadlines, working hours, pesticides and all those other aspects that we associate with a modern production-based society. The Dayaks realise that these programs are like the carnivorous pitcher plants that can be found in the swamp: once your trapped inside, there is no way back and you'll become consumed by the system. In that light, what the Dayaks are defending is not only their land but the autonomy over their way of live. While other characteristics of this case are likely to might be specific, this deeper motivation might play a role in other palm oil-related conflicts.

Here lies a chance and a challenge for people in nature conservation. If they can succeed in delivering what the palm oil companies can't – the services of both city and forest life – they have a strong advantage for their projects. Examples of these services could be: economic opportunities, affordable health care and organizing courses and gathering places for young people. One might complain that organizing these services are not falling within the scope of nature organizations, but I believe the time that we could regard nature conservation and community development as separate things are over. If services like these are set up properly, they should not be a high financial burden to nature organizations.

One of the goals of this thesis was to explore interdisciplinary research. In respect, I have made use of three fields of scientific research: political ecology, legal anthropology and forest management. Each field has its own set of theories, methods and insights. In order to have a better shot at understanding complex problem situations, I believe it is useful to take notice of these various approaches and to discuss the differences between them.
The drawback of this approach is that each field has its own theories and language which often results in inconvenient arrangements that overlap and contradict. In order to counteract to this, I tried to keep different theories separate from each other. Each field is used to explain different questions: I used the Pebble Distribution Game to understand motives of the Dayaks and their current land use. I used the idea of 'laws as maps of misreading' as an analytical tool in understanding how the Dayaks tried to influence decision-makers.

Researchers obviously have their own preferences for either qualitative or quantitative methods. While quantitative data has the advantage of statistical prove and easy communication, I found that analysis by theories, like De Sousa-Santos' 'Maps of Misreading' can have the same explanatory power. This set of

metaphors can help us to see, categorize and understand how language and ideas shape law. It shows us how symbols like stories, clothes and maps can make certain aspects of the Dayak lifestyle stand out while they may obscure other aspects.
In this respect, there are two issues that in my opinion are interesting for future research. The first one is the growing importance of information technology in these issues. How uneven a dispute may be, evidence matters. Having your land mapped on paper provides evidence that is more robust than a durian tree. NGOs make increasingly more use of satellite images, drones and GPS to gather information on what really happens in the forest. How this information influences land disputes should be researched more thoroughly .

The second topic is the contrast between symbolization of communities in public opinion and everyday life. While statesman and policymakers, as well as international donors, may have ill-informed images of the people living inland, at the very least they *do* give meaning to symbols of the 'indigenous' or 'tribal'. So we can understand why the Tembak partnership is stressing images of Tribesman and Conservationists. On the map of state- and global law these images represent an alternative (Li, 1996) for globalized capitalism and therefore gain sympathy for the Dayaks' cause.

As discussed earlier, this case is not 'finished' yet and I suspect the most interesting episodes still have to come. The short time I have spent with the Dayaks, the cultural and verbal barriers, have perhaps limited the depth and insight of this case. As the old pastor, who had the opportunity to learn about Dayaks for over 45 years, said: "The Dayaks and their ways of living are endlessly complex, just when you think you understand them, they'll surprise you". Who knows what surprises lay ahead in the future of the Dayaks...

Bibliography

Articles

Bakker, L. (2008), "Politics or tradition: Debating Hak Ulayat in Pasir", Reflections on the Heart of Borneo, Tropenbos International**:** 69

Bakker, L. and S. Moniaga (2010). "The Space Between: Land Claims and the Law in Indonesia." Asian Journal of Social Science **38**(2): 187-203.

Benda-Beckmann, K. v. (1984). "Forum shopping and shopping forums: Dispute settlement in a Minangkabau village in West Sumatra, Indonesia." The Broken Stairways to Consensus. Dordrecht, the Netherlands: Fortis Publications.

Bulkeley, H. (2005). "Reconfiguring environmental governance: towards a politics of scales and networks." Political Geography **24**(8): 875-902.

Bryant, R. L. and S. Bailey (1997). Third World Political Ecology. Routledge

Comaroff, J., et al. (2009). "Reflections on the anthropology of law, governance, and sovereignty." Rules of law and laws of ruling: on the governance of law: 31-59.

Cramb, R. and G. N. Curry (2012). "Oil palm and rural livelihoods in the Asia-Pacific region: An overview." Asia Pacific Viewpoint **53**(3): 223-239.

Cronon, W. (1996). "The trouble with wilderness: or, getting back to the wrong nature." Environmental History: 7-28.

de Sousa Santos, B. (1987). "Law: A map of misreading-Toward a Postmodern Conception of Law." JL & Soc'y **14**: 279.

Dove, M. R. (1993). "Smallholder Rubber and Swidden Agriculture in Borneo: A Sustainable Adaptation to the Ecology and Economy of the Tropical Forest." Economic Botany **47**(2): 136-147.

Dove, M. R. (1996). "Rice-eating rubber and people-eating governments: Peasant versus state critiques of rubber development in colonial Borneo." Dove, Michael R: 33-63.

Dove, M. R. (2006). "'New barbarism' or old agency among the Dayak? Reflections on post-Suharto ethnic violence in Kalimantan." Social Analysis **50**(1): 192-202.

Gönner, C. (2011). "Surfing on Waves of Opportunities: Resource Use Dynamics in a Dayak Benuaq Community in East Kalimantan, Indonesia." Society and Natural Resources **24**(2): 165-173.

Heckenberger, M. J., et al. (2003). "Amazonia 1492: Pristine forest or cultural parkland?" Science **301**(5640): 1710-1714.

Jaenicke, J., et al. (2008). "Determination of the amount of carbon stored in Indonesian peatlands." Geoderma **147**(3): 151-158.

Khor, Y. L. (2011). "The oil palm industry bows to NGO campaigns." Lipid Technology **23**(5): 102-104.

Levang, P., et al. (2007). "City Life in the Midst of the Forest: a Punan Hunter-Gatherer's Vision of Conservation and Development." Ecology & Society **12**(1).

Li, T. M. (1996). "Images of Community: Discourse and Strategy in Property Relations." Development and Change **27**(3): 501-527.

