

Development as a Tool for Conflict Prevention and Forest Conservation:

A Case Study of the Danau Sentarum Development Plan and its Impact on the People of Danau Sentarum National Park, West Kalimantan, Indonesia.



Image: Palm oil plantation near Sekadau, Kapuas Hulu District, West Kalimantan, Indonesia.

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Abstract

Are agroforestry and Participated Land-Use Planning (PLUP) a useful tool for conflict prevention and social cohesion, and thus for fighting the ever expanding palm oil plantations? This thesis tries to provide an answer to this question. In order to do so, a three-month case study in West Kalimantan was conducted to study development work in Danau Sentarum National Park. The development of agroforestry does provide better economic situations and better social relations among the communities in and around the National Park, causing a decrease in mutual conflicts. Interestingly, as a consequence an increase in tensions between the communities and the palm oil companies can be noticed. However, agroforestry is only effective when it actually provides a viable alternative to palm oil; it must have similar characteristics.

Word of thanks

First of all special thanks to Valentinus Heri, director of Riak Bumi, and his staff without whom this study would not have been possible. Since the early 1990s he has been active in developing and conserving Danau Sentarum National Park with great passion, and will never stop doing so. He has taken good care of me while I was there, and without his help I would not have been able to gather the information necessary for this thesis.

Second, I would like to say thanks to my contact at this NGO which prefers to stay anonymous. Without her I would never have been able to go to Indonesia and meet with Heri to conduct this research. She made me feel very valued by putting her trust in a student researcher for such a pressing, global and important issue.

Third, I would like to say thanks to my supervisor Bert Bomert. He always fully supported me with every step I took. I was able to work fully independent because of the freedom he gave me to develop myself as a researcher, and let me handle challenges along the way myself while being there when I needed it. This gave me the confidence to write this thesis, with this great and special opportunity of going abroad and develop myself as a person and a researcher.

Finally, I would like to say thanks to everyone who supported me along the way like my family, friends, and everybody I met in Indonesia. I wish the people in Danau Sentarum the best for the future and I hope that one day I will meet them again.

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Preface

It was two weeks before my flight to Jakarta. I got a call from the Indonesian Embassy that my socio-cultural visa was rejected, and I couldn't do my research anymore. They said I needed a research visa instead – which to me sounded pretty obvious. Unfortunately the private company which would apply for my visa advised me the wrong visa, leaving me empty handed just two weeks before I left. This affected the research significantly.

I visited the Indonesian Embassy to try and get my visa anyway, but without success. I was given the choice to cancel my tickets and start a new, very time-consuming process to apply for a new research visa, or drop the research and go on a tourist visa. If, however, I would go on a tourist visa, and would be doing my research anyway and get caught by the authorities, I could end up in jail and probably be deported. However, applying for a new visa was practically impossible, and so, in consultation with all parties involved, I decided to go to Indonesia on a tourist visa. This meant however that there was a huge set-back for my data collection. I was allowed to go to the research area, but not allowed to do research. And since it's a region where not many (Western) tourists visit, people, and thus the authorities, would easily notice me. Therefore, instead of going for a 2-3 month in-depth research, I decided to visit Danau Sentarum National Park twice during my stay for a few days max each visit. One visit was at the beginning of my trip in March, and the second visit mid-May. In the meantime I spent some time at the office of Riak Bumi in Pontianak, where I met the staff and some of its customers, could work on my research, and see how the NGO operates on a day-to-day basis.

Another important decision was not to bring anything along that would show I was doing research. I did use a laptop at the Riak Bumi office, but I did not take it with me on my visits to Danau Sentarum. Also, I did not take any large notepads or papers indicating I was doing research. I could not tell anyone I was doing research, unless Heri (director of Riak Bumi) was a hundred percent sure we could trust someone. In practice this meant that we didn't tell anyone inside the National Park. In hindsight, this was a wise decision. If you want to travel to Danau Sentarum, you take a plane from Pontianak to Putussibau (see Figure A in Danau Sentarum National Park Overview), and then a three-hour drive to Lanjak, located on the edge of the National Park. After my second visit, returning from Lanjak to Putussibau, I had to stay overnight. Shortly after I checked in to my hotel an Immigration Officer was waiting for me

in the lobby. During the bus ride from Lanjak to Putussibau I met Adhi, a nice guy who was willing to translate and mediate between me and the Immigration Officer. The Officer asked me questions like, “What are you doing here?”, “How long have you been here?”, “What is the purpose of your visit?”, “Where have you been so far?”, and “Why did you visit Danau Sentarum?”. Adhi told the man that we were friends, that I was a tourist and we wanted to visit the beautiful National Park. After a short investigation the Immigration Officer knew enough and left us alone. The funny thing is that even though you feel like you’re on the edge of the world, somehow the authorities always know that you are there. I guess *bules* (white people) really stand out in such areas.

Of course I realize there is a huge ethics factor that I had to take into consideration. Fortunately, during my second visit I was accompanied by British researcher Julia Aglionby, who has been working in the area since the 1990s and whose work I also use in this thesis, and Danish anthropologist Michael Eilenberg, an associate professor in the Department of Anthropology at Aarhus University in Højberg, Denmark, who has lived with the Dayak community for five years in the late 1990s. I discussed this issue with both researchers separately and they gave similar answers. They both acknowledged the ethical issue of gathering data without spreading that you are doing research, and that this makes it impossible to ask for permission to some people. However, they both said that these are the problems you face as a researcher in developing countries, especially in situations that are very sensitive to the authorities like Danau Sentarum National Park. This independent advice gave me comfort in going forward with my data collection and submitting the data gathered for this thesis. A second perk of meeting with these two established and experienced researchers was that I got valuable insight in how the National Park has developed since the 1990s, and what has changed over the years. I thought about interviewing them for data collection, but given the fact that they were mostly active in the 1990s and had no specific knowledge about the Danau Sentarum Development Plan nor its effect on the people, I decided against it. However, the information or insights I have obtained during my talks with both researchers are incorporated in this thesis.

Even though my research eventually ended up being less in-depth as I had initially hoped for, it taught me a great deal about development work and its effects on conflict prevention. Spending time in the Riak Bumi office provided me with useful insights in day-to-day working life in Indonesia, and the general mindset of Indonesians as a people which definitely also has a big influence on situations such as the one in Danau Sentarum. I was still able to

draw my conclusions regarding the central research question, and to provide recommendations for the future. I hope that you, as a reader, will enjoy this thesis, but above all find it interesting and useful.

List of abbreviations

APDS	Asosiasi Periau Danau Sentarum
APMB	Asosiasi Periau Muara Belitung
CCF	Community Controlled Forests
CIFOR	Center for International Forestry Research
DFID	Department For International Development
DKN	Dewan Kehutanan Nasional (National Council for Forestry)
DSDP	Danau Sentarum Development Plan
DSNP	Danau Sentarum National Park
FAO	Food and Agriculture Organization of the United Nations
GHG	Greenhouse Gas
JMHI	Jaringan Madu Hutan Indonesia (Indonesia's Forest Honey Network)
MDG	Millennium Development Goal
NTFP-EP	Non-Timber Forest Product – Exchange Program
OPEC	Organization of Petroleum Exporting Countries
PLUP	Participated Land-Use Planning
RSPO	Roundtable of Sustainable Palm Oil
SDG	Sustainable Development Goal
SLF	Sustainable Livelihoods Framework

Danau Sentarum National Park Overview



Figure A: Overview of Borneo showing west-, central-, south- and east Kalimantan, and Sarawak province (Malaysia).

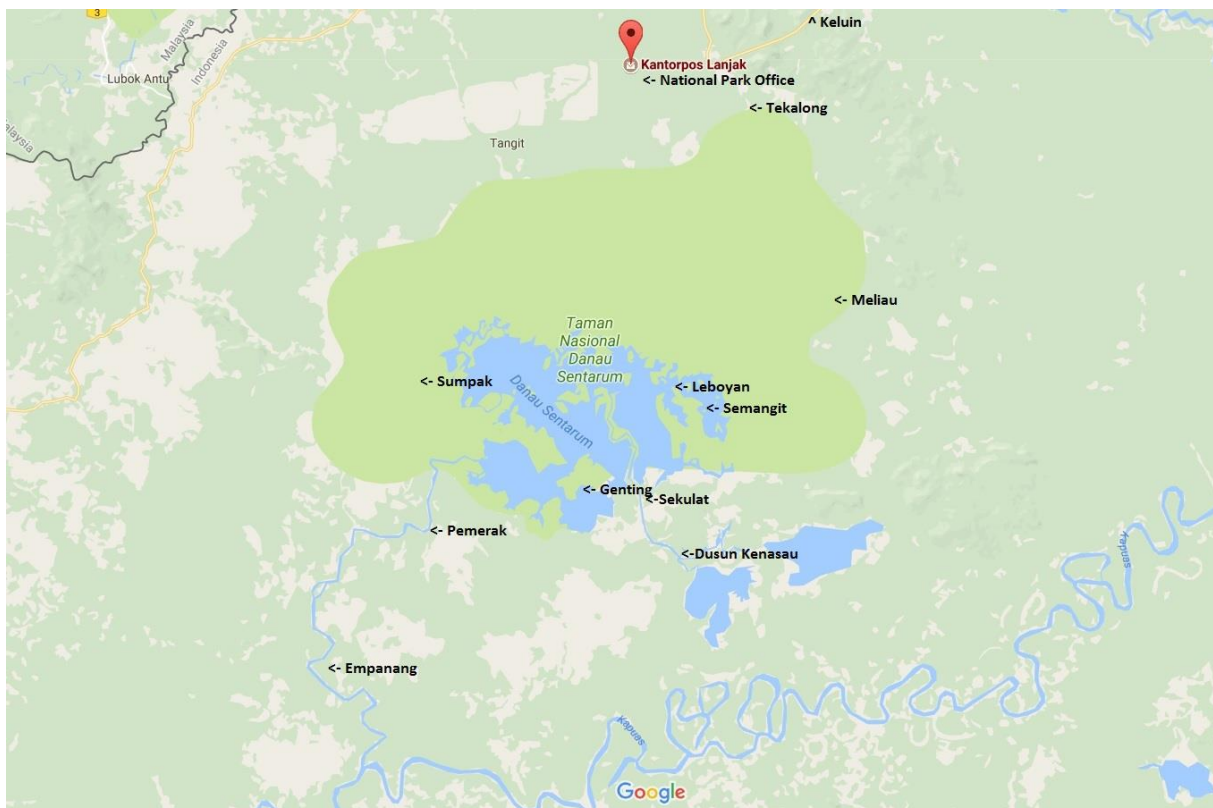


Figure B: Overview of Danau Sentarum National Park.

Figure A shows most of the island Borneo. Borneo is divided between Malaysia, Indonesia, and for a small part to Brunei. The northern part belongs for the biggest part to Malaysia, and the two provinces are called Sarawak and Sabah. The southern part belongs to Indonesia and is called Kalimantan, divided in north, east, south, west and central Kalimantan. Danau Sentarum National Park is located between Putussibau and Sintang, close to the Kapuas River, in West Kalimantan (see the red circle in figure 1.1).

Figure B shows the boundaries of the park including some of the major villages. The National Park boundaries stretch from Lanjak in the north all the way to the Kapuas River in the south. During my stay I visited Keluin, Tekalong, Meliau, Pemerak, Sumpak, Leboyan, Semangit, Genting, Sekulat, Dusun Kenasau and Empanang. I got to do interviews in Keluin, Sumpak, Sekulat, Pemerak, Genting and Dusun Kenasau.

1. Introduction

“Take urgent action to combat climate change and its impacts”, according to the United Nations Sustainable Development Goal (SDG) #13 (United Nations, n.d.). In September 2016 the UN’s 17 SDGs on the 2030 Agenda for Sustainable Development celebrated its first year anniversary. These SDGs build on the success of the Millennium Development Goals (MDGs), but are an attempt to take these goals even one step further. And within just one year the United Nations initiated another major agreement which was signed by 195¹ countries, and which states that by 2050 the global average temperature increase should be well below 2 degrees Celsius (United Nations, 2015). Both agreements acknowledge and act upon one of the globe’s most urgent threats: climate change.

Though not everyone acknowledges climate change or global warming, the fact that almost all of the world’s sovereign nation states signed the agreements mentioned above means that the attitude towards the environment is changing. Favorable in this case is the growing amount of scientific evidence and advocacy arguing climate change and global warming to be real. Without going into detail about climate change and global warming, as this thesis does not have the aim to get into the debate about whether global warming does exist or not, this thesis takes a starting point which acknowledges climate change and global warming, focusing more on the factors causing it, and especially its consequences for forest-dependent communities. Deforestation is one of the leading causes for the emission of greenhouse gasses, having a severe impact on forest-dependent communities all over the globe. I will come back to this in more detail later on.

Emission of greenhouse gasses (GHGs) is one of the most influential factors for climate change, global warming and the recent increase in extreme weather conditions (Nasa, n.d.). There are many greenhouse gasses, among which water vapor, methane and carbon dioxide are considered the most alarming at the moment. Especially the latter, which is estimated to have increased by 40% since pre-industrial times (US EPA, n.d.). This is caused through natural factors, like plant and animal respiration, volcanic eruptions, forest fires and ocean-atmosphere exchange, but also by human activities like burning fossil fuels and changes in land use. But one of the most influential causes contributing to the increase of carbon dioxide is deforestation (Hughes, 2017). Deforestation has a double impact when it comes to carbon

¹ Unfortunately during my research the new President of the United States of America, Donald J. Trump, decided to withdraw from the Paris Accords. This meant that while finalizing this thesis officially there were still 195 signatures, but effectively only 194 countries supported the Accords.

dioxide emission, because trees absorb and hold carbon dioxide as they grow, and through photosynthesis they convert carbon dioxide into oxygen. This way deforestation not only results in less trees absorbing and converting carbon dioxide into oxygen, every tree cut or burnt down also releases the carbon dioxide it had stored in its trunk into the air, thereby causing a double impact. This makes deforestation account for somewhere between 6 and 16% of the current release of GHGs in the air,² the second largest human-caused source of carbon dioxide emissions in the world (Dissanayake et al., 2015; WWF, n.d.). This is estimated to be larger than the GHG impact of the entire global transport sector. Also important is the impact it has on the habitat of both animals and humans (National Geographic, n.d.). The latest figures show that between 2010 and 2015 on a global scale 3.3 million hectares of forest has disappeared (Crezee & Ottaviani, 2017).

The reasons for deforestation are manifold. However, often it goes hand in hand with economic incentives. One factor causing deforestation is illegal logging. The World Wildlife Fund estimates that just in Peru 1,100 square miles of its tropical rainforest are cut down annually, 80% of which illegally (Smith & Schwartz, 2015). Deforestation in Peru is caused by several important factors, among which agriculture is the most important. Also mining activities and trade of other natural resources have led to deforestation (Doleac, 2015; Hughes, 2017). According to Doleac (2015), the primary driver of deforestation is economic growth for the people of Peru. This economic growth is in turn driven by the Brazilian economy, which is pushing towards better infrastructure in the Amazon (Doleac, 2015). Reason for this is the increased trade in Brazilian commodities with China and the shortest way to trade with China is right through the Amazon towards the Peruvian coast. Brazil is host to the earth's largest rainforest, but since 1980 its size has declined with 224,000 square miles (FAO, 2015). This is an incredible figure, meaning that since 1980 an area the size of Kenya has disappeared in Brazil alone.

However, there is one country destroying its rainforest at an even faster rate than Brazil: Indonesia (Bachelard, 2014). Besides the fact that Southeast Asia has shown the highest deforestation rates in the world, estimated to be a 14.5% loss of regional forest in just fifteen years, studies conducted by the University of Maryland show that between 2000 and 2012 Indonesia has lost 6.02 million hectares of primary forests, 40% of which is estimated to be done illegally; between 1973 and 2009 Indonesia has lost a total of 8.43% of its forest cover (Hughes, 2017). A study into the loss of forests in Indonesia shows that the country is among

2 The percentage depends on the way it is calculated (source: Union of Concerned Scientists (2013)).

the top three GHG emitters in the world (Tsujino et al., 2014). This is also the finding of a cooperative report by the World Bank and the Department For International Development (DFID) in 2007, which stated that “Indonesia is among the top three GHG emitters in the world due to land change and deforestation” (Sari, et al., 2007, p. 1). By July 2015, according to data provided by the World Resource Institute, countries like India, Russia and Japan have overtaken Indonesia, but it still is the eighth largest GHG emitter in the world (Kanski, 2015). On average, between 1990 and 2014 Indonesia takes the sixth place in the list of the world’s largest carbon dioxide emitters.³

These are scary facts, and just as in Peru and Brazil, the major cause for deforestation in Indonesia is illegal logging for land-use purposes as well as for timber trade. In 2001, according to Palmer, “illegal logging is the most direct threat to Indonesia’s remaining tropical forests” (Palmer, 2001, p. 28). In his research dealing with the effects of the major causes for deforestation in Indonesia, Palmer found that deforestation not only has severe environmental consequences, but economic and social impact as well. Illegal logging, according to Palmer, has had serious adverse effects on forest-dependent communities (Palmer, 2001). In 2005, Lopéz and Galinato have analyzed the connection between trade policies, economic growth and direct causes of deforestation. According to this analysis the primary causes for deforestation in Indonesia are agricultural expansion, government promotion of the logging and timber industry, and the transmigration or forced government-sponsored resettlements into forested areas (Lopéz & Galinato, 2005, p. 147). The conclusion was that “agricultural expansion increased with more open trade policies and with fiscal policies that lead to a reduction in the risks of over-valuing the exchange rate” (Lopéz & Galinato, 2005, p. 148). In addition, a growth in trade also increases the development of the infrastructure. As in Brazil, in Indonesia tropical rainforests are deforested for the construction of roads. Lopéz and Galinato have conducted a cross-country analysis in four countries (Indonesia, the Philippines, Malaysia and Brazil), and one of the most important findings is that in all four trade policies result in an increase of agricultural expansion (Lopéz & Galinato, 2005, p. 163).

Indonesia has a long history of resource extraction. In Kalimantan gold has been mined since the 4th century, diamonds since the 7th century (Leonald & Rowland, n.d.). These initial mining activities were still small-scale operations, however; large-scale industrial operations

³ Source: Food and Agriculture Organization of the United Nations (n.d.), Retrieved from: http://faostat3.fao.org/browse/G1/*/E.

only emerged in the 18th century. For example, the Anglo-Dutch oil company Shell started to extract crude oil in 1885 (Leonald & Rowland, n.d.)⁴.

Tsujino et al. (2014) have studied the history of forest loss in Indonesia from the 1960s to 2015, and they come to some important findings. In the period before 1970 the major cause for forest loss in Indonesia was agricultural production, most notably rice cultivation (Tsujino et al., 2014, p. 337). This was no coincidence, since 1966 was the beginning of the rule of President Suharto, also known as The New Order. With the implementation of the Basic Forestry Law (BFL), the national government gained control over and was able to manage and administer all designated state forest lands (Moniaga Elsam, 1998, p. 122). From the 1970s until the mid-1980s, a shift towards increased timber exports in Indonesia, the Philippines and Malaysia can be seen. However, by 1985 the export of round wood from Indonesia was reduced and eventually banned by the government, instead promoting the export of other types of wood (Tsujino et al., 2014). During this period the population size increased quite rapidly, partly influenced by migrant labor workers, causing a significant increase in deforestation in Indonesia (Tsujino et al., 2014).

Indonesia is a member state of the Organization of Petroleum Exporting Countries (OPEC). In response to falling oil prices after 1980 and a slowdown of economic growth rates, laws restricting foreign investments were changed and foreign flows of money resulted in a rapid development of Indonesia's export-oriented industries (Tsujino et al., 2014). This increased foreign investment, in combination with an ever growing population, was a major cause for the increase of deforestation in Indonesia; the growing population posed immense challenges for food security and self-sufficiency. Over the years the rate of deforestation kept increasing, from 3,000,000 hectares per year up to nearly 20,000,000 hectares by 1996, mostly for agricultural purposes.

After the financial crisis in Asia in 1997 political and economic reforms in Indonesia were necessary; in 1998 the Ministry of Forestry began to decentralize authority to local districts (Tsujino et al., 2014). This was also a direct consequence of the end of Suharto's authoritarian regime, caused by increasing pressure both from within Indonesia and from the international community (Yasmi, Guernier & Colfer, 2009; Leonald & Rowland, n.d.). This

⁴ Leonald and Rowland refer here to the British predecessor of Royal Dutch Shell, Samuel & Co., which was a trading company founded in 1830 in London. In the late 19th century this company expanded their business to the oil business, after which the name was changed to Shell Transport and Trading Company Ltd. Source: <http://www.shell.nl/over-ons/netherlands/history.html>.

decentralization of authority, in turn, resulted in a major increase in forest-related conflicts in 2000 (Yasmi, Guernier & Colfer, 2009; Yasmi et al., 2012). Most of these conflicts were related to forest clearances and activities involving theft of timber (Tsujino et al., 2014). Tariff bans on the export of round wood and sawn timber were eliminated; deforestation and forest degradation accelerated in Indonesia. This was particularly noticeable in Kalimantan, the Indonesian part of the island of Borneo, where many local logging parcels were issued, causing uncontrolled deforestation in accessible lowlands (Tsujino et al., 2014). According to Wollenberg et al. (2009), “many districts saw forests as an easy source of financial revenue to be exploited rather than managed” (as cited in Tsujino et al., 2014). Of all the areas in Indonesia, Riau and Kalimantan have seen the highest rates of forest loss over the years 2000 to 2005.

Export by and deforestation in Indonesia increased over the next couple of years and the central government was challenged to cope with an uncontrolled deforestation. Between 2011 and 2015, deforestation rates eventually declined. However, deforestation still takes place at a steady pace. In addition, soil degradation causes harm to the environment (Tsujino et al., 2014).

1.2 Danau Sentarum National Park, West Kalimantan, Indonesia

A filmed documentary dating from 2005 about Danau Sentarum National Park, West Kalimantan, shows that the most important causes for deforestation in Indonesia are timber trade, the growth in number of palm oil plantations, and forest fires. It is well known that Indonesia has had problems with month-long forest fires during the dry season (Hughes, 2017). The effects are often exacerbated by El Niño, which results in more intense dry conditions, causing increased deforestation (Fuller, Jessup & Salim, 2004). One of the most important causes for forest fires in affected areas is the so-called slash-and-burn method for converting forested land for agricultural purposes, such as palm oil. Even though this method is illegal, it still takes place in Indonesia, causing intense forest fires which may last for months (Porter, 2016). On the island of Borneo, transforming forested land into palm oil plantations has been taken place for decades and is nowadays still causing problems for Indonesia (McCarthy & Cramb, 2008; Lindsay, et al., 2012; Leonald & Rowland, n.d.). Between 2000 and 2007 the area of palm oil plantations has increased from 4.2 million to 7 million hectares. This increase has been caused by a global demand for vegetable oils; the

increase in the number and size of oil plantations has often been promoted and allowed by high-ranking officials (McCarthy & Cramb, 2008). According to a recent publication by the Centre for International Forestry Research (CIFOR), by 2012 the area covered by oil palm plantations has even increased to 11 million hectares.

The first oil palm plantations in West Kalimantan were only set up in 2000 in the Kapuas Hulu District, which is the northeastern part of West Kalimantan and derives its name from the Kapuas river. Between 2005 and 2013 Kalimantan was the main region of expansion for palm oil (Li, 2015; Leonald & Rowland, n.d.). By 2013, in West Kalimantan 694,448 hectares were covered by palm oil plantations; consisting of 63% large industrial plantations and 37% smallholdings – an increase of 244,696 hectares of large industrial plantations and 67,961 hectares in smallholdings from 2005 to 2013 (Li, 2015). Overall, since 1973 over one third of Kalimantan's forested area has been converted (i.e. deforested) for timber, palm oil and mining purposes (Leonald & Rowland, n.d.).