Myers, N., et al. (2000). "Biodiversity hotspots for conservation priorities." Nature **403**(6772): 853-858.

Myers, S. (2009). Birds of Borneo: Brunei, Sabah, Sarawak, and Kalimantan, Princeton University Press Princeton.

Obidzinski, K., et al. (2012). "Environmental and Social Impacts of Oil Palm Plantations and their Implications for Biofuel Production in Indonesia." Ecology and Society **17**(1 C7 - 25)

Robbins, P. (2004). Political ecology : a critical introduction. Oxford, Blackwell.

Peluso, N. L. (2005). "Seeing property in land use: Local territorializations in West Kalimantan, Indonesia." Geografisk Tidsskrift-Danish Journal of Geography **105**(1): 1-15.

Peluso, N. L. (2008). "A political ecology of violence and territory in West Kalimantan." Asia Pacific Viewpoint **49**(1): 48-67.

Peluso, N. L. (2009). "Rubber Erasures, Rubber Producing Rights: Making Racialized Territories in West Kalimantan, Indonesia." Development and Change **40**(1): 47-80.

Potter, L. (2008). "The oil palm question in Borneo", Reflections on the Heart of Borneo, Tropenbos International**:** 69

Rist, L., et al. (2010). "The livelihood impacts of oil palm: Smallholders in Indonesia." Biodiversity and Conservation **19**(4): 1009-1024.

Rietberg, P., (2011). Clearing Land, Obscuring Rights: seeking benefits and claiming property in a process of oil palm plantation expansion in West-Kalimantan, Indonesia, MSc Thesis, Wageningen University and Research Centre

Sirait, M. (2009). "Indigenous peoples and oil palm plantation expansion in West Kalimantan, Indonesia." Universiteit van Amsterdam and Cordaid Memisa.

Sheil, D., et al. "Building conservation around local preferences." Reflections on the Heart of Borneo: 175.

Sneddon, C. and C. Fox (2008). "River-basin politics and the rise of ecological and transnational democracy in Southeast Asia and Southern Africa." Water Alternatives **1**(1): 66-88.

De Vos. R. E. (2013), "Palm Oil Land Disputes in West-Kalimantan: the Politics of Scale in Processes of Dispute Resolution"MSc Thesis, Wageningen University and Research Centre

White, J. (2012). "Gendered experiences of dispossession: oil palm expansion in a Dayak Hibun community in West Kalimantan." Journal of Peasant Studies **39**(3-4): 995-1016.

Reports

Brown, E. and M. F. Jacobson (2005). Cruel oil: How palm oil harms health, rainforest & wildlife, Center for Science in the Public Interest.

Colchester, M. (2011). Oil palm expansion in South East Asia: trends and implications for local communities and indigenous peoples, Forest Peoples Programme.

Potter, L. and J. Lee (1998). Tree planting in Indonesia: Trends, impacts and directions, CIFOR Bogor (Indonesia).

Sheil, D. (2002). Exploring biological diversity, environment and local people's perspectives in forest landscapes: methods for a multidisciplinary landscape assessment, CIFOR

Websites

CIFOR, http://blog.cifor.org/17798/fact-file-indonesia-world-leader-in-palm-oil-production, February 2014

OONL, www.orangutanoutreachnederland.nl, March 2014

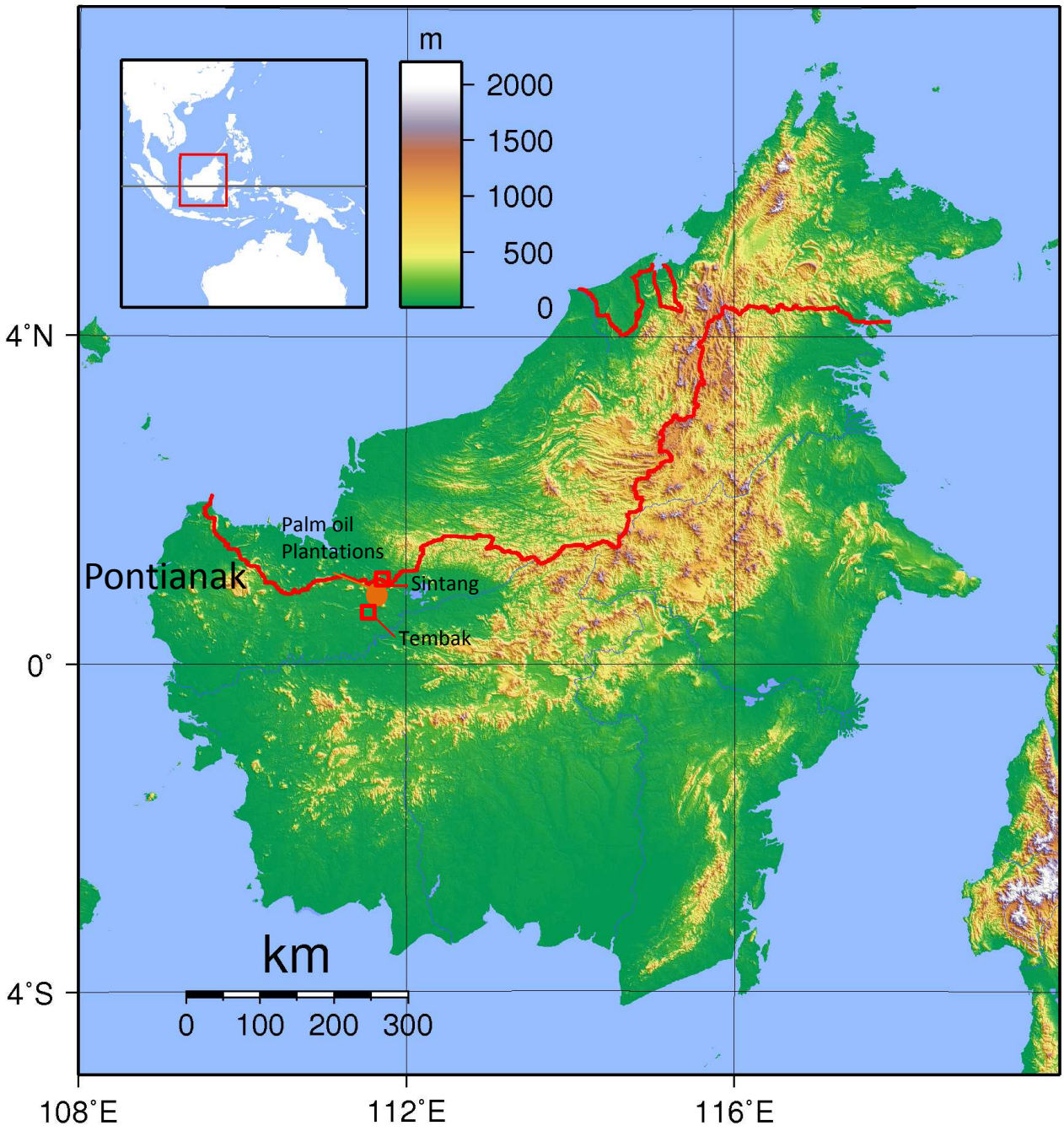
Acknowledgements

I want to sincerely thank the representatives of the organizations that work in Tembak for their trust and courtesy courtesy to facilitate me in Tembak. The family of Pak Apui and the family of Pak Nayau have my deepest gratitude for housing and feeding me. I want to thank my supervisor, my girlfriend and my parents for their patience. Special thanks to Jean Kern, Willie Smits, Agung, Pieter Zuidema and Otto Hospes.

Appendices

Appendix 1 – Map of Borneo

Figure 8 Map of Borneo with locations of Sintang and Tembak



Appendix 2 – Results Pebble Distribution Game

Figure 9 Tukey HSD test for differences between landscape categories

Tukey HSD

landtype	N	Subset for alpha = 0.05			
		1	2	3	4
Swamp	26	2,836923			
Village	26	4,606154	4,606154		
Vegetable Garden	26		7,114615		
River	26		7,424615		
Rice Field	26		8,458462		
Planted Forest	26			13,546923	
Market	26			14,020769	
Rubber Plantation	26			17,304615	
Natural Forest	26				24,694615
Sig.		,921	,094	,113	1,000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 26.000.

Figure 10 Tukey HSD test for differences between purpose categories

Tukey HSD

catnr	N	Subset for alpha = 0.05							
		1	2	3	4	5	6	7	8
Hunting	234	1,85							
Firewood	234		3,12						
Light Construction	234			3,81					
Future	234				4,58				
Cermonial Purposes	234				4,92	4,92			
Heavy Construction	234					5,46	5,46		
Medicine	234						5,54		
Water	207							6,78	
Income	234								7,42
Food	234								7,65
Sig.		1,000	1,000	1,000	,697	,109	1,000	1,000	,966

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 230.987.

In de pie charts below, average distributions of pebbles are given for each distribution. The total amount of pebbles is always fifty.