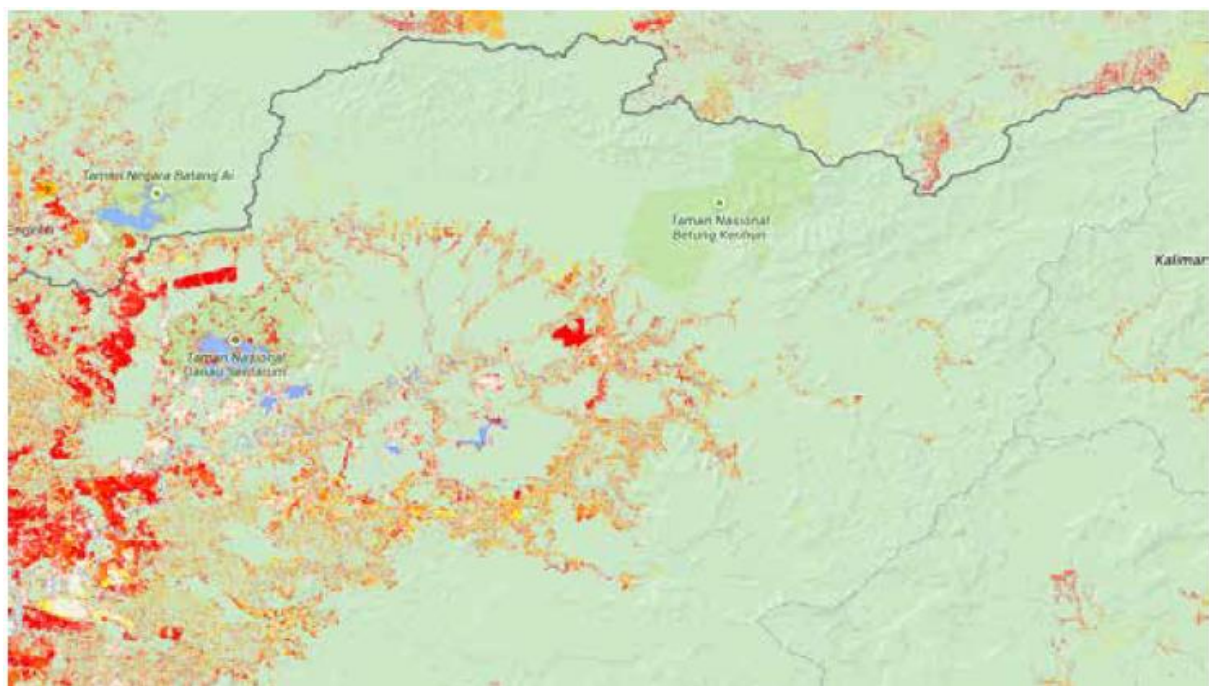


Figure 1.1: Forest loss by year in Kapuas Hulu Regency, West Kalimantan, 2000-13.

Figure 1.1 shows the loss of forests on a yearly basis in the region of Kapuas Hulu between 2000 and 2013. Darker areas indicate the loss of forests closer to the year 2013. Red areas indicate forest loss in 2013, yellow indicates forest loss during 2000.⁵ The red areas correspond with the satellite image below (Figure 1.2).

⁵ Retrieved from Leonald & Rowland (n.d.). Source: Hansen/UMD/Google/USGS/NASA (2014)

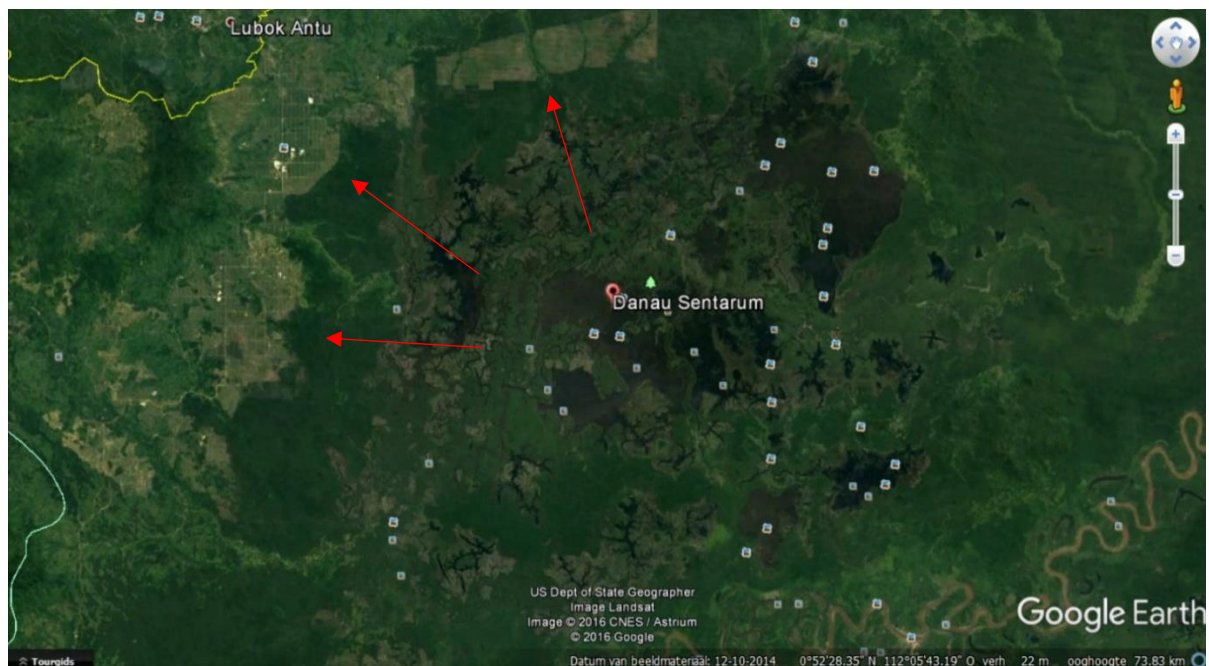


Figure 1.2: Satellite image of Danau Sentarum National Park, Kapuas Hulu Regency, West Kalimantan. Source: Google Earth.

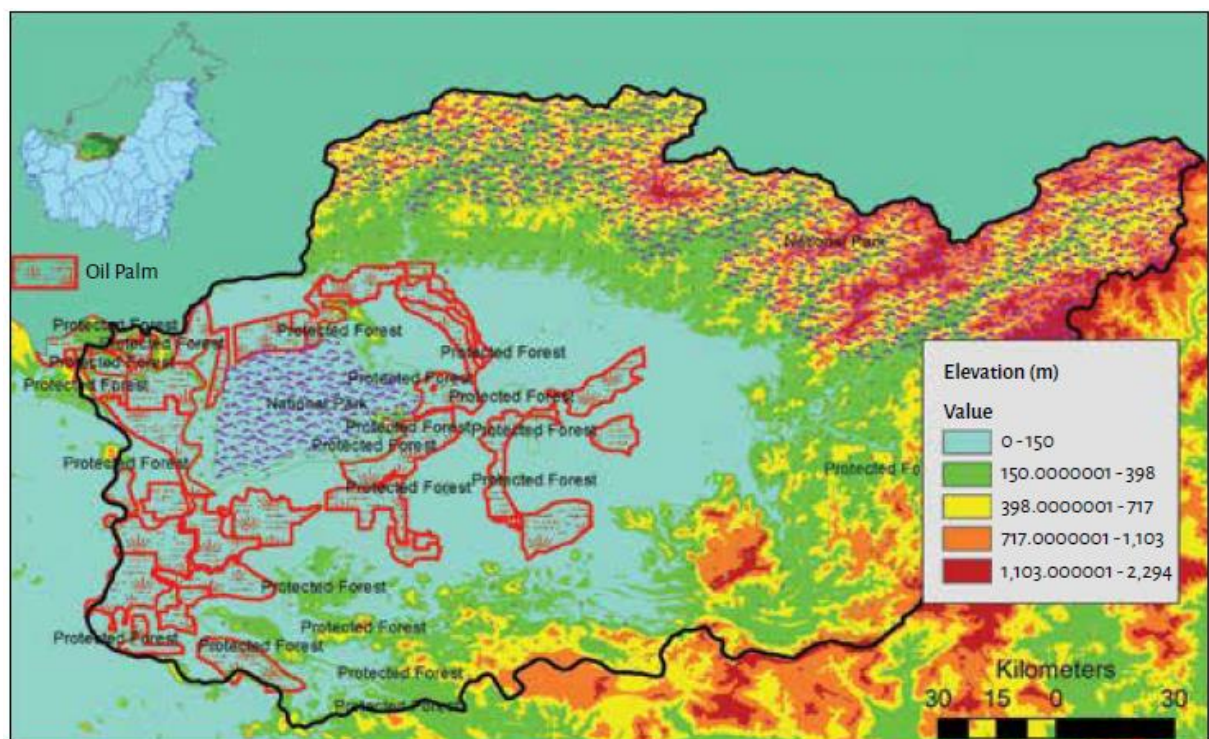


Figure 1.3: Oil Palm plantations around Danau Sentarum National Park⁶

Satellite images Figure 1.2 and Figure 1.3 show that around Danau Sentarum National Park vast areas have been deforested for oil palm plantations (highlighted with red arrows in Figure

⁶ Retrieved from Leonald & Rowland (n.d.). Source: Created using data from World Resource Institute (2013).

1.2).⁷ According to locals, the plantations are within the boundaries of the park and in violation of historical land-rights. This is, however, ignored by government officials and plantation holders. In fact, according to Leonald and Rowland (n.d., p. 104), “all forestlands in Indonesia are by default owned by the State,” a consequence of the 1999 Forestry Law No. 41. A 2013 ruling by the Constitutional Court states that this law is unconstitutional, and that the state has the legal obligation to grant ownership of forestlands to indigenous people. However, very few attempts have so far been successful (Leonald & Rowland, n.d.). In fact, according to Leonald and Rowland (n.d., p. 104), “To date, there is no legalized customary forest (*hutan adat*) in Kapuas Hulu, though several local and national NGOs are involved in attempts to legally register land claims.” The fact that more often than not there are no well-defined maps of which areas belong to which people, results in a situation in which the boundaries for different stakeholders are unclear (Yasmi, et al., 2007; Yasmi, Guernier & Colfer, 2009).

The case can be made that unclear or ambiguous mapping, land-right disputes, and deforestation practices can lead to conflict. According to Van Klinken (2006), before World War II the local Dayak population has never claimed territory as being theirs. It did happen for the first time, however, just before the war when several ‘Dayak reserves’ were installed by Governor Haga.⁸ From this point on, marking territory became more important for the Dayak population in Indonesian Borneo, as these disputes over territory often underlie many present day conflicts. In 2007, a study was published on inter-settlement conflicts in the Danau Sentarum National Park in West Kalimantan, Indonesia (Yasmi, et al., 2007). Unfortunately, West Kalimantan is not studied as much as for instance East Kalimantan. According to Yasmi, Guernier and Colfer (2009), this is partly because it is difficult to gain access to West Kalimantan. Nevertheless, scholars found that since the beginning of the decentralization efforts by the government, there is evidence that in some places conflict has increased; sometimes more peaceful, sometimes violent (Yasmi et al., 2007; Yasmi, Guernier & Colfer, 2009). Decentralization of forest management has not only resulted in an increase in conflicts over the use of forested areas, but also in conflicts about land tenure and historical land rights (Frasetiandy, 2013). The Dewan Kehutanan Nasional (DKN; National Council for Forestry) estimated that up to 2012 land-right conflicts have affected 19,420 villages in 33

⁷ Visit www.globalforestwatch.org for a live map showing forest loss and gain, and oil palm plantation expansion.

⁸ The implementation of reservations became a worldwide phenomenon in the first half of the twentieth century; see the Indian New Deal of 1934 in the United States, and the example of South Africa in 1913 and 1936 (Van Klinken, 2006).

provinces, while for 33,957 villages in forested areas it was still unclear. According to Yasmi et al. (2007, p. 598), local capacity building through local approaches like customary law, local leadership, and negotiation skills, has to be mobilized in response to this increase in the number of conflicts. According to their research, an important factor in inter-settlement conflicts is the lack of clarity concerning resource boundaries within Danau Sentarum National Park.

An additional factor is given with the contradictory customary laws. In the Danau Sentarum National Park two major indigenous peoples are living together in four communities: the Dayak⁹ and the Malay. Each of these communities has its own customary laws and historical traditions, which might clash in how to use the available land and which community has historical land-rights. Yasmi et al. (2007, p. 607) state that in particular the Dayak Iban and the Malay have to increase their negotiation skills in order to effectively settle disputes. They also see an important role for local NGOs in this case. I will go into more detail about Danau Sentarum National Park and the communities living in it later on in this thesis.

1.3 Danau Sentarum Development Plan

Increased complexity of forest management in order to prevent conflicts and adding economic benefits to all stakeholders calls for new and more flexible approaches in dealing with these situations. There is a shift from the ‘simple management of trees’ towards managing landscapes with multiple benefits (Yasmi et al., 2015). In 2005, an NGO which prefers to remain anonymous, began building a regional network of partners to initiate various programs aimed at preventing deforestation in tropical areas by increasing the value of Non-Timber Forest Products (NTFPs) and the program was therefore initially called the Non-Timber Forest Product Exchange Program, NTFP-EP. This initiative was for a long time funded by Cordaid, a different Dutch NGO. The regional network consisted of partners in six South and Southeast Asian countries: Cambodia, India, Indonesia, Malaysia, the Philippines, and Vietnam. The goal was to cooperate with local and international networks, as well as with individual partners, in order to strengthen the capacity of indigenous communities and the NTFP value chain. Cordaid wanted to support individual local honey producers. A local NGO, Yayasan Riak Bumi, became the Secretariat for a network of honey producers, the Jaringan Madu Hutan Indonesia (JMHI; Indonesia’s Forest Honey Network).

⁹ The Dayak consist of several sub-communities in and around DSNP.

Later on, various projects regarding the conservation of Danau Sentarum National Park were initiated. In 2008 Cordaid and Riak Bumi, in cooperation with the anonymous NGO, agreed to a three year partnership program, which was later extended. Primary goals were the conservation of the environment – through lobbying against oil palm plantations and advocacy in the area – and strengthening local honey production and product group differentiation. In 2011, ownership of the program was transferred from Cordaid to the other NGO, which still operates in the area today. The rapid increase in the number and size of oil palm plantations was, and still is, one of the driving factors for this NGO to continue working at such a local level.

At the start of the program two major problems were acknowledged. First, the expansion of oil palm plantations around Danau Sentarum might cause pollution of the water, which is abundant in the area. Water pollution by using pesticides or fertilizer has several consequences. It affects the ecological system, causing fish to die or retreat to other waters. Fish is one of the most important sources for food for the local communities living around Lake Sentarum, and is also the number one export product for the Malay community. The use of pesticides also means that local products can't receive the so-called BioCert certificate anymore. Based on this certificate the local producers can demand a premium for their naturally and biologically produced products. Lacking this certificate therefore has severe consequences for the income of the local communities. Second, another major problem is that because of slash-and-burn deforestation bees leave the area, since smoke scares the bees away. The smoke carries for hundreds of miles, crosses the seas, even affecting cities like Jakarta and Singapore. In fact, according to Heri a large forest fire in 2007 scared the bees away from Danau Sentarum for three years (Heri, 2009). During these three years no honey could be harvested, whereas the honey producers largely depend on this for their income.

The most recent project proposal (2014), dealing with the period between August 2013 and January 2014, clearly states that the development of forest honey is used as a means to slow down an expansion of palm oil plantations in the Kapuas Hulu Regency. The Danau Sentarum Development Plan (DSDP), initiated by the anonymous NGO and Riak Bumi, means capacity building, advocacy, strengthening honey production and product differentiation. In addition to being involved in the production of honey, the women of the Iban Dayak play an important role since they are making traditional Dayak woven products out of rattan, which can only be harvested in forested areas. These 'Handicrafts' are sold on the local and national market. In addition to honey, these Handicrafts are a vital source of income for the Dayak communities;

as such, they are an important part of the DSDP. (This thesis will address this in more detail in Chapter 2.)

Finally, resin is becoming more and more important for the Dayak communities. Honey, rattan and resin, only being harvested in forested areas, are nowadays the three most important resources for the local Dayak communities living in Danau Sentarum and, in combination with the fishing business for the Malay, therefore crucial to sustain the struggle against deforestation for oil palm plantations.

With the Danau Sentarum Development Plan, the anonymous NGO and Riak Bumi try to create a win-win situation – following Bluffstone and Robinson’s (2012) line of argument that it is important to create economic value from forests without damaging the forests – at a local level. Increased economic, social and ecological benefits for all stakeholders is supposed to lead to a better cooperation among local communities, as well as between local communities and external stakeholders like oil palm companies or local government agencies, in the end resulting in less conflicting situations.

In-depth research into the conflict between a local forest-dependent community in Sumatra and a logging company has shown that to “engage in negotiation was considered an important first step in conflict resolution.” (Yasmi, Guernier & Colfer, 2009, p. 106). In this particular case, tensions escalated almost up to a point that direct violence was seen as necessary in order to stop the logging company from cutting down community trees. One of the major factors causing conflict in this particular case were the unclear boundaries between state and communal forests, i.e. weak property rights agreements (Yasmi, Guernier & Colfer, 2009, p. 106).

According to a report of Riak Bumi, in 2011 there were conflicts between a local community and the National Park Agency relating to the use of local natural resources. The local community claimed it was cutting down trees in its own lands, where ancestors had been living for many generations, with the aim of building a church. The National Park Agency and government officials, however, claimed it to be theirs and trying to protect and conserve the area, causing a long-lasting conflict between the two parties. The case was put before the General Director of Forest Protection and Nature Conservation in Jakarta, head of the National Park. Parties were promised that the conflict would be resolved, but nothing happened. Initiatives like the NTFP-EP try to bring different stakeholders to the negotiation table, let them engage into dialogue instead of violence, try to define clear boundaries and

land-rights, and promote the local economy in order to reduce conflicts. The DSDP is such a project, aimed at local capacity building, aiding in determining land-right boundaries and improved economic and social standards.

The Danau Sentarum Development Plan is based on the principles of the Participated Land-Use Planning (PLUP) method, meant to support the Dayak and Malay communities. According to the anonymous NGO, a tool like PLUP is expected to have an impact in two ways. First, it can identify areas (un)suitable for commodity production and help in finding a balance between new developments and existing land-uses. This relates to the increase of the economic value of forested areas for local forest-dependent communities. Second, PLUP can be used to prevent inter-communal conflicts over land-use and land-rights. Understanding the perceptions of local communities regarding conflict dynamics can help decentralization policies and tools like PLUP to effectively deal with conflicts (Yasmi, Guernier & Colfer, 2009). If PLUP has indeed these alleged positive effects, then the perceived conflicts Yasmi et al. (2007) refer to must have decreased over the years and economic, social and ecological standards must have gone up for the Dayak and the Malay, considering all other variables have remained constant. The goal of this research therefore is to assess whether the Danau Sentarum Development Plan has had a positive effect on the economic and social wellbeing of the Dayak and Malay communities in the Danau Sentarum National Park, in order to assess the relevance of the method of Participated Land-Use Planning, so as to ascertain the usefulness of PLUP for similar situations in comparable high-tension land-use and land-rights situations in other developing and/or low-income countries.

Two important notes have to be made. First, the goal of this thesis is not to generate a general blue-print which can eventually be adopted in every situation similar to the one in Danau Sentarum National Park. Mahanty, Guernier & Yasmi (2009, p. 277) have conducted an extensive study into the implications, benefits and constraints of Forest Controlled Management and they acknowledge and underline the fact that local factors have to be taken into account in creating an integrated approach for a specific situation. PLUP is an inductive and integral approach which can be molded in any way, depending on a specific context. The DSDP is a plan based on PLUP principles, rather than a universal plan which should or could be implemented everywhere. The outcome of this thesis can nevertheless have important implications for other community-based management initiatives. Second, ecological research does not lie within my field of expertise. In this thesis it might be possible to assess the economic and social situation of the Dayak and Malay communities living in Danau Sentarum

National Park, but the ecological effects of the DSDP should be the focus of a different study than this.

The central question of this master thesis is:

What is the effect of the Danau Sentarum Development Plan (DSDP) on the economic and social wellbeing of both the Dayak and Malay communities, and has the plan led to a decrease in conflicts, both between and within the Dayak and Malay communities and between the communities and external stakeholders related to land-use and land-rights.

This central question can be divided in several sub-questions:

1. What have been the ex-ante expectations and practical implementations of the Danau Sentarum Development Plan for the Dayak and Malay communities in Danau Sentarum National Park?
2. Since the implementation of the DSDP, have the Dayak and Malay communities experienced increased economic wellbeing? **(economic)**
3. Has the DSDP led to better cooperation between the Dayak and Malay community concerning land-use and trade? **(social/economic)**
4. Do the Dayak and Malay communities perceive a proper balance between forest conservation and income from NTFPs? **(social/economic)**
5. Has the DSDP led to an increased dialogue and better cooperation between the Dayak and Malay communities, enabling them to deal with tensions due to external pressure? **(social)**
6. Since the implementation of the DSDP, do the Dayak and Malay communities experience less tensions of conflict between them and external stakeholders, like palm oil companies, conservation agencies and local authorities? **(social)**

This thesis is built around the following chapters. Chapter 2 deals with the context in which the research has been conducted. This chapter presents a general overview of the Danau Sentarum National Park and the Kapuas Hulu Regency, as well as of the local communities and their social and economic backgrounds. It describes how they live and interact with each other, goes into more detail about the case and context of Danau Sentarum and the various stakeholders that are involved, and includes background information regarding the communities living around Lake Sentarum. Chapter 3 provides the theoretical framework and gives a detailed definition of key concepts – like ‘social wellbeing’, ‘economic wellbeing’, ‘international stakeholders’ and ‘intra- and inter-community conflicts’ – used in many

academic publications, so that there can be little misunderstanding regarding the meaning of various concepts. In Chapter 4 I will discuss the practical implications and expectations of the Danau Sentarum Development Plan.. It gives a brief but argued explanation of the expectations of the anonymous NGO regarding PLUP as a tool for economic and social development, and indirectly conflict prevention. Chapter 5 explains the conceptual model upon which this thesis is based, the methodology and the tools which have been used to gather information and relevant data, and about the method of analysis. In Chapter 6 I will elaborate on the actual data analysis and I will answer the sub-questions of this research. In Chapter 7 I will draw my conclusions and answer the central research question. And finally, in Chapter 8 I will include a discussion, make recommendations for further research and try to provide some practical advice for the future.

2. Case & Context

2.1 The Environment

The focus of this thesis is on the case of Danau Sentarum National Park. The park covers an area of around 132,000 hectares and is located close to the equator in the floodplain in the Kapuas Hulu Regency in West Kalimantan, Indonesia (Aglionby, 2000; Anshari et al., 2004; Lubis, Handayani & Muazir, 2009). The park consists of a series of interconnected seasonal lakes ranging in size from 100 to 5,200 hectares, interspersed with swamp forests, peat lands, and dry lowlands on isolated hills (Anshari et al, 2004). The area was first designated to be *Suaka Margasatwa*, or Wildlife Reserve (Aglionby, 2000; Wadley et al., 2010). Then, in 1994, it was named – only the second – Ramsar Convention site in Indonesia (Aglionby, 2000; Anshari et al., 2004). In 1999 it became a *Taman Nasional* (National Park), with the 132,000 hectares as a core area, and another 65,000 hectares of buffer zone (Wadley, et al., 2010). This buffer zone is however a very disputed area and has been partly earmarked for oil palm plantations (Aglionby, 2000).

During the rainy season from October to May the water in the lakes can rise up to 12 meters, which can turn the vast network of smaller lakes into one large water mass. Even though it rains pretty much all year, during the dry season from July to September some lakes dry up almost entirely (Anshari et al., 2004; Lubis, Handayani & Muazir, 2009). The drying up of the lakes can be more extreme during El Niño-related events (Anshari et al., 2004). This varies from year to year, however, depending on the rainfall.

The park has a great diversity of wildlife and plantation, being home to the largest population of inland Proboscis monkeys, and home to one of the largest remaining populations of Orangutans in the world (Aglionby, 2000). The lakes support all 39 villages, home to approximately 6,500 people, according to a count from the 1990s (Aglionby, 2000), rising to a population of 10,300 people in 2007, according to a census conducted by Indriatmoko.¹⁰ In 2007 about 93% of them were Malay, primarily depending on the fishing industry, while the remainder were primarily Iban Dayak who rely heavily on hunting and agriculture (Wadley et al, 2010). The forests supports these villages, both by the so-called non-timber forest products that can be harvested, as well by the production of timber. Apart from the influence of the Dutch colonial administration on fishery management during the first half of the 20th century, and by the Fisheries Department in the 1940s, the management of the park has been largely based on customary law (*adat*) (Aglionby, 2000). Officially, however, the park is managed by the Directorate General of Nature Protection and Conservation of the Ministry of Forest.¹¹ (Aglionby, 2000)

2.2 The people of Danau Sentarum

2.2.1 The Malay community

Two hundred years ago the park consisted of diverse ethnic groups, which later became known as ‘Dayak’ people (Aglionby, 2000). The term ‘Dayak’ is “a term first employed by western anthropologists to embrace the various non-Muslim indigenous peoples of Borneo.” (Van Klinken, 2006, p. 28). These people cultivated rice and lived primarily off hunting and gathering whatever the forests provided them with. Around the lakes fishing was more important (Aglionby, 2000). The people living in Kapuas Hulu felt a strong connection to the forests and its wildlife. Approximately three to four hundred years ago the Islamic Malay culture came from Sumatra and Malaya. By the late 18th century it had spread inlands up to the larger towns along the Kapuas River (Aglionby, 2000). Many of the Dayaks were converted to the Malay culture and their languages intertwined. During these years people moved from their traditional longhouses in the forests towards single family houses along the

¹⁰ Though no official numbers are available, locals estimate the population to have been doubled in the past 10 years, meaning the current population must be somewhere around 20,000 people in 2017. This increase in population is one of the major current and future challenges of the National Park. I will discuss this in Chapter 8.