Figure 11 Landscapes that are considered important for Food

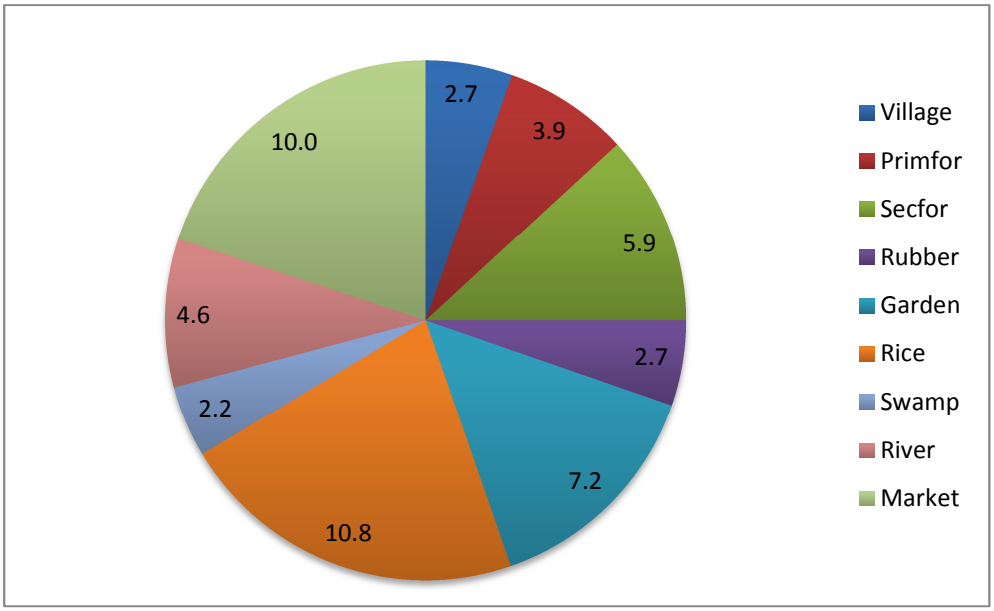


Figure 12 Landscapes that are considered important for Income

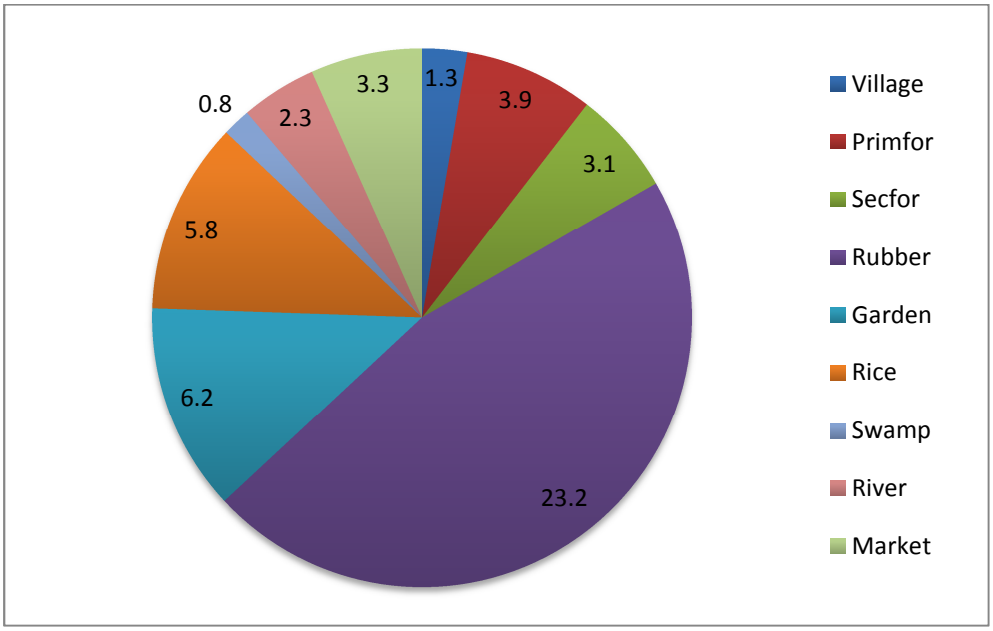


Figure 13 Landscapes that are considered important for Water

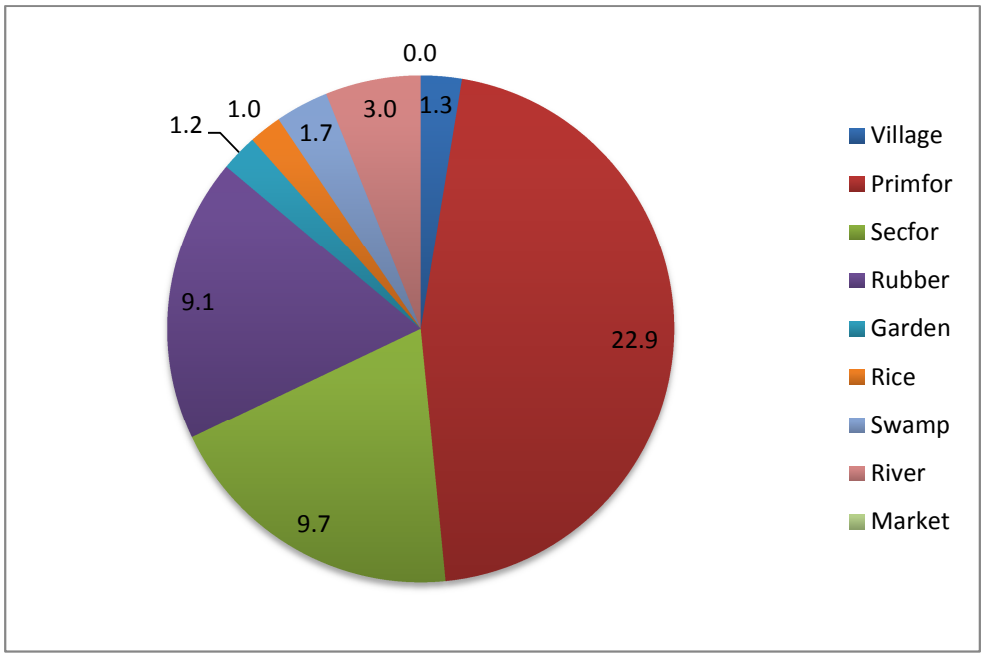


Figure 14 Landscapes that are considered important for Medicine

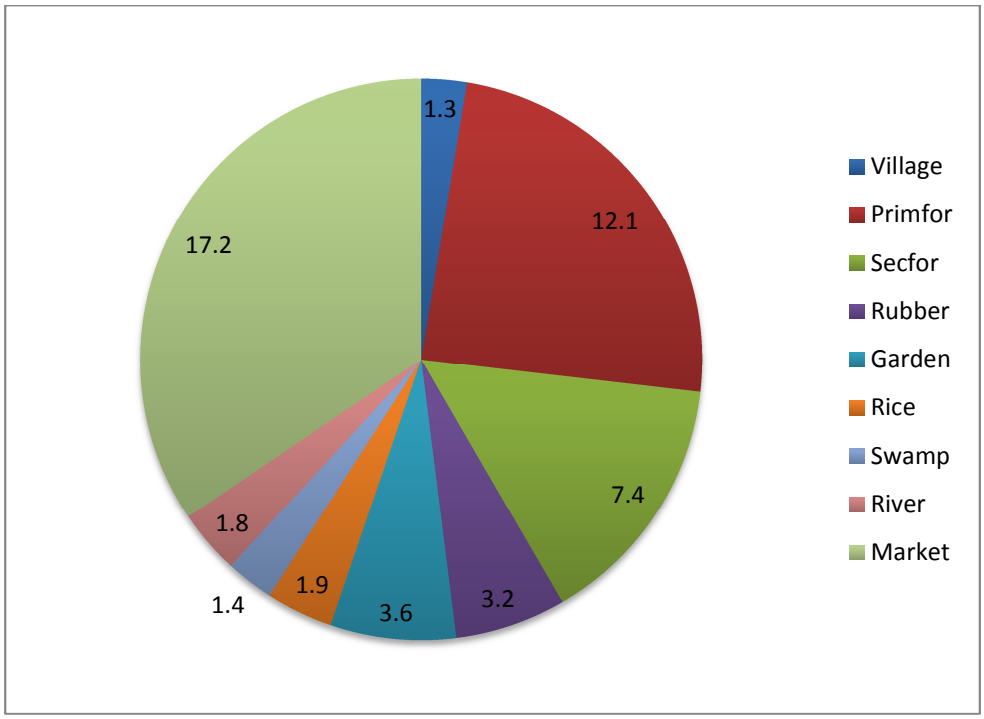


Figure 15 Landscapes that are considered important for heavy construction

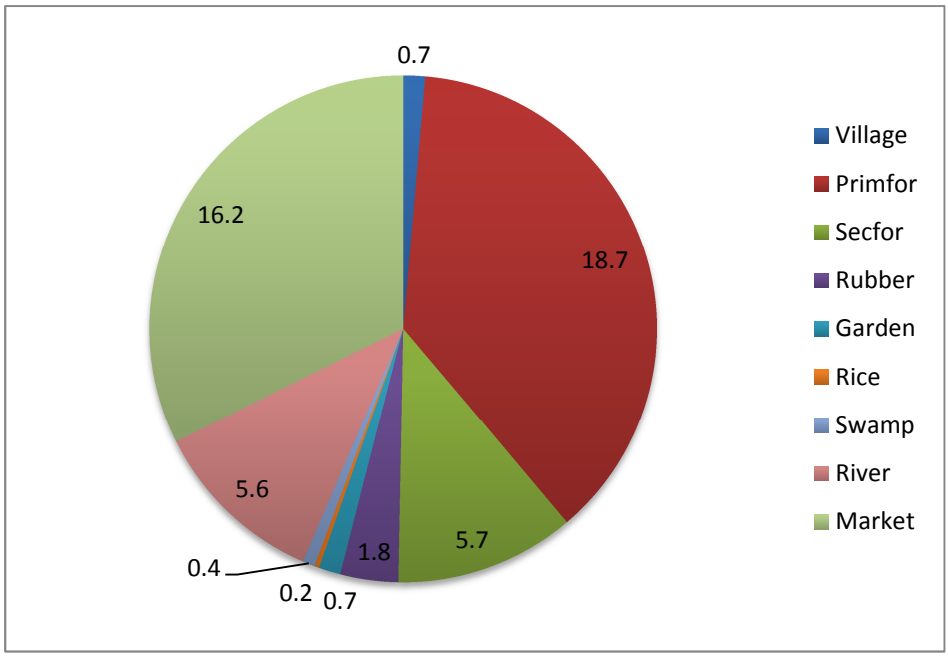


Figure 16 Landscapes that are considered important for light construction

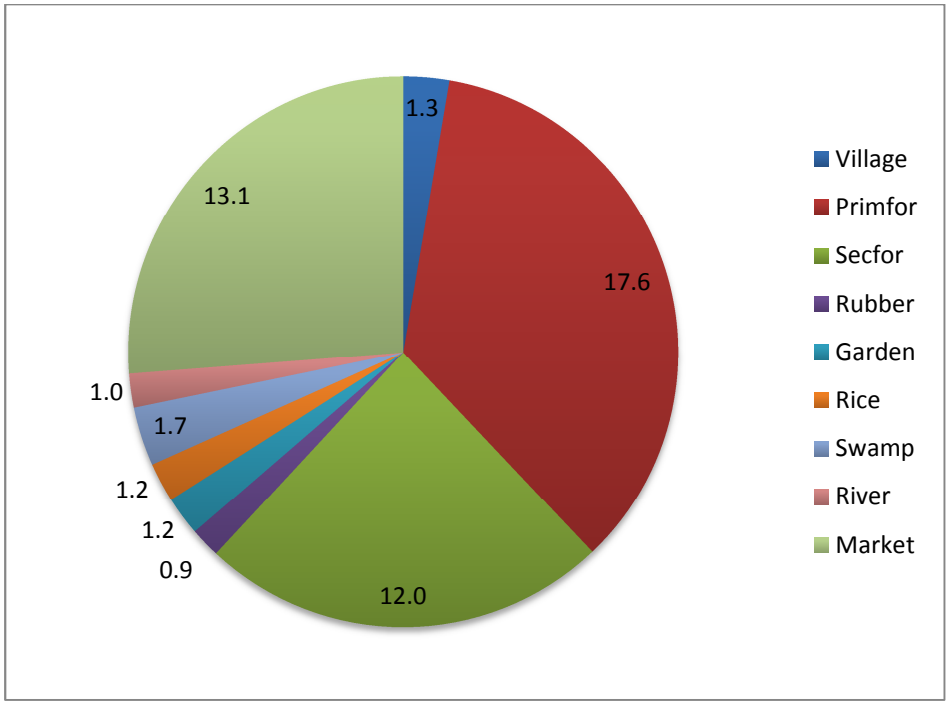