¹¹ Formerly the Ministry of Forest and Estate Crops.

rivers (Aglionby, 2000). Contrary to Borneo's coastal Malays, the Malay in Danau Sentarum National Park still have strong links to the forest.

Out of the 39 villages in Danau Sentarum, 34 are populated by Malays. The 2007 census showed that 10,300 people live in Danau Sentarum, 93% of which Malay (Wadley et al., 2010). This means that in 2007 an estimated population of 9,580 Malay lived the park. Their economy revolves almost entirely around fishing, as their major source of income (Aglionby, 2000). Fishing activities drop when water levels are high, but when water levels are low relatives from various villages all migrate to Lake Sentarum to offer help. Fish is not just for consumption, but also for trading. Lake Sentarum is home to about two hundred different species of fish, some of which are more rare and valuable (Aglionby, 2000). The Malay also engage in agricultural practices, in particular the harvesting of timber as well as non-timber forest products. Most of these activities are however for their own consumption or for improving their fishing techniques.

2.2.2 The Dayak community

Danau Sentarum is home to three different ethnic Dayak groups: the Embaloh, the Iban, and the Kantu Dayak (Aglionby, 2000). The Embaloh and Kantu Dayak populate areas east and west of the lakes respectively, while the Iban Dayak mainly live in the flat areas to the north and northeast of the lakes (called the Emperan) (Aglionby, 2000). The majority of the Dayak population lives further away from the lake in the hills and they are more dependent on agriculture and the gathering of non-timber forest products. The Dayak practice an agroforestry system, a system in which cultivation and trees are mixed, instead of exhaustive monocultures which are often used in tea and rice production.¹²

The Dayaks live either in small longhouses, housing five to eight families, or large longhouses, housing fifteen up to even thirty families (Aglionby, 2000). The Iban Dayak have been involved in migrant labor for a long time, many of them employed in illegal logging or on oil palm plantations. They have even moved to Sarawak, the Malaysian side of Borneo, for work. This migration is often a consequence of lack of income at home (Aglionby, 2000). Dayaks do engage in fishing activities, but less so than their Malay counterparts. They rely more on dryland activities, like hunting and gathering.

¹² 'Agroforestry' is one of the cornerstones of the Danau Sentarum Development Plan. I will go into more detail about this concept in Chapter 4 .

2.2.3 Politics and the indigenous people of West Kalimantan

To understand how the indigenous people of West Kalimantan feel about the current situation, to understand what their relationship is to the government, and what their claims are regarding the territory and the use of land, I will now elaborate upon the historical background of the indigenous people, focusing on the period after 1945 and the end of the Dutch colonial administration. Little is known about the pre-1945 situation of the indigenous people of Borneo, in particular regarding the Dayak politics in West Kalimantan.¹³ After 1945 several major events took place, shaping the current political and social context in which today's challenges take place (Tansaldy, 2012).¹⁴

Davidson & Kammen (2002), Davidson (2008) and Tanasaldy (2012) all provide a detailed historical background of the Dayaks, and have conducted extensive case studies in Kalimantan, which are important to understand the current social and political context. During colonial times the Dayaks lived under the nominal rule of the Malay Sultanate. When the Malay settled on the coastal areas of Borneo, they drove the Dayak peoples towards the virtually impenetrable inlands. For a long time the interior regions of Kalimantan had no educational system whatsoever, and it wasn't until Christian schools were founded in the area that the inland Dayaks gained any access to proper education. Education is regarded as a prerequisite for political awakening, a process that emerged in some parts of Indonesia during the twentieth century. The lack of employment due to religious reasons, in combination with a lack of education, gave the Dayak the lowest social status in the area, even lower than that of the Bugis and Chinese immigrants.

The end of World War II changed all that. After the war the Dutch federal government in West Kalimantan was reinstated and in order to include the largest ethnic group of Kalimantan, the Dayaks, they were given the opportunity to organize politically. For the first time in the province's history the Dayaks were represented in the government. They were also no longer under Malay rule, which resulted in a major change in social status. As a result, the

¹³ On the island of Borneo, various Dayak political movements were active between 1945 and 1998, but most of them were limited to the political boundaries of the provinces. Therefore, it is good to understand that movements in West Kalimantan and movements in Central Kalimantan are practically unrelated (Van Klinken, 2006).

¹⁴ For an extended and detailed overview of the history, see: Tansaldy (2012), the publications by Dutch social scientist Van Klinken concerning the colonial history of Borneo in relation to state-building and politics, Davidson (2008), and Davidson & Kammen (2002). This thesis only discusses those elements relevant for a better understanding of the current social and political context.

Dayaks accepted the pro-Dutch government and opposed the Java-based nationalist movements.

When Indonesia became independent and Dutch sovereignty was transferred to the new Republic of Indonesia, the entire political and social context changed once again. The new government accused the Dayaks of being traitors and all Dayak leaders who held power positions lost their jobs. However, this time they did not lose their social status completely, as the political party *Persatuan Dayak* (PD Unity), took part in the general elections of 1955 and 1958, and was able to obtain a significant number of votes. Since there were many uprisings and rebellions on various islands, the local regimes collapsed and ushered in Sukarno's authoritarian and centralized government. This time the PD could not resist the new regulations from Jakarta and it was forced to disband.

In 1965 the political landscape changed once again. After the disbandment of PD, politically active Dayaks had either joined the leftist *Partindo* or the *Partei Katolik* (PK). Over time some Dayaks had been able to obtain prominent positions again, for instance in Partindo which was close to the Sukarno regime. In 1965 Partindo was accused of involvement in the attempted coup against the Sukarno regime; while many higher ranking Dayak politicians had joined Partindo simply because their 'own' party PD had been disbanded, they had nothing to do with the coup attempt. Nevertheless, they now found themselves under threat of the military-backed New Order regime of general Suharto and his *Golkar* party. Many Dayak ex-Partindo members tried to join another party, the IPKI. In 1973 there was – another – party reduction, which forced the remaining IPKI members to merge with other non-Islamic parties, to form the *Partei Demokrasi Indonesia*. The PDI was by far the smallest party and had almost no political influence. Many Dayaks decided to join the governing Golkar for better political opportunities. As a result, the political representation of the Dayaks in the provincial and district legislatures declined from 1966 onwards and did not recover until 1977.

Interesting to note is that under Suharto's New Order the development of (West) Kalimantan took off. However, the Dayak communities did not profit from the logging, plantations, infrastructure and transmigration and many elements of their culture came under attack. Under The New Order the Dayaks and other ethnic groups became marginalized and their situation declined. In 1998 things changed again with the downfall of The New Order. Dayaks took advantage of the new political freedom and restored local democratic institutions. In the period following the fall of Suharto's regime, the Dayaks were able to obtain high political

functions, sometimes by exerting pressure and/or threatening the central government, and in 1999 the number of Dayak legislators reached a thirty-year high.

Important to note are two major outbursts of ethnic violence in 1997 and 1999, originating in West Kalimantan. The first instance of violence took place between Dayaks and Madurese, the second one between Dayaks and Malays on the one hand, and Madurese on the other (Davidson & Kammen, 2002; Davidson, 2008; Tanasaldy, 2012). These were not the only violent uprisings the Dayaks had been involved in, but as Tanasaldy (2012) argues, these later ones are historically strained, arising from cultural and contingent factors, and they can be ascribed to a political strengthening of the Dayak community rather than conflicts related to land issues.¹⁵ This is in line with Davidson's (2008) extensive case study on collective ethnic violence in West Kalimantan, in which he makes the argument that these violent outbreaks were a result of the polarization during Suharto's regime. Ethnic violence in West Kalimantan was a response to state action against communism (Davidson, 2008).

Van Klinken (2006) relates in detail how the Suharto regime was responsible for the killing of several Dayaks, but was able to put the blame on the Chinese, thereby instigating retaliating Dayak violence against the Chinese community; this event of the 1960s continued to be of influence during the following decades. Davidson (2008, p. 12) describes it as follows: "Suharto's military officers, in an attempt to wipe out a local communist rebellion, used 'warrior' Dayaks to expunge ethnic Chinese from the region's heartland". It is widely acknowledged, however, that the Dayaks are a harmonious and peaceful group of people, and, according to Davidson (2008), no natural link has been found between violence and ethnic heterogeneity, nor is the notion supported that the ethnic outbursts were historically determined. In fact, Davidson argues that "tangible political and temporal processes in large part yield violent conflict" (Davidson, 2008, p. 201).

Through Dutch missionary education, race-based laws, a practice of divide and rule, and the use of auxiliaries, a monolithic Dayak ethnicity was created among the hundreds of different indigenous peoples inhabiting Kalimantan, who mostly had one thing in common, namely its non-Muslim beliefs (Davidson, 2008, p. 201). During the years of colonial rule Dayak identity was opposed to the Muslim Malay identity and this was used in a political sense to sunder the social relationships between the two groups. When it comes to the Madurese-Dayak

¹⁵ It is important to differentiate between the two types of conflict, since the focus of this thesis lies on land-related conflicts instead of ethnic conflict, the latter which has not taken place on such large scales since 1999. This thesis elaborates on this matter in more detail in Chapter 3.

relationship and the inter-community violence of the 1990s, however, according to Davidson there is no reason why it would be historically bound or characterized by divisions along ethnic lines; the division rather stems from a specific confluence of contingent factors in the post-colonial period (Davidson, 2008). If the outbursts of violence were ethnicity-based grievances, it cannot be explained why the two episodes of violence were territorially strained, instead of spreading across the island. Rather surprisingly Davidson refers to the 1999 Malay involvement in the second violent outburst towards the Madurese as a political action. The fall of Suharto created space for more Dayak ethno-political movements, while Dayaks quickly gained prominent legislative positions. For the Malay joining the Dayak actions against the Madurese was necessary in order to be able to compete with the Dayak identity, and “heightened local politics that developed in anticipation of regional autonomy.” (Davidson, 2008, p. 204).

Since the outbursts of more extreme violence in 1997 and 1999, the region has not seen any large scale outbreaks of ethnic violence. Although tensions between Dayaks and Madurese are still present, they live alongside each other rather peacefully. The argument made by Davidson (2008) that the violence – albeit ethnic – is not based on ethnic grievances, but rather on contingent and contextual factors, is important for this thesis and I will get back to this issue in Chapter 3.

Based on the diverse interpretations in the literature, some important developments and events can be identified. The first, and probably most influential one is the sudden collapse of The New Order’s centralized and authoritarian regime in 1998. A new regime implied decentralization of legislation, known as the *era Reformasi*. For the Dayak communities this created a new opportunity to regain political functions. The collapse of The New Order was a direct consequence of the financial crisis of 1997, which illustrated the need for economic reforms. Following this collapse, large uprisings and forest-related conflicts, often fueled by timber-theft issues, came to the fore. Davidson (2008, p. 20), however, argues that the ethno-religious violence of the Dayaks against the Madurese came not about as a consequence of the financial crisis or the destabilization of the Suharto regime in 1997, but rather contributed to the change and that the rest followed. After the fall of The New Order in 1998, Indonesia experienced an accelerated expansion of oil palm cultivation due to a growing global demand, especially from Europe (Tampajara, Syrier & Julia, n.d.).

Since the end of Suharto’s regime until the present day, the Indonesian government has been struggling with decentralization efforts. Decentralization also provided a context where

corruption among district government officials could prosper.¹⁶ Especially on a district level, in the Kapuas Hulu Regency, many Dayaks now hold influential legislative positions. This might sound like a positive development, because how could ‘a Dayak’ let commercial companies exploit other Dayak territories? The truth is way more complex. The fact that people with a Dayak ethnicity now occupy such positions does not mean that they, based on their ethnic point of view, halt illegal logging practices. On the contrary, they are rather involved in such issues, providing permits for companies to plant oil palm plantations (Tampajara, Syrier & Julia, n.d.). However, companies often do not use their permits to build oil palm plantations. As Tampajara et al. (n.d.) show in their study, such companies often come to a community with good-sounding promises of good fortune, development, education, improvement of the infrastructure, and in particular a regular source of income. This happened, for instance, in the case of a small village in Semunying Jaya, West Kalimantan, where the company PT Multi Agung Perkasa presented itself as an oil palm company and promised the community 40% of its revenues. After two years no plantation had been opened yet and the community finally realized this was never going to happen. In fact, the company had solely focused on the timber trade, cutting down trees and transporting its timber illegally across the border to Malaysia (Tampajara, Syrier & Julia, n.d.). In particular along the Indonesian-Malaysian border many illegal timber trade activities take place, quite often by Malaysian companies on Indonesian territory. Activities like this are often condoned by the district government officials – most of the time because of a good down-payment – and it poses one of the greatest challenges in illegal logging issues today (Tampajara, Syrier & Julia, n.d.).

2.3 Previous research in Danau Sentarum National Park

During the past decades the contribution of the field of social sciences to conservation has focused on two general approaches (Wadley et al., 2010). The first approach is aimed at enhancing local knowledge about resource management and capacity building, whereas the second approach deals with whether or not the people in question are truly committed to conservation of their resources (Wadley et al., 2010). The latter approach might lead to conflicting situations, removing those who do not have a preservationist mind and replacing them by someone who does, emphasizing conflicts of natural resources. Wadley et al. (2010,

¹⁶ The district level is the lowest level of the political framework in Indonesia, followed by the provincial and the national level.

p. 1) emphasize that “conservation management requires management of the social relations surrounding natural resources”. They argue that a vital dimension in conservation management, although often neglected, is human interaction: the intimate social relationships among people engaged in conservation projects (Wadley et al., 2010).

In an extensive study Wadley et al. (2010) come up with some interesting arguments concerning Danau Sentarum National Park and research in the field of conservation. One important note is that there is no right ‘recipe’ for good conservation practices (Wadley et al., 2010, p. 40). They argue that for ‘good conservation’ one needs at least six ingredients:

“1) involvement and commitment of key players, including communities, 2) funding, 3) strong leadership, 4) capacity building, 5) partnership with supportive organizations and government, and 6) economic incentives, including alternative livelihood options.”

Wadley et al. (2010) conducted an extensive study about conservation policies in Danau Sentarum National Park, focusing on ‘ingredients’ 1, 4 and 5. One of their major findings, and perhaps the most important dimension of conservation, was the need for trust; trust, both within and among communities and between communities and external stakeholders. In the words of Wadley et al. (2010, p. 46):

“Trust is an integral part of the social capital we consider crucial for effective conservation actions [...]. It is central to effective collaboration and has serious effects on the team members’ motivations. It can also be destroyed much more easily than it can be established.”

Given this finding, the building of trust is therefore one of the most important elements of the Danau Sentarum Development Plan of Riak Bumi and the anonymous NGO.

2.4 Riak Bumi¹⁷

Riak Bumi has officially been founded on September 9, 2000, with “a commitment to countering trends that further marginalize rural and indigenous communities and disrupt the balance of healthy ecosystems”. It is argued that the best way of doing this is by empowering the local people. Riak Bumi tries to increase the capacity of local communities in sustainable management of natural resources through facilitation and technical assistance, to increase the

¹⁷ Information retrieved from: <http://www.riakbumi.or.id/>

awareness of local communities concerning the wealth and potential and limitations of local natural resources, to increase access to education and technical knowledge, to guide local decision-making and policies concerning natural resource management, and finally to promote community-based natural resource management in local policy-making.

Riak Bumi tries to fight external pressures by developing the area. In cooperation with the anonymous NGO it has initiated the Danau Sentarum Development Plan. As external pressure by oil palm plantations and illegal logging increases, it becomes much harder for locals to withstand these pressures. An employee of the anonymous NGO, relayed the following:

“People living in Danau Sentarum have a long history in the area. They consider the area as theirs, the area where their ancestors have lived for generations, and where they are buried. The forest have a spiritual meaning for them and they are losing it to oil palm companies. Without the forests it becomes harder to generate income from the NTFP, and thus they are forced to go work on the plantations.”

As mentioned previously, many Iban Dayaks are forced to enter into migrant labor due to a lack of income (Aglionby, 2000). The goal of Riak Bumi and the other NGO is clear: on the one hand they focus on a development of the value chain of NTFPs, for example by improving harvesting or processing techniques, providing technical education and equipment, and by exploring and expanding local and national markets. The focus is on locally produced forest honey and bee wax, traditionally woven crafts made out of rattan, a development of eco-tourism, and resin harvest. On the other hand they try to improve the cooperation between the communities living around Lake Sentarum, by building mutual trust and providing the communities with tools to withstand the ever increasing external pressures. The general idea is that if there is a viable source of income, which local communities can achieve through cooperation, they can better cope with external pressures, and they do not have to work on oil palm plantations or be involved in illegal logging practices.

2.4.1 Eco-tourism

In 2001, a first step was made by the local government of the Kapuas Hulu Regency to increase eco-tourism in the area. By improving the infrastructure in the area, the government hopes that people will visit the area more often. Riak Bumi offers a special program, called ‘eco-tours’, to increase awareness. By bringing more tourism to the area, the economic value of the region increases and locally produced products can be sold to generate income.

2.4.2 Forest Honey and Wax

Perhaps one of the most promising non-timber forest products in the area is natural honey. In particular the Malay communities have many honey hunters. These activities started in 1995, but were already halted in 1997 due to heavy forest fires. In 2000, honey production started again and an estimated 20 to 25 tons of honey is now produced every year. Harvesting techniques and knowledge are improved continuously and although the honey already has a very high standard of quality Riak Bumi tries to improve it even more. The honey is shipped directly to the local market in Pontianak. Riak Bumi also offers better education and tries to build negotiation skills, so as to improve the negotiation position in attracting both local and international traders.

Initially, the wax, a side product of the production of honey, was often thrown away or just a small part of it was actually used. Market research showed that people were interested in buying the bee wax. Just like the production of honey, the production of wax was also halted in 1998/99, but it revived in 2000. Riak Bumi is still looking into ways for bringing this product to the market.

2.4.3. Crafts of Kalimantan

‘Crafts of Kalimantan’ is the collective name for traditional Dayak woven Handicrafts like matts and bags. The crafts often include items used at traditional ceremonies. The ingredients for these products, for instance rattan, can only be harvested in the forests, which makes the conservation of the forest area very important for the producers of these products. The bags are usually sold locally to tourists, although small numbers are sold on far-away markets like Singapore and in Sarawak.

2.4.5. Resin

Resin becomes more and more important in Danau Sentarum, especially since newer harvesting techniques have been developed. Resin comes from a specific tree, the Menungau, which grows in the forest. The price of resin is not very high, however, but the costs of transportation are. Riak Bumi is exploring markets outside Borneo, since resin can be used as a resource for making paint.

All these products and services are part of what is called the ‘NTFP value chain’. They are considered to be a viable source of income where the forests can both be used and preserved. Developing this value chain is one of the core aims of the Danau Sentarum Development Plan, and therefore knowing what makes up this value chain is essential for this thesis.

3. Theoretical Framework

This chapter provides a clear theoretical framework, where various ambiguous concepts are debated and defined so that there can be no misunderstanding about the meaning of concepts in this thesis. Definitions will be drawn both from primary sources – interviews with representatives of the anonymous NGO and Riak Bumi – and secondary data sources. The interviews used for data collection are based on the definitions given in this chapter.

3.1 Local versus indigenous people

A first issue that needs clarification is that there are various ways of addressing the human populations which are the focus of study. For instance, according to Bayrak and Marafa (2016), in 2000 the world counted approximately 300 million forest-dependent communities, occupying around 80% of the planet’s biodiversity. According to Bluffstone and Robinson (2012), 25% of developing country forests are “community controlled”. Yasmi et al. (2012) in turn talk about the “local communities getting into community-outsider conflicts” due to deforestation. Another term often coined is ‘indigenous people’ or ‘customary people’ (De Royer et al., 2015).

The concept of ‘identity’ is often an ambiguous term in itself; it may contain elements of ethnicity, culture, language, religion or geography. Put in terms of Fearon and Laitin (2000), identity refers to a social category in which an individual member takes pride. It might be clear that identity plays an important role when considering what, or rather who, to talk about as a subject of study. However, as I will address in the Methodology section below, ethnicity and identity as such are not the focus of this thesis, and, though kept in mind, will not play a central role in the establishment of the theoretical framework and the measurement tool. Besides, one’s ethnicity has little value for the gathering of relevant information in this case. How the development plan has affected someone economically or socially does not depend on his or her ethnic identity. One way to find out whether ethnicity matters or not is to have a

proper balance in the respondents, though they should not be selected based on their ethnicity. For that reason, in this thesis the term of ‘local’ or ‘indigenous’ communities living around Lake Sentarum refers to ethnic Dayaks and Malay as well.

Bayrak and Marafa’s “forest-dependent communities” is a vague concept that holds little value here. This concept includes every individual who is in some way dependent of some type of forest somewhere in the world. The term ‘local’ communities narrows it down, and might therefore be more suitable to use in this thesis. But what is local then? When is a community considered local? When they are living on Borneo? If that were the case, it would imply that people living in Malaysia and Brunei, the non-Indonesian parts of Borneo, are also part of the community. Even in Indonesian West Kalimantan there are thousands of smaller communities which would all be considered ‘local’. The definition of Yasmi et al. (2012) can be used, and in this thesis ‘local’ community will then be defined as: people from either Dayak – whether Iban, Kantu or Embaloh – or Malay ethnicity, living in one of the 39 villages in or around Lake Sentarum.

As for the term ‘indigenous’, like identity, how can one say that a person is indigenous? Mac Ginty (2008, p. 149) argues that the term ‘indigenous’, referring to indigenous norms and activities is not the same as traditional: “Like all human communities, indigenous groups engage in constant processes of adaption to their social environment”. In other words, ‘indigenous’ communities are not to be considered those groups holding on to their cultural or religious traditions, but rather those that evolve with and adapt to their social, political and economic environment (Mac Ginty, 2008). For instance, the Dayak people are known to many as headhunters, and in the past have shown that they indeed have had such traditions (Van Klinken, 2007). Nowadays the practices of headhunting are illegal, the Dayaks have abandoned these and have instead adapted to the new situation. The Indonesian authorities consider the Dayaks and Malay to be indigenous, whereas others like the Chinese and Madurese are seen as migrants. The indigenous peoples in Indonesia also have a protected status; according to the Department of Social Welfare (DepSos) and the Directorate for the Empowerment of Isolated Indigenous Communities (Dit.PKAT), they are “vulnerable groups” (AMAN, 2012).

However, also within Indonesia there is no absolute clarity about who should be considered indigenous and who not. The Indigenous Peoples Alliance of the Archipelago (AMAN), estimates that fifty to seventy million people can be classified as indigenous. Other sources put this figure even higher, as high as 120 million (AMAN, 2012). More than a thousand

ethnic, sub-ethnic or indigenous groups can be found in Indonesia; it is hard to determine exactly who is, and who is not, indigenous.

In summary, in this thesis I will therefore not use the term ‘indigenous’ to denote the research subjects; ‘local’ seems more in place here. The focus of this thesis is on the local communities of Danau Sentarum National Park; being all people that live in one of the 39 villages located in or around Danau Sentarum National Park, including ethnic Dayaks, Malay, Chinese, Madurese, or any other ethnic group living in one of these villages.

3.2 Decentralization

The next ambiguous concept deals with the ‘decentralization’ processes by the government. Decentralization is defined here as the transfer of ownership and responsibility by the state to the people (Yasmi, Guernier & Colfer, 2009). This should not be confused, however, with the decentralization efforts to transfer responsibilities for forest management from a central, national level to a lower, district level. An important note has to be made here. Moniaga Elsam (1998) argues that often property rights are not clearly defined, mainly because historical rights are not recognized in existing policies. This means that decentralization efforts are clearly bound to fail, since it is not clear to whom ownership and responsibility should be transferred. This is where the issue of community controlled forests (CCFs) comes in, which, according to Bluffstone and Robinson (2012, p. 9), refers to “a type of property right – formal, informal, written or unwritten – over forests that is vested in a group of people”. In many developing or low-income countries the government cannot provide security and conservation measures for indigenous communities, but it does have ownership of the areas these communities live in. In many countries, this quite often leads to tensions and even conflicts between – and among – these communities and the government (Moniaga Elsam, 1998).