Figure 17 Landscapes that are considered important for firewood

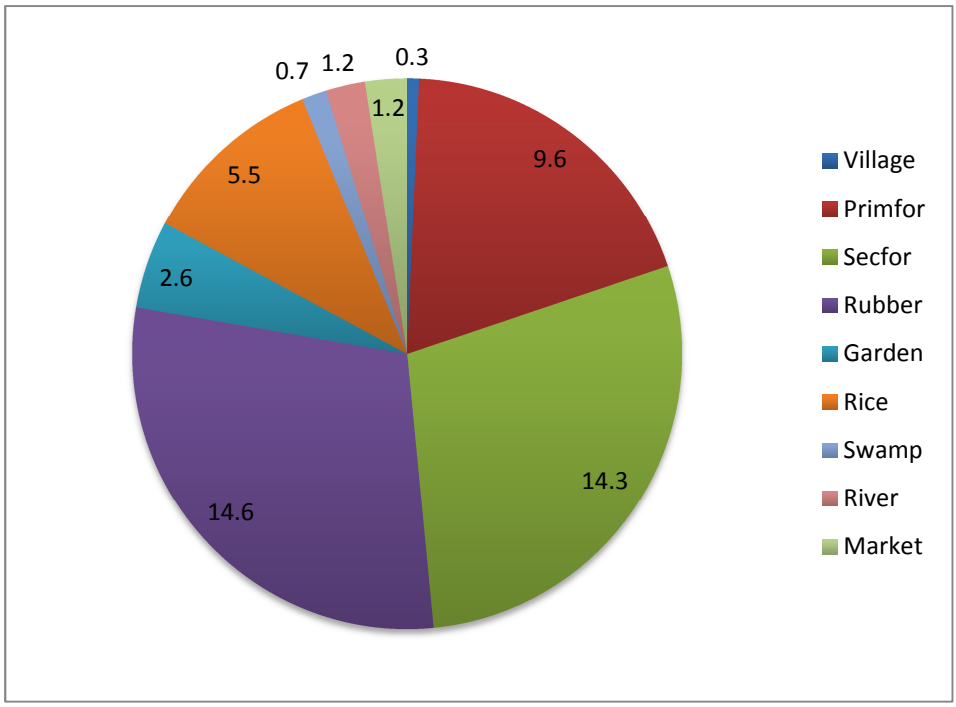


Figure 18 Landscapes that are considered important for ceremonial purposes

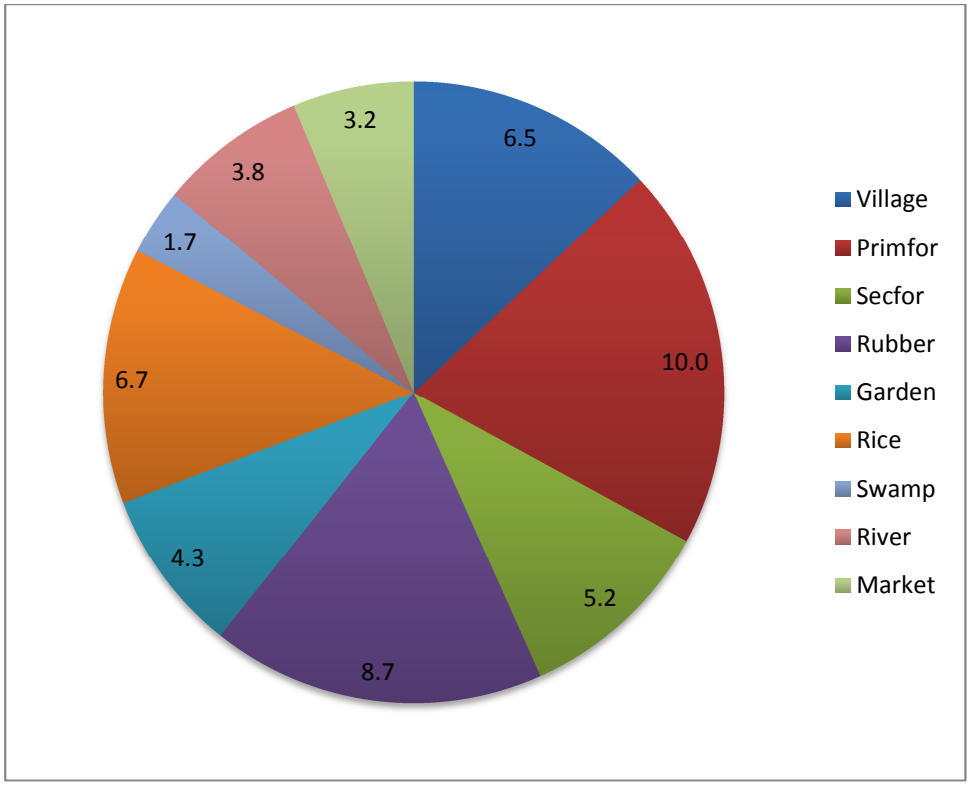


Figure 19 Landscapes that are considered important for Hunting

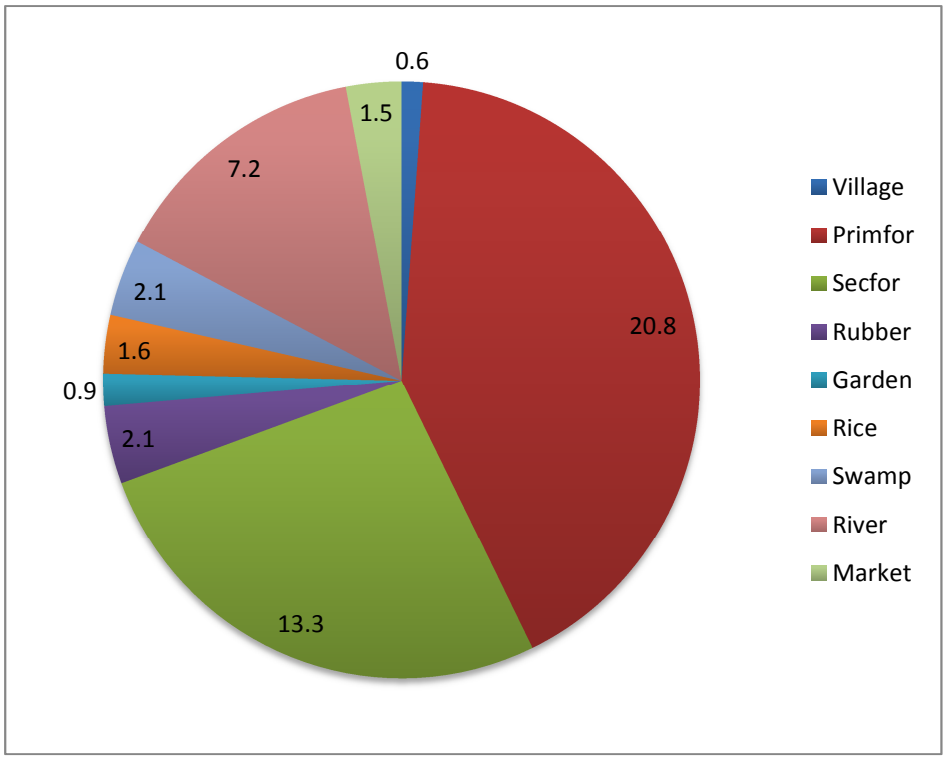
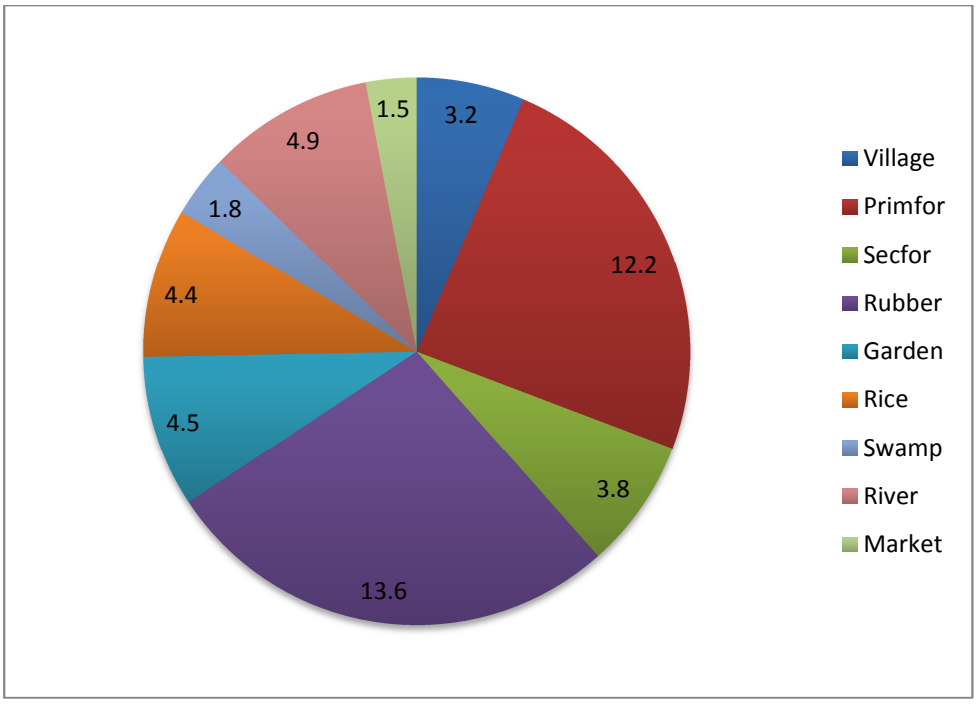


Figure 20 Landscapes that are considered important for the Future



Appendix 3 – Maps of Tembak Forest

In the maps bellow we can follow the process of mapping a site and transforming these images in both a claim to land as well as a fundraising machine.

Figure 21 The Tempunak / Saran forest (blue) and the Ribangayau forest (red) Map made by T.A. van Gorkum

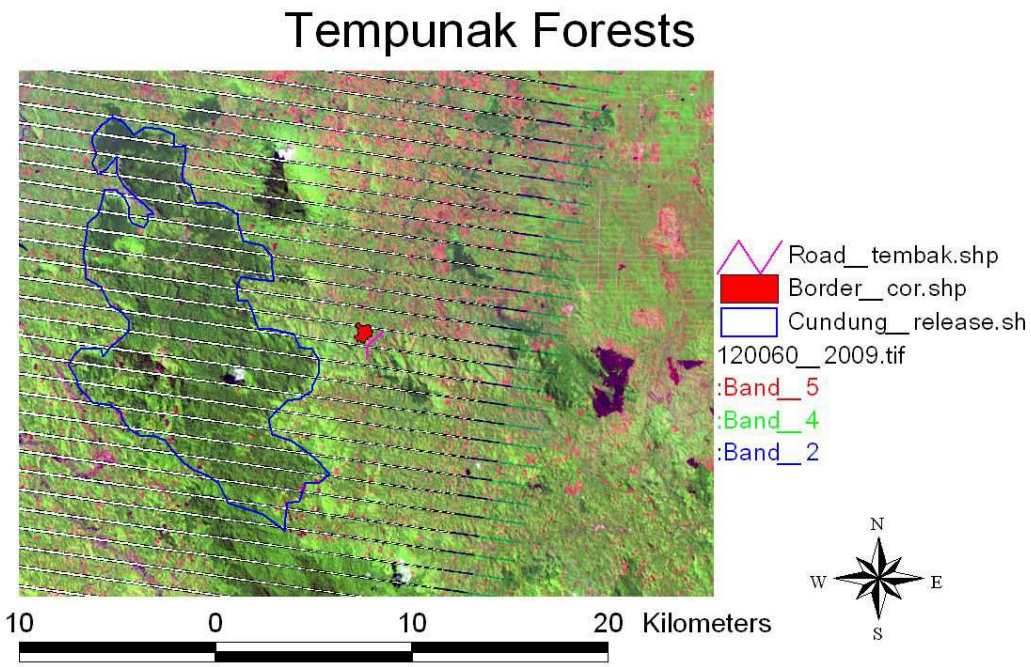


Figure 22 The Ribangayau Forest (map by T.A. van Gorkum)

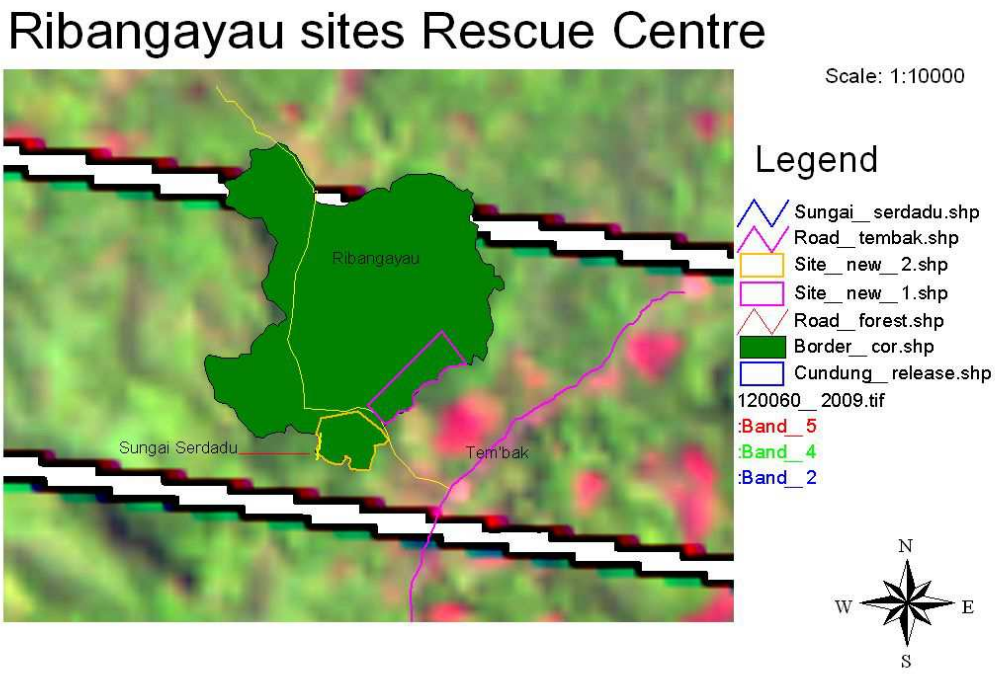


Figure 24 Tembak with the Ribangayau forest with the location for the new long house