As we have witnessed, efforts in Indonesia to transfer ownership from the government to indigenous people have been only marginal. However, as Tampajarah, Syrier and Julia (n.d.) show, getting a formal written certificate of transfer of ownership involves a lengthy and costly process which community members would rather avoid, especially since they had *adat* authority anyway and a community trust guaranteed access to the land (Tampajarah, Syrier & Julia, n.d.). This means that decentralization efforts have proven not to be sufficient. However, to be clear, this thesis follows the definition by Yasmi, Guernier and Colfer (2009),

stating that decentralization means the transfer of ownership from the state to the people, and not from the national to the district level.

3.3 Conflicts and violence

For many, the word ‘conflict’ immediately relates to violence. To make sure what type of conflicts are dealt with in this thesis, I will briefly discuss various cases and common forms of conflict in related situations. Basically, conflict means opposing interests between two or more parties. In social conflict, according to Daniels and Walker (2001, as cited in Yasmi et al., 2007), conflicts are based on differences in interests, perceptions, power and goals. Glasl (1999, as cited in Yasmi et al. 2007), argues that conflicts over resource management occur if one actor feels “impairment” from the behavior of another. This means that, in order to distinguish ‘conflict’ from ‘non-conflict’, “the experience of an actor’s behavior as impairment becomes a prerequisite for conflict.” (Yasmi et al., 2007, p. 598).

For the people living around Lake Sentarum this would mean that differing opinions regarding land-use issues do not have to be called a conflict, but that experiencing ‘impairment’ because of the behavior of, for instance, another villager that benefits from a deal made with an oil palm corporation, might very well be a conflict.

This does not mean that a conflict also has to be violent. What is clear, however, is that forest-related situations like the ones in Danau Sentarum are much more complex and often involve multiple parties. Conflicts can appear (1) within communities, (2) between communities, (3) between the communities and external parties, or (4) a combination of these. Setiawan et al. (2016) acknowledge the multiplicity of actors which might have an interest in forests and forestry-related issues, which in turn might lead to very complex and conflicting situations regarding land-use. The classic image of David versus Goliath, of ‘the indigenous’ versus ‘the evil companies’, is often not directly applicable. Communities are quite often divided when it comes to land-use issues, often fueled by considerations of short-term incentives rather than by long-term strategies, according to Syrier. Yasmi, Guernier and Colfer (2009) as well as Tampajara, Syrier and Julia (n.d.) are aware of problems that have come to the fore as a consequence of decentralization and where conflict and violence have arisen at a local level. However, most studies focus on conflicts between a community, or several communities, on the one hand and an external party on the other (Mahanty, Guernier & Yasmi, 2009; Yasmi, Kelley & Enters, 2013). These are often referred to as ‘community-outsider conflicts’. Yasmi

et al. (2012) have analyzed seven different cases, all of which were local community versus some type of external actor, be it a mining, logging or plantation company or even the government. Many of these cases show that forest-related and land-use conflicts can indeed become violent (Yasmi, Kelley & Enters, 2013). For example, in the case of Kanchanaburi, Thailand, community members became engaged in violent fights with forestry officials (Yasmi et al., 2012).

Another important issue is whether or not conflicts are based on ethnicity. As has been addressed in Chapter 2, Indonesian politics have been used in West Kalimantan to divide and rule the indigenous peoples, sparking violent outbursts between the Madurese and the Dayaks. However, as Davidson (2008) shows, the conflicts were not inherently based on ethnicity, but rather contingent to a specific context. This also explains why violence between the two ethnicities – three, with the involvement of Malay – was only bound to specific episodes in specific areas, instead of spreading across the island. Davidson (2008) discusses various approaches to the violence in Kalimantan; one of them being the critical development/natural resource conflict approach. This approach concentrates on “the injuring effects New Order development had on Dayak cultures and welfare and its role in sparking unrest” (Davidson, 2008, p. 13). It put pressure on natural resources, particularly on land, because of illegal logging and oil palm plantations, which fueled discontent among the Dayaks. In addition to this, Dayaks were also underrepresented in the government. These two conditions combined, rather than ethnicity as such, are believed to have strongly influenced the accumulated grievances which have resulted in the violent outbursts against the Madurese in 1997. However, a downfall of this approach is the fact that it “tends to conflate the explanations of the 1997 violence with references to the origins of Dayak-Madurese clashes, although the two are incommensurable” (Davidson, 2008, p. 14). Meaning that it is impossible to tell what impact of earlier quarrels between the two peoples had on the 1997 violence, and that is exactly what this school is trying to do.

Davidson also addresses an approach that focusses more on cultural explanations. More often than not media ascribes the violence to primordial factors, where the use of violence is inherently Dayak or inherently Madurese. However, a primordial view fails to explain why the first clashes between Dayak and Madurese did not take place until 1967,¹⁸ while the Madurese migration dates back to the mid- and late 19th century; nor does it explain why

¹⁸ In 1967 the Dayak-Madurese quarrels were instigated by the early New Order regime. This polarization continued during Suharto's reign and came to an all-out violent outbreak in 1997 and 1999.

clashes have not happened in other locations with sizeable Dayak and Madurese communities (Davidson, 2008).

A third and final approach focusses on institutional factors, but does take Dayak frustrations under the New Order as a starting point (Davidson, 2008). Bertrand (2004, p. 8) argues: “the frustration is rooted in their [Dayak; TF] status as a ‘backward group’ in Indonesian society”, and “the regime’s institutional structure, as reflected in its normative interpretation of the basis of citizenship, of the modernity of the Indonesian national identity, and of the characteristics of inclusion and exclusion” (Bertrand, 2004, p. 49). However, according to Davidson (2008), this approach, just like the critical approach, measures up inadequately against the empirical evidence: other marginalized peoples under Suharto’s institutional rule did not engage in the same kind of violence. Besides, a growing frustration cannot explain the anti-Chinese pogroms that took place at the start of the New Order regime (Davidson, 2008). There has to be a link between an individual’s frustration and his or hers participation in the killings, but that cannot be provided in this case. Finally, just like the other explanations, this ‘institutional approach’ cannot account for the fact that the outbreaks of violence were territorially bound.

Davidson argues that the ‘truth’ lies somewhere in the middle; the violent episodes between the Madurese and the Dayaks are caused by specific local, national and international contextual factors (Davidson, 2008). What has become clear from his research, however, is that violence emerged out of an increasing sense of frustration; from a political, social, economic as well as cultural perspective, the parties involved experienced a sense of impairment. Therefore, in conclusion to this section, in this thesis the notion of conflict refers to any experience of impairment by a member of a group, or by a group as a whole, due to the behavior of another person or group of people, regarding land-use issues, regardless of whether or not violence is used.

Important to note here is that conflict is not necessarily a bad thing. Conflicts can be resolved; people can engage in negotiation and dialogue to solve a conflict, leading to improved cooperation and social relationships, eventually leading to less conflicts. The Danau Sentarum Development Plan is aimed at bringing parties in conflict together and by doing just so, trying to decrease conflicts over land-use issues in the region of Danau Sentarum.

3.4 Social wellbeing

One of the most ambiguous concepts in the research question is ‘wellbeing’, either in an economic or a social sense. Social wellbeing is based on the term of ‘social capital’ and is derived from the Sustainable Livelihoods Framework (SLF) for impact measurement from the Department for International Development. This framework is a tool to improve understanding of livelihoods, particularly those of the poor (DFID, 1999). The framework tries to measure the impact from anti-poverty tools on someone’s livelihood, based on five sorts of capital: human, social, financial, natural, and physical capital. The framework also acknowledges that all livelihoods take place in a certain ‘vulnerable context’, meaning one has to recognize that since efforts take place in a specific context the impact of a specific tool cannot be fully and only attributed to the tool itself; rather, other important factors could be at play. For example, a decrease in illegal logging for oil palm plantations might take place because a development plan works very well, but it might also be a consequence of a decreased global demand for palm oil. In this case, the vulnerability context refers to the global level.

The framework will not be used in this thesis on a one-to-one basis, however, but rather its premises are used as a foundation for the measurement tool. According to the SLF, social capital refers to “the social resources upon which people draw in pursuit of their livelihood objectives” (DFID, 1999, p. 9). This can be a social network with connectedness in both horizontal as well as vertical directions, but can also be a membership of more formalized groups and relationships of trust, reciprocity and exchanges that facilitate cooperation (DFID, 1999). This approach is interesting for several reasons. First, it focuses on social networks; the larger one’s network is, the bigger one’s social capital. A social network can consist of family members, friends or colleagues, but also partners, government officials or company owners. Having a large network as such is important, but having a good and strong relationship with others in one’s social network is even more important. In the Lake Sentarum case the development plan aims at not just expanding the networks of the people living around Lake Sentarum, but also at strengthening the network by bringing people together, let them engage into dialogue, and negotiate with each other with the ultimate goal of having them cooperate in order to withstand external pressures.

A second important element is a focus on trust. As we have seen earlier in Chapter 2.3, according to Wadley et al. (2010) trust is perhaps the most important element regarding conservation in any situation. The building of trust between people is a delicate, difficult and

lengthy process, easier to be destroyed than to be build. And trust directly relates to a third element, which is membership of some kind of a (in)formal group, where one shares certain norms, values and customs. A good example of this is *adat* (customary) law, used by almost all Dayak tribes in all of Borneo. But as Tapajarah, Syrier and Julia (n.d.) have shown, being a member of a certain tribe, for instance the Dayaks, does not automatically mean one shares the same interests or opinions regarding land-use issues. In fact, most community conflicts start because village elites take a share of oil palm or illegal logging profits as a pay-off, while lower-ranking community members want to preserve the forest (Tampajarah, Syrier & Julia, n.d.). Building trust and a sense of membership is therefore crucial in conservation practices. As mentioned previously, by bringing the people in the communities around Lake Sentarum together, the development plan tries to build trust and membership by encouraging participation in the land-use decision making process.

To sum up, in this thesis social wellbeing is a combination of (1) expanding and empowering social relationships among community members, (2) building of trust among community members, (3) encouraging participation of community members in the land-use decision making process, and (4) improving the negotiation skills of community members.

3.5 Economic wellbeing

A perhaps somewhat less ambiguous concept, but still in need of a proper definition, is ‘economic wellbeing’. The activities of Riak Bumi have already been addressed in Chapter 2 and the economic wellbeing of community members is pretty much derived from those activities. In the Sustainable Livelihoods Framework the element of financial capital is explained as “the financial resources that people use to achieve their livelihood objectives” (DFID, 1999, p. 15). This is a rather broad definition and it can mean anything. In Danau Sentarum people are mostly concerned with food security and income generation. Traditionally, the people around Lake Sentarum relied on the fishing industry, hunting, the gathering of NTFPs, and in some cases some small-scale agricultural practices like rice cultivation. Since large scale oil palm plantation activities started in the Kapuas Hulu Regency in the second half of the 20th century, these sources for income generation as well as food production came under threat. Nowadays, the communities are under great pressure to generate income and food, forcing them to either work on the oil palm plantations or become involved in logging activities. Those who still live of the traditional forms of income and food

generation – still a large number of people – find it harder and harder to do so because of the external pressures and destruction of their main sources of income: the forest and the lakes.

The economic wellbeing of the communities around Lake Sentarum relies on two factors. On the one hand there is the need for a market where their products can be sold. This market can be local, regional, national or even international. For instance, honey and candles produced by the communities are exported to and sold in Pontianak; the baskets and bags made out of rattan are sold in Jakarta and Singapore; while fish is exported all over Asia, and rare species are sold all over the world through the markets in Jakarta and Singapore (Aglionby, 2000). Expanding existing markets and opening new ones is a core aim of Riak Bumi, which acts as the Secretariat of the JMHI; besides, it is also involved in other income generating activities in the area. Therefore, one of the improvements of the economic wellbeing should be an increase in trade of non-timber forest products and therefore an increase in income for the people involved in these activities.

A second factor of economic wellbeing relates to the ways in which products are harvested and processed. Better techniques and newer technology lowers the costs and increases production, which in turn should lead to an increase of trade. The development plan provides educational programs on how to effectively and efficiently harvest the NTFPs, without damaging the environment and therefore their source of income. They also provide communities with modern technologies and techniques for making the harvesting of NTFPs easier, for improving production processes of, for instance, honey, candles and resin, and for opening up new markets by product differentiation.

Important to keep in mind is that improvements like this are only valuable if in the long run they exceed the opportunity costs. Opportunity costs are the costs one would make if instead of option A one would choose for the second best available option B. In other words, if working on an oil palm plantation is relatively easier and yields higher incomes than busting around in the forest every day, than what is the point? Of course reality is much more complex, since traditional values should be taken into account as well. But it is conceivable that short-term deals offered by oil palm plantations are just too good to ignore and say no. This issue is illustrated by Tampajarah, Syrier and Julia (n.d.): a community was offered a huge chunk of profits by an oil palm company – an ‘offer they could not refuse’ – but in the end it turned out to be a false promise; after two years there was still no plantation and the company was only active in the community for logging activities.

In light of the research in this thesis it means that statistics and financial data as such might show improvements in overall local economics, but the development plan only holds value if the community members experience the ‘win-win’ situation Riak Bumi and the anonymous NGO try to facilitate; where the benefits of holding on to traditional sources of income exceeds the opportunity costs of working on oil palm plantations or engaging in illegal logging activities. Although backed up by financial data, for instance on trade, a central issue in this thesis is therefore the experience of community members, which stands for economic wellbeing.

4. Practical implications and expectations of the Danau Sentarum Development Plan

Insight in the underlying and practical implications and expectations of the DSDP is vital for understanding the context of the case, and also crucial for developing the proper methodology and measurement tools. This should rather be a sub-question to the main research question, and therefore deserves a full chapter instead of just a smaller paragraph. This chapter provides a clear overview of the basic concepts of the DSDP and its intentions for the communities of Danau Sentarum. Relevant information is based on the academic literature, the website of the anonymous NGO, as well as conversations with the directors of Riak Bumi and the other NGO.

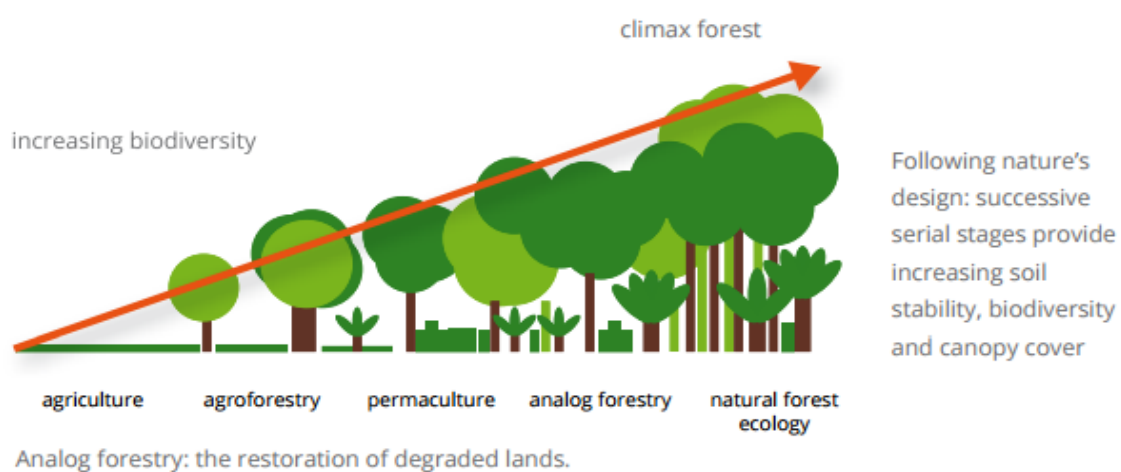


Figure 4.1: analog forestry. Source: anonymous NGO, 2015.

In 2011 the anonymous NGO initiated a program called *Rich Forests*, of which the Non-Timber Forest Products Exchange Program, NTFP-EP, addressed in the introduction, is a part. This program combines people with production, conservation and regeneration through adding value. The Rich Forests program focusses on tropical agriculture, the biggest driver of deforestation, often characterized by monocultures. This means that a piece of land is used for only one single crop, plant or livestock, which is extremely exhaustive for the soil. The Rich Forest program acknowledges the importance of NTFPs for forest-dependent communities like the ones living in Danau Sentarum, and therefore tries to shift away from this exhaustive form of agriculture towards agroforestry or even so-called analog forestry (see Figure 4.1).

Agroforestry refers to “land use systems in which trees are combined with the cultivation of crops or rearing livestock” (Gonsalves, 2015, p. 7). This means that crops grow or livestock grazes in a forested area; trees are not removed for agricultural purposes, but the two are rather combined (Young, 1988; Gaspar, Escribano & Mesias, 2016; Upson, Burgess & Morison, 2016). Agroforestry contributes to national food security and the self-sufficiency of local communities (Moniaga Elsam, 1998). Analog forestry, in turn, refers to “the restoration of degraded land in such a way that its vegetation structure and composition will mimic the original vegetation cover, ultimately bringing back the area’s biodiversity to the original level” (Gonsalves, 2015, p. 7). By incorporating agro- or analog forestry, the Rich Forest program tries to create win-win situations, in which local communities as well as external stakeholders will both benefit in a social and economic sense. According to Moniaga Elsam (1998, p. 121), community-based forest management “contributes to the economic well-being of local communities, as well to the well-being of the Indonesian Nation.”

Agroforestry has gained increased attention since the late 1970s (Denning, 2001). During the following decades it became a widely analyzed concept, and it evolved from a ‘indigenous’ and ‘romantic’ practice to a more scientifically based system for managing natural resources (Denning, 2001, p. 407). Agroforestry became a popular and inexpensive tool for restoring depleted lands in both Africa and Asia. It also turned out to be an effective tool for local capacity building. Franzel, Cooper and Denning (2001) argue that local capacity building not only relies on implementing an agroforestry system, but it also relies on planning, implementing and evaluating a broad range of other development activities. Communities in Kenya, for instance, developed action plans based on their needs and implemented it together. Franzel, Cooper and Denning (2001) draw some critical lessons from this type of local capacity building, for instance that community planning is more effective through village

elders and leaders of organized groups than through open public meetings (Franzel, Cooper & Denning, 2001). Their argumentation is based upon several cases in Kenya, Uganda and the Philippines, and they conclude that participatory land-use planning and agroforestry largely benefited the communities both socially and economically.

Agriculture is a major source of emission of greenhouse gasses, not only because of the deforestation practices for clearing land but also for holding livestock, and as a result of biochemical processes that are strongly affected by land management practices (Baah-Acheamfour et al., 2014). According to Baah-Acheamfour et al. (2014, p. 131), trees in agricultural landscapes can be used as a management practice to counter the emission of GHGs, both directly and indirectly. Trees can also be used to prevent the degradation of pastureland, to improve the land fertility due to the introduction of livestock, for the exploitation of marginal resources and the increase of animal welfare because of shelter provided by trees (Young, 1988; Gaspar, Escribano & Mesias, 2016). Since any type of crop or livestock can be combined in agroforestry, this variety makes such programs difficult to design and evaluate, as opposed to simple monocultures (Young, 1988; Hagggar et al., 2001). Therefore, Hagggar et al. (2001) argue that it is not necessary to try to 'homogenise' the various management systems and treatments.

On the other hand, this opens up possibilities for more participatory research methods for agroforestry management. The most important issue Hagggar et al. (2001, p. 423) bring up is that agroforestry has to have a long-term focus; long-term partnerships between farmers, researchers, and other stakeholders should be strived for. This is, however, not the case in Indonesia, according to Bhagwat & Willis (2008); they argue that in Southeast Asia there is an emphasis on short-term economic growth rather than on long-term conservation of natural resources.

The Rich Forest program tries to create a situation where forests are combined with agricultural activities. Tea plants can grow in a monoculture system, but they can also grow within forested areas, where the forest also provides NTFPs, as trees for wood purposes, wildlife, and biodiversity. In Danau Sentarum agroforestry is used to increase the value of the forests, at the same time decreasing the need to deforest large areas for exhaustive monoculture systems like oil palm plantations, as well as to secure food and income through NTFPs for local communities. In this case agroforestry is already used to collect honey from bees, to gather rattan, to tap resin and to hunt. The ultimate goal the anonymous NGO and

Riak Bumi try to achieve is a situation in which both agriculture and conservation takes place, a win-win situation where all stakeholders can benefit from the forest.

Agroforestry is widely used as a tool to fight the rapid global expansion of the oil palm industry. The big question is: is it possible to manage oil palm plantations through agroforestry, thereby enhancing local economies while at the same time conserving biodiversity? According to several studies, modern agroforestry – where plantation crops such as coffee, cocoa, and rubber are cultivated around native trees in mixed agricultural landscapes – can contribute to biodiversity conservation by providing a habitat to a number of foreign species outside protected areas (Bhagwat & Willis, 2008). This is also the case in Southeast Asia's jungle rubber, which is produced in mixed agroforestry systems, unlike the oil palm monocultures (Bhagwat & Willis, 2008).

Bhagwat and Willis (2008, p. 1368) come up with three reasons why oil palm plantations, if managed as agroforestry systems, can further conservation efforts: "First, when oil palm is grown in mixed-tree orchards rather than monoculture plantations, these systems can provide habitat for forest-dwelling species. Second, the mixed orchards in the landscape can act as buffers and corridors connecting distant forest reserves. Third, forest resources available in mixed plantations can provide livelihood to local people." They conclude that there might be an 'agriculture' versus 'biodiversity' deadlock between conservation agencies and the oil palm industry, but combining the two worlds, managing oil palm plantations in a mixed agroforestry system, is a promising solution (Bhagwat & Willis, 2008, p. 1369).

In addition to agroforestry, the development plan uses the Participated Land-Use Planning (PLUP) method to support the Dayak and Malay communities. According to the anonymous NGO, a tool like PLUP is expected to have an impact in two ways. First, it can identify areas (un)suitable for commodity production and therefore create a balance between new developments and existing land-uses. This relates to the increase of the economic value of forested areas for local forest-dependent communities. Second, it can be used to prevent inter-communal conflicts over land-use and land-rights. Understanding the perceptions of local communities regarding conflict dynamics can be useful for decentralization policies and tools like PLUP to effectively deal with conflicts (Yasmi, Guernier & Colfer, 2009). If PLUP has indeed these alleged positive effects, then the number and/or intensity of the perceived conflicts Yasmi et al. (2007) talk about must have decreased over the years and economic, social and ecological standards for the Dayak and the Malay must have gone up.

These principles translate into some widely acknowledged important objectives as a tool for conflict prevention. For example, Yasmi et al. (2007) call for improving negotiation skills of communities in Danau Sentarum as a crucial element for conflict resolution; in a case study on this topic, Yasmi et al. (2009) stress the importance of negotiation. Wadley et al. (2010) argue for enhancing local knowledge on resource management and capacity building, as well as a focus on solidifying and maintaining social relationships relating to natural resource issues. The latter relates to the most important element, according to them, being the building of trust. Davidson (2008) discusses the role of civil society organizations, as they can enhance inter-ethnic associational life by facilitating intercommunal conversation and trust, which in turn puts them in a position where they can effectively prevent ethnic violence. He also discusses the downside of this approach; such organizations might have a better effect in urban settings, but Davidson acknowledges the fact that if such organizations can create mutual trust and keep the peace in (semi-)rural settings, this can turn out to be a good tool for conflict prevention (Davidson, 2008). Finally, Bluffstone and Robinson (2012) argue that it is important to create a situation in which income can be generated from the forests without damaging them.

In conclusion to this chapter, and in answer to the first sub-question, the Danau Sentarum Development Plan is based on both the principles of agroforestry and PLUP, which both aim to reach various objectives such as:

- improving the economic livelihoods for local communities while conserving nature;
- improving the NTFP value chain by exploring new markets, expanding existing markets as well as product differentiation;
- increasing the negotiation skills of the communities living in and around Danau Sentarum, by actively involving them in the decision-making process;
- providing education and knowledge, in combination with new technologies, for communities in and around Danau Sentarum;
- having communities cooperate in land-use issues, in order to prevent land-use and land-rights conflicts.

5. Methodology

This chapter discusses the methodology used to collect relevant data in order to be able to answer the proposed research question and its sub-questions. The study is primarily qualitative; collecting the right data is interpretative, based on my interpretations of the ‘truth’. A section on ‘ethics’ will therefore be added to this chapter, a topic which will also be reflected upon in the Discussion section at the end of this thesis.

The qualitative data has been gathered using semi-structured interviews, following the research methods as used by Yasmi, Guernier and Colfer (2009). However, as I have already mentioned in the Preface this did not go as planned accordingly. There are valid reasons for this qualitative approach. First, because I try to understand the dynamics and problems on a community level, in such cases qualitative data is generally collected (Tempajara, Syrier & Julia, n.d.; Yasmi, Guernier & Colfer, 2009). There can be lots of tensions within communities, even within families, about how to deal with certain situations. The research of Tempajara, Syrier and Julia (n.d., p. 8) has great similarities to this thesis, except that it is conducted in the region of Semunying Jaya, approximately 400 kilometers to the west of Danau Sentarum. They show that “local grievances can lead to intra-community conflicts as well as vertical conflicts with the plantation company and local authorities.”

A second reason for opting for this approach was that a comparison can be made to other studies, like those of Tempajara et al. (n.d.) and Yasmi et al. (2009). Unfortunately, as explained in the Preface, I had to be way more careful and discrete in conducting my research as initially anticipated. This meant I could not use the interview format I had created upfront anymore, and instead had to rely on brief and less in-depth interviews with just some members of the communities in the National Park, one Park Official, one employee of Riak Bumi and one employee of Link AR Borneo (local NGO). Following Yasmi, Guernier and Colfer (2009, p. 101), the number of respondents was initially set to as many until the data saturation point is reached; where the data saturation point refers to the point where no additional information is provided by carrying out more interviews (Yasmi, Guernier & Colfer, 2009). In their case study, 28 interviews were held: 18 with members of the community, three from logging companies and seven outsiders (Yasmi, Guernier & Colfer, 2009, p. 102). Unlike their research, I wanted to reach female respondents as well, since the women in Danau Sentarum play an important role regarding trade and income. They practice a traditional type of weaving with rattan for making bags and baskets. These are sold on the

(inter)national market at a premium, called Borneo Chic, a hand-woven traditional Iban Dayak product.¹⁹ The men are primarily involved in gathering the rattan and hunting honey. Crafts of Kalimantan is one of the three focal points of the Danau Sentarum Development Plan. In their study, Yasmi et al. (2009) concluded it was difficult to reach women in these communities because of the socio-political structure. Unfortunately, due to lack of time because of reasons previously explained, I could only reach the women weavers of Dusun Kenasau. In the other villages my traveling partners and I were always welcomed by the men, as the women stayed in the back. Even though during our stay it wasn't impossible to reach women – and I am sure if I could have been in the park according to my original plan, I could have reached them for interviews – it became very clear that, except for the weavers in Dusun Kenasau, women have no involvement in the honey business at all. Finally, unlike my original plan to interview as many people as necessary to reach a saturation point, this goal was deemed impossible and I ended up doing 11 interviews.

Unlike the study of Yasmi, Guernier and Colfer (2009), the semi-structured interviews were not meant to explore how respondents perceived conflict and tensions, but rather how the development plan had changed their social and economic situation. The focus was on improved social relationships both within and between the communities; on whether or not the people living in and around Lake Sentarum cooperate, or rather work in their own best interest; on who benefits from the development plan and who does not. One major important difference is that the interviews deal with various levels – intra- and inter-communal conflicts, as well as conflicts between the communities and external stakeholders. As Tampajara et al. (n.d.) have shown, conflicts can even arise within families. Finally, the economic element is also different compared to the study conducted by Yasmi et al. (2009).

The second element concerns the quantitative data that Riak Bumi has provided me with. This type of data is an indicator of the economic situation of the villages and communities on the one hand, but primarily supports the qualitative data gathered by the interviews. The types of quantitative data that had to be collected, will be discussed later on in this chapter.

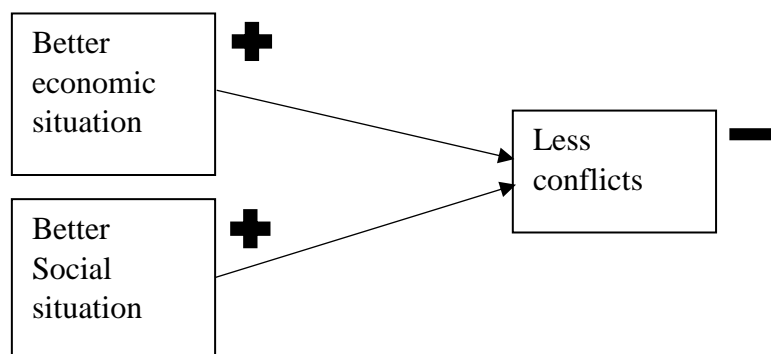
Third and finally, an extensive literature study has been conducted in order to grasp both the historical and contemporary context of the issues in the area, which forms the foundation of this thesis.

¹⁹ <http://borneochic.com/>

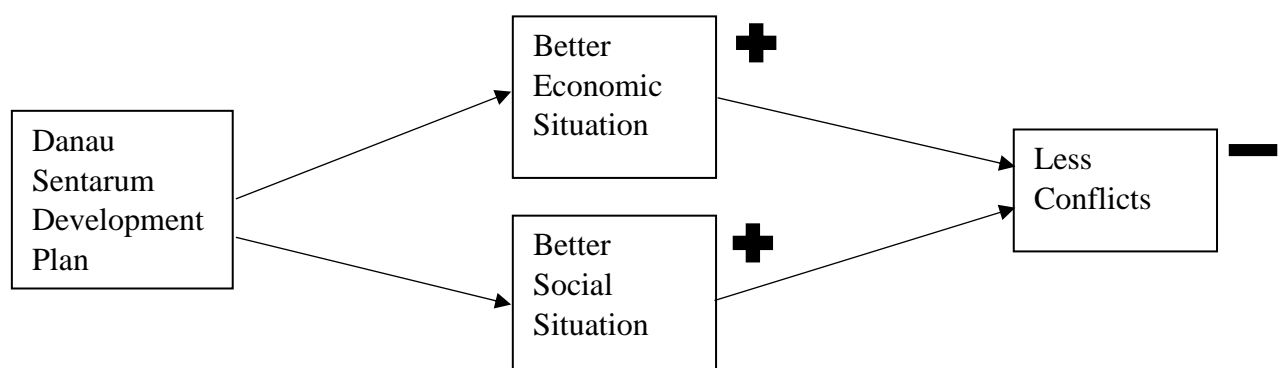
To make sure that the research method used in this thesis is both valid and representative, I will first break the research question down to its simplest form, and examine which information was needed to answer both the central research question as well as the various sub-questions. Based on this information, I have created a measurement tool, the semi-structured interview format, which I planned on using in the field for gathering information. Due to the change in plans this was impossible, but the interviews I did during my visit to the area were based on the general outline of this format.

5.1 Conceptual model

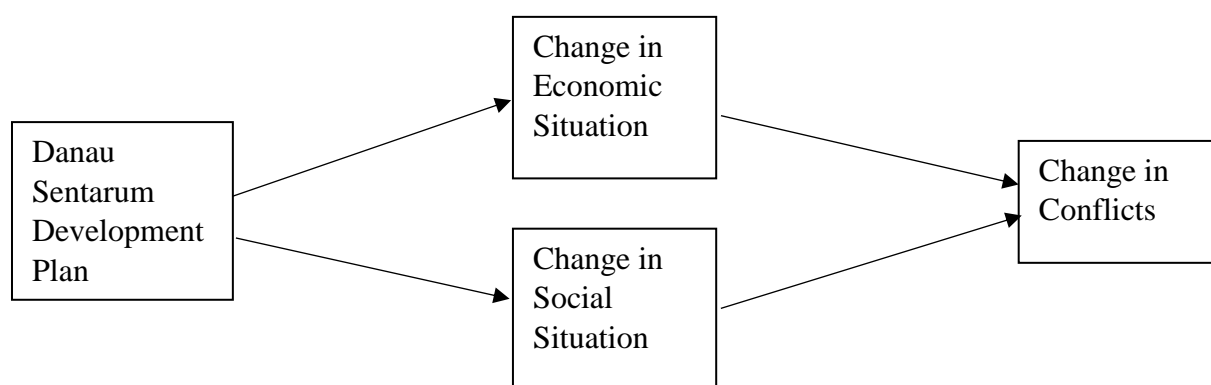
In its most simple form, the hypothesis of this study is as follows: an improvement in the economic and social wellbeing of the Dayak and Malay communities in Danau Sentarum National Park results in less intra- and inter-community conflicts, as well as less conflicts between the communities and external parties, such as corporations and government authorities.



The expectation is that the Danau Sentarum Development Plan, as implemented by the anonymous NGO and Riak Bumi, is a tool that improves the economic and social situation for the communities of Danau Sentarum, and in this way indirectly results to less conflicts in the area.



The conceptual model is quite clear about what to measure in order to get the right data. Important to note, however, is that the central research question is how the Development Plan has affected the communities in terms of economic and social wellbeing. The expectation is that the plan has had a positive effect thus far, but reality might be different. The model above already assumes a positive impact by the Development Plan. Since this cannot be said up front, the final conceptual model has to look like this:



This model is more neutral and fits the main research question. The goal of this thesis still is to assess the effectiveness of the Development Plan as a tool for conflict prevention.

After presenting the theoretical framework and the conceptual model, I will now briefly discuss the relevance of this thesis, the ethical and scientific considerations, the measurement tool and gathered data, and finally the method of analysis.

5.2 Relevance

This thesis has similarities with previous work by Yasmi, Guernier and Colfer in 2009. They have conducted a case study regarding the positive and negative aspects of conflict related to forestry issues in Sumatra, Indonesia. Their argument is that a better understanding of local perceptions of conflict is useful for improving decentralization policies (Yasmi, Guernier & Colfer, 2009, p. 100). This thesis is based on a case study of communities living in and around Lake Sentarum in the Danau Sentarum National Park, West Kalimantan, Indonesia. As mentioned before, living around this lake are two indigenous peoples divided in four communities: one Malay community and three Dayak communities; Iban Dayak, Embaloh Dayak and Kantu Dayak.

The reason to choose this area might not seem straight-forward, but it does show the necessity to study this region. Gaining access to West Kalimantan, where Lake Sentarum is located, is not as easy as gaining access to other areas like Sumatra, East Kalimantan or other countries (Yasmi, Guernier & Colfer, 2009). This also explains why to date little research has been done in this particular area. Local and international NGOs have, however, been active for quite some time now and can provide a clear and detailed overview of the history of the region. They also provide access to the communities living around Lake Sentarum. Research among and within these communities can provide new insights and knowledge on how indigenous peoples perceive conflict, but also on how a specific program like the Danau Sentarum Development Plan has affected their lives, both in economic and social terms. This makes the data this research has generated somewhat comparable to previous research conducted by, for instance, Yasmi, Guernier and Colfer in Sumatra in 2009. This data can thus have important theoretical, but also practical implications for further research and development programs.

To conclude, this thesis thus has both practical and theoretical scientific implications, as described above. Very important as well is that this research contributes to an increasing awareness of the dangers of (illegal) deforestation of tropical and primary rainforests all over the world. The insatiable growing global demand for products like palm oil, rare wood species for the timber industry, mining activities, hunting and gathering of rare mammals, fish and birds, is extremely damaging for forests everywhere. Recently a new state of the art study has been published by the University of Maryland, in which scholars have used new satellite technologies to scan forest areas; the research found that between 2000 and 2013 the amount of intact forests on a world scale – being forests where no human activity whatsoever has taken place – has decreased from 3.15 million to 3.08 million hectares. If this rate of decline continues, all natural and intact forests in countries like Paraguay, Laos, Equatorial-Guinee and Cambodia will be lost within twenty years (Potapov et al., 2017). This thesis might contribute to not only showing whether PLUP is an effective tool for conflict prevention, but also to see whether the argument made by Bhagwat and Willis (2008), i.e. agroforestry is a solution in the conservation versus development debate, holds indeed true, and therefore eventually contributes to the increasing global action to prevent deforestation.

5.3 Ethical and scientific considerations

First and foremost while conducting this research I have taken into account the value that is given to the concept of ‘ethnicity’. That is: is ethnicity, or ethnic identity, important here? Does it matter whether one is Iban, Kantu or Embaloh Dayak, or even Malay? Are they not all in the same situation? This is a difficult question, since ethnicity can have severe implications in such situations; especially in light of the many episodes of ethnic violence Kalimantan has experienced, as addressed in Chapter 2. In order to deal with this ethical dilemma up front, before I left for data collection, I contacted Raoul Syrier, a Dutch researcher currently working for the Dutch government and co-researcher in the case of Semunying Jaya, West Kalimantan, as well as Jan Nielen, former head of the Cordaid department on Southeast Asia.

Syrier remarked the following regarding the issue of ethnicity in Kalimantan:

“Though ethnicity is important, there is an interesting thing happening in Kalimantan. Ethnic identities are becoming more and more important, but also more shallow. It is used as a tool to raise awareness and to make a statement. The district officials issuing oil palm plantation permits and allowing illegal logging activities to happen are also Dayaks. So what does it matter?”

His argument here was that it does not matter which ethnic identity one has when approaching them for information. Jan Nielen confirmed Syrier’s argument. Anyone, whether Dayak or Malay, has the same problems as anyone else in the community, and ethnicity does not change that. Syrier’s advice regarding whom to approach for gathering information was to just randomly approach people. If in this particular case ethnic identity does matter, it would follow in the interviews and conversations with the people. Given the unexpected change in plans as described in the Preface there was little other choice than randomly approach people, and in that sense it was almost impossible to approach specific people based on ethnicity. I will come back to this in the following chapters.

The choice of how much emphasis should be placed on ethnicity in this thesis was a rather tough one. Ethnic identity in Kalimantan is primarily based on religion; the Dayaks are Christian and the Malay are Muslim. As noted before, the Malay are mostly Dayaks that in the past have been converted to Islam. Whether someone is Iban, Kantu or Embaloh is often based on where one lives or comes from. The Embaloh, for example, is a river in the northeastern part of the Kapuas Hulu Regency, while ‘Iban Dayak’ actually means Sea Dayak, as these people used to live on the sea, often as pirates, before they were forced to

move to the inlands of Borneo when the Malays settled on the coastal parts of Borneo. Historically, ethnic identity has played a big part in social status and politics during the 20th century, as discussed in Chapter 2.

However, I decided to follow Syrier and Nielen's advice, for several reasons. Although I believed that ethnic identity does play a role in this context, the aim of this thesis is first and foremost to assess the effectiveness of the development plan as a tool for conflict prevention, and not to explore what the role of ethnicity is in this context. Ethnic identity was not one of the core issues of the development plan, and therefore the research focused on what it wanted to achieve and how it tried to do so. Second, as can be seen in Chapter 2 and Chapter 3, ethnicity has been used as a political tool to polarize communities, rather than it being an underlying and self-contained factor in the violent uprisings during the 20th century. The conflicts, and in particular the violent conflicts, according to Davidson (2008), came forth out of frustration and manipulating a divide and rule strategy as used by the New Order. In addition, in this thesis the definition of conflict is based on someone's experience of impairment due to the behavior of others, and not based on ethnicity.

Following these arguments, I do not think in this thesis a strong emphasis should be given to the concept of ethnicity. And as will be shown later in Chapter 6 and 7, this was the correct choice. However, sharing an ethnic identity might build trust and strengthen cooperation efforts. It is interesting, perhaps as a follow-up, to study the relationship between a high sense of shared – ethnic – identity and willingness for conservation. I believe there could be a strong correlation between the two.

A second important issue was whether the information provided by the people targeted for an interview is reliable and honest. People from Java and Bali are known for the fact that they are 'servants'; they would do anything for you and they will answer 'yes' even if they mean 'no', just to not lose face. They will even send you in the wrong direction if they do not know where a particular place you are looking for is located – this I experienced firsthand several times. This is different with people from Kalimantan, also according to Syrier. People from Kalimantan seem honest and straightforward when interviewing them, as I encountered myself as well. In fact, they are really eager to tell you their story. This does not mean that there can't be various versions of the 'truth'. Syrier told me that talking to one person might give a different story than talking to another person. He therefore recommended that, if this were to happen I should go talk to the former person again to double-check the story. What I have noticed during my field work, is that generally the stories told by people from different

villagers line up. I had to realize and accept that I would have to make interpretations of the truth and therefore I tried to remain as objective as possible in analyzing the data. Though some stories within different villages were similar in general with different details, most of the information aligned and seemed honest.

5.4 Measurement tool & collected data

For the collection of reliable and valid information, I wanted to conduct semi-structured interviews with the people living around Lake Sentarum. A draft of this interview can be found in Appendix 1. Unfortunately due to reasons described in the Preface I was not able to use this draft. However, the interviews I ended up doing were based on the format of the interview in Appendix 1.

Though it is difficult to generalize the findings of a single isolated case-study, the goal of this thesis is to find out what the effects are of the Danau Sentarum Development Plan on the economic and social wellbeing of the communities living in and around Lake Sentarum, and whether the principles on which the plan is based can have implications for future conflict resolution and prevention. The use of semi-structured interviews would have given me the opportunity to go deeper into someone's answer, if this appeared to be useful to. Not to be bound to a specific sequence of questions also would have given the respondent more space to elaborate on his or her answers.

In my original plan the interviews would have followed three sections, or 'themes'. The first section was a more introductory section, where I would ask basic information about the person, about the respondents life, how the respondent generates income, what the respondents experiences were with the development plan – and whether they knew the plan in the first place – and their attitude towards oil palm plantations and illegal logging, and whether and how they experience this growing pressure.

The second section would have been about the respondents economic wellbeing. Knowing how income is generated, the respondent would have been asked what the development plan has done to improve that, both in financial terms as well as technological and procedural terms. In financial terms the respondents would have been asked what the development plan's effect has been on their income generation. Whether this has increased or declined; whether the development plan has led to new markets to sell their products, or it expanded already to existing markets; whether new knowledge provided by the development plan has led to

improved production of their products, and more easier ways to produce them; whether the development plan had given them ways to produce their products while decreasing damage to the area; what the alternatives were to their current form if income generation (opportunity costs), and how appealing these alternatives were to them due to the growing external pressures.

The third section would have been about the social wellbeing. Here I would have asked the respondents if they, as a consequence of the development plan, learned how to negotiate; how their relationship is with others in the community, and how the development plan has affected these relationships; how their relationships are with people from other villages or communities, and how the development plan has affected these relationships; how their relationship is with oil palm companies, and local government officials, and how the development plan has affected these relationships; whether they trust the people both within their own community and in other communities, and how the development plan has affected this sense of trust; whether they are actively involved in the decision-making process concerning land-use issues; and finally whether they experienced less impairment due to other people's behavior, since the implementation of the development plan.

At first, Valentinus Heri took me around the National Park to various villages and introduced me to some key members of the villages. In these villages there usually is one village head, and sometimes an administrative village head. After the first introductions had been made, I wanted to approach people randomly and form relations in a natural way. Unfortunately due to the changed situations as described before this was not possible anymore. I was bound to contingencies and had to do my interviews when the situation occurred. Time was very limited so it was impossible to build a relationship with someone over a longer period of time, or to speak with people in private. This meant that often I had to do my interviews in groups, and in situations with a lot of distraction and background noise. Heri introduced me mostly to his friends or family, which does not necessarily has to be a problem. But I was unable to go to villages that Heri himself also did not know so well and talk to different people. Though this is not wrong, I wanted to approach the situation from different perspectives and therefore talk to different people. Someone who might fish for a living, or who might hunt or gather honey, or maybe even work on an oil palm plantation or is involved in logging activities. I wanted the group of respondents to be as random and diverse as possible. The same holds for female respondents, which I have mentioned earlier in this thesis. Unfortunately they still play

a minor role in the development of NTFPs. Only the women weavers of Dusun Kenasau were part of the development plan with their Handicrafts.

While being in Danau Sentarum I really wanted to try and understand local dynamics and the context to make sense of the information. Unfortunately living among and with the local communities was not possible anymore, but I talked a lot with the Riak Bumi staff which works intensively in the area and close with the people, and with external researchers who have been working in the area since the 1990s. I will come back to this in a later chapter, but this did provide me with a much better understanding of the context and the changes and developments the park and its people have experienced over the years. Finally, Syrier also mentioned it would be worthwhile to approach local oil palm plantation holders. He said that often some of the people in the villages work on the plantation and they can easily be approached. Large-scale industrial plantation holders are often more difficult to approach, since they are often not interested in doing interviews. Fortunately I had the opportunity to visit a village where people work as farmers on an oil palm plantation and there some of the villagers are small-scale plantation holders. It was indeed not possible to talk to people from the larger palm oil companies.

The data eventually collected, adequate for this study, entails eleven interviews as well as financial data provided by Riak Bumi, with the approval of two honey associations, APDS and APMB, and by Crafts of Kalimantan. This financial data consists of selling reports, income statements, production reports and production capacity reports. The financial data, however, is mainly used in support of the analysis as based on the interviews. The interviews consist of an interview with Hermanto, Secretary of Riak Bumi, an interview with Mr. Tomo and Giovanni of Link AR Borneo, an interview with a Park Official, and eight interviews with people from various communities inside the National Park. Of these eight interviews, two have been conducted in Tekalong and Keluin respectively, which are Dayak longhouses on the border of the National Park. Keluin is a longhouse where a new NTFP is being developed; Tengawang, a nut which provides oil that in the future might become substitute for palm oil. Keluin was not part of the original development plan, but after the development plan ended, Riak Bumi continued its activities in the park, expanding the honey associations and looking for new opportunities.

The fact that the people are willing to join this course of development is a first indicator that the people are generally content with Riak Bumi and its development activities. Since the development plan has officially been terminated but activities continued in the same way, I

decided to include the interview with Keluin as well, as it is the only village developing a product that is seen as the strongest competitor for the oil palm industry. First, I will briefly explain what my method of analysis has been, before elaborating on the actual analysis in Chapter 6.

5.5 Data analysis method

The first step in my analysis was to transcribe the recorded interviews. I have made a carefully written version of each of the eleven interviews. The second step was labeling each question. Third, I have used the labels I gave each question for categorizing all questions. Fourth, I attributed the categories from step three to eleven sub-topics. Finally, in step five, I have created four main topics according to the central research question and various sub-questions: ‘social’, ‘economic’, ‘future goals and expectations’, and ‘other’. The categorization can be found in Appendix 2. I have assigned a number to each category so it can be easily traced back to the specific interview and category. This way it was easy to trace back from the main topic to specific questions and could it be used to answer the sub- and research-questions. For example, under main topic ‘economic’ the ‘livelihoods of the people’ is a sub-topic. A ‘1-2’ in the ‘interview/category’ column means that interview 1 and category 2 belong to that specific sub-topic, and the specific questions are noted in the column next to the categories. In this example, questions 4 and 5 of the interview with the head of Tekalong village (pt. 1) can be used to answer questions about the effect of palm oil on the livelihoods of the people. In the next chapter, I will answer the various sub-questions of this study based the analysis I have made according to the method described above, before I will answer the main research question in Chapter 7.

6. Data Analysis

Since the implementation of the DSDP, have the Dayak and Malay communities experienced increased economic wellbeing? The first sub-question is whether or not the communities in the National Park have experienced an increase in economic wellbeing. As previously mentioned in Chapter 3.5, the economic wellbeing consists of the perceived ‘win-win’ situation by the people living in and around Danau Sentarum. The benefits of holding on to

traditional ways of living must outweigh the benefits of moving away to Malaysia or to work on oil palm fields.

The simple answer to this question is ‘yes’. As mentioned before, over the past decade several small NTFP businesses have been developed with the aid of Riak Bumi. Where the Dayak people are primarily concerned with selling traditionally woven products called Handicrafts, the Malayan people are primarily concerned with the honey business. Riak Bumi set up two honey associations, APDS and APMB, and it is exploring the idea of setting up a third association. Since the National Park is so large and each association has its own designated territory, they don’t compete with each other. The first association, APDS has 305 members, while APMB momentarily has 161 members²⁰. According to the processing manager from APDS, in 2006 the price for 1 kilogram of honey was IDR 25,000.²¹ In 2008 it had already risen to IDR 40,000/kg, and now (2017) it is IDR 120,000/kg. This represents is an increase of 480% in just 11 years. These are the prices buyers like Riak Bumi and Dian Niaga²² pay; to outside buyers like tourists the honey is sold for IDR 150,000/kg. According to the village head of Sumpak, since they joined APDS the prices doubled from IDR 60,000/kg to IDR 120,000/kg. In the case of the village head of Pemerak, an independent honey gatherer, the price of 1 kg of honey is IDR 100,000. He said he is considering joining APDS, if he sees the economic benefits. However, Pemerak lies on a very favorable position in the park with lots of local tourists who pay a premium for the honey.

The agreement made within the association is that 10% of all profits is equally shared among the members, which means that an increase in sales and profits also means an increase in income for the individual members. According to the income statement of APDS, in 2013-2014 the total profits were IDR 74,692,500, while in 2014-2016 it was IDR 112,007,151, and during the first three months of 2017 it was IDR 15,090,000.²³ This range of income can be attributed to the amount of honey harvested every year. The range is between 3 and 18 tons of honey per year, affected by changes in weather patterns. The income statements show a decrease in sales of honey, especially since the weather has become more unpredictable lately, making it more difficult to harvest honey. Appendix 3C, the APMB production sheet, shows the same fluctuations. However, according to the production manager of APDS, in

²⁰ APDS has its office in Genting and APMB has its office in Sekulat.