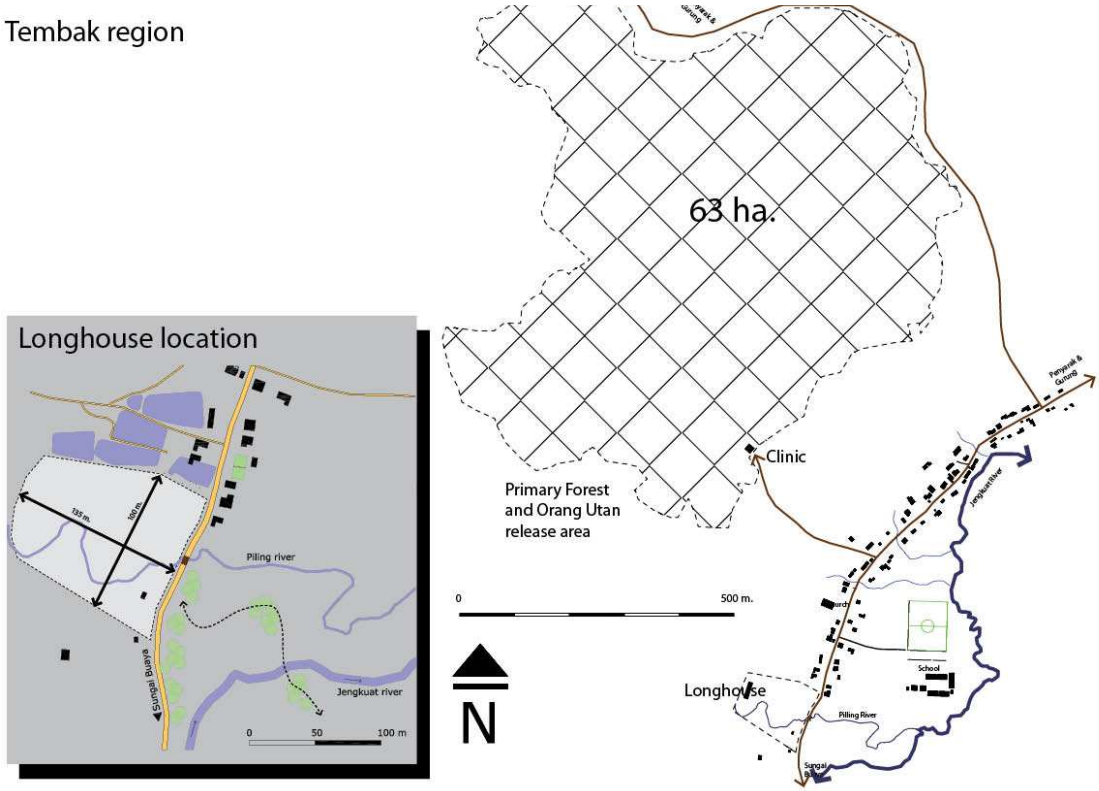
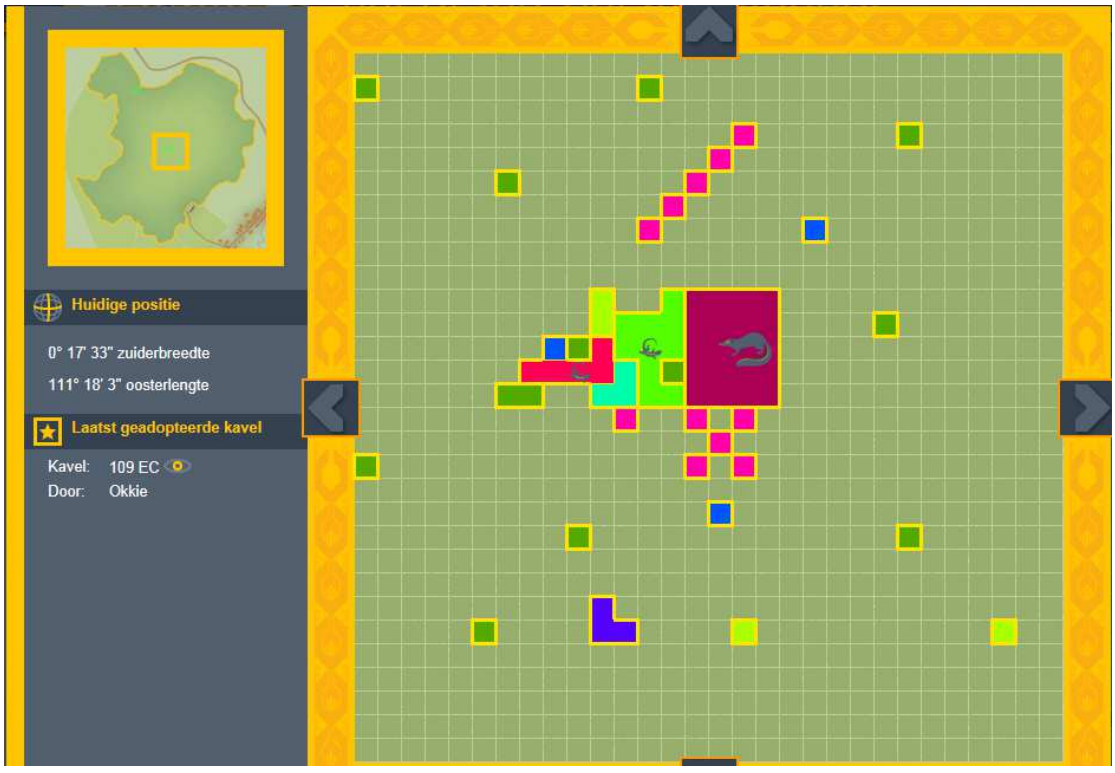


Figure 23 The pastor and former village leader holding the map that will be handed over to the Bupati - a claim to land

Figure 25 The Ribangayau Forest as adoption forest on Internet (map by H. Wortel)

Figure 26 People can adopt square meters by making a donation. Every square meter that is adopted is filled in with a vivid colour.



Appendix 4 - Satellite images that indicate forest being cut down on the Saran Hills

Figure 27 Time series of forest area indicating areas being logged