²¹ €1,00 = IDR 15,202. Source: www.valuta.nl Date: 30-06-2017

²² Dian Niaga is a trading company in Jakarta which buys a lot of honey from the National Park. They work in close cooperation with Riak Bumi.

²³ See Appendix 3E for the income statement of APDS.

comparison to 2006 the amount of harvests, sales and profits has definitely increased. When it comes to the Handicrafts made by the weavers in Dusun Kenasau, the total sales in 2015 were IDR 16,760,000, in 2016 IDR 32,408,000, while until March 2017 it was already IDR 43,278,500 (See Appendix 3A). That is an impressive increase of 258% in just under three years. They agreed to sell the products for the same price to avoid internal competition, but if the production is higher, so is the income. For Keluin and the development of Tengkawang it's too early to say anything about the income for the longhouse. However, to conclude, the people involved in the Danau Sentarum Development Plan have indeed experienced an increase in income, and thus their economic wellbeing. According to Hermanto from Riak Bumi, the opportunity of producing and selling NTFPs is at least as interesting as going to some other place like Malaysia or the oil palm plantations. According to the people from Sumpak, Sekulat and Pemerak it is a welcome, also necessary addition in their livelihoods because catching and selling fish is often not sufficient anymore. The village head in Sumpak says that they have never moved away to work in Malaysia or on the oil palm plantations, but since the fish and honey business is increasingly unpredictable, they sometimes have to look for other means of income. However, their first choice in providing livelihood is definitely selling fish and honey.

Has the DSDP led to better cooperation between the Dayak and Malay community concerning land-use and trade? Interesting to note is that until recently there were some disputes between the Malay and Dayak communities about their livelihoods, but efforts by Riak Bumi and Link AR Borneo²⁴ to bring the communities together did have the intended effect. The answer to this sub-question is 'yes' and I will explain why. An anecdote provided by Giovanni from Link AR Borneo tells that there is less fish available in Lake Sentarum, making it harder for the Malay people to catch fish, and the Malay blamed the Iban for this. They argue that the Iban people are using poison upstream to catch more fish for themselves, leaving the Malayan people with less fish downstream. However, as the head of APDS argues, it is more likely that the water is polluted because of the use of pesticides, fertilizers, and, according to the village head of Pemerak, toxics like mercury coming from gold mining activities. Riak Bumi and Link AR Borneo, in cooperation with the National Park Office, have held meetings to convince the people in the park that both Malay and Dayak face the same problems. They do so by having the people talk together through organizing meetings

²⁴ Link AR Borneo is a local NGO concerned with the rights of farmers who lost their lands to oil palm plantations. During my visit they invited me to join them to visit a group of farmers near Sekadau, West Kalimantan, Indonesia.

and workshops. The people themselves also argue that they have good relationships with other villages. In particular within the associations they handle everything very professionally. This relates also to the sense of 'trust' Wadley et al. (2010) argued. Being part of one of the associations it doesn't matter from which village you are, there is trust. Also organized meetings generate a sense of trust, crucial in shaping these good relationships. In the associations there are very clear rules and arrangements put on paper, accompanied by proper punishments for whoever breaks these rules and arrangements. The head of APDS says they have a lot of meetings and discussions on how to operate, and this, in combination with the fact that the honey business is doing quite well, is the main reason there are such good relationships between villages at this moment. Disputes about territory, land-use or even bee hives are either settled with *adat* law (for the Dayaks) or according to the association's rules. The village head of Sumpak acknowledges that they have "smooth, more successful relationships" (Village head Sumpak, p. 2).

Previously in this thesis I addressed the role of ethnicity, whether it would influence the social relationships inside the National Park. Both Hermanto from Riak Bumi and Giovanni from Link AR Borneo state that it doesn't matter which ethnicity someone is from. Hermanto argues that "all of them are living friendly and together like family" (Hermanto, p. 8). So, according to the people involved, cooperation indeed increased. The professionalization of the associations has caused villages to come together in meetings and discuss important issues, such as the price to set and how to operate and harvest honey. Also, activities by Riak Bumi and Link AR Borneo help in bringing the people together, foster trust between the communities, let them discuss pressing issues like the challenges they face, and show them the common enemy.

Do the Dayak and Malay communities perceive a proper balance between forest conservation and income from NTFPs? Unfortunately, due to reasons explained in the Preface, this topic was difficult, if not impossible to study. However, one important finding is that since the development of NTFPs a decrease in forest fires can be witnessed. According to the National Park Officer one of the activities as part of the management plan was to train a group of local people to protect the park from forest fires. Especially since the park just recently joined

together with a neighboring national park.²⁵ The head of APDS acknowledges that the rate of forest fires has gone down since cooperation with the National Park increased. An important factor is that the number of honey collectors has risen over the years, which means that more people are out in the forests. Forest fires are therefore detected earlier and they can be prevented from spreading and growing in to large, long lasting forest fires. To conclude, it is impossible to answer this sub-question with a clear ‘yes’, but with the development of NTFPs it did become easier to protect the forest.

Has the DSDP led to an increased dialogue and better cooperation between the Dayak and Malay communities, enabling them to deal with tensions due to external pressure? External pressure in this context is considered to be quite broad; from pressure from for example oil palm plantations, through weather conditions and the quality of the water to challenges confronting the harvesting of honey – basically, any factor outside the power of the people themselves. Important again are the activities of Riak Bumi, Link AR Borneo and the National Park office in bringing people together, as previously addressed. Regarding the question of the biggest threat, or pressure for that matter, to the livelihoods of the people inside the National Park, there is no straightforward answer. The people in Sekulat notice the pollution of the water by pesticides and fertilizers used on the oil palm plantations. The head of Pemerak says that mercury in the water caused by goldmining activities upstream is causing fish to die or retreat to other waters. In Sumpak they say the biggest threat is the growing size of the population. Although there are no official numbers, according to the people in the park the population has doubled over the past ten years, and is still growing. Hermanto also argues that the population size is the biggest threat to the park. In response to this issue, they have no idea yet how to deal with it. They do recognize the challenges of providing livelihood for the current population, let alone in the future. There are even efforts by the head of the National Park to have people study outside the boundaries of the National Park, in the hope they will eventually stay there.

However, as pointed out previously, especially by Giovanni, there are many activities focusing on having people talk to each other, showing them the common enemy, and having them cooperate in dealing with these situations. According to him, letting people unify and discuss how to deal with for instance palm oil is effective and actually the only way to deal

²⁵ Danau Sentarum National Park and Betung Kerihun National Park are still separate areas but now under one centralized management.

with these challenges. Here too it does not matter whether someone is Dayak or Malay, they all “face the same problem” (Giovanni, p. 1). So, to conclude and give an answer to this sub-question, yes there is increased dialogue and cooperation between the villages, meant to discuss how to deal with external pressures.

Since the implementation of the DSDP, do the Dayak and Malay communities experience less tensions of conflict between them and external stakeholders, like palm oil companies, conservation agencies and local authorities? Unfortunately, due to limitations of the research as discussed in the preface, there was no chance of going to a village inside the National Park where the people have direct encounters with oil palm companies. The village head of Tekalong said that in the Badau district, on the north side of the park, they have encounters with the companies. The companies try to persuade the people to give them their land so they can build plantations there. The villages inside the park however have no direct encounters with the companies, although they do experience a lot of challenges due to reasons explained in the sections before.

However, during my stay I got invited by Mr. Tomo and Giovanni of Link AR Borneo to join them to visit a plantation close to Sekadau, not far from the National Park. They experience a lot of tensions and conflicts between them and the palm oil companies, also with local authorities. The palm oil company exploits the people in the village with fake promises of profit, hard labor, illegal expansions of the plantations, and underpayment. Besides that, the little pieces of land they have left for cultivating rice is not fertile anymore because of the devastating effect of the palm tree, which sucks up all groundwater and the extensive use of pesticides. Their drinking water is polluted, so they had to find another source. And even though the villagers have written many letters of complaint to the local authorities and the RSPO,²⁶ nobody helps them. Giovanni argues that eventually various villages joined together in order to make a common stand against the palm oil companies, which decreased the number of conflicts among the people, but did bring up more tensions between the people on the one hand and the palm oil companies and local government on the other.

This specific case doesn't say much about the situation of the people inside and around Danau Sentarum National Park, however, but according to Mr. Tomo and Giovanni they also work in Sejiran, close to Suhaid, inside the National Park, and there they are faced with similar

²⁶ Roundtable of Sustainable Palm Oil

problems. They also argue that the people see the value of NTFPs and agroforestry over palm oil, and offer a viable alternative to the palm oil. They relate the case of seven villages that formed a union against the palm oil industry and started growing their own NTFPs instead. These seven villages, inhabited by Malay, Dayak, Javan, Sulawesi and West-Timorese people alike, are now closely cooperating in order to stand up against the palm oil companies. So, even though it is not possible to give a clear and straightforward answer to this sub-question, I believe it is reasonable to assume that the DSDP indeed has led to better cooperation between the various villages inside the National Park, but that this cooperation also might have led to increased tensions between the villages and palm oil companies with local government.

7. Conclusion

What is the effect of the Danau Sentarum Development Plan (DSDP) on the economic and social wellbeing of both the Dayak and Malay communities, and has the plan led to a decrease in conflicts, both between and within the Dayak and Malay communities and between the communities and external stakeholders related to land-use and land-rights.

In general, the DSDP has had a positive effect on the economic wellbeing of all the communities inside and on the edges of the park. As has been addressed previously, conflicts have been defined as a sense of impairment of one person or group by another person or group. This impairment occurred, and so did the conflicts as a consequence of that impairment. Especially the Malay people felt impairment by the Dayak people, because they believed it were the Dayak who polluted the water in order to catch fish upstream, leaving less fish for the Malay people downstream. However, bridging this gap and bringing the people together and let them talk to each other opened their eyes and showed they have a common enemy. In addition, the development and especially the professionalization of the NTFP businesses like the forest honey, Handicrafts and recently the Tengkwang business, makes sure that there is a lot of communication between the villages in the park. In particular the honey associations APDS and APMB have come a long way, with a really professional organizational structure with rules and guidelines, a board to run the association, and organized meetings with its members to discuss pressing issues like challenges and price negotiations. Besides that, the production and processing of the honey not only increased over the years, but it became much more sustainable, the quality keeps improving and the capacity continuously expands. The fact that there are more members joining every year and that Riak

Bumi gets requests from all over the park to set up comparable associations elsewhere shows how lucrative the honey business is and above all how important it has become.

In addition to the economic wellbeing, the social wellbeing also increased. The meetings organized by the associations, by Riak Bumi or by the National Park Office have resulted in a lot more discussion among the people living inside the park. Conflicts are easily dissolved, or even prevented from taking place because the pressing issues are discussed. In fact, even if there is no meeting planned, someone who feels it is necessary can just convene a meeting. In some cases the National Park Office steps in as mediator, but this only happens in rare cases. Hermanto, the head of APDS as well as the village head in Sumpak all acknowledge that the economic wellbeing, in combination with being part of an association, leads to better relationships among the villages since there is way more cooperation.

Even though the Development Plan has officially been terminated, Riak Bumi still continues its activities in a similar way. This is important, because the people inside the park need the extra income from NTFPs for their livelihoods. As they see it, it is not a substitute but definitely a necessary addition to their livelihoods. And because of the increased unpredictability of the weather conditions, even the income from NTFPs sometimes isn't enough. So the ongoing activities by Riak Bumi are essential to the people inside the park, and certainly contribute to increased economic and social wellbeing and a decrease in inter- and intra-village conflicts.

However, an important question is whether the NTFPs, or agroforestry in general, can be a viable alternative to the palm oil industry. To this question the answer is both 'yes' and 'no'. I do not think that development of agroforestry in general is a direct competitor to the palm oil. So like the honey business or the Handicraft production, agroforestry is not a viable alternative to the palm oil. It is considered an alternative for the local people, since they prefer agroforestry over the palm oil plantations, but what the people want is often neglected because the companies have so much power, and they are often supported by the government. No matter how bad palm oil is for the environment, wildlife or human living conditions, it is already so intertwined with our lives that you can't go without it. Buying groceries in a Western country is almost impossible without buying something containing palm oil. Palm oil is in everything, from cookies to shampoo to bio-fuel. And besides, the economic benefits are just too big to ignore. It is the most cost-effective and efficient oil to produce on a large scale. This is something often ignored by conservation agencies, but understanding this is crucial if one wants to do something about it.

I do believe that it can be an alternative to palm oil if the Tengkawang business or something similar can be developed further. Then it might have a major impact on the palm oil industry because it can be a serious competitor. The reason for this is because the oil from the Tengkawang nut has similar features as the palm oil. The question is then whether it can be produced, harvested and processed with the same efficiency as the palm oil. In this light the approach of providing a win-win situation is the most promising approach to the palm oil issue. From a conservationist point of view agroforestry is a viable alternative to the palm oil industry, but there is a big business perspective as well. And beside the product specific and business aspects of palm oil, there are other reasons why it is difficult to replace palm oil.

After visiting one of the oil palm plantations and meeting with the farmers involved, it dawned upon me that the oil palm industry is a game played on a totally different level. It has its connections all the way up to the national government. Repeated complaints by various local villages have had almost no effect. Instead, Giovanni told me that after a joint letter was sent to the government, one of the two largest oil palm companies in Indonesia, Sinarmas, approached Mr. Tomo and asked him to withdraw the complaint. At the meeting we were invited to an official from the local government was present, but after he gave his speech to the farmers they got furious, because according to them the local government never has done anything with any of the complaints made by the farmers.

It is not the goal of this thesis to go into too much detail about the oil palm industry and its methods in Indonesia, but my time in Indonesia has given me some valuable insights. In general, Indonesia as a nation is proud of being the largest palm oil producing country in the world, characterized by ever expanding – though often illegally – oil palm plantations and the lack of control by the government. The average person in Indonesia uses the oil for daily activities such as cooking or as ingredients of their groceries, and they are not very aware of the harm the palm oil industry does to either the environment, the wildlife or the human living conditions. Besides a general ignorance, it occurred to me that this can be attributed to a very important factor: Indonesians are short-term minded. In response to a question to the village head in Sumpak about what he expects to be the biggest threat in five years, he answered that he couldn't think that far ahead. This lack of long-term vision is something Indonesians, and Indonesia as a country, seem to have in common. The goal is to maintain Indonesia's position as global leader in the production of palm oil, regardless (or at least unaware) of the global, as well as environmental, wildlife, and human consequences of this industry. Depleted oil palm fields cannot be used for the next thirty to fifty years because the soil isn't fertile anymore.

This means that more and more of Indonesia's fertile soil will be degraded and cannot be used to grow anything else for a long period of time. However, these future challenges are not taken into account; the industry keeps expanding, legally as well as illegally, fully supported by the government. And all for a 'quick buck'.

As crucial as the development of the NTFP business is for the communities inside and on the edges of Danau Sentarum National Park, it will most likely not be sufficient to convince the (national) government of putting a halt to the ever-expanding palm oil companies. Without a doubt the development of NTFPs has had a positive effect on the economic and social wellbeing of the people in DSNP, and it does lead to better relationships, more cooperation and discussion, and less inter- and intra-community conflicts. The only way to effectively provide an alternative to palm oil, is to develop an alternative that has the same qualities, but less negative consequences. As said, the Tengkawang oil might be a viable alternative, but this product should be studied and developed further. However, agroforestry in general does not provide a direct alternative to the palm oil industry, like the honey business or the Handicrafts, and therefore it is unlikely to be effective to prevent the oil palm industry from expanding further. The focus and priority of both Riak Bumi and other NGOs should be on the Tengkawang business; on increasing production and processing capacity, but also on other business aspects of the Tengkawang like logistics, marketing, and sales.

Finally, as a consequence of the development plan the communities stand up together to their common enemy, which in this case are the palm oil companies, and this actually causes more village-company conflicts over land-use. However, the latter also implies more cooperation with conservation agencies and NGOs like Riak Bumi and Link AR Borneo, that try to bring all parties to the negotiation table. This is of course part of the PLUP approach which focusses on getting local people to participate on deciding how to use land. If NGOs can gather more and more people to stand up together against the oil palm business, eventually the government has to listen. Or so is the idea. But If this indeed is true, the more people joining hands together the more powerful their voice will be at the negotiation table. Therefore this development of agroforestry and NTFPs, and especially Tengkawang in this case, is important to show the local people – who are generally unaware and ignorant - there is an alternative way. So though agroforestry in general might not be a competitor to the palm oil industry – unless it provides a direct viable alternative – it can bring the people together and claim their place at the negotiation table as a side-effect.

Nowadays most meetings are called by the National Park Office or the village heads themselves. There is little interaction with palm oil, mining or logging companies, or the government. There should be more focus on this topic, maybe with the help of local NGOs, but initiated by the people from the National Park. They have to claim their place at the negotiation table, and the development work that has been done and currently is still ongoing, gives them the opportunities to do so. Also there must be more inter-village interaction about how the palm oil companies operate. Though there is a lot of interaction about issues concerning the honey business, there is little interaction about the methods the palm oil companies use to persuade villagers to give up their land. The village I visited, where the palm oil company came with its promises of great fortune, never told neighboring villages what had happened. This happens a lot in Indonesia; villages are concerned with their own problems and not with what might happen in a different and similar village. Link AR Borneo is an NGO that already tries to work on this issue, but they should promote villages to do this themselves. It is 'too easy' for the palm oil companies to operate the way they do now, and little is done against this. So there should be more activities focused on general knowledge and awareness among local peoples, and creating unions against the palm oil to have a strong voice at the negotiation table. PLUP is a promising approach, but there is much more than can be done with it. The development of NTFPs has been a good first step, a crucial one, but if the people want to really stand up against the palm oil industry they have to take it one step further.

Many people are still unaware of the consequences of palm oil, or the harm it does to their fellow Indonesians or their country. Activities focused on raising awareness are therefore crucial and should be continued and expanded. There is hope that this approach will eventually have a positive effect in the struggle against palm oil, in preserving the traditional way of life the communities so desperately want to hold on to. After all, they just want to live their own lives in their own traditional ways.

8. Discussion

There are some important remarks that have to be made about this research. First I will discuss an important challenge NGOs are missing at this moment, but is going to be crucial in the future. Second I will make some practical remarks for future activities. Third I will make some critical reflections on the research itself.

In response to the question what currently is the biggest threat, or will be the biggest threat in the future to the livelihoods of the people in Danau Sentarum National Park, most people answered the ‘size of the population’. The village head of Sumpak says that the growth of the population, which in Sumpak almost doubled in size in ten years, is the biggest threat to their fishing. There is less fish to catch with more people coming to the park. Hermanto of Riak Bumi acknowledges this too. Not only in Sumpak, but in the entire park the population has doubled over the past ten years, and it is still on the rise. The National Park Office is trying to support people to study outside of the National Park and to let the people stay there, but many students also return. The reason for this increase is because there is a lot of inter-marriage with communities outside of the National Park, and the families then move to the park. One might think that the development of NTFPs for sustainable livelihoods might contribute to the rise of the population. After all, people will not move to an area where they can’t make a proper livelihood.

However, this leads to a debate on whether or not to develop an area. As can be seen from this study, the development of NTFPs is crucial for the survival of the people inside the National Park. This means that the parties involved in this development scheme, like Riak Bumi, Link AR Borneo, the local government, the park officials, and the communities must come up with a future plan to deal with this challenge. Right now, they acknowledge the problem, but they don’t really anticipate on it. My advice would be to create a ten-year strategy consisting of different scenario’s and with clear boundaries on which organization is responsible for what. Also, the National Park Office must find a way to regulate who goes in and out of the National Park. Especially for locals it is difficult to see who is a tourist and who is not. Better regulation might contribute to a slower and more regulated increase in population size. Finally, the communities must be represented in this ten-year strategy. They experience the most problems in their livelihoods by the ever increasing population, and they should be incorporated in a plan to better manage the park.

This relates directly to what I have addressed in the previous chapter. The Danau Sentarum Development Plan has put a lot of focus on the development of NTFPs, and very effectively, but neglected the PLUP approach for a large part. There should be more focus on inter-village interactions. Not only about the current issues concerning the NTFPs like the honey business, but also concerning the palm oil, mining and logging companies which cause the problems the villages experience. Hermanto acknowledged that even though there is new infrastructure that makes it more easy to communicate with each other, it is questionable whether villages

actually do so when Riak Bumi is not around. Communication is key to stand up together to the companies that now hurt them. The honey associations also acknowledge that they meet just a few times a year, and just to discuss business issues. If Riak Bumi and Link AR Borneo want to do something about this they must try to promote inter-village communications. A good way to do this is to create a monthly or quarterly meeting with the heads or representatives of the villages to discuss the pressing issues. They can invite the various companies in the area and (local) government. This way they can promote negotiations about how to use the land. The more villages join, the stronger the voice will be at the negotiation table. For the future, the development of NTFPs – and especially of Tengkawang in this case - must continue, but more focus should be on this PLUP approach and to increase inter-village communication in Kapuas Hulu.

Finally, a reflection about the research itself. Obviously the fact that I did not get a research visa has had a huge impact on this research. I could no longer go to the research area for an extended period of time, nor could I be open and honest about it to everyone that I was there for research. This certainly had a negative impact on the depth of this research. However, I am satisfied with the approach taken after this set-back. I was still able to talk to a lot of people, collect a lot of very valuable and relevant information, and eventually was able to answer – to some extent – the research question of this thesis. Also, my time at the Riak Bumi office definitely provided me with more insight in the development business in Indonesia. The three-month period was enough to gain a sense of the general culture Indonesians hold towards the issues which are subject to this thesis. However, for the future I would recommend to apply for a research visa in order to get a full and detailed participatory research, as I am sure that gaining more insight in the social relationships inside the villages in the National Park help in better understanding the context and providing better solutions for the future. This deep understanding of social relations is a serious lack of this thesis.

A consequence of the lack of a more in-depth research is that the research questions remained quite shallow. Still, I was able to ask a lot of valuable questions, but with more time or without limitations I would have been able to gain a lot more information; not only in the interviews that were conducted, but also in the sense that I would have been able to reach more people in different villages. Also, with a research visa I would have been able to choose a better setting for my interviews. In this study the interviews were subject to contingencies, meaning I had to do interviews whenever the chance presented itself. Often we were guests in houses and we were welcomed by entire families and many villagers joined. This often led to

a lot of chaotic situations and conversations with only a limited time for real interviewing. There was a lot of background noise because of the people present, but also because of livestock like chickens were walking around. With a research visa I would have been able to schedule interviews at a more tranquil, private location. It is always the question whether people give honest answers when they are in group settings. However, given the social interaction during the meetings I got the feeling that the villagers were honest in their answers. They agreed with each other about everything being said and they were very eager to tell their story. This gives me the confidence that the interviews are reliable. A final factor influencing the interviews is that during my two trips to the National Park I was accompanied by others. The first time by two people from the anonymous NGO, the second time by researcher Julia Aglionby. This meant that we had to adjust our agendas, so I didn't have the full freedom to go wherever and whenever I wanted. Especially when travelling with Julia, who speaks the local language, it was sometimes difficult to join in the conversations and do an interview, since I was the only one present who did not speak the language. On the other hand, the times I did do an interview she kindly volunteered to translate for me.

All in all I would say I did make the best out of a bad situation. Despite the set-backs I still managed to get a lot of information, and to some extent answer the research questions of this thesis. To conclude, for future research I would obviously recommend getting the proper visa's. For the development work in Danau Sentarum I would recommend making a ten-year strategy for the park, including scenarios where the challenges of a growing population are addressed. Second, I would recommend to put more effort in bringing the villages together with local authorities and the district government, and promote the PLUP approach in Kapuas Hulu. There is quite some communication with the National Park Office, but if they really want to compete with the palm oil companies they must gain support from the government. Lobbying is essential here, up to highest levels of government. This is something where NGOs like Riak Bumi should put their focus on for the future, alongside the development of NTFPs, and especially the development of the Tengkwang industry. This is in my perspective the most promising challenger to the palm oil industry. The Tengkwang however should not only be explored from a conservation perspective, but also from a business perspective. At this point there is a small factory close to Sintang run by a Dutch man called Dirk-Jan. He cooperates with some villages like Tekalong in developing harvesting and production methods, processing techniques, and sales of the Tengkwang. This is where the focus should be on in the future. One thing is clear, however, and that is that without the work

of Riak Bumi and others the National Park would probably have no future at all, but now there is.

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Appendix 1 – Interview

Introduction

Hello sir/madam,

First of all, thank you for taking the time to let me interview you. Your contribution will help the research, but above all helps in understanding the underlying dimensions of forest conservation, social and economic development and conflict prevention in this specific region. I want to insure you that the information given in this interview will be used for this study only, and will not be distributed to other parties. You do not have to state your name, since your name will not be used in the final rapport, and the information will be used anonymously. The interview will consist of three sections, and will take up to about ... minutes. You can end the interview at any time if you want to.

Section 1²⁷

1. Can you please introduce yourself? – *Attention: no name necessary*
2. What do you do for a living?
 - a. How does your household looks like? – *family*
 - b. How do you generate income?
3. If you were not doing... then what would you probably do to generate income?
 - a. Why? Why not [something else]?
4. Are you originally from here?
 - a. If not, where are you from?
 - b. Why have you moved here?
5. What is the main reason that you (want to) live here (and not move to a city)?
 - a. If family -> inquire about family means to him, trust
 - b. If ethnicity -> inquire what ethnic identity means to him/her
 - c. If happy to be here -> inquire what makes him/her happy to be here
 - d. If nowhere else to go -> inquire about why not?
6. Who are your closest friends/family, and why? Do you trust them?
7. How do you feel about oil palm plantations and logging activities around Danau Sentarum?
 - a. How did it affect your life?

²⁷ The questions posed at the numbered sequence (1, 2, 3) are the primary questions. The questions posed at the alphabetical sequence (a, b, c) are possible – but most likely – follow-up questions.

8. What is your relationship with Riak Bumi?
 - a. If good: why? (Because of their help? Ethnicity? Only active NGO in area?)
 - b. If not good: why?
9. What do you know about the Danau Sentarum Development Plan?
 - a. If don't know – explain what it means and ask the question again (maybe he/she does not know the official name).²⁸
 - b. How do you feel about the DSDP?

Section 2 – Economic wellbeing

1. You told me you generated income through... - How does this work in practice?
 - a. What kind of activities do you do?
 - b. How do you do them? (What is a day in the life of the respondent)
2. How has the development plan influenced your way of generating income?
 - a. How has the plan affected your activities?
 - b. How has the plan affected the way you perform your activities?
 - i. Has the plan provided you with new technology?
 - ii. Has the plan made income generation more easy?
 - c. Has the plan led to new ways of generating incomes? (product differentiation/new markets/expanding existing markets)
 - d. What did the plan do to improve your knowledge about ... [whatever the respondent has answered above]?
 - e. What did the plan do to improve your technical skills concerning...?
3. You told me that if you were not doing ... to generate income, then you would do Why (opportunity costs)?
 - a. What would be the benefit of doing [alternative]?
 - b. What would be the downside of doing [alternative]?
 - c. What would be the primary reason NOT to do [alternative]?
 - d. What would be the primary reason do GO do [alternative]?
 - e. How does the plan help you to continue the way you live know? (And that is ok?)

²⁸ If a person does not know the DSDP at all, even after brief explanation I will continue the interview, but not by putting an emphasis on the plan. I will consider this as a 'control-group respondent'; if this respondent deviates from the answers given by respondents who do know the DSDP this also provides me with meaningful and useful insights about the effects of the plan.

4. How do you feel about forest conservation?
 - a. How important is it to keep in mind when generating income from...?
 - b. What has your priority: increasing income or preserving the forest? Why?

Section 3 – Social wellbeing

1. How has the plan influenced your negotiation skills?
 - a. Has the plan led to trainings and workshops about negotiation?
 - b. Has the plan taught you tactics and negotiation strategies?
 - c. Do you come in situations where you have to negotiate with, for example, oil palm company holder? How is this going?
2. You told me that ... were your closest friend and relatives. How is your relationship with them?
 - a. Why these people?
 - b. What do they mean for you in daily life?
 - c. Why them and not others? (family? Ethnicity?)
 - d. Do you trust these people? Why (not)?
3. How is your relationship with others in the village/community?
 - a. How often do you have contact with others in your village/community?
 - b. Why (not)?
 - c. Do you trust others inside your community? Why (not)?
 - d. How has the development plan influenced these relationships?
 - i. Has it provided you with means to increase contact and trust?
4. How is your relationship with others outside your village/community?
 - a. How often do you have contact with others outside your village/community?
 - b. Why (not)?
 - c. Do you trust others outside your community? Why (not)?
 - d. How has the development plan influenced these relationships?
 - i. Has it provided you with means to increase contact and trust?
 - ii. Has the plan tried to bring different communities together?
5. How often are you engaged in the decision-making process concerning land-use issues?
 - a. How do you feel about this?
 - b. Do you think this is enough?

- c. Should others be included in the decision making process? Why (not)?
 - d. Should others be excluded in the decision making process? Why (not)?
- 6. What do you think is the best way to deal with land-use issues?
 - a. Why?
- 7. Do you think forest management should be done at village/community level, district level or higher? Why (not)?
 - a. At question 4 section 2 you answered [answer]. How does this relate to your answer now?
- 8. How is the relationship with local district officials/the government?
 - a. How has the development plan influenced this relationship?
 - b. In what way does the government consults the community concerning land-use issues?
 - c. How do you feel about this?
 - d. Do you think the government should interfere more or less in these matters?
 - e. Do you trust the government on these issues?
- 9. How is the relationship between the village/community and oil palm plantation companies?
 - a. How have these plantations influenced your daily life?
 - b. How have these plantations influenced your way of generating income?
 - c. Do you trust the company holders?
- 10. Have you ever felt impaired because of the action of inside or outside village/community members?
 - a. How so?
 - b. What was your response?
 - c. How has the development plan influenced such situations?
 - i. Did you felt less impaired after the development plan? Or more?
 - ii. Did it provided you with tools to tackle the situation yourself?
- 11. Have you ever felt impaired because of the action of a government official or plantation holder?
 - a. How so?
 - b. What was your response?
 - c. How has the development plan influenced such situations?
 - i. Did you felt less impaired after the development plan? Or more?
 - ii. Did it provided you with tools to tackle the situation yourself?

12. How do you feel about the level of cooperation between the different villages/communities?

- a. Would you like to cooperate more?
- b. Does it matter whether someone is Dayak or Malay?

13. How do you see the future? What should be done according to you?

- a. What kind of further improvements would you like to see?
- b. Where are the best opportunities for improvements?

I want to thank you for your time and effort. Your contribution is very valuable to me and I hope that I can contribute to your cause in the future too. Terima Kasih!

Appendix 2 - Categorization of interviews

Interview	Category	Questions	Sub-topic	Interview category	Topic
1 Village Head Tekalong pt 1	1. Working in palm oil fields	2	1 <i>Livelihoods of the people</i>		
	2. Effects of palm oil	4, 5	- Working on palm oil plantations	1-1	- Support of external parties (e.g. Government, NGOs)
	3. Expansion of palm oil	1, 6	- Effects of palm oil on livelihoods	1-2	- Land-use and territorial disputes
	4. Opinion about palm oil	3, 7, 8	- Working in Malaysia	2-4, 3-9, 7-15	- Cooperation between and among villages
	5. Development of NITFs	9, 10	- Development to keep people in the National Park	7-16	- Role of ethnicity
2 Village Head Tekalong pt 2	1. Working in Malaysia	7-10, 15	- Opportunity costs	7-17	
	2. Vision for the future	12-14, 16	- Selling of fish	7-18	<i>Economic</i>
	3. Government support	17, 18, 20-22	- Young people move or stay	7-24	- Livelihoods of the people
	4. Inter-village relations	12, 19, 23	- Alternatives to palm oil	8-9	- Development of NITFs
	5. Village leadership	11	- Good livelihood/Good alternative to working in Malaysia or palm oil	9-12	
3 Keluin	1. Village leadership	1	- Sufficient livelihoods or additional	10-10, 11-10	<i>Future goals and aspirations</i>
	2. Education and equality	2, 3, 7, 8	- Additional livelihood	10-11	- Future expectations
	3. Land-use	4, 5	- Biggest threat to livelihood	10-17	- Development plan
	4. Vision for the future	6	- Does increasing income prevent people from moving away? (Malaysia/Pain 11-12)	11-12	- Threats and challenges
	5. Working in Malaysia	9, 13			
	6. Tengkuawang	11, 12, 14-16	2 <i>Support of external parties (e.g. Government, NGOs)</i>		<i>Other</i>
4 National Park office	1. Role of Park Officer in the Development Plan	1, 2	- Government support	2-2	- Village leadership
	2. Cooperation between communities	3, 5	- Management levels	4-7	- Wildlife
	3. Representation of local people	4	- Support from the government	8-12	
	4. Conflicting interests	6	- Cooperation with the National Park	9-14	
	5. Zones in the National Park	7-11, 14	- Zones in the National Park	4-5	
	6. The Development Plan	12, 15			
	7. Management levels	13	3 <i>Land-use and territorial disputes</i>		
5 Dusun Kensau	1. Selling of Handicrafts	1, 2	- Conflicting interests	4-4	
	2. How many people make Handicrafts	3	- Expansion of palm oil	1-3	
	3. How to divide money	4	- Opinion about palm oil	1-4	
	4. Competition among weavers	5	- Land-use	3-3	
6 APDS	1. Harvesting of honey	1, 2	- Dealing with opposing interests	7-10	
	2. Processing of honey	3, 4, 30	- Conflicts concerning palm oil	7-20	
	3. Production of honey	5, 6, 16, 16, 26	- Long running conflicts	8-8	
	4. Selling of honey	7, 8, 9, 10, 27, 29	- How is territory divided	9-4	
	5. Cooperation between communities	18, 19	- People harvesting in each other's territory	9-5	
	6. Quality of honey	11, 12	- Disputes about territories	8-11	
	7. Expansion of business/markets	13, 14			
	8. Influence of weather	17	4 <i>Future expectations</i>		
	9. Capacity building activities	20	- Vision for the future	3-4, 6-11, 7-23, 10-15	
	10. Sharing profits	21-24, 28	- Education and equality	3-2	
	11. Vision for the future	25	- What still can be improved	7-27	

			13. Challenge to make people cooperate	19			- Production of honey	6-3	
			14. Vote for a new bupati	20			- Selling of honey	6-4, 10-5	
			15. Goals of the bupati candidates	21			- Quality of honey	6-6	
			16. What happens if a bupati is elected	22			- Expansion of business/markets	6-7	
			17. Opinions about the bupati	23			- Sharing profits	6-10	
			9 Head of Cooperation Sekulat (At 1. Village head	1			- Development of honey	7-13	
			2. Change in harvesting season	2			- Improvement of tourism	7-21	
			3. How many people are active	3			- Sales of products	7-26	
			4. How is territory divided	4			- Agroforestry	8-11	
			5. People harvesting in each other's territory	5			- How many people are active	9-3	
			6. Arrangements with other villages	6			- Changes in prices over the years	9-9, 10-8	
			7. Lot of discussion between villages	7			- Riak Bumi as honey buyer	9-10	
			8. Reason for a good relationship between villages	8			- Price of equipment	9-11	
			9. Changes in prices over the years	9			- Changes in amounts harvested per year	10-9	
			10. Riak Bumi as honey buyer	10			- Harvesting methods for honey	10-2	
			11. Price of equipment	11			- Amount of hives	10-3	
			12. Good livelihood/Good alternative to working in Malaysia or pal	12			- Marking of the hives	10-7	
			13. Biggest threat to the honey business	13			- Type of hives	11-4	
			14. Cooperation with the National Park	14			- Time active as honey collectors	11-3	
			15. More difficult to catch fish	15			- When and why joined APDS	11-5	
			16. Pollution of the water	16			- Changes in prices after joining APDS	11-9	
			17. Effects of fertilizer by the palm oil plantations on fish	17					
			18. Effects of palm oil plantations on people's health	18		8	<i>Threats and challenges</i>		
			1. Sub-centers	1			- Influence of weather	6-8	
			2. Harvesting methods for honey	2			- Influence of palm oil	7-14	
			3. Amount of hives	3			- Biggest threat to the National Park	7-22	
			4. Processing of honey	4, 10			- Population size	7-23	
			5. Selling of honey	5, 8			- Change in harvesting season	9-2	
			6. Cooperation with other villagers	6			- Biggest threat to the honey business	9-13	
			7. Marking of the hives	7			- More difficult to catch fish	9-15	
			8. Changes in prices over the years	9			- Pollution of the water	9-16	
			9. Changes in amounts harvested per year	11			- Effects of fertilizer by the palm oil plantations on fish	9-17	
			10. Sufficient livelihood or additional	12			- Effects of palm oil plantations on people's health	9-18	
			11. Additional livelihood	13			- Biggest threat to livelihood	10-17, 11-13	
			12. Meetings with other honey collectors	14, 15			- Forest fires	11-6	
			13. Harvesting in each other's territory	16			- Rise in population as threat	11-14	
			14. How to deal with opposing interests	17					
			15. Vision for the future	18		9	<i>Role of ethnicity</i>		
			16. Economic benefits lead to cooperation	19			- Role of ethnicity	7-11	
			17. Biggest threat to livelihood	20			- Ethnicity	8-5	
			1. Head of the honey collectors	1					
			2. Honey collectors	2		10	<i>Village leadership</i>		
			3. Time active as honey collectors	3			- Village leadership	3-1	

Appendix 3A - Bemban Selling Report in Kenasau Village Danau Sentarum 2015-2017

CATATAN PENJUALAN ANYAMAN 2015

Dusun Kenasau

No	Date	Buyers	Product Name	Size	Unit	Price perunit	Total
1	Maret	Rumah Rakuji	Dompot Hp	15 x 20 cm	10	200.000	2.000.000
			Tikar Bemban	100 x 60 cm	5	350.000	1.750.000
			Tikar Bemban	35 x 40 cm	20	98.000	1.960.000
							-
2	Juni	Myra W	Tikar Bemban	40x30 cm	5	200.000	1.000.000
			Tikar Bemban	100x30 cm	1	400.000	400.000
			Benda	M	2	75.000	150.000
			Benda	S	4	50.000	200.000
							-
3	Maret	Pak Johan	Tikar Bemban	40 x 50 cm	3	250.000	750.000
			Dompot Hp	15x20 cm	1	200.000	200.000
			Tikar Bemban	40 x 30 cm	4	200.000	800.000
							-
4	Juli	Myra W	Tikar Bemban	142x75 cm	1	600.000	600.000
			Tikar Bemban	185x88 cm	1	700.000	700.000
			Tikar Bemban	170x68 cm	1	700.000	700.000
			Tikar Bemban	140x70 cm	1	600.000	600.000
			Tikar Bemban	100x60 cm	5	400.000	2.000.000
			Tikar Bemban	40x35 cm	4	350.000	1.400.000
			Tikar Bemban	35x35 cm	2	200.000	400.000
			Tikar Bemban	25x35 cm	3	100.000	300.000
			Tikar Bemban	183x100	1	550.000	550.000
			Tikar Bemban	60x60 cm	1	300.000	300.000
					75		16.760.000

CATATAN PENJUALAN ANYAMAN 2016

Dusun Kenasau

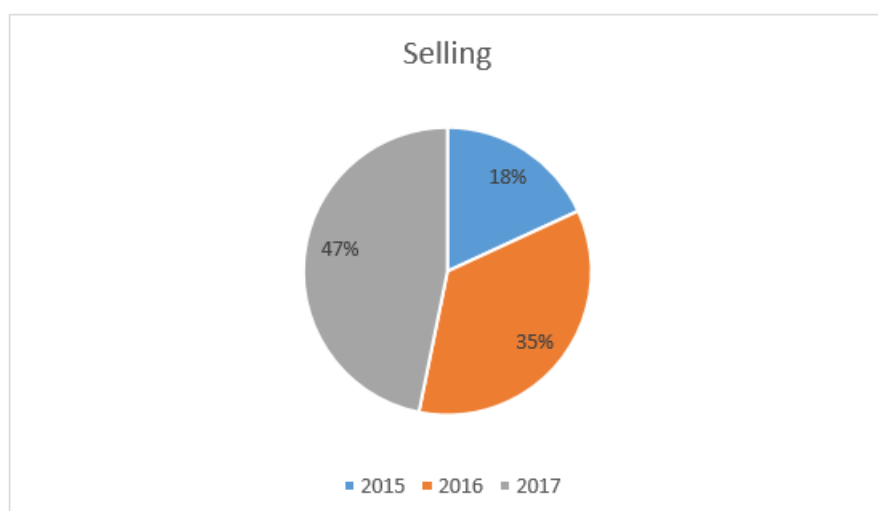
No	Date	Buyers	Product Name	Size	Unit	Price perunit	Total
1	Juli	Borneo Chic	Tikar Bemban	200x25 cm	4	200.000	800.000
			Tikar Bemban	61x59 cm	5	130.000	650.000
			Tikar Bemban	54x35 cm	6	100.000	600.000
			Tikar Bemban	100x30 cm	3	175.000	525.000
			Tikar Bemban	200x30 cm	3	250.000	750.000
			Tikar Bemban	200x25cm	11	270.000	2.970.000
			Tikar Bemban	61x59 cm	5	180.000	900.000
			Tikar Bemban	54x35 cm	4	157.000	628.000
			Tangguk	20 x17x7 cm	5	30.000	150.000
2	Agustus	Myra W	Tikar Bemban	100x60 cm	6	425.000	2.550.000
			Tikar Bemban	42x25 cm	10	125.000	1.250.000
			Tas Bemban	22x16 cm	1	550.000	550.000
			Tas Bemban	20x15 cm	2	500.000	1.000.000
			Tas Bemban	20x13 cm	1	425.000	425.000
			Dompot	17x8 cm	2	125.000	250.000
			Dompot	19x10 cm	2	175.000	350.000
			Tas Bemban	22x16 cm	1	700.000	700.000
			Tas Bemban	25x15 cm	3	525.000	1.575.000
3	November	Myra W	Tas Bemban	36x25 cm	3	900.000	2.700.000
			Tas Bemban	25x16 cm	7	700.000	4.900.000
			Tas Bemban	25x15 cm	11	525.000	5.775.000
			Tikar Bemban	100x60 cm	2	500.000	1.000.000
			Tikar Bemban	100x60 cm	2	425.000	850.000
			Tikar Bemban	150x68 cm	1	560.000	560.000
					100		32.408.000

CATATAN PENJUALAN ANYAMAN 2017

Dusun Kenasau

No	Date	Buyers	Product Name	Size	Unit	Price perunit	Total (rupiah)
1	Februari	Myra W	Tas Bemban	36x25 cm	10	925.000	9.250.000
			Tas Bemban	25x16 cm	25	450.000	11.250.000
			Tas Bemban	25x15 cm	8	425.000	3.400.000
2	Maret	Borneo Chic	Tikar Bemban	100x60 cm	11	360.000	3.960.000
			Tikar Bemban	55x45 cm	11	135.000	1.485.000
			Tikar Bemban	45x40 cm	11	148.500	1.633.500
			Tikar Bemban	55x40 cm	4	132.000	528.000
			Tikar Bemban	45x30 cm	7	94.000	658.000
			Tikar Bemban	45x35 cm	2	90.000	180.000
			Tikar Bemban	35x35 cm	4	73.500	294.000
3	Maret	Riak Bumi	Tikar Bemban	160x73 cm	1	720.000	720.000
			Tikar Bemban	160x78 cm	1	700.000	700.000
			Tikar Bemban	145x70 cm	1	650.000	650.000
			Tikar Bemban	160x66 cm	1	625.000	625.000
			Tikar Bemban	146x81 cm	1	670.000	670.000
			Tikar Bemban	150x73 cm	1	650.000	650.000
			Tikar Bemban	100x60 cm	10	425.000	4.250.000
			Tikar Bemban	100x60 cm	1	525.000	525.000
4	Maret	Riak Bumi	Dompot	18 x10 cm	3	150.000	450.000
5	Maret	Both Ends	Tikar Bemban	100x60 cm	1	350.000	350.000
			Tikar Bemban	35 x 40 cm	2	75.000	150.000
			Tas Bemban	20 x16 cm	2	450.000	900.000
					118		43.278.500

Year	Selling
2015	16.760.000
2016	32.408.000
2017	43.278.500



Handicraft Producer in Kenasau Village 2017

No	Producer Name	Age	Education Level	Remark
1	Yunita Kanca	30	Basic School	Very Productive
2	Leokrita Diana	27	Basic School	Very Productive
3	Elis	25	Basic School	Very Productive
4	Mawas	52	No Education	Very Productive
5	Dambak	60	No Education	Very Productive
6	Nawan	58	No Education	Very Productive
7	Lia	22	Basic School	Less Productive
8	Caya	45	No Education	Less Productive
9	Tayuk	40	Basic School	Less Productive
10	Bajik	37	Basic School	Less Productive
11	Bay	37	Basic School	Less Productive
12	Ida	30	Basic School	Working in Malaysia
13	Tina	56	No Education	Married in other village
14	Kati	26	Basic School	Menikah ke luar kampung
15	Prada	28	Basic School	Working in Malaysia
16	Mut	53	No Education	Working in Malaysia
17	Jijah	46	No Education	Working in Malaysia
18	Limau	43	No Education	Passed Away
19	Punai	26	Basic School	Married in Malaysia

Appendix 3B - Production Capacity of Tengkawang at Mensiau Village Kapuas Hulu Regency 2014

No	Name of Hamlet	Total of house holder	Production Capacity (kg)		
1	Entebuluh	8	173		
2	Kelawik	21	2.000		
3	Keluin	10	500		
4	Engkadan	11	800		
	Total of production		3.473		

Production Capacity of Tengkawang

Entebuloh hamlet, Mensiau village, Batang Lupar District

No	Name Holders	Total Production	Unit	Dry	Wet	Year	Total (Kg)
1	Sateng	1300	kg	x		2014	1.300
2	Liong	500	kg	x		2014	500
3	Sunuk	1304	kg	x		2014	1.304
4	Muntek	500	kg	x		2014	500
		3	tin		x	2014	10
5	Bada	420	kg	x		2014	420
6	Nyawai	500	kg	x		2014	500
7	Laman	357	kg	x		2014	357
8	Injak	50	tin		x	2014	167
		173	kg	x		2014	173
	Total						5.231

Remark:

- 1 tin = 10 kg Wet
or = 3 ons Dry

Total 4 hamlets at Mensiau Villa		Production
50	KK	47.236 kg

Production Capacity of Tengkawang

Keluin hamlet, Mensiau village, Kec.Batang Lupar

No	Name Holders	Total Production	Unit	Dry	Wet	Year	Total (Kg)
1	Ringgit	285	kg	x		2014	285
2	Agung	428	kg	x		2014	428
3	Lenti	500	kg	x		2014	500
4	Bajik	285	kg	x		2014	285
5	Lasah	428	kg	x		2014	428
6	Mandau	428	kg	x		2014	428
7	Jenur	428	kg	x		2014	428
8	Tinggi	428	kg	x		2014	428
9	Anggau	357	kg	x		2014	357
10	Bandan	500	kg	x		2014	500
							4.067

Production Capacity of Tengkawang

Kelawik Hamlet, RT. 01, Mensiau village, Batang Lupar dictrict

No	Name Holders	Total Production	Unit	Dry	Wet	Year	Total (Kg)
1	Selanse	5	tin		x	2014	17
2	Gong	1,3	ton	x		2014	1.300
3	Regang	2	ton	x		2014	2.000
4	Sandin	1	ton	x		2014	1.000
5	Ngindang	1,5	ton	x		2014	1.500
6	Kanai	1,2	ton	x		2014	1.200
7	Nuka	5	ton	x		2014	5.000
8	Pinus	1	ton	x		2014	1.000
9	Bunsi	1,2	ton	x		2014	1.200
10	Berasap	1,5	ton	x		2014	1.500
11	Sanggu	500	kg	x		2014	500
12	Sijun	2	ton	x		2014	2.000
13	Adeh	2,5	ton	x		2014	2.500
14	Pilai	3	ton	x		2014	3.000
15	Ganing	200	kg	x		2014	200
16	Taboh	1	ton	x		2014	1.000
17	Sigi	700	kg	x		2014	700
18	Among	2	ton	x		2014	2.000
19	Sirang	500	kg	x		2014	500
20	Usin	1015	kg	x		2014	1.015
21	Aden	2	ton	x		2014	2.000
							31.132

Production Capacity of Tengkawang

Engkadan Hamlet RT 02, Mensiau village, Kec.Batang Lupar

No	Name Holders	Total Production	Unit	Dry	Wet	Year	Total (Kg)
1	Basin	160	kg		x	2014	53
2	Bayang	500	kg	x		2014	500
		160	kg		x	2014	53
3	Impin	500	kg	x		2014	500
4	Ganggang	1000	kg	x		2014	1.000
5	Abu	1000	kg	x		2014	1.000
6	Edom	1000	kg	x		2014	1.000
7	Belon	1000	kg	x		2014	1.000
8	Nayai	600	kg	x		2014	600
9	Philip	300	kg	x		2014	300
10	Abong	0	kg	x		2014	-
11	Jawan	800	kg	x		2014	800
							6.807

Appendix 3C - APMB Organic Honey Production 2015-2017

ASOSIASI PERIAU MUARA BELITUNG (APMB) SELIMBAU DISTRICT, KAPUAS HULU REGENCY MEMBERS AND HONEY PRODUCTION 2015

NO	Honey Collector Name	Location of Periau	Total		Total Production 2015 (kg)
			TIKUNG	LALAU	
1	SAHBUDIN	SUMBUK	52		20
2	JAINI USMADI	SUMBUK	28		0
3	JELANI	SUMBUK	29		0
4	KARYADI	SUMBUK	181		20
5	TARMIZI	SUMBUK	161		22
6	ABANG DANI	SUMBUK	82	6	10
7	SUKIMAN	SUMBUK	36		0
8	MAT HASAN	SUMBUK	65		0
9	SAPRIADI	SUMBUK	36		0
10	USMAN	SUMBUK	102		13
11	BAMBANG	SUMBUK	142	2	15
12	MUHAMMAD ISA	SUMBUK	44		0
13	KAMARUDIN	SUMBUK	157		20
14	IBRAHIM	SUMBUK	80		0
15	AHMAD YANI	SUMBUK	100		8
16	KARYADI MAS	SUMBUK	80		0
17	IBRAHIM S	SUMBUK	30		0
18	MENEY	SUMBUK	50		0
19	ADMAJA	SUMBUK	30		0
20	ALI	SUMBUK	40		0
21	MAHYUNI	SUMBUK	50	5	0
22	SUPARDI	SUMBUK	40	3	15
23	HERMAN	SUMBUK	200		0
24	SUHAILI	SUMBUK	70		0
25	SUMADI	SUMBUK	150		0
26	ILUI	SUMBUK	30		0
27	SAPRIADI	SUMBUK	40		0
28	ADI R	SUMBUK	60		0
29	NANANG	SUMBUK	100		0
30	WAN ABDULLAH	SUMBUK	60		0

31	RAMANDANU	SUMBUK	25		0
32	RAHMAD I	SUMBUK	25		0
33	ABANG SABRAN	SUMBUK	100		0
34	SUMARDI	SUMBUK	50		0
35	IWAN	SUMBUK	30		0
36	RAHMAD I	SUMBUK	50		0
37	MADI	SUMBUK	30		0
38	JO	SUMBUK	118		3
39	EDI BAHTIAR	SUMBUK	50		0
40	SAMSUDIN	SUMBUK	42		0
41	SUDIRMAN	SUMBUK	42		0
42	HERI SUSANTO	SUMBUK	30		0
43	ALIAN TO	SUMBUK	30		0
44	SUHARJO	SUMBUK	30		0
45	ABDUL ALIM	SUMBUK	30		0
46	HERMAN. S	SUMBUK	30		4
47	ALFIAN	SUMBUK	30		0
48	SALAMSAH	SUMBUK	30		0
49	KARNADI	SUMBUK	30		0
50	HAJI SAHADI	SUMBUK	30		0
51	DODI IRAWAN	SUMBUK	30		0
52	ABDUL HAMID	VEGA LESTARI	158	3	105
53	SUDIRMU	VEGA LESTARI	246	1	20,5
54	RABUDI	VEGA LESTARI	31		0
55	JUNAIDI	VEGA LESTARI	149	3	69
56	H. USMAN	VEGA LESTARI	123		89,2
57	SUBANDI	VEGA LESTARI	94		113
58	RAHMAD I	VEGA LESTARI	103		0
59	SAHARDI	VEGA LESTARI	75		0
60	IBRAHIM	VEGA LESTARI	58	6	1,5
61	SUPARDI	VEGA LESTARI	36	1	113
62	OBOY. ANA	VEGA LESTARI	75		0
63	AGUS MULYONO	VEGA LESTARI	147		15,3
64	YAHYA	VEGA LESTARI	34		22,5
65	JAMLI	VEGA LESTARI	216		105
66	MUSLIMIN	VEGA LESTARI	108		105
67	SASTRAWADI	VEGA LESTARI	40	4	0
68	SAINUDIN	VEGA LESTARI	47		0
69	YUSNI KARNADI	VEGA LESTARI	26	3	0
70	SULAIMAN	VEGA LESTARI	123		40
71	SUDIRMAN SALEH	VEGA LESTARI	98		41,4
72	SUANDI	VEGA LESTARI	117		20,8
73	TONI	VEGA LESTARI	110		49,6
74	TAHARDIN	VEGA LESTARI	35		0
75	BAHARRUDIN	VEGA LESTARI	27		0
76	ABAS	VEGA LESTARI	50		0
77	SENU DIN	VEGA LESTARI	80		10
78	MERAIS	VEGA LESTARI	77		43,6
79	ADI. A	VEGA LESTARI	86		40,3
80	ARDIMAN	VEGA LESTARI	26		0
81	JAKIR	VEGA LESTARI	36		29,2
82	AMAN	VEGA LESTARI	65		5,4
83	MULIADI ADENG	VEGA LESTARI	51		0
84	MASRAN	VEGA LESTARI	57		0
85	ABDUL HAMID L	VEGA LESTARI	25		0
87	ALI	VEGA LESTARI	72		15,4
88	JAYADI	PENGKAL TUA	35		0
89	DONI	PENGKAL TUA	32		0
90	PENDI	PENGKAL TUA	41		0

91	ANJAS	PENGKAL TUA	72		20
92	SAPARUDIN	PENGKAL TUA	27		0
93	KUSNADI	PENGKAL TUA	53		0
94	SAHARMAN	PENGKAL TUA	76		7,8
95	DONI PRATAMA	PENGKAL TUA	50		0
96	SUKARNA	PENGKAL TUA	78		0
97	JUNAIDI	PENGKAL TUA	38		0
98	BAHARI	PENGKAL TUA	41		0
99	MAT ALI	PENGKAL TUA	50		0
100	MESRA	PENGKAL TUA	45		0
101	MOHTAR JAINI	PENGKAL TUA	44		0
102	RONI	PENGKAL TUA	63		32
103	JERIMIN	PENGKAL TUA	52		0
104	RASIMAN	PENGKAL TUA	40		0
105	SU. R	PENGKAL TUA	30		0
106	M. UDAT	PENGKAL TUA	45		0
107	NAVIS	PENGKAL TUA	60		42
108	ISKANDAR	PENGKAL TUA	90		21,5
109	JUMAIN	PENGKAL TUA	25		0
110	JONSON	PENGKAL TUA	25		0
111	ATUI	PENGKAL TUA	35		0
112	RAHMAD A	PENGKAL TUA	57		0
113	USMAN MU	PENGKAL TUA	70		0
114	H. SAHDAN	PENGKAL TUA	60		0
115	ABDUL RANI	PENGKAL TUA	45		0
116	BURHAN S	PENGKAL TUA	37		0
117	ABANG LAH	PENGKAL TUA	33		0
118	SAPARDI	PENGKAL TUA	32		0
119	HUSIN	PENGKAL TUA	36		0
120	SANUSI	PENGKAL TUA	42		0
121	JAMAK WAN	DANAU SEKULAT	48		31
122	DULADI	DANAU SEKULAT	27		0
123	NYAI	DANAU SEKULAT	27		0
124	DERANI	DANAU SEKULAT	28		12
125	ISKANDAR	DANAU SEKULAT	40		0
126	SURYADI	DANAU SEKULAT	27		0
127	BADAR	DANAU SEKULAT	28		0
128	KARIM	DANAU SEKULAT	26		0
129	M. JAPAR	DANAU SEKULAT	27		0
130	DEDEK	DANAU SEKULAT	26		19
131	SENI	DANAU SEKULAT	27		0
132	MARDIPIN	DANAU SEKULAT	28		0
133	HENDRI	DANAU SEKULAT	54		17
134	JAILANI	DANAU SEKULAT	30		0
135	AYANI	DANAU SEKULAT	35		0
136	JALALUDIN	DANAU SEKULAT	30		0
137	A. YAMIN	DANAU SEKULAT	40		0
138	MAHYUDIN	DANAU SEKULAT	40		0
139	SALMAN	DANAU SEKULAT	35		0
140	SAHARJO	DANAU SEKULAT	30		0
141	JOHAN IDA	DANAU SEKULAT	60		0
142	MULYADI J	DANAU SEKULAT	40		0
143	RANI	DANAU SEKULAT	35		0
144	SAPARUDIN	DANAU SEKULAT	40		0
145	JE	DANAU SEKULAT	35		0
146	RETNO	DANAU SEKULAT	30		0
147	BUDAI	DANAU SEKULAT	30		0
148	SUPIANDI	DANAU SEKULAT	32		0
149	SAHPUAN	DANAU SEKULAT	34		0
150	MULYADI	DANAU SEKULAT	28		0

151	RAFI'I	DANAU SEKULAT	37		0
152	MALIDIN	DANAU SEKULAT	43		0
Total			8.744,0		1.343,4

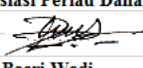
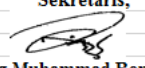
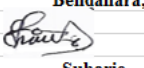
**ASOSIASI PERIAU MUARA BELITUNG (APMB)
SELIMBAU DISTRICT, KAPUAS HULU REGENCY
MEMBERS AND HONEY PRODUCTION 2016**

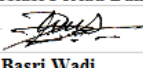
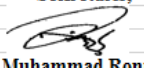
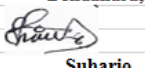
NO	Honey Collector Name	Member ID	Serial Number	Member Code	Location of Periau	Total		Total Production 2015 (kg)
						TIKUNG	LALAU	
1	JAMAK WAN	21	1	JKW	DANAU SEKULAT	35		42,8
2	ISKANDAR	25	5	IS	DANAU SEKULAT	41		72,6
3	JAYADI	1	1	JY	PENGKAL TUA	72		36,4
4	KUSNADI	6	6	TA	PENGKAL TUA	27		31,2
5	JERIMIN	16	16	JR	PENGKAL TUA	53		25
6	BAHARI	11	11	BHR	PENGKAL TUA	78		25
7	A. PENDI	3	3	PD	PENGKAL TUA	41		2,4
8	ANJAS	4	4	AJS	PENGKAL TUA	50		11
9	SUKARNA	9	9	SKN	PENGKAL TUA	63		2,4
10	MAT ALI	12	12	M.ALI	PENGKAL TUA	30		11
11	MESRA	13	13	MSR	PENGKAL TUA	45		1,4
12	RONI	15	15	R	PENGKAL TUA	35		1,8
13	SU. R	18	18	S	PENGKAL TUA	72		1,4
14	M. UDAD	19	19	UD	PENGKAL TUA	27		4
15	DERANI	24	4	DERANI	DANAU SEKULAT	38		18
16	KARIM	28	8	KRM	DANAU SEKULAT	50		7,2
17	M. JAPAR	29	9	JAPAR	DANAU SEKULAT	45		3,4
18	DEDEK	30	10	DK	DANAU SEKULAT	82		4,6
19	MARDIPIN	32	12	MARDIPIN	DANAU SEKULAT	42		2,5
20	HENDRI	33	13	HD	DANAU SEKULAT	76		5,7
21	JAKIR	63	30	JKR	VEGA LESTARI	82		36
22	SAHARDI	41	8	N	VEGA LESTARI	46		2
23	SUPARDI	43	10	SPI	VEGA LESTARI	76		13,8
24	YAHYA	46	13	YH	VEGA LESTARI	34		6,6
25	SUBANDI	39	6	BNK	VEGA LESTARI	99		19,2
26	SULAIMAN	52	19	ABT	VEGA LESTARI	148		19,4
27	AMAN	64	31	AMAN	VEGA LESTARI	62		3
28	AGUS MULYONO	45	12	AML	VEGA LESTARI	147		34,8
29	IBRAHIM	42	9	IBM	VEGA LESTARI	58		3,8
30	JAMLI	47	14	PA	VEGA LESTARI	364		30,2
31	SAINUDIN	50	17	SAI	VEGA LESTARI	76		15,4
32	MUSLIMIN	48	15	KIMIN	VEGA LESTARI	162		23,8
33	JUNAIDI	37	4	JN	VEGA LESTARI	80		28,5
34	SUDIRMU	35	2	SDM	VEGA LESTARI	248		28
35	TONI	55	22	TN	VEGA LESTARI	154		4
36	MERAIS	60	27	M	VEGA LESTARI	77		2,8
37	ADI A	61	28	AI	VEGA LESTARI	150		20,6
38	HAJI USMAN	39	5	HU	VEGA LESTARI	123		27,8
39	SUDIRMAN SALEH	53	20	GUB	VEGA LESTARI	131		27,6
40	SENUDIN	59	26	SD	VEGA LESTARI	109		11,8
41	ABDUL HAMID	34	1	AD	VEGA LESTARI	163		6,5
42	RAHMAD	40	7	RH	VEGA LESTARI	103		6,3
43	KAMARUDIN	80	13	KMR	SUMBUK	168		17
44	SAHBUDIN	68	1	BDN	SUMBUK	52		20
45	KARYADI NONA	71	4	KN	SUMBUK	181		20
46	TARMIZI	72	5	MZ	SUMBUK	161		22
47	ABANG DANI	73	6	ABG	SUMBUK	82	6	10
48	USMAN	77	10	U	SUMBUK	102		13
49	BAMBANG	78	11	BMG	SUMBUK	142	2	15
50	SUPARDI	89	22	SP	SUMBUK	40	3	15
51	HERMAN. S	113	46	HN	SUMBUK			100
Total						3.696		914



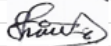
**ASOSIASI PERIAU MUARA BELITUNG (APMB)
SELIMBAU DISTRICT, KAPUAS HULU REGENCY
MEMBERS AND HONEY PRODUCTION 2017**

NO	Honey Collector Name	Member ID	Serial Number	Member Code	Location of Periau	Total		Total Production 2017 (kg)
						TIKUNG	LALAU	
1	Jayadi	PPT 01	1	JY	Pengkal Tua	78		101,5
2	Kusnadi	PPT 06	6	TA	Pengkal Tua	48		71,5
3	Doni Pratama	PPT 08	8	DN	Pengkal Tua	50		11
4	Sukarna	PPT 09	9	SKN	Pengkal Tua	29		29,5
5	Mat Ali	PPT 11	11	M.ALI	Pengkal Tua	50		59,5
6	Rasiman	PPT 16	16	RS	Pengkal Tua	30		5,5
7	Su. R	PPT 17	17	SR	Pengkal Tua	26		14,5
8	Napis	PPT 19	19	NP	Pengkal Tua	70		4,5
9	Iskandar L	PPT 20	20	ISL	Pengkal Tua	70		75
10	Mardipin	PPT 21	21	MARDIPIN	Pengkal Tua	54		12,5
11	Derani	PPT 22	22	DERANI	Pengkal Tua	73		15
12	Jamak Wan	PDS 01	1	JKW	Danau Sekulat	48		27
13	Iskandar K	PDS 04	4	ISK	Danau Sekulat	58		11
14	Dedek	PDS 09	9	DK	Danau Sekulat	26		35
15	Hendri	PDS 11	11	HD	Danau Sekulat	54		9
16	Sugeng	PDS 13	13	TS	Danau Sekulat	80		16
17	Sukarna J	PDS 17	17	SJ	Danau Sekulat	80		11,5
18	Bahari	PDS 18	18	BHR	Danau Sekulat	53		12
19	Abdul Hamid	PVL 01	1	MATA PANAHAH	Vega Lestari	350		82,4
20	H. Usman	PVL 02	2	TIKAP DUA	Vega Lestari	200		61
21	Junaidi	PVL 03	3	JN	Vega Lestari	300		61,7
22	Agus Mulyono	PVL 04	4	ML	Vega Lestari	150		32
23	Suandi	PVL 05	5	SNI	Vega Lestari	300		53,1
24	Sudirman Saleh	PVL 06	6	GUB	Vega Lestari	350		23,4
25	Supardi	PVL 07	7	SPI	Vega Lestari	200		140
26	Sudirmu	PVL 08	8	GERIT SATU	Vega Lestari	400		51,7
27	Rahmad	PVL 09	9	RT	Vega Lestari	200		17,1
28	Sahardi	PVL 10	10	N	Vega Lestari	100		37
29	Adi. A	PVL 11	11	AI	Vega Lestari	250		32,4
30	Ibrahim	PVL 12	12	AIM	Vega Lestari	200		5,7
31	Merais	PVL 13	13	GERIT 2 DEPAN 2 BLKG	Vega Lestari	65		10,6
32	Senudin	PVL 14	14	GERIT 3 DEPAN	Vega Lestari	70		10
33	Sulaiman	PVL 15	15	ABT TIKAP SATU	Vega Lestari	250		9,6
34	Yahya	PVL 16	16	YH	Vega Lestari	150		50,2
35	Susilawati	PVL 17	17	PANAHAH DUA SUS	Vega Lestari	80		19,4
36	Jakir	PVL 18	18	JKR	Vega Lestari	160		28,4
37	Aman	PVL 19	19	AMAN	Vega Lestari	350		34,8
38	Ade Mus	PST 01	23	MUS	Vega Lestari	40		6,4
39	H. Aris	PST 03	25	ARS	Vega Lestari	65		3,2
40	Yusni Karnadi	PST 04	26	YI	Vega Lestari	43		5,8
41	Abdul Hamid L	PST 06	28	LPN	Vega Lestari	55		6,4
42	Obay. Ana	PST 08	30	OBOY	Vega Lestari	35		16,6
43	Rabudi	PST 11	33	RB	Vega Lestari	150		10
44	Abas Suni	PST 17	39	ABAS	Vega Lestari	350		6,8
45	Bahrnunudin	PST 24	46	ARN	Vega Lestari	40		4
46	Jamli	PST 28	50	PA	Vega Lestari	375		62
47	Muslimin	PST 29	51	KIMIN	Vega Lestari	272		40
48	Subandi	PST 30	52	BNK	Vega Lestari	356		118,5
49	Sahbudin	PS 01	1	BDN	Sumbuk	170		5,4
50	Karyadi N	PS 04	4	KN	Sumbuk	166		19,5
51	Tarmizi	PS 05	5	MZ	Sumbuk	260		10,7
52	Usman	PS 10	10	U	Sumbuk	62		12,5
53	Bambang	PS 11	11	BMG	Sumbuk	518		45,5
54	Admaja	PS 19	19	AD	Sumbuk	100		22,2
55	Jo	PS 38	38	JO	Sumbuk	110		4
56	Herman. S	PS 46	46	HN	Sumbuk	62		12,5
Total						8.331		1.694

Appendix 3D – Income Statement of APDS for 3 years (2014-2017)

Kop. Asosiasi Periau Danau Sentarum						
Income Statement						
31 Desember 2013 - 31 Desember 2014						
Sales	Unit			Price/Unit	Total	
Madu Kemasan/Honey Packaged	263,9	Kg	513 Btl	50.000	25.650.000	
Madu Kemasan/Honey Packaged			362 Btl	45.000	16.290.000	
Madu Curah/Bulk Honey	13.021,0	Kg		90.000	1.171.890.000	
Madu Curah/Bulk Honey	418,0	Kg		110.000	45.980.000	
Madu Curah/Bulk Honey	100,0	Kg		100.000	10.000.000	
Madu Curah/Bulk Honey	200,0	Kg		103.000	20.600.000	
Madu Curah/Bulk Honey	2.114,4	Kg		100.000	211.440.000	
Total Income	16.117,3	Kg				Rp 1.501.850.000
Pembelian Madu/Purchasing Honey	16.117,3			80.000	1.289.384.000	
Pembelian jerigen (a/1 Kg)/Purchasing Honey in Jerry Can	2.832,4			5.000	14.162.000	
Pembelian jerigen (a/25 Kg)/Purchasing Honey in Jerry can	527,0			75.000	39.525.000	
Pembelian Botol/Bottle buying			875	2.000	1.750.000	
Pengangkutan Madu/ Honey transporting	16.117,3			2.000	32.234.600	
Pengolahan/ Production cost			875	2.000	1.750.000	
HPP/Cost of sale						Rp 1.378.805.600
Biaya Manajemen/Managament Fee	16.117,3			1.000	16.117.300	
Biaya Inspeksi Internal/Internal inspection fee	16.117,3			1.000	16.117.300	
Biaya Inspeksi Eksternal/Eksternal inspection fee	16.117,3			1.000	16.117.300	
Total Beban Usaha/ Total expenses						Rp 48.351.900,00
Total Profit						Rp 74.692.500
Batu Rawan, 31 Desember 2014						
Ket. Kop. Asosiasi Periau Danau Sentarum,	Sekretaris,			Bendahara,		
						
Basri Wadi	Abang Muhammad Roni Mulyadi			Suharjo		

Kop. Asosiasi Periau Danau Sentarum						
Income Statement						
31 Desember 2014 - 31 Desember 2016						
Sales	Unit			Price/Unit	Total	
Madu Kemasan/Honey Packaged	206,3	Kg	492 Btl	70.000	34.440.000	
Madu Kemasan/Honey Packaged	652,7		1.522	70.000	106.540.000	
Madu Kemasan/Honey Packaged	786		2.577	70.000	180.390.000	
Madu Curah/Bulk Honey	951,0	Kg		110.000	104.610.000	
Madu Curah/Bulk Honey	4,5	Kg		120.000	540.000	
Madu Curah/Bulk Honey	114,0	Kg		140.000	15.960.000	
Madu Curah/Bulk Honey	1,0	Kg		130.000	130.000	
Total Income	2.716	Kg				Rp 442.610.000
Cost						
Pembelian Madu/Purchasing Honey	2.715,5			90.000	244.395.000	
Pembelian jerigen (a/1 Kg)/Purchasing Honey in Jerry Can	121			5.000	605.000	
Pembelian jerigen (a/25 Kg)/Purchasing Honey in Jerry can	38			75.000	2.850.000	
Pembelian Botol/Bottle buying			4.591	2.000	9.182.000	
Pengangkutan Madu/ Honey transporting	2.715,5			2.000	5.431.000	
Pengolahan/ Production cost			4.591	2.000	9.182.000	
HPP/Cost of sale						Rp 271.645.000
Biaya Manajemen/Managament Fee	2.715,5			21.712	18.957.849	
Biaya Inspeksi Internal/Internal inspection fee	2.715,5			21.712	20.000.000	
Biaya Inspeksi Eksternal/Eksternal inspection fee	2.715,5			21.712	20.000.000	
Total Beban Usaha/ Total expenses						Rp 58.957.849
Total Profit						Rp 112.007.151
Batu Rawan, 31 Desember 2016						
Ket. Kop. Asosiasi Periau Danau Sentarum,	Sekretaris,			Bendahara,		
						
Basri Wadi	Abang Muhammad Roni Mulyadi			Suharjo		

Kop. Asosiasi Periau Danau Sentarum					
Income Statement					
31 Maret 2017					
		Unit	Price/Unit	Total	
Sales					
Madu Kemasan Stok Sebelumnya/Honey Packaged previous		515 Bottle	70.000	36.050.000	
Madu Kemasan /Honey packaged	151 Kg	327 Bottle	80.000	26.160.000	
Madu Curah/Bulk Honey	275		130.000	35.750.000	
	56		150.000	8.400.000	
	52		140.000	7.280.000	
Total Income	534	842			Rp 113.640.000,00
Cost					
Pembelian Madu/Purchasing Honey	534		120.000	64.080.000	
Pembelian jerigen (a/1 Kg)/Purchasing Honey in Jerry Can	108		5.000	540.000	
Pembelian jerigen (a/25 Kg)/Purchasing Honey in Jerry can	12		75.000	900.000	
Pembelian Botol/Bottle buying		327	2.000	654.000	
Pengangkutan Madu/ Honey transporting	534		2.000	1.068.000	
Pengolahan/ Production cost		327	4.000	1.308.000	
HPP/Cost of sale					Rp 68.550.000,00
Biaya Manajemen/Managament Fee	534		18.727	10.000.000	
Biaya Inspeksi Internal/Internal inspection fee	534		18.727	10.000.000	
Biaya Inspeksi Eksternal/Ekternal inspection fee	534		18.727	10.000.000	
Total Beban Usaha/ Total expenses					Rp 30.000.000,00
Total Profit					Rp 15.090.000,00
Batu Rawan, 31 Maret 2017					
Ket. Kop. Asosiasi Periau Danau Sentarum,		Sekretaris,		Bendahara,	
					
Basri Wadi		Abang Muhammad Roni Mulyadi		Suharjo	